TABLE OF CONTENTS

1.0 PEA SUMMARY 1-1
1.1 PROJECT LOCATION 1-1
1.2 PROPOSED PROJECT COMPONENTS 1-1
1.3 PROJECT NEED AND RANGE OF ALTERNATIVES CONSIDERED 1-3
1.4 PROPONENTS ENVIRONMENTAL ASSESSMENT CONTENTS 1-3
1.4.1 PEA Part A 1-3
1.4.2 PEA Part B (Technical Appendices) 1-5
1.4.3 Other PEA Requirements 1-5
1.5 MAJOR PEA CONCLUSIONS 1-6
1.5.1 Resource Areas with No Impact or Less than Significant Impacts 1-6
1.5.2 Resource Areas Requiring Applicant Proposed Measures 1-6
1.5.3 Significant, Unavoidable Impacts 1-8
1.6 PUBLIC OUTREACH EFFORTS 1-8
1.6.1 Overview of Public Involvement 1-8
1.6.2 Door-to-Door Outreach and Mailings 1-9
1.6.3 Proposed Project Hotline 1-9
1.6.4 Proposed Project Website 1-9
1.6.5 Public Open Houses 1-9
1.6.6 San Juan Capistrano Substation Wall Design Charrette 1-11
1.7 INTER-AGENCY AND OTHER CONSULTATIONS 1-11
1.7.1 Public Support for Proposed Project 1-12
1.7.2 Areas of Controversy 1-13
1.8 ISSUES TO BE RESOLVED 1-14
1.8.1 Final Design of the La Pata Avenue Gap Closure and Camino Del Rio Extension Project 1-14
1.8.2 State Route 241 Extension 1-15
1.8.3 Final Design of the San Juan Capistrano Substation Perimeter Wall and Landscaping 1-15

2.0 PROPOSED PROJECT PURPOSE AND NEED 2-1
2.1 OVERVIEW 2-1
2.2 PROPOSED PROJECT OBJECTIVES 2-6
2.2.1 Objective 1: Provide Transmission System Reliability 2-6
2.2.2 Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity 2-9
2.2.3 Objective 3: Improve Transmission and Distribution Operating Flexibility 2-10

2.2.4 Objective 4: Accommodate Customer Load Growth in the South Orange County Area 2-11
2.2.5 Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E ROW and Utility Owned Property 2-11
2.3 CONCLUSION 2-15

3.0 PROPOSED PROJECT DESCRIPTION 3-1

3.1 PROPOSED PROJECT OVERVIEW 3-1
3.2 PROPOSED PROJECT LOCATION AND REGIONAL CONTEXT 3-2
3.2.1 Capistrano Substation Site 3-5
3.2.2 Talega Substation Site 3-5
3.3 EXISTING REGIONAL ELECTRIC SYSTEM 3-5
3.3.1 Capistrano Substation 3-5
3.3.2 Talega Substation 3-11
3.3.3 Transmission Lines 3-11
3.4 PROPOSED PROJECT FACILITIES 3-17
3.4.1 Substations 3-17
3.4.2 Substation Getaways 3-24
3.4.3 Transmission Lines 3-25
3.4.4 Distribution Lines 3-79
3.5 CONSTRUCTION METHODS 3-81
3.5.1 Overhead Transmission Lines 3-81
3.5.2 Underground Transmission Lines 3-85
3.5.3 Substation Site Development 3-88
3.5.4 Temporary Work Areas 3-97
3.5.5 Road Crossings 3-101
3.5.6 Helicopter Usage During Transmission Line Construction 3-102
3.5.7 Retired Structures/Poles, Materials, and Components 3-103
3.5.8 Construction Equipment and Personnel 3-103
3.6 CONSTRUCTION SCHEDULE 3-106
3.7 PERMANENT LAND AND RIGHT-OF-WAY REQUIREMENTS 3-108
3.7.1 San Juan Capistrano Substation Rebuild 3-108
3.7.2 Talega Substation Alterations 3-109
3.7.3 Transmission Line Installation and Re-location 3-109
3.8 OPERATION AND MAINTENANCE (EXISTING AND PROPOSED) 3-110
3.9 ENVIRONMENTAL PROCEDURES AND PROTOCOLS 3-112
3.9.1 SDG&E's Natural Community Conservation Plan 3-113
3.9.2 SDG&E's Water Quality Construction Best Management Practices Manual 3-114
3.9.3 Fire Prevention and Fire Safety Standards 3-114

3.9.4 Other SDG&E Environmental Procedures and Protocols 3-114
3.10 APPLICANT PROPOSED MEASURES....3-115
3.11 ELECTRIC AND MAGNETIC FIELDS SUMMARY 3-125
3.11.1 Electrical Effects....3-125
3.11.2 Background....3-125
3.11.3 History....3-126
3.11.4 Current Research....3-126
3.11.5 Federal Electric and Magnetic Fields Program....3-130
3.11.6 California Electric and Magnetic Fields Policy 3-131
3.11.7 Electric Magnetic Field Summary 3-132
3.11.8 California Environmental Quality Act....3-132
3.12 REQUIRED APPROVALS....3-133
3.13 REFERENCES 3-136

4.0 ENVIRONMENTAL IMPACT ASSESSMENT (INCLUDING ENVIRONMENTAL SETTING)....4-1

4.1 AESTHETICS....4.1-1
4.1.1 Introduction....4.1-1
4.1.2 Methodology 4.1-1
4.1.3 Existing Conditions....4.1-3
4.1.4 Potential Impacts....4.1-42
4.1.5 Applicant Proposed Measures....4.1-87
4.1.6 References....4.1-88
4.2 AGRICULTURE AND FORESTRY RESOURCES 4.2-1
4.2.1 Introduction....4.2-1
4.2.2 Methodology 4.2-1
4.2.3 Existing Conditions....4.2-2
4.2.4 Potential Impacts....4.2-5
4.2.5 Applicant Proposed Measures....4.2-8
4.2.6 References....4.2-8
4.3 AIR QUALITY....4.3-1
4.3.1 Introduction....4.3-1
4.3.2 Methodology 4.3-2
4.3.3 Existing Conditions....4.3-2
4.3.4 Potential Impacts....4.3-24
4.3.5 Applicant Proposed Measures....4.3-50
4.3.6 References....4.3-51

4.4 BIOLOGICAL RESOURCES 4.4-1
4.4.1 Introduction 4.4-1
4.4.2 Methodology 4.4-2
4.4.3 Existing Conditions 4.4-7
4.4.4 Potential Impacts 4.4-23
4.4.5 Applicant Proposed Measures 4.4-33
4.4.6 References 4.4-33
4.5 CULTURAL RESOURCES 4.5-1
4.5.1 Introduction 4.5-1
4.5.2 Methodology 4.5-1
4.5.3 Existing Conditions 4.4-4
4.5.4 Potential Impacts 4.5-16
4.5.5 Applicant Proposed Measures 4.5-22
4.5.6 References 4.5-24
4.6 GEOLOGY, SOILS, AND MINERAL RESOURCES 4.6-1
4.6.1 Introduction 4.6-1
4.6.2 Methodology 4.6-2
4.6.3 Existing Conditions 4.6-2
4.6.4 Potential Impacts 4.6-10
4.6.5 Applicant Proposed Measures 4.6-17
4.6.6 References 4.6-18
4.7 HAZARDS AND HAZARDOUS MATERIALS 4.7-1
4.7.1 Introduction 4.7-1
4.7.2 Methodology 4.7-2
4.7.3 Existing Conditions 4.7-7
4.7.4 Potential Impacts 4.7-20
4.7.5 Applicant Proposed Measures 4.7-28
4.7.6 References 4.7-29
4.8 HYDROLOGY AND WATER QUALITY 4.8-1
4.8.1 Introduction 4.8-2
4.8.2 Methodology 4.8-2
4.8.3 Existing Conditions 4.8-2
4.8.5 Potential Impacts 4.8-11
4.8.5 Applicant Proposed Measures 4.8-21
4.8.6 References 4.8-21

4.9 LAND USE AND PLANNING 4.9-1
4.9.1 Introduction 4.9-1
4.9.2 Methodology 4.9-1
4.9.3 Existing Conditions 4.9-2
4.9.4 Potential Impacts 4.9-24
4.9.5 Applicant Proposed Measures 4.9-27
4.9.6 References 4.9-27
4.10 NOISE 4.10-1
4.10.1 Introduction 4.10-1
4.10.2 Methodology 4.10-1
4.10.3 Existing Conditions 4.10-2
4.10.4 Potential Impacts 4.10-20
4.10.5 Applicant Proposed Measures 4.10-41
4.10.6 References 4.10-41
4.11 POPULATION AND HOUSING 4.11-1
4.11.1 Introduction 4.11-1
4.11.2 Methodology 4.11-1
4.11.3 Existing Conditions 4.11-1
4.11.4 Potential Impacts 4.11-3
4.11.5 Applicant Proposed Measures 4.11-5
4.11.6 References 4.11-5
4.12 PUBLIC SERVICES 4.12-1
4.12.1 Introduction 4.12-1
4.12.2 Methodology 4.12-1
4.12.3 Existing Conditions 4.12-2
4.12.4 Potential Impacts 4.12-5
4.12.5 Applicant Proposed Measures 4.12-11
4.12.6 References 4.12-11
4.13 RECREATION 4.13-1
4.13.1 Introduction 4.13-1
4.13.2 Methodology 4.13-1
4.13.3 Existing Conditions 4.13-1
4.13.4 Potential Impacts 4.13-3
4.13.5 Applicant Proposed Measures 4.13-4
4.13.6 References 4.13-4

4.14 TRANSPORTATION AND TRAFFIC....4.14-1
4.14.1 Introduction....4.14-1
4.14.2 Methodology....4.14-2
4.14.3 Existing Conditions....4.14-2
4.14.4 Potential Impacts....4.14-18
4.14.5 Applicant Proposed Measures....4.14-30
4.14.6 References....4.14-30
4.15 UTILITIES AND SERVICE SYSTEMS....4.15-1
4.15.1 Introduction....4.15-1
4.15.2 Methodology....4.15-2
4.15.3 Existing Conditions....4.15-2
4.15.4 Potential Impacts....4.15-5
4.15.5 Applicant Proposed Measures....4.15-11
4.15.6 References....4.15-11
4.16 CUMULATIVE IMPACTS....4.16-1
4.16.1 Introduction....4.16-1
4.16.2 Significance Criteria....4.16-1
4.16.3 Timeframe of Analysis....4.16-2
4.16.4 Area of Analysis....4.16-2
4.16.5 Methodology....4.16-2
4.16.6 Existing/Operating Projects....4.16-3
4.16.7 Foreseeable Projects Inventory....1.46-3
4.16.8 Potential Cumulative Impacts....4.16-13
4.16.9 Application Proposed Measures....4.16-33
4.16.10 References....4.16-33

5.0 DETAILED DISCUSSION OF SIGNIFICANT IMPACTS....5-1

5.1 APPLICANT PROPOSED MEASURES TO MINIMIZE SIGNIFICANT EFFECTS....5-1
5.2 DESCRIPTION OF PROJECT ALTERNATIVES TO MINIMIZE SIGNIFICANT EFFECTS....5-2
5.2.1 Introduction....5-2
5.2.2 Methodology....5-2
5.2.3 Proposed Project Objectives....5-3
5.2.4 Alternatives Considered but Rejected....5-3
5.3 GROWTH-INDUCING IMPACTS....5-43
5.3.1 Economic or Population Growth....5-43
5.3.2 New Employment....5-44
5.3.3 Extended Access or Public Services....5-44

5.3.4 Existing Community Services....5-45
5.3.5 New Development....5-45
5.3.6 Conclusion....5-45
5.4 REFERENCES....5-46

ACRONYMS

LIST OF PREPARERS AND CONTRIBUTORS

LIST OF FIGURES

Figure 2-1: South Orange County 138kV Substation Interconnection Diagram....2-3
Figure 2-2: South Orange County 138kV Substation Load Center Diagram....2-13

Figure 3-1: Project Vicinity Map....3-3
Figure 3-2: Project Overview Map....3-7
Figure 3-3: Existing Capistrano Substation Layout....3-9
Figure 3-4: Existing Capistrano Substation Site Overview....3-13
Figure 3-5: Existing Talega Substation Layout....3-15
Figure 3-6: Ultimate San Juan Capistrano Substation Layout....3-21
Figure 3-7: Proposed Transmission Line Route (20 Sheets)....3-27
Figure 3-8: San Juan Capistrano Preliminary Grading Plan....3-91
Figure 3-9: San Juan Capistrano Substation Preliminary Landscape Screening Diagram....3-93

Figure 4.1-1: Regional Landscape Context....4.1-5
Figure 4.1-2a: Photograph Viewpoint Locations – San Juan Capistrano....4.1-9
Figure 4.1-2b: Photograph Viewpoint Locations – San Clemente....4.1-11
Figure 4.1-3a: Photographs 1 and 2....4.1-15
Figure 4.1-3b: Photographs 3 and 4....4.1-16
Figure 4.1-3c: Photographs 5 and 6....4.1-17
Figure 4.1-3d: Photographs 7 and 8....4.1-18
Figure 4.1-3e: Photographs 9 and 10....4.1-20
Figure 4.1-3f: Photographs 11 and 12....4.1-21
Figure 4.1-3g: Photographs 13 and 14....4.1-22
Figure 4.1-3h: Photographs 15 and 16....4.1-23
Figure 4.1-3i: Photographs 17 and 18....4.1-24

Figure 4.1-3j: Photographs 19 and 20 ..... 4.1-25
Figure 4.1-3k: Photographs 21 and 22 ..... 4.1-27
Figure 4.1-3l: Photographs 23 and 24 ..... 4.1-28
Figure 4.1-3m: Photographs 25 and 26 ..... 4.1-31
Figure 4.1-3n: Photographs 27 and 28 ..... 4.1-32
Figure 4.1-3o: Photographs 29 and 30 ..... 4.1-33
Figure 4.1-3p: Photographs 31 and 32 ..... 4.1-34
Figure 4.1-3q: Photographs 33 and 34 ..... 4.1-36
Figure 4.1-3r: Photographs 35 and 36 ..... 4.1-37
Figure 4.1-4: Preliminary Landscape Screening Diagram 4.1-47
Figure 4.1-5: Existing View and Visual Simulation from Avenida De La Vista 4.1-51
Figure 4.1-6: Existing View and Computer Rendering from Camino Capistrano 4.1-55
Figure 4.1-7: Existing View and Computer Rendering from Calle Santa Rosalia 4.1-57
Figure 4.1-8: Existing View and Computer Rendering from Calle Bonita 4.1-59
Figure 4.1-9: Existing View and Visual Simulation from Junipero Serra Park 4.1-63
Figure 4.1-10: Existing View and Visual Simulation from Via Priorato 4.1-65
Figure 4.1-11: Existing View and Visual Simulation from Arroyo Park 4.1-69
Figure 4.1-12: Existing View and Visual Simulation from San Juan Creek Road 4.1-71
Figure 4.1-13: Existing View and Visual Simulation from San Juan Hills High School 4.1-73
Figure 4.1-14: Existing View and Visual Simulation from Via Ceramica 4.1-77
Figure 4.1-15: Existing View and Visual Simulation from Calle Saluda 4.1-79
Figure 4.1-16: Existing View and Visual Simulation from Talega Park 4.1-83
Figure 4.1-17: Existing View and Visual Simulation from Cristianitos Road 4.1-85

Figure 4.3-1: Wind Rose, Costa Mesa Monitoring Station 4.3-21

Figure 4.8-1: Hydrologic Area, Watersheds, and Drainages 4.8-7

Figure 4.9-1: Existing Land Uses in the Proposed Project Vicinity 4.9-5

Figure 4.10-1: Ambient Noise Measurement Locations at the Capistrano Substation 4.10-15
Figure 4.10-2: Predicted Noise Level Contours for the San Juan Capistrano Substation 4.10-23
Figure 4.10-3: Construction Vibration Levels with Distance from Several Source Types 4.10-31

Figure 4.14-1: Affected Roadways Map 4.14-7

Figure 4.16-1: Foreseeable Project Map....4.16-7

Figure 5-1: Development Constraints within the South Orange County Transmission Load Center....5-25
Figure 5-2: Alternative 230/138kV Air Insulated Substation Site Location at the Prima Deshecha Landfill....5-29

LIST OF TABLES

Table 1-1: PEA Checklist Key Table....1-16

Table 3-1: Proposed Project Cost Estimate....3-17
Table 3-2: Transmission Line Segments....3-67
Table 3-3: Proposed New 230kV Poles....3-68
Table 3-4: Proposed New 138kV Poles....3-69
Table 3-5: Proposed New 69kV Poles....3-69
Table 3-6: Transmission Structures/Poles to be Removed....3-70
Table 3-7: Transmission Pole Diameters....3-72
Table 3-8: Scope of Work for Segment 1....3-73
Table 3-9: Scope of Work for Segment 2....3-76
Table 3-10: Scope of Work for Segment 3....3-76
Table 3-11: Scope of Work for Segment 4....3-77
Table 3-12: Summary of Proposed Project Disturbance Areas....3-98
Table 3-13: Common Destination of Retired Project Components....3-103
Table 3-14: Standard Construction Equipment and Usage....3-104
Table 3-15: Proposed Construction Schedule....3-106
Table 3-16: Permanent Land and ROW Requirements....3-108
Table 3-17: Applicant Proposed Measures by Resources Area....3-116
Table 3-18: Applicant Proposed Measures....3-117
Table 3-19: Anticipated Permit, Approval, and Consultation Requirements....3-134

Table 4.1-1: Summary of Landscape Units....4.1-13
Table 4.1-2: Summary of Simulation Views....4.1-49

Table 4.3-1: Ambient Air Quality Standards....4.3-4
Table 4.3-2: South Coast Air Basin Attainment Classification for Criteria Pollutants....4.3-6
Table 4.3-3: State of California Greenhouse Gases Emissions by Sector....4.3-9

Table 4.3-4: Global Warming Potentials and Atmospheric Lifetimes of Greenhouse Gases 4.3-9
Table 4.3-5: Background Air Quality Data (2008 to 2010).....4.3-23
Table 4.3-6: Air Quality Significance Thresholds.....4.3-26
Table 4.3-7: Localized Significance Thresholds 4.3-28
Table 4.3-8a: Estimated Construction Emissions for Substation Construction.....4.3-32
Table 4.3-8b: Estimated Construction Emissions for Transmission Line Construction.....4.3-39
Table 4.3-9: Estimated Maximum Simultaneous Construction Emissions 4.3-42
Table 4.3-10: Greenhouse Gas Construction Emissions.....4.3-48

Table 4.4-1: Vegetation Communities in the Proposed Project Area.....4.4-14
Table 4.4-2: Potentially Jurisdictional Waters in Proposed Project Survey Area 4.4-22
Table 4.4-3: Vegetation Community Impacts in Acres 4.4-25

Table 4.5-1: Previously Recorded Cultural Resources within the Proposed Project Area.....4.5-13

Table 4.6-1: Geologic Units Within the Proposed Project Area.....4.6-4
Table 4.6-2: Known Active Faults Within the Proposed Project Area.....4.6-6
Table 4.6-3: Soil Units within the Proposed Project Area.....4.6-9

Table 4.7-1: Databases Searched and Potential Impact Ranking 4.7-3
Table 4.7-2: Hazardous Materials Sites Adjacent to the Capistrano Substation 4.7-15
Table 4.7-3: Asbestos Containing Materials Survey Results (2008).....4.7-15
Table 4.7-4: Lead-Based Paint Survey Results (2002).....4.7-16
Table 4.7-5: Soil Sampling Results (2009).....4.7-17
Table 4.7-6: Hazardous Materials Sites Adjacent to the Transmission Line ROW 4.7-18
Table 4.7-7: Schools within 0.25 Mile of the Proposed Project 4.7-19
Table 4.7-8: Physical and Chemical Properties of Sulfur Hexafluoride.....4.7-24

Table 4.8-1: Watersheds and Waterbodies Spanned by the Proposed Project 4.8-10

Table 4.9-1: Designated and Existing Land Uses in the Proposed Project Area.....4.9-17

Table 4.10-1: Human Response to Transient Vibration.....4.10-5
Table 4.10-2: County of Orange Noise Ordinance Limits (Exterior Noise Standards).....4.10-7
Table 4.10-3: County of Orange Noise Ordinance Limits (Interior Noise Standards).....4.10-7
Table 4.10-4: City of San Clemente Exterior Noise Ordinance Limits.....4.10-8
Table 4.10-5: City of San Clemente Interior Noise Ordinance Limits.....4.10-9

Table 4.10-6: City of San Juan Capistrano Maximum Noise Levels 4.10-11
Table 4.10-7: Summary of Ambient Noise Short-term Measurements 4.10-17
Table 4.10-8: Summary of Corona Noise Measurement Data.....4.10-19
Table 4.10-9: Allowable Times for Construction Activities.....4.10-21
Table 4.10-10: Calculated Substation Operational Sound Levels 4.10-25
Table 4.10-11: Construction-Related Architectural Damage Potential 4.10-28
Table 4.10-12: Typical Noise Levels Generated by Construction Equipment 4.10-34
Table 4.10-13: Predicted Aggregate Average (L_{eq}) Construction Noise Along the Transmission Corridor at Nearest Receptors to each Proposed Project Pole.....4.10-36
Table 4.10-14: Predicted Aggregate Average (L_{eq}) Construction Noise around the San Juan Capistrano Substation Site 4.10-39

Table 4.11-1: Total Population 4.11-2
Table 4.11-2: Total Housing Units and Vacancy Rates (2010).....4.11-2
Table 4.11-3: Housing Needs Assessment.....4.11-2
Table 4.11-4: Total Employment and Unemployment (2011).....4.11-3
Table 4.11-5: Median Household Income (2010).....4.11-3

Table 4.12-1: Schools within 0.25 Mile of the Proposed Project Area 4.12-3

Table 4.14-1: Level of Service Calculation Values.....4.14-2
Table 4.14-2: Existing Average Daily Trips for Affected Roadways 4.14-6
Table 4.14-3: OCTA Bus Routes within the Proposed Project Area.....4.14-17
Table 4.14-4: OCTA Bus Stops Potentially Affected by the Proposed Project.....4.14-18
Table 4.14-5: Metrolink Rail Train Routes within the Proposed Project Area 4.14-18
Table 4.14-6: Construction Access Routes.....4.14-20
Table 4.14-7: Construction Generated Average Daily Trips.....4.14-21
Table 4.14-8: Designated Traffic Congestion Problem Areas and Special Land Use Areas.....4.14-24
Table 4.14-9: Lane Closures and Duration of Construction.....4.14-26

Table 4.15-1: Capacity of Landfills Serving the Proposed Project 4.15-9

Table 4.16-1: Planned and Proposed Projects within One Mile of the Proposed Project Area 4.16-4

LIST OF APPENDICES (PEA PART B)

Appendix 1-A	Letters of Support
Appendix 1-B	Geographic Information Systems Data **(Confidential)**
Appendix 1-C	Parcel and Mailing Information for Properties within 300 Feet of the Proposed Project **(Confidential)**
Appendix 1-D	Existing Transmission System Map
Appendix 1-E	City of San Juan Capistrano Correspondence
Appendix 3-A	Talega to Capistrano Existing Transmission Lines Map **(Confidential)**
Appendix 3-B	Typical Structure Diagrams and Photographs
Appendix 3-C	Proposed Distribution Map **(Confidential)**
Appendix 3-D	Detailed Construction Schedule and Vehicle Use Tables
Appendix 3-E	South Orange County Reliability Enhancement Electric and Magnetic Fields Studies
Appendix 4.3-A	Emissions Calculations
Appendix 4.4-A	Biological Resources Assessment
Appendix 4.5-A	Cultural Resources Assessment Report **(Attachments A and C are Confidential)**
Appendix 4.5-B	Historic Property Evaluation **(Appendix E is Confidential)**
Appendix 4.5-C	Paleontological Resources Record Search
Appendix 4.7-A	EDR Corridor Study
Appendix 4.7-B	Historic Aerial Photographs of the Capistrano Substation Site
Appendix 4.7-C	MSDS for Sulfur Hexafluoride
Appendix 4.10-A	Basics of Noise and Vibration
Appendix 4.10-B	Ambient Noise Survey Report

Acronym	Definition
AB	Assembly Bill
A/C	Air-conditioning
ACM	Asbestos containing material
ACOE	United States Army Corps of Engineers
ACSR	Aluminum conductor, steel reinforced
ACSS/AW	Aluminum-clad steel supported
ADT	Average daily traffic
AFY	Acre-feet per year
AL	Action Level
ANSI	American National Standards Institute
APMs	Applicant Proposed Measures
APS	Alternative Planning Strategy
AQMP	Air Quality Management Plan
AR	Agriculture Residential
ASCE	American Society of Civil Engineers
AST	Aboveground storage tank
Basin	South Coast Air Basin
BCC	Birds of Conservation Concern
BLM	U.S. Bureau of Land Management
BMPs	Best management practices
BMP Manual	Water Quality Construction Best Management Practice Manual
BOD	Buildings of Distinction
BP	Before present
CAAQS	California Ambient Air Quality Standards
CalARP	California Accidental Release Prevention
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CAISO	California Independent System Operator
Cal NAGPRA	California Native American Graves Protection and Repatriation Act
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
Camp Pendleton	United States Marine Corps Base Camp Pendleton
CACD	Commission Advisory and Compliance Division

Acronym	Definition
CARB	California Air Resources Board
CBC	California Building Code
CCAR	California Climate Action Registry
CCG	California Consensus Group
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDHS	California Department of Health Services
CDL	Clandestine Drug Labs
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compliance, and Liability Act
CESA	California Endangered Species Act
CFG	California Fish and Game
CFR	Code of Federal Regulations
CHC	City of San Juan Capistrano Cultural Heritage Commission
CH_4	Methane
CHHSL	California Human Health Screening Levels
CHRIS	California Historic Resources Information System
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon monoxide
CO_2	Carbon dioxide
Construction General Permit	General Permit for Discharges of Stormwater Runoff Associated with Construction Activity
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
CSS	Coastal sage scrub
CUPA	Certified Unified Program Agencies
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted sound level
DDE	Dichlorodiphenyldichlorethylene

Acronym	Definition
DOE	United States Department of Energy
DOT	United States Department of Transportation
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources
EHC	Environmental Health Criteria
EHD	Environmental Health Division
EIR	Environmental Impact Report
ELF	Extremely Low Frequency
ELF-EMF	Extremely Low Frequency Electric and Magnetic Fields
EMF	Electric and Magnetic Fields
Emergency Operations Plan	City of San Juan Capistrano Operations Plan
Emergency Plan	City of San Clemente Plan
EMF-RAPID Program	Electric and Magnetic Fields Research and Public Information Dissemination Program
ESP	Electric Standard Practice
°F	Fahrenheit
FAA	Federal Aviation Administration
fbs	Feet below surface
FE	Federally endangered
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FP	Fully Protected
FRAP	CAL Fire and Resource Assessment Program
FT	Federally Threatened
FTA	Federal Transit Administration
FTZ	Fire Threat Zone
FWCA	Fish and Wildlife Conservation Act of 1956
G	Gauss
GCB	Gas circuit breaker
G.O.	General Order
GHGs	Greenhouse gases
GIS	Geographic information systems
GPS	Global positioning system

Acronym	Definition
H_2S	Hydrogen sulfide
HCP	Habitat Conservation Plan
HHWE	Household Hazardous Waste Element
HSWA	Hazardous and Solid Waste Act
HWCL	California Hazardous Waste Control Law
Hz	Hertz
I-5	Interstate-5
IARC	International Agency for Research on Cancer
IEEE	Institute of Electrical and Electronics Engineers
IHCL	City of San Juan Capistrano Inventory of Historic and Cultural Landmarks
INRMP	Integrated Natural Resources Management Plan
IPCC	Intergovernmental Panel on Climate Change
ISD	In Service Date
ISO	International Standards Organization
Kcmil	Thousand circular mils
kg	kilograms
KOP	Key Observation Point
kV	Kilovolts
kV/m	Kilovolts per meter
$L_{1.6}$	Noise standard plus 15 dBA for a cumulative period of more than one minute in any hour
L_{25}	Noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour
$L_{8.3}$	Noise standard plus 10 dBA for a cumulative period of more than five minutes in any hour
L_{50}	Noise standard for a cumulative period of more than thirty minutes in any hour
L_{eq}	Equivalent sound level
L_{dn}	Day-night equivalent sound level
L_{eq-24}	24-hour energy equivalent sound value
L_{max}/L_0	Maximum Sound Level
lbs	Pounds
LOS	Level of Service
LSAA	Lake and Streambed Alteration Agreement
LST	Localized Significance Threshold
LTPP	Long term procurement plans

Acronym	Definition
LUP	Linear Underground/Overhead Project
Manual	1987 Wetlands Delineation Manual
MBTA	Migratory Bird Treaty Act
mg	Milligram
mg/kg	Milligrams per kilogram
mg/l	Milligrams per liter
mgd	Million gallons per day
MLD	Most Likely Descendent
mm	Millimeter
MMT	Millions of metric tons
mph	Miles per hour
MSDS	Material Safety Data Sheet
MT	Metric tons
MVA	Megavolt amperes
MW	Megawatts
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEMA	National Electrical Manufacturer's Association
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NESHAP	National Emissions Standards for Hazards Air Pollutants
NHPA	National Historical Preservation Act
NIEHS	National Institute of Environmental Health Services
NMFS	National Marine Fisheries Service
N_2O	Nitrous oxide
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRC	National Research Council
NRCS	Natural Resources Conservation Service
NRPD	National Radiological Protection Board
NSLU	Noise-sensitive land uses
NWI	National Wetlands Inventory

Acronym	Definition
NWPs	Nationwide Permits
OCTA	Orange County Transportation Authority
OEHHA	Office of Environmental Health Hazard Assessment
OES	California Office of Emergency Services
OHWM	Ordinary high water mark
ONAC	Office of Noise Abatement and Control
OPGW	Optical Ground Wire
OPR	Office of Planning and Research
OSHA	Occupation Safety and Health Act of 1970
O_3	Ozone
Pb	Lead
PCBs	Polychlorinated biphenyls
PEA	Proponent's Environmental Assessment
PEL	Permissible Exposure Level
PFC	Perfluorocarbons
PLM	Polarized Light Microscopy
$PM_{2.5}$	Fine particulate matter (less than 2.5 microns in diameter)
PM_{10}	Coarse suspended particulate matter (less than 10 microns)
PPE	Personal protection equipment
ppm	Parts per million
PPV	Peak particle velocity
Proposed Project	South Orange County Reliability Enhancement Project
PRG	Preliminary Remediation Goal
PRPA	Paleontological Resources Preservation Act
PVC	Polyvinyl chloride
RCRA	Resource Conservation and Recovery Act of 1976
REL	Reference exposure level
RH	Relative humidity
RHNA	Regional Housing Needs Assessment
ROW	Right-of-way
RSL	Regional screening level
RTP	Regional Transportation Plan
RTP/SCS	2012-2013 Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board

Acronym	Definition
SARA	Superfund Amendments and Reauthorization Act
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCIC	South Coastal Information Center
SCS	Sustainable Communities Strategy
SDG&E	San Diego Gas & Electric
SE	State endangered
SEMS	California Standardized Emergency Management System
SF_6	Sulfur hexafluoride
SHPO	State Historic Preservation Officer
SLR	Single lens reflex
SO_2	Sulfur dioxide
SONGS	San Onofre Nuclear Generating Station
SPCC	Spill Prevention, Control, and Countermeasures
SPL	Sound pressure level
SR	State Route
SRRE	Source Reduction an d Recycling Element
SR-74	Ortega Highway
SSC	Species of Special Concern
ST	State threatened
STATCOM	Static Synchronous Compensator
STLC	Soluble Threshold Limit Concentration
STP	Standard temperature and pressure
SWP	California State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SWS	Southern willow scrub
T	Tesla
TACs	Toxic cir contaminants
TCA	Transportation Corridor Agency
TL	Transmission Line
TPL	Transmission Planning

Acronym	Definition
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USMC	United States Marine Corps
UST	Underground storage tank
V	Volt
v/c	Volume to capacity ratio
v/m	Volts per meter
VOC	Volatile organic compound
WECC	Western Electric Coordinating Council
WHO	World Health Organization
Williamson Act	California Land Conservation Act of 1965
WIP	Well Investigation Program Case List
WL	Watch List
WUS	Waters of the United States
µT	Microtesla

TABLE OF CONTENTS

1.0 PEA SUMMARY 1-1
1.1 PROJECT LOCATION 1-1
1.2 PROPOSED PROJECT COMPONENTS 1-1
1.3 PROJECT NEED AND RANGE OF ALTERNATIVES CONSIDERED 1-3
1.4 PROPONENTS ENVIRONMENTAL ASSESSMENT CONTENTS 1-3
1.4.1 PEA Part A 1-3
1.4.2 PEA Part B (Technical Appendices) 1-5
1.4.3 Other PEA Requirements 1-5
1.5 MAJOR PEA CONCLUSIONS 1-6
1.5.1 Resource Areas with No Impact or Less than Significant Impacts 1-6
1.5.2 Resource Areas Requiring Applicant Proposed Measures 1-6
1.5.3 Significant, Unavoidable Impacts 1-8
1.6 PUBLIC OUTREACH EFFORTS 1-8
1.6.1 Overview of Public Involvement 1-8
1.6.2 Door-to-Door Outreach and Mailings 1-9
1.6.3 Proposed Project Hotline 1-9
1.6.4 Proposed Project Website 1-9
1.6.5 Public Open Houses 1-9
1.6.6 San Juan Capistrano Substation Wall Design Charrette 1-11
1.7 INTER-AGENCY AND OTHER CONSULTATIONS 1-11
1.7.1 Public Support for Proposed Project 1-12
1.7.2 Areas of Controversy 1-13
1.8 ISSUES TO BE RESOLVED 1-14
1.8.1 Final Design of the La Pata Avenue Gap Closure and Camino Del Rio Extension Project 1-14
1.8.2 State Route 241 Extension 1-15
1.8.3 Final Design of the San Juan Capistrano Substation Perimeter Wall and Landscaping 1-15

LIST OF TABLES

Table 1-1: PEA Checklist Key Table 1-16

THIS PAGE IS INTENDED TO BE LEFT BLANK

1.0 PEA SUMMARY

In accordance with the California Public Utilities Commission (CPUC) General Order (G.O.) 131-D, this Proponent's Environmental Assessment (PEA) has been prepared by San Diego Gas & Electric Company (SDG&E) to support SDG&E's application for a Certificate of Public Convenience and Necessity (CPCN) for the South Orange County Reliability Enhancement Project (Proposed Project).

As discussed in more detail below, the overall purpose of the Proposed Project is to ensure electric service reliability in South Orange County. The Proposed Project would replace or modify existing electric transmission, distribution, and substation facilities that SDG&E has operated and maintained for decades. The Proposed Project involves construction within two existing SDG&E substation properties and within an approximately eight-mile existing transmission line corridor. With the exception of approximately 1,200 linear feet of power line facilities, the entire Proposed Project would be located within existing SDG&E right-of-way (ROW). This PEA Summary briefly describes the location and primary components of the Proposed Project, the Proposed Project need and range of alternatives considered, the PEA contents, the major conclusions of the PEA, SDG&E's public outreach and consultation efforts, areas of controversy, and issues to be resolved.

1.1 PROJECT LOCATION

The Proposed Project is located almost entirely within an existing electric transmission corridor and two existing substation sites. The Proposed Project components are primarily located in portions of the cities of San Juan Capistrano and San Clemente as well as unincorporated Orange and San Diego counties. The Proposed Project location is discussed in more detail in Section 3.2, Proposed Project Location and Context.

1.2 PROPOSED PROJECT COMPONENTS

As discussed in Section 3, the Proposed Project comprises the replacement and upgrade of existing substation, transmission, and distribution facilities. The Proposed Project includes the following three main components:

- Complete re-build and expansion of the San Juan Capistrano Substation within the existing substation property footprint;
- Minor alterations to the Talega Substation within the existing substation footprint including the addition of one new 138 kilovolt (kV) connection and the removal of one 230kV connection; and
- Removal, installation, and relocation of multiple transmission lines within the existing, approximately eight-mile transmission corridor between the Capistrano and Talega Substations.

1.2.1 San Juan Capistrano Substation

The proposed rebuild and expansion of the existing 138/12kV Capistrano Substation would result in a 230/138/12kV substation to be re-named the San Juan Capistrano Substation. This substation would occupy the full 6.4 acre SDG&E property at the existing Capistrano Substation site (approximately 360 feet wide by 700 feet long at its widest points). Once complete, the San Juan Capistrano Substation would connect to six 138kV transmission lines, two 230kV transmission lines, and seven distribution lines.

1.2.2 Talega Substation

At the existing Talega Substation, one 138kV transmission line (TL13835) would be connected to the Talega Substation and one 230kV transmission line (TL23007) would be disconnected from the Talega Substation and instead connect directly to the new San Juan Capistrano Substation. In order to accommodate these changes, existing 138kV and 230kV structures within the Talega Substation would have to be re-arranged.

1.2.3 Transmission Lines

The Proposed Project includes the following transmission line activities:

- Within SDG&E's existing ROW, build approximately 7.5 miles of new overhead double-circuit 230kV transmission lines and remove existing 138kV;
- Within SDG&E's existing Vista Montana street easement position, replace 0.36 mile of existing 138kV underground transmission system with one new 230kV underground transmission line;
- Install 0.36 mile in franchise position within Vista Montana Street one 230kV underground transmission line;
- Relocate the three existing 138kV transmission lines from the Capistrano Substation into the new San Juan Capistrano Substation. Loop-in the two 138kV transmission lines that currently bypass the existing substation into the new San Juan Capistrano Substation. Underground all of the westbound 138kV transmission line getaways; and
- Realign existing 69kV and 138kV transmission lines near the Talega Substation.

For the purposes of this PEA, the transmission line work associated with the Proposed Project is divided into four segments, as described in Section 3.4.3:

- Segment 1 – San Juan Capistrano Substation to Rancho San Juan
- Segment 2 – Rancho San Juan
- Segment 3 – Rancho San Juan to the Talega Hub
- Segment 4 – Talega Hub to the Talega Substation

Detailed discussion for the proposed transmission line work for the Proposed Project is included within Section 3.4.3, Transmission Lines.

1.3 PROJECT NEED AND RANGE OF ALTERNATIVES CONSIDERED

The Proposed Project has been developed by SDG&E in order to achieve the following project objectives (refer to Section 2.0, Proposed Project Purpose and Need):

1. Provide transmission system reliability:
    a. Reduce the risk of an uncontrolled outage of all South Orange County load.
    b. Reduce the risk of a controlled interruption of a portion of the South Orange County load.
    c. Comply with mandatory North American Electric Reliability Corporation (NERC), Western Electric Coordinating Council (WECC) and California Independent System Operator (CAISO) transmission planning and operations standards.
2. Rebuild Capistrano Substation to replace aging equipment and increase capacity.
3. Improve transmission and distribution operating flexibility.
4. Accommodate customer load growth in the South Orange County area.
5. Locate proposed facilities within existing transmission corridors, SDG&E ROW and utility owned property.

Section 5.2, Description of Project Alternatives to Minimize Significant Effects, outlines 14 alternatives to the Proposed Project, including a no project alternative, alternative substation sites, system alternatives, facility alternatives, and alternative routes. Only one other alternative was identified that would meet or exceed the project objectives; however, this alternative (the Proposed Project with 230kV Connection to Escondido Substation) was rejected by the CAISO in favor of the Proposed Project due to cost considerations.

1.4 PROPONENTS ENVIRONMENTAL ASSESSMENT CONTENTS

1.4.1 PEA Part A

Part A of this PEA was prepared in accordance with the PEA Checklist issued by the CPUC and is divided into five sections.

Section 1-PEA Summary. Section 1 discusses the conclusions and content of the PEA sections, and contains information on SDG&E's coordination efforts.

Section 2-Project Purpose and Need. Section 2 outlines the purpose and need for the Proposed Project, including the Proposed Project objectives.

Section 3-Project Description. Section 3 describes the whole of the Proposed Project, including construction, operation, and maintenance. The Project Description includes a detailed description of construction methods, construction schedule, existing facilities, proposed facilities, and anticipated permit requirements.

Section 4-Environmental Impact Assessment. Section 4 includes a discussion of the existing conditions and potential and anticipated impacts for the following resource areas:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Mineral Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

Section 4 also includes an assessment of potential cumulative impacts that could occur as a result of impacts from the Proposed Project contributing to cumulatively considerable adverse effects when analyzed with respect to other foreseeable projects.

Section 5-Detailed Discussion of Significant Environmental Impacts. Section 5 includes a detailed discussion of significant impacts and discusses the Applicant Proposed Measures that would be implemented to reduce these impacts. This section also evaluates the alternatives to the Proposed Project.

Throughout the PEA sections and appendices, SDG&E has provided specific information to address the items outlined within the CPUC's PEA Checklist for Transmission Line and Substation Projects (PEA Checklist). Table 1-1, PEA Checklist Key Table, provides the specific location within the PEA and appendices of all data provided to meet the requirements of the PEA Checklist.

1.4.2 PEA Part B (Technical Appendices)

Part B of the PEA contains technical appendices in support of Part A as well as other items required by the CPUC PEA Checklist and G.O. 131-D. Specifically, Part B of the PEA includes the following documents (documents submitted as confidential are noted):

- Appendix 1-A: Letters of Support
- Appendix 1-B: Geographic Information System (GIS) Data (Confidential)
- Appendix 1-C: Parcel and Mailing Information for Properties within 300 Feet of the Proposed Project (Confidential)
- Appendix 1-D: Existing Transmission System Map
- Appendix 1-E: City of San Juan Capistrano Correspondence
- Appendix 3-A: Talega to Capistrano Existing Transmission Line Map (Confidential)
- Appendix 3-B: Typical Structure Diagrams and Photographs
- Appendix 3-C: Proposed Distribution Line Map (Confidential)
- Appendix 3-D: Detailed Construction Schedule and Vehicle Use Tables
- Appendix 3-E: South Orange County Reliability Enhancement Electric and Magnetic Fields Studies
- Appendix 4.3-A: Emissions Calculations
- Appendix 4.4-A: Biological Resources Assessment
- Appendix 4.5-A: Cultural Resources Assessment Report (Attachments A and C are Confidential)
- Appendix 4.5-B: Historic Property Evaluation (Appendix E is Confidential)
- Appendix 4.5-C: Paleontological Resources Record Search
- Appendix 4.7-A: EDR Corridor Study
- Appendix 4.7-B: Historic Aerial Photographs of the Capistrano Substation Site
- Appendix 4.7-C: MSDS for Sulfur Hexafluoride
- Appendix 4.10-A: Basics of Noise and Vibration
- Appendix 4.10-B: Ambient Noise Survey Report

1.4.3 Other PEA Requirements

The following items are included within the CPUC PEA Checklist and/or CPUC G.O. 131-D and have been provided as described below:

- Geographic Information System Data. GIS data for the Proposed Project has been provided as Appendix 1-B. Appendix 1-B is being submitted as Confidential.

- Parcel and Mailing information for parcels within 300 feet of the Proposed Project. This has been provided as Appendix 1-C. Appendix 1-C is being submitted as Confidential.
- Map showing all transmission lines within one mile of the Proposed Project. This map has been provided as Appendix 1-D.

1.5 MAJOR PEA CONCLUSIONS

As discussed throughout the PEA, the Proposed Project replaces existing electric transmission, distribution and substation facilities and is located almost entirely within existing SDG&E ROW. The existing electric transmission, distribution and substation facilities constitute the existing setting and baseline from which the potential impacts of the Proposed Project were analyzed.

1.5.1 Resource Areas with No Impact or Less than Significant Impacts

The PEA analyzes the potential environmental impacts associated with construction, operation and maintenance of the Proposed Project. Seven resource areas would not have environmental impacts or would experience only less than significant impacts due to the Proposed Project. The resource areas are:

- Agricultural Resources,
- Biological Resources,
- Hydrology and Water Quality,
- Land Use and Planning,
- Population and Housing,
- Recreation, and
- Utilities and Service Systems.

1.5.2 Resource Areas Requiring Applicant Proposed Measures

In addition, the following eight resource areas would result in potentially significant impacts that can be reduced to a level less than significant with the incorporation of Applicant Proposed Measures (APMs) (See Table 3-18, Applicant Proposed Measures):

- Aesthetics,
- Air Quality,
- Cultural Resources,
- Geology and Soils,
- Hazards and Hazardous Materials,
- Noise,
- Public Services, and
- Transportation and Traffic.

The impacts that would be less than significant with incorporation of APMs are discussed below, by resource area.

1.5.2.1 Aesthetics

Potential impacts to the overall visual character of the area from construction, operation, and maintenance of the Proposed Project would be reduced to a level less than significant through implementation of APMs AES-1 through AES-3.

1.5.2.2 Air Quality and Greenhouse Gases

While not anticipated to be significant, potential impacts related to emissions of sulfur hexafluoride would be minimized through implementation of APM AIR-1.

1.5.2.3 Cultural Resources

Potential impacts related to cultural and paleontological resources from construction of the Proposed Project would be reduced to a level less than significant through implementation of APMs CUL-1 through CUL-9.

1.5.2.4 Geology, Soils, and Mineral Resources

Potential impacts related to seismic-related ground failure, landslides, and unstable soils would be reduced to a level less than significant through implementation of APMs GEO-1 and GEO-2.

1.5.2.5 Hazards and Hazardous Materials

Potential impacts relating to the routine and potential upset conditions during construction of the San Juan Capistrano Substation would be reduced to a level less than significant through implementation of APM HAZ-1.

1.5.2.6 Noise

Potential impacts relating to limited construction activities occurring at night would be reduced to a level less than significant through implementation of APM NOISE-1.

1.5.2.7 Public Services

Potential impacts related to disruption of existing parks and recreational areas during construction of the proposed Project would be reduced to a level less than significant through implementation of APMs PS-1 and PS-2.

1.5.2.8 Transportation and Traffic

Potential impacts related to traffic congestion and deterioration of level of service (LOS) would be reduced to a level less than significant through implementation of APMs TR-1 and TR-2. Construction of Segment 2 of the Proposed Project could still result in significant impacts, as discussed in Section 1.6.3, Significant, Unavoidable Impacts, below.

Potential impacts related to inadequate emergency access during construction of the Proposed Project would be reduced to a level less than significant through implementation of APM TR-3.

1.5.3 Significant, Unavoidable Impacts

The following two significant, short-term impacts were identified for construction of the Proposed Project:

- Emissions of criteria pollutants in excess of South Coast Air Quality Management District (SCAQMD) California Environmental Quality Act (CEQA) Significance Thresholds, and
- Traffic congestion and deterioration of LOS during construction of Segment 2.

These impacts are further discussed in the following subsections.

1.5.3.1 Air Quality

Construction of the Proposed Project would result in exceedances of SCAQMD Significance Thresholds for criteria pollutants. This adverse effect could also contribute to cumulatively considerable significant effects where construction of the Proposed Project would occur simultaneously with other Project in the immediate vicinity (refer to Section 4.16, Cumulative Impacts). These significant effects would be minimized to the extent feasible through adherence to SCAQMD Rule 403 and construction emission best management practices (BMPs).

1.5.3.2 Transportation and Traffic

Construction of Transmission Line Segment 2 (Rancho San Juan) of the Proposed Project would result in temporary significant impacts relating to traffic congestion and deterioration of LOS. This significant effect could also contribute to cumulatively considerable significant effects where construction of the Proposed Project would occur simultaneously with other projects (refer to Section 4.16, Cumulative Impacts). APMs are proposed that would minimize these impacts to the extent feasible (See Section 4.14, Transportation and Traffic).

1.6 PUBLIC OUTREACH EFFORTS

1.6.1 Overview of Public Involvement

SDG&E continues to conduct public outreach to provide details about the Proposed Project and solicit input from stakeholders, including residential and commercial customers, community and business leaders, and elected officials. This outreach effort has three primary objectives:

1. Engage a broad array of stakeholders in the process to ensure that all interested parties have an opportunity to provide input on the Proposed Project;
2. Identify key issues and possible community impacts associated with the Proposed Project prior to making final design decisions; and
3. Maximize public awareness of the Proposed Project by visiting residences located along the Proposed Project ROW and also using direct mail, open houses, and public presentations.

SDG&E began its public outreach and education program for the Proposed Project in 2011 by meeting with customers and community leaders to inform them of the Proposed Project. These efforts were aimed at providing local communities and customers with multiple forums to express concerns and provide input on the Proposed Project and to provide feedback on key issues. The public outreach, consultation and education programs will continue until the Proposed Project is approved.

SDG&E plans to work closely with a city of San Juan Capistrano ad hoc committee that has been established and will consider suggestions regarding the design of the substation wall and landscaping.

1.6.2 Door-to-Door Outreach and Mailings

SDG&E conducted door-to-door visits to over 2,000 local residents along the Proposed Project route to inform them of the Proposed Project and invite them to upcoming Open House events. The residents were provided a flyer describing the Proposed Project as well as a contact phone number and email address for further information. For those residents not at home, the same flyer was left at their door. Bilingual team members were utilized during this outreach to assure that the Proposed Project was understood by Spanish-speaking residents. SDG&E collected mailing addresses and sent postcard invitations to four open house events.

1.6.3 Proposed Project Hotline

After the application is filed for the Proposed Project, a hotline will be initiated as a tool to provide concerned citizens with a representative available to answer questions about the Proposed Project during business hours.

1.6.4 Proposed Project Website

A Project website was established to provide easily accessible Proposed Project information to the public. The Proposed Project website address is www.sdge.com/southcounty. This website is included on all public outreach materials and the SDG&E website.

1.6.5 Public Open Houses

Residents along the Proposed Project route were invited to the Open House events listed below by door-to-door notices, a mailed notice to their home, an e-blast from the local Chambers of Commerce, through advertisements placed in the local newspapers and during Open Comment sessions of the cities of San Juan Capistrano and San Clemente council meetings. Open House events were held for the public to learn more about the Proposed Project. The Open Houses emphasized one-on-one exchanges of information at numerous "Key Topic Stations" located throughout the meeting rooms, where members of the public could spend as much or as little time discussing a particular aspect of the Proposed Project. The public was invited to attend at any time during the hosted timeframe to obtain project information and provide input.

Open Houses were held in both the city of San Juan Capistrano and the city of San Clemente in the vicinity of the Proposed Project. Bilingual Project team members were present to communicate with Spanish-speaking attendees. The Open Houses are listed by date, location, and attendance below.

1. San Juan Capistrano Open House
   San Juan Hills Golf Club
   November 16, 2011 -- 2:00 pm to 4:00 pm
   Attendance: 26

   San Juan Capistrano Open House
   San Juan Hills Golf Club
   November 16, 2011 -- 6:00 pm to 8:00 pm
   Attendance: 22

2. San Clemente Open House
   Bella Collina Towne & Golf Club
   November 17, 2011 -- 2:00 pm to 4:00 pm
   Attendance: 19

   San Clemente Open House
   Bella Collina Towne & Golf
   November 17, 2011 -- 6:00 pm to 8:00 pm
   Attendance: 24

3. San Juan Capistrano Open House
   Mission San Juan Capistrano
   February 8, 2012 -- 3:00 pm to 7:00 pm
   Attendance: 57

4. San Juan Capistrano Open House
   San Juan Hills Golf Club
   April 25, 2011 -- 3:00 pm to 7:00 pm
   Attendance: 45

Interactive GIS was utilized at two of the Open Houses to provide landowners and stakeholders with visual and photographic spatial media. Open House attendees, with the help of a GIS specialist, were able to ask questions about their residence location as it relates to the Proposed Project. Proposed Project information flyers that included information about the Proposed Project were provided at each Open House.

Key Topic Stations included:

- Check in Table,
- Transmission Planning,
- Transmission and Distribution,
- Project Overview Map,
- Substation Design,
- Geographic Information Systems and Land Services,
- Regulatory and Environmental Process, and
- Electric and Magnetic Fields.

In addition, at certain Open Houses, SDG&E also included the following Topic Stations:

- Community Relations,
- Clean Transportation,
- Customer Assistance,
- Customer Programs,
- Energy Resource Plan,
- Environmental Services,
- Fire Coordination and Preparedness,
- Smart Grid,
- Smart Meter/My Account,
- Vegetation Management, and
- Sustainable Communities.

1.6.6 San Juan Capistrano Substation Wall Design Charrette

On April 18, 2012 SDG&E hosted a Design Charrette at the San Juan Hills Golf Club from 7:00PM to 9:00PM to identify an architectural design theme for the San Juan Capistrano Substation wall. Approximately 50 attendees reviewed three initial substation wall design theme concepts that either emulated the existing setting of the Capistrano Substation and the former utility structure or mission styles that reflect the surrounding San Juan Capistrano community. The attendees included neighbors of the substation, the City Architectural Design Review Committee, city of San Juan Capistrano officials and other interested residents. Based on the three design concepts reviewed it was determined that the appropriate architectural style for the substation wall would be mission or Spanish style, which is demonstrated in general terms in the PEA Visual Resources discussion. This was the first step in the design of the substation wall. SDG&E will participate in subsequent meetings with the City's ad hoc committee to further refine the design.

1.7 INTER-AGENCY AND OTHER CONSULTATIONS

As part of its public outreach and involvement efforts, SDG&E made presentations to key stakeholders, community and civic organizations, elected officials, customers, government entities, and tribal representatives. To date, SDG&E has provided briefings or conducted presentations for more than 80 groups and individuals. Included in those briefings or presentations were several homeowners' associations that are near to the Proposed Project. The presentations have helped expand community awareness of the Proposed Project and have provided interested parties with project information. It has also provided the opportunity to contribute valuable input and feedback about the Proposed Project. The following is a list of organizations that were consulted:

- City of San Juan Capistrano (meetings with various staff as well as presentations to the City Council and to the Planning Commission),

- City of San Clemente (meetings with various staff as well as presentations to the City Council),
- Substation tours for various San Juan Capistrano city staff,
- Capistrano Unified School District,
- Office of Orange County Supervisor Pat Bates – Don Hughes (Chief of Staff),
- Association of California Cities – Orange County Division,
- Orange County Director of Public Works – Jess Carabajal,
- City of San Juan Capistrano Chamber of Commerce Legislative Committee,
- City of San Clemente Chamber of Commerce Legislative Committee, and
- Multiple homeowners associations along the Proposed Project alignment.

In addition to the agency coordination outlined above, a presentation was also made to representatives of the Gabrieliño Band of Mission Indians. On January 26, 2012, Ms. Joyce Perry of the Juaneño Band of Mission Indians Acjachemen Nation contacted TRC, stating that she and Mr. David Belardes (Chairperson for the tribe) would like to meet to review the maps for the Proposed Project and point out areas of sensitivity and concern. On March 19, 2012, Ms. Joyce Perry and Mr. David Belardes met with representatives from SDG&E and TRC. The meeting gave Ms. Perry and Mr. Belardes an opportunity to see larger scale maps of the Proposed Project, to ask questions and to provide comments and input on any sensitive areas or areas of concern. Input from Ms. Perry and Mr. Belardes has been included within Section 4.5, Cultural Resources.

1.7.1 Public Support for Proposed Project

To date, approximately 127 supporters, including government entities, elected officials, individual customers and other organizations have expressed their support for the Proposed Project. Proposed Project supporters include, but are not limited to, the following:

- Senator Mimi Walters
- Senator Mark Wyland
- Assemblywoman Diane Harkey
- Association of Orange County Cities
- San Juan Capistrano Chamber of Commerce
- San Clemente Chamber of Commerce
- Orange County Business Council
- South Orange County Regional Chamber of Commerce
- South Orange County Economic Coalition
- Orange County Taxpayers Association
- Rancho Mission Viejo

- Orange County Association of Realtors

Copies of support letters that have been received to date can be found within Appendix 1-A, Project Letters of Support.

1.7.2 Areas of Controversy

To date, SDG&E has identified the following areas of controversy regarding the Proposed Project.

1.7.2.1 Demolition of Former Utility Structure

The Proposed Project includes demolition of an existing former utility structure located at the Capistrano Substation site that was constructed 1918. City of San Juan Capistrano staff and officials have expressed to SDG&E representatives that the former utility structure should be preserved, relocated or otherwise treated as a historical resource. This concern was memorialized in an Agenda Report from the City Development Services Department to the City Cultural Heritage Commission dated February 28, 2012, as well as City Council resolution 12-02-21-02, which was passed on February 21, 2012. Resolution 12-02-21-02 states that the City Manager shall prepare a letter to SDG&E on behalf of the City and its residents expressing (refer to Appendix 1-E):

> *"…formal opposition to any upgrade or modification to the transmission lines that would have a measureable impact on nearby residences, schools, public open spaces, historic assets, and other public property unless corresponding mitigations are available to reduce the measureable impacts at or below corresponding levels of the existing transmission line…"*

In the letter referenced above dated April 18, 2012 from the City Manager to SDG&E (refer to Appendix 1-E), the City states that the former utility structure was constructed in 1918 and is listed on the city of San Juan Capistrano's Buildings of Distinction (BOD) list. A slightly different version of the same letter from the City Manager of San Juan Capistrano to the CPUC contains the additional claim that "San Diego Gas & Electric (SDG&E) Company currently operates an electrical substation located in the historic district of San Juan Capistrano." SDG&E has not been able to confirm this statement. As discussed in Section 4.5 of this PEA, there is no readily available evidence to support the claim that the substation or former utility structure is located within a historic district. Moreover, Section 4.5 of the PEA concludes that the former utility structure is not a "historical resource" as defined by CEQA.

These conclusions are based on a historic resource evaluation prepared by an expert in the field of historic preservation.

Even though the former utility structure is not historically significant, to address the concerns expressed by city staff and other representatives, SDG&E plans to take the following steps, which apply to structures that are historically significant according to city of San Juan Capistrano City Council Policy 602:

1. Advertise for a period of three months that the former utility structure may be available for relocation.

2. Prepare a photographic record of the former utility structure. Photographs will include 1) each elevation, 2) close-ups of any unusual or unique architectural features and 3) views of the structure from a distance. In addition, measured drawings or plans will be included.
3. If not relocated, allow the removal of any architectural elements of the former utility structure for a period of two weeks at the expense of any local historic interest group or organization removing the element**.**

1.7.2.2 Location of Proposed Substation and Aesthetics

Another area of controversy indentified in the April 18 letter from the city of San Juan Capistrano City Manager to the CPUC is the location of the proposed new San Juan Capistrano Substation. The City's letter identifies an existing electric corridor to the east as a better location to construct the new electric transmission and substation facilities included within the Proposed Project. Concerns for San Juan Capistrano carrying the regional burden of the Proposed Project have been expressed by both city representatives and residents. SDG&E developed the Proposed Project because it is located within the load center and almost exclusively utilizes existing SDG&E owned property and ROW. As outlined in Section 5.2, Description of Project Alternatives to Minimize Significant Effects, utilization of an alternative substation site would result in more adverse environmental effects than utilization of the existing Capistrano Substation site. SDG&E notes that at open houses held by SDG&E, residents expressed to SDG&E representatives favorable opinions regarding removal of the former utility structure and proposed improvements to the substation property including landscaping, wall design and undergrounding some of the 138kV and 12kV electric transmission and distribution lines.

1.7.2.3 Undergrounding

Elected officials and members of the community have requested the undergrounding of SDG&E's electric facilities. As noted above, some undergrounding of the 138kV transmission and 12kV distribution lines has been proposed around the substation location. In addition, SDG&E is proposing to underground a small portion of the 230kV transmission lines near Rancho San Juan where the existing 138kV transmission lines are currently underground.

1.8 ISSUES TO BE RESOLVED

1.8.1 Final Design of the La Pata Avenue Gap Closure and Camino Del Rio Extension Project

Design of the La Pata Avenue Gap Closure and Camino Del Rio Extension Project is currently being finalized which affects the location of Pole Nos. 26 and 27. The location of these poles will affect final grading and impact areas for the Proposed Project. It is anticipated that the design for the La Pata Avenue Gap Closure and Camino Del Rio Extension project will occur in the months following submittal of the application for the Proposed Project and that the final pole locations for the Proposed Project will be included within the CEQA compliance process completed by the CPUC. SDG&E's transmission engineering and land management is currently working with the County of Orange to minimize any future conflicts.

1.8.2 State Route 241 Extension

The Transportation Corridor Agency currently has plans to extend the State Route (SR) 241 toll road from its current terminus at Oso Parkway to the Interstate 5 (I-5) Freeway near the border of Orange and San Diego Counties. The proposed alignment of the SR-241 extension would place the toll road immediately adjacent to the SDG&E Talega Substation and through the proposed Project transmission line components. While SDG&E has attempted to incorporate the current proposed design for the SR-241 extension, additional coordination with the Transportation Corridor Agencies and possible refinement of the Proposed Project design may be required.

1.8.3 Final Design of the San Juan Capistrano Substation Perimeter Wall and Landscaping

SDG&E is working with city of San Juan Capistrano ad hoc committee which consists of city staff and local residences to refine the design of the San Juan Capistrano Substation perimeter wall and landscaping (refer to Section 1.6.6, San Juan Capistrano Substation Wall Design Charrette). Therefore, the final design of the substation perimeter wall and landscaping has not yet been fully defined. The information provided within the PEA includes preliminary design and parameters relating to these aspects of the proposed San Juan Capistrano Substation.

The remainder of this page is intentionally left blank.

Table 1-1: PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
Chapter 1: PEA Summary		
	Include major conclusions of the PEA.	Section 1.5 – Major PEA Conclusions
	List any areas of controversy.	Section 1.7.2 – Areas of Controversy
	Identify any major issues that must be resolved, including the choice among reasonably feasible alternatives and mitigation measures, if any.	Section 1.8 – Issues to be Resolved
	Include a description of inter-agency coordination if any.	Section 1.7 – Inter-Agency and Other Consultations
	Include a description of public outreach efforts, if any.	Section 1.6 – Public Outreach Efforts
Chapter 2: Project Purpose and Need		
2.1 Overview	Include an analysis of Proposed Project objectives and purpose and need that is sufficiently detailed so that the Commission can independently evaluate the Proposed Project need and benefits in order to accurately consider them in light of the potential environmental impacts.	Section 2.0 – Proposed Project Purpose and Need
	Explain the objective(s) and/or purpose and need for implementing the Proposed Project.	Section 2.0 – Proposed Project Purpose and Need
2.2 Project Objectives	Include an analysis of the reason why attainment of these objectives is necessary or desirable. Such analysis must be sufficiently detailed to inform the Commission in its independent formulation of Proposed Project objectives which will aid any appropriate CEQA alternatives screening process.	Section 2.0 – Proposed Project Purpose and Need

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
Chapter 3: Project Description		
3.1 Project Location	Identify geographical location: County, City (provide Proposed Project location map[s]).	Section 3.2 – Proposed Project Location and Regional Context Figure 3-1: Project Vicinity Map Figure 3-2: Project Overview Map
3.1 Project Location	Provide a general description of land uses within the Proposed Project site (e.g., residential, commercial, agricultural, recreation, vineyards, farms, open space, number of stream crossings, etc.).	Section 3.2 – Proposed Project Location and Regional Context Section 3.2.1 – Capistrano Substation Site Section 3.2.2 – Talega Substation Site Section 4.9 – Land Use and Planning Figure 4.9-1: Existing Land Uses in the Proposed Project Vicinity
	Determine whether the Proposed Project is located within an existing property owned by the Applicant, traverses existing ROWs, or requires new ROWs. Provide the approximate area of the property or the length of the Proposed Project that is in an existing ROW or which requires new ROWs.	Section 3.2 – Proposed Project Location and Regional Context Section 3.7 – Permanent Land and Right-of-Way Requirements
3.2 Existing System	Describe the local system to which the Proposed Project relates.	Section 2.0 – Proposed Project Purpose and Need Section 3.3 – Existing Regional Electric System
	Provide a schematic diagram and map of the existing system.	Figure 2-1: South Orange County 138kV Substation Interconnection Diagram Appendix 3-A: Talega to Capistrano Existing Transmission Line Map
	Provide a schematic diagram that illustrates the system as it would be configured with the implementation of the Proposed Project.	Figure 3-7: Proposed Transmission Line Route

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.4 Proposed Project	Describe the Proposed Project. Is it an upgrade, a new line, new substations, etc.?	Section 3.1 – Proposed Project Overview Section 3.4 – Proposed Project Facilities
	Describe how the Proposed Project fits into the regional system. Does it create a loop for reliability, etc.?	Section 2.0 – Proposed Project Purpose and Need Section 3.1 – Proposed Project Overview Section 3.4.3 – Transmission Lines
	Describe all reasonably foreseeable future phases, or other reasonably foreseeable consequences of the Proposed Project.	Section 3.4.1.1 – Capistrano Substation
	Provide the capacity increase in megawatts (MW). If the Proposed Project does not increase capacity, state that.	Section 3.4.1.1 – Capistrano Substation
	Provide GIS (or equivalent) data layers for the Proposed Project preliminary engineering, including estimated locations of all physical components of the Proposed Project, as well as those related to construction.	Appendix 1-B
3.5 Project Components **3.5.1 Transmission Line**	Describe what type of line exists and what type of line is proposed.	Section 3.4.3 – Transmission Lines
	Identify the length of the upgraded alignment, the new alignment, etc.	Section 3.4.3 – Transmission Lines Table 3-2: Transmission Line Segments
	Describe whether construction would require one-for-one pole replacement, new poles, steel poles, etc.?	Section 3.4.3 – Transmission Lines
	Describe what would happen to other lines and utilities that may be collocated on the poles to be replaced (e.g., distribution, communication, etc.).	Section 3.4.3 – Transmission Lines

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.5.2 Poles/Towers	Provide information for each pole/tower that would be installed and for each pole/tower that would be removed.	Section 3.4.3 – Transmission Lines Table 3-3: Proposed New 230kV Poles Table 3-4: Proposed New 139kV Poles Table 3-5: Proposed New 69kV Poles Table 3-6: Transmission Structures/Poles to be Removed Appendix 3-B: Typical Structure Diagrams and Photographs
	Describe any specialty poles or towers; note where they would be used; make sure to note if any guying would likely be required across a road.	Section 3.4.3 – Transmission Lines Table 3-3: Proposed New 230kV Poles Table 3-4: Proposed New 139kV Poles Table 3-5: Proposed New 69kV Poles Table 3-6: Transmission Structures/Poles to be Removed
	If the Proposed Project includes pole-for-pole replacement, describe the approximate location of where the new poles would be installed relative to the existing alignment.	The Project does not included pole-for-pole replacement.
	Describe any special pole types and any special features.	Section 3.4.3 – Transmission Lines

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.5.3 Conductor/Cable 3.5.3.1 Above-Ground Installation	Describe the type of line to be installed on the poles/tower.	Section 3.4.3 – Transmission Lines
	Describe the number of conductors required to be installed on the poles or tower and the number on each side including applicable engineering design standards.	Section 3.4.3 – Transmission Lines
	Provide the size and type of conductor and insulator configuration.	Section 3.4.3 – Transmission Lines
	Provide the approximate distance from the ground to the lowest conductor and the approximate distance between the conductors (i.e., both horizontally and vertically). Provide specific information at highways, rivers, or special crossings.	Section 3.4.3 – Transmission Lines
	Provide the approximate span lengths between poles or towers, note where different if distribution is present or not if relevant.	Section 3.4.3 – Transmission Lines
	Determine whether other infrastructure would likely be collocated with the conductor; if so, provide conduit diameter of other infrastructure.	Section 3.4.3 – Transmission Lines
3.5.3.2 Below Ground Installation	Describe the type of line to be installed.	Section 3.4.3 – Transmission Lines
	Describe the type of casing the cable would be installed in; provide the dimensions of the casing.	Section 3.4.3 – Transmission Lines
	Provide an engineering 'typical' drawing of the duct bank and describe what types of infrastructure would likely be installed within the duct bank.	Appendix 3-B: Typical Structure Diagrams and Photographs

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.5.4 Substations	Provide "typical" plan and profile views of the proposed substation and the existing substation if applicable.	Figure 3-3: Existing Capistrano Substation Layout Figure 3-4: Existing Capistrano Site Overview Figure 3-6: Ultimate San Juan Capistrano Substation Layout Appendix 3-B: Typical Structure Diagrams and Photographs
	Describe the types of equipment that would be temporarily or permanently installed and provide details as to what the function/use of said equipment would be.	Section 3.4.1 – Substations Section 3.4.1.1 – San Juan Capistrano Substation Section 3.4.1.2 – Talega Substation
	Provide the approximate or "typical" dimensions (width and height) of new structures including engineering and design standards that apply.	Section 3.4.1 – Substations Section 3.4.1.1 – San Juan Capistrano Substation Section 3.4.1.2 – Talega Substation
	Describe the extent of the Proposed Project. Would it occur within the existing fence line, existing property line or would either need to be expanded?	Section 3.4.1 – Substations Section 3.4.1.1 – San Juan Capistrano Substation Section 3.4.1.2 – Talega Substation
	Describe the electrical need area served by the distribution substation.	Section 2.0 – Proposed Project Purpose and Need
3.6 Right-of-Way Requirements	Describe the ROW location, ownership, and width. Would the existing ROW be used or would a new ROW be required?	Section 3.4.3 – Transmission Lines Section 3.7 – Permanent Land and Right-of-Way Requirements
	If a new ROW is required, describe how it would be acquired and approximately how much land would be required (length and width).	Section 3.7 – Permanent Land and Right-of-Way Requirements
3.6 Right-of-Way Requirements	List the properties likely to require acquisition.	Section 3.7 – Permanent Land and Right-of-Way Requirements

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7 Construction **3.7.1 For All Projects** **3.7.1.1 Staging Areas**	Where would the main staging area(s) likely be located?	Section 3.5.4 – Temporary Work Areas Figure 3-7: Proposed Transmission Line Route
	Approximately how large would the main staging area(s) be?	Section 3.5.4 – Temporary Work Areas Figure 3-7: Proposed Transmission Line Route
	Describe any site preparation required, if known, or generally describe what might be required.	Section 3.5.4 – Temporary Work Areas Figure 3-7: Proposed Transmission Line Route
	Describe what the staging area would be used for.	Section 3.5.4.1 – Materials Storage and Staging Areas
	Describe how the staging area would be secured, would a fence be installed? If so, describe the type and extent of the fencing.	Section 3.5.4.1 – Materials Storage and Staging Areas
	Describe how power to the site would be provided if required.	Section 3.5.4.1 – Materials Storage and Staging Areas
	Describe any grading activities and/or slope stabilization issues.	Section 3.5.4.1 – Materials Storage and Staging Areas
3.7.1.2 Work Areas	Describe known work areas that may be required for specific construction activities.	Section 3.5.4 – Temporary Work Areas Figure 3-7: Proposed Transmission Line Route
	For each known work area, provide the area required (include length and width) and describe the types of activities that would be performed.	Section 3.5.4 – Temporary Work Areas Figure 3-7: Proposed Transmission Line Route
	Identify the approximate location of known work areas in the GIS database.	Appendix 1-B: Geographic Information System Data (Compact Disc)
	Describe how the work areas would likely be accessed.	Section 3.5.4.7 – Access Roads

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7.1.2 Work Areas	If any site preparation is likely required, generally describe what and how it would be accomplished.	Section 3.5.4 – Temporary Work Areas
	Describe any grading activities and/or slope stabilization issues.	Section 3.5.4 – Temporary Work Areas
	Based on the information provided, describe how the site would be restored.	Section 3.5.4 – Temporary Work Areas Section 3.5.4.2 – Pull and Tension Sites Section 3.5.4.3 – Structure Sites Section 3.5.4.4 – Splice Sites Section 3.5.4.5 – Guard Structures
3.7.1.3 Access Roads and/or Spur Roads	Describe the types of roads that would be used and/or would need to be created to implement the Proposed Project.	Section 3.5.1.1 – Step 1 –Access Road Construction Section 3.5.4.7 – Access Roads
	For road types that require preparation, describe the methods and equipment that would be used.	Section 3.5.1.1 – Step 1 –Access Road Construction Section 3.5.4.7 – Access Roads
	Identify approximate location of all access roads (by type) in the GIS database.	Appendix 1-B: Geographic Information System Data (Compact Disc)
	Describe any grading activities and/or slope stabilization issues.	Section 3.5.1.1 – Step 1 –Access Road Construction Section 3.5.4.7 – Access Roads
3.7.1.4 Helicopter Access	Identify which proposed poles/towers would be removed and/or installed using a helicopter.	Section 3.5.6 – Helicopter Usage during Transmission Line Construction
	If different types of helicopters are to be used, describe each type and what activities they would be used for.	Section 3.5.6 – Helicopter Usage during Transmission Line Construction

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7.1.4 Helicopter Access	Provide information as to where the helicopters would be staged, where they would refuel, where they would land within the Proposed Project site.	Section 3.5.6 – Helicopter Usage during Transmission Line Construction
	Describe any BMPs that would be employed to avoid impacts caused by use of helicopters, for example: air quality and noise considerations.	Section 3.5.6 – Helicopter Usage during Transmission Line Construction
	Describe flight paths, payloads, hours of operations for known locations, and work types.	Section 3.5.6 – Helicopter Usage during Transmission Line Construction
3.7.1.5 Vegetation Clearance	Describe the types of vegetation clearing that may be required and why.	Section 3.5.4 – Temporary Work Areas
	Identify the preliminary location and provide an approximate area of disturbance in the GIS database for each type of vegetation removal.	Figure 3-7: Proposed Transmission Line Route Appendix 1-B: Geographic Information System Data (Compact Disc)
	Describe how each type of vegetation removal would be accomplished.	Section 3.8 – Operation and Maintenance (Existing and Proposed)
	For removal of trees, distinguish between tree trimming as required under GO-95D and tree removal.	Section 3.8 – Operation and Maintenance (Existing and Proposed)
	Describe the types and approximate number and size of trees that may need to be removed.	Section 3.8 – Operation and Maintenance (Existing and Proposed) Section 4.4 – Biological Resources Section 4.12 –Public Services
	Describe the type of equipment typically used.	Section 3.8 – Operation and Maintenance (Existing and Proposed)

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7.1.6 Erosion and Sediment Control and Pollution Prevention during Construction	Describe the areas of soil disturbance including estimated total areas and associated terrain type and slope. List all known permits required. For project sites of less than 1 acre, outline the BMPs that would be implemented to manage surface runoff.	Section 3.5 – Construction Methods Section 3.9 – Environmental Procedures and Protocols Table 3-12: Summary of Proposed Project Disturbance Areas Table 3-19: Anticipated Permit, Approval, and Consultation Requirements
	Describe any grading activities and/or slope stabilization issues.	Section 3.5.1.1 – Step 1 - Access Road Construction Section 3.5.1.2 – Step 2 - Installing the Support Structure Foundations Section 3.5.3.1 – Capistrano Substation Section 3.5.4.2 – Pull and Tension Sites Figure 3-8: San Juan Capistrano Preliminary Grading Plan Section 4.6 – Geology, Soils, and Mineral Resources
	Describe how construction waste would be disposed.	Section 3.5.7 – Retired Structures/Poles Materials, and Components Section 3.5.4.1 – Material Storage and Staging Areas Section 3.5.1.7 – Step 7 - Site Cleanup Section 4.15 – Utilities and Service Systems
3.7.1.7 Cleanup and Post-Construction Restoration	Describe how cleanup and post-construction restoration would be performed.	Section 3.5.1.7 – Step 7 - Site Cleanup Section 3.5.2.4 – Step 4 - Site Cleanup Section 3.5.4 – Temporary Work Areas

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7.2 Transmission Line Construction (Above Ground) **3.7.2.1 Pull and Tension Sites**	Provide the general or average distance between pull and tension sites.	Section 3.5.4.2 – Pull and Tension Sites
	Provide the area of pull and tension sites including the estimated length and width.	Section 3.5.4.2 – Pull and Tension Sites
	According to the preliminary plan, identify the number of pull and tension sites that would be required, and their locations. Provide the location information in GIS.	Section 3.5.4.2 – Pull and Tension Sites Figure 3-7: Proposed Transmission Line Route Appendix 1-B: Geographic Information System Data (Compact Disc)
	Describe the type of equipment that would be required at these sites.	Section 3.5.4.2 – Pull and Tension Sites Table 3-14: Standard Construction Equipment and Usage
	If conductor is being replaced, describe how it would be removed from the site.	Section 3.5.1.4 – Step 4 - Structure Removal Table 3-14: Standard Construction Equipment and Usage
3.7.2.2 Pole Installation and Removal	Describe how the construction crews and their equipment would be transported to and from the pole site locations. Provide vehicle type, number of vehicles, estimated number of trips, and hours of operation.	Section 3.5.1.3 – Step 3 – Structure Erection Table 3-14: Standard Construction Equipment and Usage Appendix 3-D: Detailed Construction Schedule and Equipment Use Tables
	Describe the process of removing the poles and foundations.	Section 3.5.1.4 – Step 4 - Structure Removal
	Describe what happens to the holes that the poles were in (i.e., reused or backfilled)?	Section 3.5.1.4 – Step 4 - Structure Removal
	If the holes are to be backfilled, what type of fill would be used and where would it come from?	Section 3.5.1.4 – Step 4 - Structure Removal

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7.2.2 Pole Installation and Removal	Describe any surface restoration that would occur at the pole sites.	Section 3.5.1.7 – Step 7 - Site Cleanup
	Describe how the poles would be removed from the sites.	Section 3.5.1.4 – Step 4 - Structure Removal
	If topping is required to remove a portion of an existing transmission pole that would now only carry distribution lines, describe the methodology to access and remove the tops of these poles. Describe any special methods that would be required to top poles that may be difficult to access, etc.	Not applicable – no topping is proposed as part of this project.
	Describe the process of how the new poles/towers would be installed; specifically identify any special construction methods for specific locations or for different types of poles/towers.	Section 3.5.1.3 – Step 3 – Structure Erection
3.7.2.2 Pole/Tower Installation	Describe the types of equipment and their use as related to pole/tower installation.	Section 3.5.1.3 – Step 3 – Structure Erection Table 3-13: Standard Construction Equipment and Usage
	Describe the actions taken to maintain a safe work environment during construction.	Section 3.5 – Construction Methods
	Describe what would be done with soil that is removed from a hole/foundation site.	Section 3.5.1.2 – Step 2 - Installing the Support Structure Foundations
	For any foundations required, provide a description of the construction method(s), approximate average depth and diameter of excavation, approximate volume of soil to be excavated, approximate volume of concrete or other backfill required, etc.	Section 3.5.1.2 – Step 2 - Installing the Support Structure Foundations
	Describe briefly how poles/towers and associated hardware are assembled.	Section 3.5.1.3 – Step 3 – Structure Erection

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7.2.2 Pole/Tower Installation	Describe how the poles/towers and associated hardware would be delivered to the site; would they be assembled off-site and brought in or assembled on site?	Section 3.5.1.3 – Step 3 – Structure Erection
	Provide the following information about pole/tower installation and associated disturbance area estimates; pole diameter, lattice tower base dimension, auger hole depth, permanent footprint per pole/tower, number of poles/towers, average work area around poles/towers, and total permanent footprint for poles/towers.	Section 3.5.1.2 – Step 2 - Installing the Support Structure Foundations Section 3.5.4.3 – Structure Sites Table 3-2: Proposed New 230kV Structures Table 3-6: Transmission Pole Diameters
3.7.2.3 Conductor/Cable Installation	Provide a process-based description of how new conductor/cable would be installed and how old conductor/cable would be removed, if applicable.	Section 3.5.1.6 – Step 6 - Conductor Stringing
	Generally describe the conductor/cable splicing process.	Section 3.5.2.3 – Step 3 – Cable Pulling, Splicing, and Termination
	If vaults are required, provide their dimensions and approximate location/spacing along the alignment.	Section 3.4.3.1 – Segment 1 - Capistrano to Interstate 5 Section 3.4.3.3 – Segment 3 – Rancho San Juan
	Describe in what areas conductor/cable stringing/installation activities would occur.	Section 3.5.4.2 – Pull and Tension Sits Section 3.5.4.4 – Splice Sites Figure 3-7: Proposed Transmission Line Route
	Describe any safety precautions or areas where special methodology would be required.	Section 3.5.5 – Road Crossings Section 3.5.6 – Helicopter Usage during Transmission Line Construction
3.7.3 Transmission Line Construction (Below Ground) **3.7.3.1 Trenching**	Describe the approximate dimensions of the trench (e.g., depth, width).	Section 3.5.3 – Transmission Lines

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7.3 Transmission Line Construction (Below Ground) **3.7.3.1 Trenching**	Describe the methodology of making the trench.	Section 3.5.2.1 – Trenching and Duct Bank Installation
	Provide the total approximate cubic yardage of material to be removed from the trench, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site.	Section 3.5.2.1 – Trenching and Duct Bank Installation
	Provide off-site disposal location, if known, or describe possible option(s).	Section 3.5.2.1 – Trenching and Duct Bank Installation Section 3.5.7 – Retired Structures/Poles, Materials, and Components Table 3-13: Common Destination of Retired Project Components
	If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used.	Section 3.5.2.1 – Trenching and Duct Bank Installation
	Describe if dewatering would be anticipated, if so, how the trench would be dewatered, what the anticipated flows of the water are, whether there would be treatment, and how the water would be disposed.	Section 3.5.2.1 – Trenching and Duct Bank Installation
	Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants that could be exposed as a result of trenching operations.	Section 4.7 – Hazards and Hazardous Materials
	If pre-existing hazardous waste was encountered, describe the process of removal and disposal.	Section 4.7 – Hazards and Hazardous Materials
	Describe any standard BMPs that would be implemented.	Section 4.7 – Hazards and Hazardous Materials

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7.3.2 Trenchless Techniques: Microtunnel, Bore and Jack, Horizontal Directional Drilling	Provide the approximate location of the bore pits.	Figure 3-7: Proposed Transmission Line Route
	Provide the length, width and depth of the sending and receiving pits.	Section 3.5.2.4 – Step 5-Jack-and-Bore
	Describe the methodology of excavating and shoring the pits.	Section 3.5 – Construction Methods Section 3.5.2.4 – Step 5-Jack-and-Bore
	Describe the methodology of the trenchless technique.	Section 3.5.2.4 – Step 5-Jack-and-Bore
	Provide the total cubic yardage of material to be removed from the pits, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site.	Section 3.5.2.4 – Step 5-Jack-and-Bore
	Describe the process for safe handling of drilling mud and bore lubricants.	Not Applicable – no drilling mud is proposed.
	Describe the process for detecting and avoiding "fracturing-out" during horizontal directional drilling operations.	Not Applicable – no horizontal directional drilling is proposed.
	Describe the process for avoiding contact between drilling mud/lubricants and stream beds.	Not Applicable – no drilling mud is proposed.
	If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used.	Not Applicable – no engineered fill is anticipated.
	If dewatering is anticipated, describe how the pit would be dewatered, what the anticipated flows of the water are, whether there would be treatment, and how the water would be disposed.	Not applicable – dewatering is not anticipated.
	Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants.	Section 3.5.2.1 – Step 1 – Trenching and Duct Bank Installation
	If a pre-existing hazardous waste was encountered, describe the process of removal and disposal.	Not Applicable – no known contaminants existing near the jack-and-bore location.

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7.3.2 Trenchless Techniques: Microtunnel, Bore and Jack, Horizontal Directional Drilling	Describe any grading activities and/or slope stabilization issues.	Not Applicable – no grading or slope stabilization is anticipated at the jack-and-bore location.
	Describe any standard BMPs that would be implemented.	Section 3.5 – Construction Methods Section 3.8 – Operation and Maintenance (Existing and Proposed) Section 3.9 – Environmental Procedures and Protocols
3.7.4 Substation Construction	Describe any earth moving activities that would be required; what type of activity and, if applicable, estimate cubic yards of materials to be reused and/or removed from the site for both site grading and foundation excavation.	Section 3.5.3.1 – Capistrano Substation Section 3.5.3.2 – Talega Substation Figure 3-8: San Juan Capistrano Preliminary Grading Plan
	Provide a conceptual landscape plan in consultation with the municipality in which the substation is located.	Section 3.5.3.1 – Capistrano Substation Figure 3-9: San Juan Capistrano Conceptual Landscaping Plan
	Describe any grading activities and/or slope stabilization issues.	Section 3.5.3.1 – Capistrano Substation Section 3.5.3.2 – Talega Substation Figure 3-8: San Juan Capistrano Preliminary Grading Plan Section 4.6 – Geology, Soils, and Mineral Resources
	Describe possible relocation of commercial or residential property, if any.	Not applicable – no relocation of commercial or residential property is being proposed as part of this project.

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.7.5 Construction Workforce and Equipment	Provide the estimated number of construction crew members.	Section 3.5.8 – Construction Equipment and Personnel
	Describe the crew deployment, whether crews would work concurrently, if they would be phased, etc.	Section 3.5.8 – Construction Equipment and Personnel
	Describe the different types of activities to be undertaken during construction, the number of crew members for each activity, and the number and types of equipment expected to be used for said activity. Include a written description of the activity.	Section 3.5.8 – Construction Equipment and Personnel
	Provide a list of the types of equipment expected to be used during construction of the Proposed Project as well as a brief description of the use of the equipment.	Table 3-14: Standard Construction Equipment and Usage Appendix 3-D: Detailed Construction Schedule and Vehicle Use Tables
3.7.6 Construction Schedule	Provide a preliminary project construction schedule; include contingencies for weather, wildlife closure periods, etc.	Section 3.7 – Construction Schedule
3.8 Operation and Maintenance	Describe the general system monitoring and control.	Section 3.8 – Operation and Maintenance (Existing and Proposed)
	Describe the general maintenance program of the Proposed Project include timing of inspections, type of inspection, and a description of how the inspection would be implemented.	Section 3.8 – Operation and Maintenance (Existing and Proposed)
	If additional full time staff would be required for operation and/or maintenance, provide the number of workers and for what purpose they are required.	Section 3.8 – Operation and Maintenance (Existing and Proposed) Section 3.5.8 – Construction Equipment and Personnel
3.9 Applicant Proposed Measures	If there are measures that the Applicant would propose to be part of the Proposed Project, include those measures and reference plans or implementation descriptions.	Section 3.10 – Applicant Proposed Measures Section 4.1 through Section 4.15

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
3.10 Electric and Magnetic Fields Summary	Electric and Magenetic Fields Summary	Section 3.11 – Electric and Magnetic Fields Summary Appendix 3-E: South Orange County Reliability Electric and Magnetic Fields Studies
Chapter 4: Environmental Setting		
	For each resource area discussion within the PEA, include the following: a description of the physical environment in the vicinity of the Proposed Project and a description of the regulatory environment/context.	Section 4.1 through Section 4.15
	Limit detailed descriptions to those resource areas which may be subject to a potentially significant impact.	Section 4.1 through Section 4.15
Chapter 5: Environmental Impact Assessment Summary		
5.1 Aesthetics	Provide visual simulations of prominent public view locations, including scenic highways, to demonstrate the views before and after project implementation.	Section 4.1 – Aesthetics Figures 4.1-5 through 4.1-17
5.2 Agriculture Resources	Identify the types of agricultural resources affected.	Section 4.2 – Agriculture and Forestry Resources
5.3 Air Quality	Provide supporting calculations/spreadsheets/technical reports that support emission estimates in the PEA.	Appendix 4.3-A
	Provide documentation of the location and types of sensitive receptors that could be impacted by the project.	Section 4.3 – Air Quality and Greenhouse Gases
	Identify Proposed Project greenhouse gas (GHG) emissions.	Section 4.3 – Air Quality and Greenhouse Gases

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
5.3 Air Quality	Ensure that the assessment of air quality impacts are consistent with PEA Sections 3.7.5 and 3.7.6, as well as with the PEA's analysis of impacts during construction, including traffic and all other emissions.	Section 4.3 – Air Quality and Greenhouse Gases
5.4 Biological Resources	Provide a copy of the Wetland Delineation and supporting documentation. If verified, provide supporting documentation.	Appendix 4.4-A: Biological Resources Assessment
	Provide a copy of special-status surveys for wildlife, botanical and aquatic species, as applicable. Any GIS data documenting locations of special-status species should be provided.	Appendix 4.4-A: Biological Resources Assessment
5.5 Cultural Resources	Cultural Resources Report documenting a cultural resources investigation of the Proposed Project.	Appendix 4.5-A: Cultural Resources Survey Report
	Provide a copy of the records found in the literature search.	Appendix 4.5-A: Cultural Resources Survey Report
	Provide a copy of all letters and documentation of Native American consultation.	Appendix 4.5-A: Cultural Resources Survey Report
5.6 Geology, Soils, and Seismic Potential	Provide a copy of the geotechnical investigation if completed, including known and potential geologic hazards such as ground shaking, subsidence, liquefaction, etc.	To be provided once finalized.
5.7 Hazards and Hazardous Materials	Include the Environmental Data Resources report.	Appendix 4.7-A: EDR Corridor Study
	Include a Hazardous Substance Control and Emergency Response Plan, if required.	Not applicable.
	Include a Health and Safety Plan, if required.	If required, this will be prepared at a later date.
	Describe the Worker Environmental Awareness Program	Section 3.9 – Environmental Procedures and Protocols Section 4.7 – Hazards and hazardous Materials

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
5.7 Hazards and Hazardous Materials	Describe which chemicals would be used during construction and operation of the Proposed Project.	Section 4.7 – Hazards and hazardous Materials
5.8 Hydrology and Water Quality	Describe impacts to groundwater quality including increased runoff due to construction of impermeable surfaces, etc.	Section 4.8 – Hydrology and Water Quality
	Describe impacts to surface water quality including the potential for accelerated soil erosion, downstream sedimentation, and reduced surface water quality.	Section 4.8 – Hydrology and Water Quality
5.9 Land Use and Planning	Provide GIS data of all parcels within 300 feet of the Proposed Project with the following data: APN number, mailing address, and parcel's physical address.	Appendix 1-C
5.10 Mineral Resources	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Not applicable.
5.11 Noise	Provide long term noise estimates for operational noise.	Section 4.10 - Noise
5.12 Population and Housing	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Not applicable.
5.13 Public Services	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Not applicable.
5.14 Recreation	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Not applicable.
5.15 Transportation and Traffic	Discuss traffic impacts resulting from construction of the Proposed Project including ongoing maintenance operations.	Section 4.14 – Transportation and Traffic
	Provide a preliminary description of the traffic management plan that would be implemented during construction of the Proposed Project.	Section 4.14 – Transportation and Traffic

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
5.16 Utilities and Services Systems	Describe how treated wood poles would be disposed of after removal, if applicable.	Section 3.5.7 – Retired Structures/Poles, Materials, and Components
5.17 Cumulative Analysis	Provide a list of projects within the Proposed Project area that the applicant is involved in.	Section 4.16 – Cumulative Impacts
	Provide a list of projects that have the potential to be proximate in space and time to the Proposed Project.	Section 4.16 – Cumulative Impacts
5.18 Growth-Inducing Impacts, If Significant	Provide information on the Proposed Project's growth-inducing impacts.	Section 5.3 – Growth-Inducing Impacts
Chapter 6: Detailed Discussion of Significant Impacts		
6.1 Mitigation Measures Proposed to Minimize Significant Effects	Discuss each mitigation measure and the basis for selecting a particular mitigation measure should be stated.	Sections 4.1 through 4.15 Table 3-18 - Applicant Proposed Measures
6.2 Description of Project Alternatives and Impact Analysis	Provide a summary of the alternatives considered that would meet most of the objectives of the Proposed Project and an explanation as to why they were not chosen as the Proposed Project. Include system or facility alternatives, route alternatives, route variations, alternative locations.	Section 5.2 – Description of Project Alternatives to Minimize Significant Effects
	Include a description of a "No Project Alternative" should be included.	Section 5.2 – Description of Project Alternatives to Minimize Significant Effects
	If significant environmental effects are assessed, the discussion of alternatives shall include alternatives capable of substantially reducing or eliminating any said significant environmental effects, even if the alternative(s) substantially impede the attainment of the Proposed Project objectives and are more costly.	Section 5.2 – Description of Project Alternatives to Minimize Significant Effects

Table 1-1 (cont.): PEA Checklist Key Table

Location in PEA Checklist	Checklist Item	Location within PEA
6.3 Growth-Inducing Impacts	Discussion should be fairly succinct and focus on if the Proposed Project will foster economic or population growth, cause an increase in population that could further tax existing community service facilities, or encourage and facilitate other activities that would cause population growth that could significantly affect the environment.	Section 5.3 - Growth-Inducing Impacts
6.4 Suggested Applicant Proposed Measures to address GHG Emissions	Include a menu of suggested APM's that applicants can consider.	Table 3-18: Applicant Proposed Measures Section 4.3.5 – Applicant Proposed Measures
Chapter 7: Other Process-Related Data Needs		
	Include an excel spreadsheet that identifies all parcels within 300 feet of any Proposed Project component with the following data: APN number, owner mailing address, and parcels physical address.	Appendix 1-C

This page intentionally left blank.

TABLE OF CONTENTS

2.0 PROPOSED PROJECT PURPOSE AND NEED 2-1
2.1 OVERVIEW 2-1
2.2 PROPOSED PROJECT OBJECTIVES 2-6
2.2.1 Objective 1: Provide Transmission System Reliability 2-6
2.2.2 Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity 2-9
2.2.3 Objective 3: Improve Transmission and Distribution Operating Flexibility 2-10
2.2.4 Objective 4: Accommodate Customer Load Growth in the South Orange County Area 2-11
2.2.5 Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E ROW and Utility Owned Property 2-11
2.3 CONCLUSION 2-15

LIST OF FIGURES

Figure 2-1: South Orange County 138kV Substation Interconnection Diagram 2-3
Figure 2-2: South Orange County 138kV Substation Load Center Diagram 2-13

THIS PAGE IS INTENTIONALLY LEFT BLANK

2.0 PROPOSED PROJECT PURPOSE AND NEED

This section of the Proponent's Environmental Assessment (PEA) identifies the objectives, purpose and need for San Diego Gas & Electric Company's (SDG&E) proposed South Orange County Reliability Enhancement Project (Proposed Project), as required by the California Public Utilities Commission's (CPUC) PEA Guidelines (CPUC Information and Criteria List, Appendix B, Section V) and the California Environmental Quality Act (CEQA) Guidelines (Section 15126.6(a)). Additional information regarding the Proposed Project's purpose and need is provided in SDG&E's application to the CPUC, in accordance with CPUC General Order (G.O.) 131-D.

2.1 OVERVIEW

SDG&E is a regulated public utility that provides electric service to approximately 1.4 million electric customers within a 4,100-square-mile service area, covering 25 cities and unincorporated areas within San Diego County and a portion of Orange County. SDG&E requests approval of the Proposed Project to improve reliability, replace aged equipment, and accommodate future customer load growth in the South Orange County service area.

SDG&E's South Orange County service area is located at the northern end of SDG&E's service territory and has more than 129,000 electric customers. This service area represents approximately 10 percent of SDG&E's total customer load of approximately 5000 megawatts (MW). South Orange County's electric load is supplied by seven SDG&E 138/12 kilovolt (kV) distribution substations (Capistrano, Laguna Niguel, Margarita, Pico, San Mateo, Rancho Mission Viejo, and Trabuco).

Currently, there is no significant generation of electric energy in South Orange County service area. Consequently, the only power source for this entire service area is the 230kV transmission network at Talega Substation. Power supplied from the Talega Substation is transmitted to seven distribution substations over a 138kV transmission network. The substation interconnection diagram shown in Figure 2-1, South Orange County 138kV Substation Interconnection Diagram, illustrates how the distribution substations within the South Orange County service area are connected to each other and to the source of power, which is located at the 230/138kV Talega Substation.

The current 138kV transmission network leaves South Orange County vulnerable to bulk power system failures, such as outages of lines, transformers or buses, which may lead to the interruption of power to customers. Power from the 230kV transmission network enters South Orange County at the Talega Substation 230kV bus and flows through the substation's four 230/138kV transformers to the substation's 138kV bus. The Talega Substation 138kV bus supplies power to the 138kV transmission network, which supplies the distribution substations. If a failure occurs, which requires the Talega Substation 230kV or 138kV bus to be removed from service, power flow to South Orange County would be interrupted.

THIS PAGE IS INTENDED TO BE LEFT BLANK

Figure 2-1: South Orange County 138kV Substation Interconnection Diagram

THIS FIGURE HAS BEEN OMITTED – IT HAS BEEN SUBMITTED UNDER CONFIDENTIAL COVER

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 2-1

Additionally, the existing Talega Substation configuration restricts the conditions under which maintenance can be done and creates 18 different outage scenarios that would cause uncontrolled loss of customer load in South Orange County.

Among the 18 outage scenarios, approximately half could cause uncontrolled loss of the entire customer load in South Orange County.

In addition, the South Orange County area has been experiencing continuing load growth: over 15 percent in the last ten years and an expected 10 percent in the next ten years. In order to keep up with increasing customer load, SDG&E has added two of the existing seven 138/12kV distribution substations over the last ten years. The 138kV transmission network, however, has reached its maximum capacity. To accommodate load growth within the South Orange County service area, the Proposed Project is needed for additional capacity, reliability, and operational flexibility.

The need to upgrade the existing transmission network in South Orange County has been identified in both SDG&E's and the California Independent System Operator's (CAISO) long-term assessments of South Orange County. The Proposed Project is the result of work done independently by both CAISO and SDG&E staff working toward a common goal: service reliability through compliance with mandatory standards. The Proposed Project was included in the CAISO 2010-2011 Transmission Plan and presented to the CAISO Board of Governors for approval. The CAISO Board of Governors approved the CAISO 2010-2011 Transmission Plan, along with the Proposed Project, at its May 18, 2011 meeting.

The Proposed Project meets the ultimate goal of SDG&E and the CAISO that any upgrade to the transmission system provide safe, reliable, and reasonably priced electric power to the local cities and communities of South Orange County. This is consistent with CPUC Section 451[1] and SDG&E's obligation to serve by implementing a comprehensive and long-term electric system strategy. Also, it meets one of the CAISO's primary tasks to benefit customers by operating the grid in a reliable and efficient manner.[2]

In addition to bringing a second source of power into the South Orange County service area, the Proposed Project will modernize SDG&E's 138/12kV Capistrano Substation, which is nearly 60

[1] Pursuant to Cal. Pub. Util. Code § 451 "Every public utility shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities, including telephone facilities, as defined in Section 54.1 of the Civil Code, as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public." Further, Cal. Pub. Util. Code § 330 (g) provides that "Reliable electric service is of utmost importance to the safety, health, and welfare of the state's citizenry and economy. It is the intent of the Legislature that electric industry restructuring should enhance the reliability of the interconnected regional transmission systems, and provide strong coordination and enforceable protocols for all users of the power grid." Generally, the CPUC provides the following language in regards to a utility's obligation to serve: "The utilities' obligation to serve their customers is mandated by state law and is part and parcel of the entire regulatory scheme under which the utilities received a franchise and under which the CPUC regulates utilities under the Public Utilities Act. (*See, e.g.,* Pub. Util. Code §§ 451, 761, 762, 768, and 770)" [Footnote omitted] (D.02-12-069 at 7-8).

[2]CAISO Mission Statement: "For the benefit of our customers, we: (1) operate the grid reliably and efficiently; (2) provide fair and open transmission access; (3) promote environmental stewardship; and (4) facilitate effective markets and promote infrastructure development. All through the provision of timely and accurate information."

years old. To replace the aging substation and accommodate the new 230kV power source, SDG&E is proposing to build a new 230/138/12kV Gas Insulated Substation on SDG&E's existing Capistrano Substation site. SDG&E proposes to bring the additional source of power to the South Orange County service area by adding two new 230kV transmission lines into the new San Juan Capistrano Substation. The Proposed Project will connect six 138kV transmission lines at the new San Juan Capistrano Substation, two of which currently bypass the substation, and three of which currently connect at the substation.

The Proposed Project will also bring an additional 138kV transmission line into the Talega Substation by rearranging the existing transmission system located near this substation. As a result, the Proposed Project will improve reliability at the Talega Substation by removing undersized and aging equipment.

No new substation land and minimal new transmission right-of-way (ROW) will be required for the Proposed Project. The Proposed Project has an anticipated in-service date of 2017.

2.2 PROPOSED PROJECT OBJECTIVES

As discussed above, SDG&E has identified several areas of concern that must be resolved in order to meet SDG&E's obligation to serve and to maintain reliable customer service in the South Orange County service area. Resolving those areas of concern is the overall purpose of the Proposed Project, which will achieve the following objectives:

1. Provide transmission system reliability:
    a. Reduce the risk of an uncontrolled outage of all South Orange County load.
    b. Reduce the risk of a controlled interruption of a portion of the South Orange County load.
    c. Comply with mandatory North American Electric Reliability Corporation (NERC), Western Electric Coordinating Council (WECC) and CAISO transmission planning and operations standards.
2. Rebuild Capistrano Substation to replace aging equipment and increase capacity.
3. Improve transmission and distribution operating flexibility.
4. Accommodate customer load growth in the South Orange County area.
5. Locate proposed facilities within existing transmission corridors, SDG&E ROW and utility owned property.

The Proposed Project components are presented in Section 3.0, Project Description. Each of the Proposed Project objectives is more thoroughly described below.

2.2.1 Objective 1: Provide Transmission System Reliability

One of the primary objectives of the Proposed Project is to reduce the risk of a service interruption resulting from a transmission failure. The standards put in place by the Federal Energy Regulatory Commission (FERC) after the August 14, 2003 Northeast blackout set the

foundation for reducing the possibility of power system failures and support the need to construct new transmission infrastructure. Each of the three transmission system reliability objectives (a) – (c) is listed with the related NERC transmission planning standard. NERC, WECC, and CAISO all require SDG&E to meet the NERC Transmission Planning (TPL) standards.

2.2.1.1 Objective 1a: Reduce the Risk of an Uncontrolled Outage of all the South Orange County Load

NERC Standard TPL-004-0 requires that each Transmission Owner assess the risks and consequences of the loss of a substation.[3] SDG&E and the CAISO have evaluated the risks and consequences of the loss of the Talega Substation, which are outlined below.

Risks:

- Loss of 230kV switchyard or a combination of the 230/138kV transformers at the Talega Substation would result in the loss of power flow to all customers located in the South Orange County service area.
- Loss of 138kV switchyard at the Talega Substation would result in the loss of power flow to all customers located in the South Orange County service area.

Consequences:

- A momentary outage may cause sensitive electronic equipment to reset.
- An outage lasting an hour or more may cause economic impacts (food spoilage, equipment damage, loss of business for retail establishments, etc.).
- A prolonged outage (days or weeks) would leave all customers without power for an extended period of time and cause extensive and serious economic impacts. Sensitive loads (hospitals, emergency services, data centers, etc.) would be supplied by customer owned emergency backup systems. These systems can operate for a limited duration, but are not designed as a primary source of power.

To reduce the risks associated with the loss of Talega Substation, the Proposed Project would introduce a second 230kV source into South Orange County at the new San Juan Capistrano Substation. Both San Juan Capistrano and Talega Substations would supply the area load during normal operation and in the event that one of the substations is removed from service, the remaining substation would supply power to the area. The Proposed Project meets Objective 1a by substantially reducing the risk of an uncontrolled outage of the entire South Orange County load.

2.2.1.2 Objective 1b: Reduce the Risk of a Controlled Interruption of a Portion of the South Orange County Load

NERC Standard TPL-003-0 requires that, when there is a loss of two or more elements (where an element is defined as a generator, transformer, transmission line, circuit breaker or bus section),

[3] NERC Transmission Planning Standard TPL-004-0 – System Performance Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements (Category D). Table I, Category D, Contingency 8.

all remaining elements be within applicable ratings.[4] If a failure or fault (short-circuit) forces the removal of two or more elements from the system and overloads occur, the standard allows customer load to be interrupted to remove the overloads. Independent reliability assessments prepared by CAISO and SDG&E of the South Orange County service area for the year 2020 found numerous instances where the loss of two elements would require customer load to be interrupted to bring the remaining transmission elements within emergency ratings.

The addition of a second 230kV source at the new San Juan Capistrano Substation redistributes power flow on the 138kV transmission system in the South Orange County service area and removes the majority of the instances which would need to interrupt customer load following the loss of two elements. Therefore, the Proposed Project meets Objective 1b by substantially reducing the risk of a controlled interruption of a portion of the South Orange County load.

2.2.1.3 Objective 1c: Comply with Mandatory NERC, WECC and CAISO Transmission Planning Standards

The Proposed Project is needed to comply with mandatory NERC, WECC and CAISO standards. NERC Standard TPL-002-0[5] requires all transmission lines and transformers that remain in service following the loss of a single transmission line or transformer to be within applicable ratings. This standard does not allow interruption of customer load to be used to remove overloads caused by the loss of a single transmission line or transformer. The CAISO and SDG&E performed independent reliability assessments of the South Orange County service area, which showed that of the eight 138kV transmission lines that serve the area, four will overload following the outage of a single transmission line. Until the Proposed Project is approved, constructed and in service there are two transmission line taps that temporarily reduce the number of potential overloads from four to two. These temporary transmission line taps do not fully address the system performance requirements of the NERC Standard TPL-002-0 in the South Orange County service area.

Requirement R1.3.12 of NERC Standard TPL-002-0 requires that maintenance outages be included in the reliability assessments. SDG&E and the CAISO have independently identified several maintenance outages combined with a single system element outage that will lead to an interruption of the entire South Orange County load.

NERC Standard TPL-002-0 does not allow for the loss of demand following the loss of a single element with one exception. Footnote b of the standard states that:

> *Planned or controlled interruption of electric supply to radial customers or some local Network customers connected to or supplied by the Faulted element or by the affected area, may occur in certain areas without impacting the overall reliability of the interconnected transmission systems. To prepare for the next*

[4] NERC Transmission Planning Standard TPL-003-0 – System Performance Following Loss of Two or More Bulk Electric System Elements (Category C). Table I, Category C.
[5] NERC Transmission Planning Standard TPL-002-0 – System Performance Following Loss of a Single Bulk Electric System Element (Category B), Table I, Category B.

> *contingency, system adjustments are permitted, including curtailments of contracted Firm (non-recallable reserved) electric power Transfers.*

System adjustments will not prevent the interruption of customer load and the loss of load is neither planned nor controlled.

Requirement R1.3.12 of NERC Standard TPL-003-0 requires that maintenance outages be included in the reliability assessment. SDG&E and the CAISO have independently identified numerous maintenance outage scenarios that combined with a bus outage or single breaker failure will lead to an interruption of all South Orange County load.

NERC Standard TPL-003-0 allows for "Planned or Controlled" load interruption to remove overloads caused by the loss of two or more elements, but the loss of South Orange County load described above is neither planned nor controlled.

The addition of a second 230kV source at the new San Juan Capistrano Substation assures continued compliance with the NERC reliability standards. Therefore, the Proposed Project meets Objective 1c by making the system improvements necessary to comply with mandatory NERC reliability standards.

2.2.2 Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

The Capistrano Substation is nearly 60 years old and was not constructed to meet today's customer load growth or today's engineering standards. The substation's aging equipment and infrastructure need to be upgraded and rebuilt.

Replacing aging equipment, upgrading and rebuilding the existing substation will result in the following benefits:

- Modernizes substation infrastructure to meet current standards,
- Improves reliability by adding new 12kV bus ties,
- Increases ultimate 12kV (distribution) capacity,
- Improves operating flexibility,
- Increases available 12kV tie capacity,
- Rebuilds equipment to new seismic standards,
- Improves security,
- Reduces maintenance requirements, and
- Utilizes new substation standards in electrical and structural design.

The Proposed Project meets this objective by completely rebuilding the almost 60 year old Capistrano Substation to current SDG&E standards.

2.2.3 Objective 3: Improve Transmission and Distribution Operating Flexibility

Since the Talega Substation is the only substation feeding power to the South Orange County service area and the South Orange County 138kV transmission network is a loop system which begins and ends at Talega Substation, SDG&E has limited ability to schedule maintenance outages at Talega Substation.

Currently, when SDG&E needs to perform some maintenance activities on the 230kV transformers and busses at Talega Substation or 138kV transmission lines serving South Orange County, it is necessary to take outages that result in radializing customer load. Also, some maintenance activities do not result in radialized customer load, but instead render the remaining system elements insufficient to serve customer load in the event of a subsequent unscheduled outage.

The Proposed Project provides a new 230/138kV source within the South Orange County that will significantly improve the ability of Electric Transmission (Grid) Operations to schedule outages not only at Talega Substation but also for neighboring substations at San Mateo, Rancho Mission Viejo, Pico, and Trabuco. This improved operational flexibility is the result of two 230kV transmission lines serving San Juan Capistrano and Talega Substations, and two 230/138kV sources serving the South Orange County 138kV network.

The modernized 138kV bus at the new San Juan Capistrano Substation will improve operational flexibility with its breaker and a half design and increased positions to allow for the feed of the new 230kV source and three additional 138kV transmission lines. The increased operating flexibility will also allow SDG&E's Grid Operations to utilize the 138kV system more efficiently and reliably in normal operations and in programming routine maintenance.

The 12kV distribution system serving the South Orange County service area is currently limited in its operating flexibility due to the current configuration of the existing Capistrano Substation. The existing Capistrano Substation's capacity is 60 megavolt amperes (MVA), which limits the available tie capacity between the neighboring Laguna Niguel and Trabuco Substations. These substations are currently loaded to over 90 percent of their maximum rating of 120MVA and a loss of one or more of their 12kV transformer banks would result in customer load loss due to lack of available transfer capacity at the Capistrano Substation. This transfer capacity is further decreasing as the loading at Capistrano Substation increases.

To prevent high loading of the existing 60MW capacity at the Capistrano Substation, the new 138/12kV San Juan Capistrano Substation will coincide with the distribution system need for added capacity to increase operational flexibility. This additional capacity at the new San Juan Capistrano Substation will improve reliability by providing tie capacity to the adjacent Laguna Niguel, Trabuco, and Margarita Substations. This improved reliability will come from allowing existing circuits to be more fully utilized and allow for new 12kV circuits to be added at San Juan Capistrano Substation, thereby creating more usable connections between the substations, increased capacity and improved operational flexibility.

The Proposed Project meets this objective of improving transmission and distribution operating flexibility by providing additional bulk power sources, and modernizing and expanding the 138kV and 12kV busses at Capistrano Substation.

The Proposed Project also meets Objective 3 by introducing the second 230kV source into the South Orange County service area, which alleviates the difficulty of obtaining necessary maintenance and construction outages. This will also reduce the loading at Talega Substation and will allow SDG&E to eliminate the need to replace two existing 230/138kV transformers: Banks 60 and 62.

2.2.4 Objective 4: Accommodate Customer Load Growth in the South Orange County Area

South Orange County is an area in SDG&E's service territory experiencing continuing load growth. Customer load is expected to increase 10 percent over the next ten years. To provide efficient and effective electric service in the South Orange County area, SDG&E must locate the proposed facilities (a new 230/138kV substation and associated 230kV transmission lines) within the transmission load center. Notably, serving customer load closer to the transmission load center will reduce transmission line losses.

One of the factors that led to choosing Capistrano Substation for the new 230kV source is its close proximity to South Orange County's transmission load center. Approximately 81 percent of the load served by the South Orange County 138kV transmission network is within four miles of the Capistrano Substation. Figure 2-2, South Orange County 138kV Substation Load Center Diagram, shows the location of the South Orange County transmission load center. This point is approximately one mile east of Capistrano Substation. The transmission load center represents the theoretical geographical point where the substation loads served from the Talega Substation (South Orange County electrical source) converge based on the influence of distance and MW load at those substations.

2.2.5 Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

Another primary objective of the Proposed Project is to locate the proposed facilities within areas that already include electric transmission facilities. SDG&E currently owns 6.4 acres of property at the existing Capistrano Substation site. This property is currently the site of the existing Capistrano Substation (upper yard). The lower portion of this property and the existing structure were previously utilized for utility purposes. SDG&E continues to retain ownership of the entire property for the express purpose of accommodating future load growth and expansion.

SDG&E currently has an easement for a transmission corridor between the Talega and Capistrano Substations. Much of this corridor also includes Southern California Edison (SCE) transmission facilities. This average 150-foot easement was acquired in the 1960s to allow for future load growth and system expansion. Currently, this 150-foot easement is generally occupied by three 138kV transmission lines. The 150-foot easement was originally acquired to accommodate multiple transmission lines.

THIS PAGE IS INTENTIONALLY LEFT BLANK

Figure 2-2: South Orange County 138kV Substation Load Center Diagram

THIS FIGURE HAS BEEN OMITTED – IT HAS BEEN SUBMITTED UNDER CONFIDENTIAL COVER

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 2-2

The Proposed Project has been designed to meet Objective 5. The construction of the new San Juan Capistrano Substation can be accommodated on SDG&E's utility property. The property is currently occupied by existing electrical substation equipment and has been used for electrical facilities since 1918. Furthermore, all substation work at the Talega Substation can also occur within the existing fenced area resulting in no expansion of the existing facility.

The construction of the 230kV transmission lines utilizes approximately eight miles of existing ROW, thereby requiring minimal additional ROW which is consistent with state law guiding the use of existing transmission corridors, known as the Garamendi Principle.[6] Only minimal amounts of new ROW will be required to implement the Proposed Project (see Section 3.8, Permanent Land and Right of Way Requirements). Therefore, the Proposed Project will meet Objective 5.

2.3 CONCLUSION

The Proposed Project would construct two new 230kV transmission lines within an existing transmission corridor and a new 230/138/12kV substation at the existing Capistrano Substation site. The Proposed Project would fully meet all five of the Objectives, which represent a long-term electric system strategy for the South Orange County area. The Proposed Project will result in increased transmission and distribution capacity and reliability, improving SDG&E's ability to provide safe, reliable, and reasonably priced electric power for the future.

[6] Garamendi Principle – Transmission Siting SB 2431 (Garamendi), Chapter 1457, 62, Statutes of 1988: 1. Encourage the use of existing ROW by upgrading existing transmission facilities where technically and economically feasible; 2. When construction of new transmission lines is required, encourage expansion of existing ROW, when technically and economically feasible; and 3. Provide for the creation of new ROW when justified by environmental, technical, or economic reasons defined by the appropriate licensing agency.

This page intentionally left blank.

TABLE OF CONTENTS

3.0 PROPOSED PROJECT DESCRIPTION 3-1
3.1 PROPOSED PROJECT OVERVIEW 3-1
3.2 PROPOSED PROJECT LOCATION AND REGIONAL CONTEXT 3-2
3.2.1 Capistrano Substation Site 3-5
3.2.2 Talega Substation Site 3-5
3.3 EXISTING REGIONAL ELECTRIC SYSTEM 3-5
3.3.1 Capistrano Substation 3-5
3.3.2 Talega Substation 3-11
3.3.3 Transmission Lines 3-11
3.4 PROPOSED PROJECT FACILITIES 3-17
3.4.1 Substations 3-17
3.4.2 Substation Getaways 3-24
3.4.3 Transmission Lines 3-25
3.4.4 Distribution Lines 3-79
3.5 CONSTRUCTION METHODS 3-81
3.5.1 Overhead Transmission Lines 3-81
3.5.2 Underground Transmission Lines 3-85
3.5.3 Substation Site Development 3-88
3.5.4 Temporary Work Areas 3-97
3.5.5 Road Crossings 3-101
3.5.6 Helicopter Usage During Transmission Line Construction 3-102
3.5.7 Retired Structures/Poles, Materials, and Components 3-103
3.5.8 Construction Equipment and Personnel 3-103
3.6 CONSTRUCTION SCHEDULE 3-106
3.7 PERMANENT LAND AND RIGHT-OF-WAY REQUIREMENTS 3-108
3.7.1 San Juan Capistrano Substation Rebuild 3-108
3.7.2 Talega Substation Alterations 3-109
3.7.3 Transmission Line Installation and Re-location 3-109
3.8 OPERATION AND MAINTENANCE (EXISTING AND PROPOSED) 3-110
3.9 ENVIRONMENTAL PROCEDURES AND PROTOCOLS 3-112
3.9.1 SDG&E's Natural Community Conservation Plan 3-113
3.9.2 SDG&E's Water Quality Construction Best Management Practices Manual 3-114
3.9.3 Fire Prevention and Fire Safety Standards 3-114
3.9.4 Other SDG&E Environmental Procedures and Protocols 3-114

3.10 APPLICANT PROPOSED MEASURES 3-115
3.11 ELECTRIC AND MAGNETIC FIELDS SUMMARY 3-125
3.11.1 Electrical Effects 3-125
3.11.2 Background 3-125
3.11.3 History 3-126
3.11.4 Current Research 3-126
3.11.5 Federal Electric and Magnetic Fields Program 3-130
3.11.6 California Electric and Magnetic Fields Policy 3-131
3.11.7 Electric Magnetic Field Summary 3-132
3.11.8 California Environmental Quality Act 3-132
3.12 REQUIRED APPROVALS 3-133
3.13 REFERENCES 3-136

LIST OF FIGURES

Figure 3-1: Project Vicinity Map 3-3
Figure 3-2: Project Overview Map 3-7
Figure 3-3: Existing Capistrano Substation Layout 3-9
Figure 3-4: Existing Capistrano Substation Site Overview 3-13
Figure 3-5: Existing Talega Substation Layout 3-15
Figure 3-6: Ultimate San Juan Capistrano Substation Layout 3-21
Figure 3-7: Proposed Transmission Line Route (20 Sheets) 3-27
Figure 3-8: San Juan Capistrano Preliminary Grading Plan 3-91
Figure 3-9: San Juan Capistrano Substation Preliminary Landscape Screening Diagram 3-93

LIST OF TABLES

Table 3-1: Proposed Project Cost Estimate 3-17
Table 3-2: Transmission Line Segments 3-67
Table 3-3: Proposed New 230kV Poles 3-68
Table 3-4: Proposed New 138kV Poles 3-69
Table 3-5: Proposed New 69kV Poles 3-69
Table 3-6: Transmission Structures/Poles to be Removed 3-70
Table 3-7: Transmission Pole Diameters 3-72
Table 3-8: Scope of Work for Segment 1 3-73
Table 3-9: Scope of Work for Segment 2 3-76
Table 3-10: Scope of Work for Segment 3 3-76
Table 3-11: Scope of Work for Segment 4 3-77
Table 3-12: Summary of Proposed Project Disturbance Areas 3-98
Table 3-13: Common Destination of Retired Project Components 3-103
Table 3-14: Standard Construction Equipment and Usage 3-104
Table 3-15: Proposed Construction Schedule 3-106
Table 3-16: Permanent Land and ROW Requirements 3-108
Table 3-17: Applicant Proposed Measures by Resources Area 3-116
Table 3-18: Applicant Proposed Measures 3-117
Table 3-19: Anticipated Permit, Approval, and Consultation Requirements 3-134

LIST OF APPENDICES

Appendix 3-A	Talega to Capistrano Existing Transmission Line Map
Appendix 3-B	Typical Structure Diagrams and Photographs
Appendix 3-C	Proposed Distribution Route Map
Appendix 3-D	Detailed Construction Schedule and Vehicle Use Tables
Appendix 3-E	South Orange County Reliability Enhancement Electric and Magnetic Fields Studies

THIS PAGE IS INTENDED TO BE LEFT BLANK

3.0 PROPOSED PROJECT DESCRIPTION

3.1 PROPOSED PROJECT OVERVIEW

SDG&E is a regulated public utility that provides electric service to three million customers within a 4,100 square mile service area, covering parts of two counties and 25 cities in the San Diego area. To increase reliability and reduce the risk of a system-wide outage affecting all its customers and substations in the South Orange County area, SDG&E is proposing to rebuild and upgrade the existing 138/12kV Capistrano Substation with a 230/138/12kV substation and replace an existing 138kV transmission line (TL13835) with a new 230kV double-circuit extension between SDG&E's Capistrano and Talega Substations. The Proposed Project is intended to meet the area load growth and service reliability for approximately 129,000 customers (approximately 10 percent of SDG&E's total customer load) within South Orange County. By adding the new 230kV double-circuit extension, the Proposed Project will bring a new 230kV transmission source into South Orange County for increased capacity and reliability. The Proposed Project would have an anticipated in-service date of approximately 2017.

Specifically, the Proposed Project would include the following primary components:

- Within SDG&E's existing property, build a new 230kV partially enclosed gas insulated substation at the existing 138/12kV Capistrano Substation site;
- Within SDG&E's existing property, relocate, rebuild, and expand the existing 138kV facility with a new partially enclosed gas insulated substation;
- Relocate, rebuild, and expand existing 12kV facilities within SDG&E's existing Capistrano Substation property;
- Replace an existing 138kV transmission line (TL13835) with a new 230kV double-circuit extension between SDG&E's Capistrano and Talega Substations, described as follows:
    - Within SDG&E's existing ROW build approximately 7.5 miles of new overhead double-circuit 230kV transmission lines;
    - Acquire new ROW for approximately 0.25 mile of new overhead 230kV transmission line adjacent to SDG&E's Talega Substation;
    - Within SDG&E's existing Vista Montana street easement position, replace 0.36 mile of existing 138kV underground transmission system with one new 230kV underground transmission line; and
    - Install 0.36 mile in franchise position within Vista Montana Street one 230kV underground transmission line.
- Realign existing 69kV and 138kV transmission lines near the Talega Substation;

- Relocate the three existing 138kV transmission lines from the Capistrano Substation into the new San Juan Capistrano Substation. Loop-in the two 138kV transmission lines that currently bypass the existing substation into the new San Juan Capistrano Substation. Underground all of the westbound 138kV transmission line getaways;
- Install approximately 81 new steel transmission line poles (49 230kV poles, 23 138kV poles, and 9 69kV poles);
- Remove approximately 86 wood structures/poles, 12 steel poles, and 5 steel lattice towers;
- Reconfigure the Talega Substation to accommodate the new TL13835 connection; and
- Undertake other activities required to implement the Proposed Project, including upgrading the communications, controls, and relays for corresponding facilities, as required.

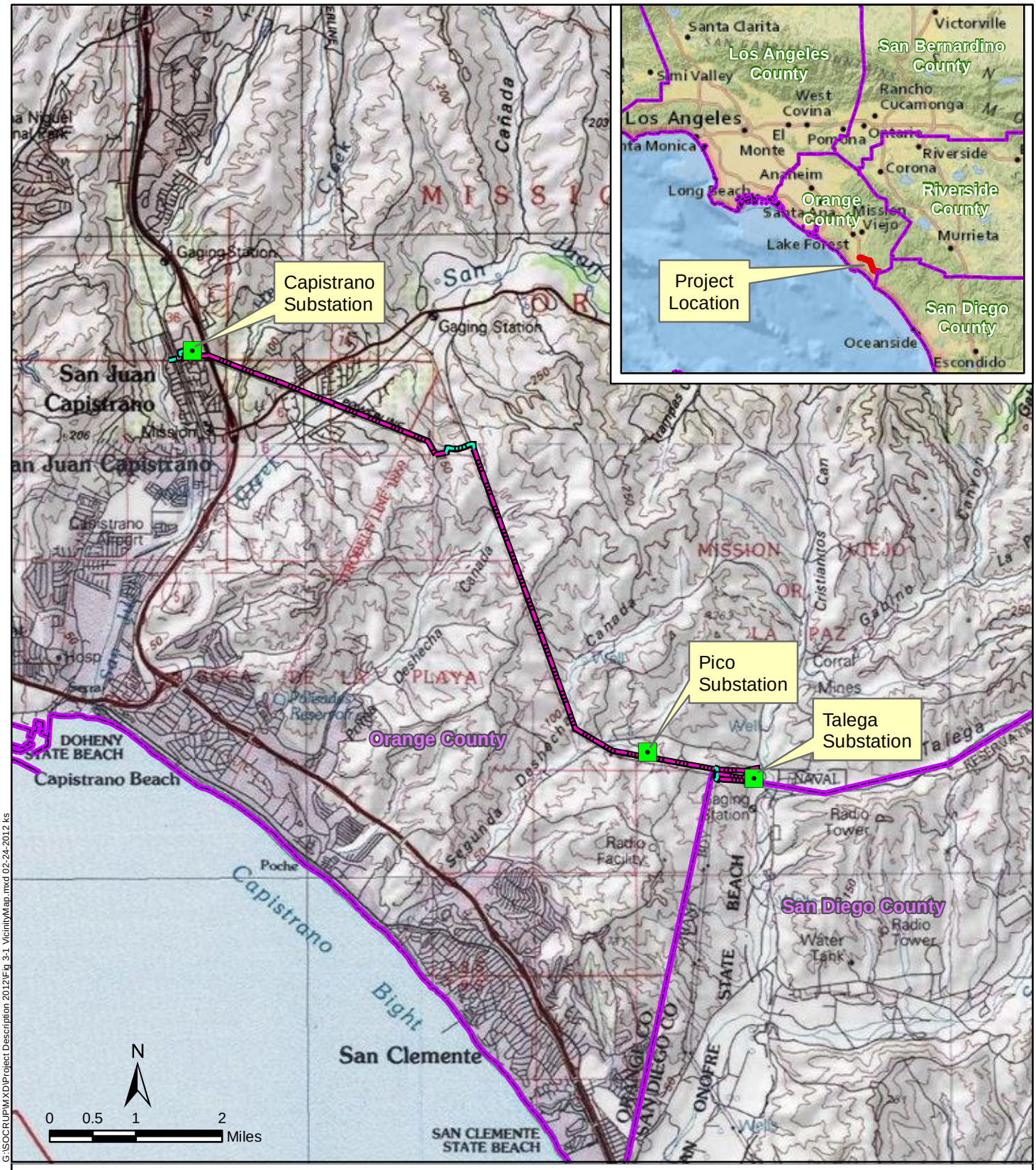
The CPUC will be the lead agency for the Proposed Project under CEQA. SDG&E is submitting this PEA (Part II of II) in support of its Application (Part I of II) for a Certificate of Public Convenience and Necessity (CPCN).

It should be noted that there will be several 12kV electric distribution improvements outside of the San Juan Capistrano Substation that will also be implemented. These include the following:

- Remove and relocate 12kV distribution lines from within SDG&E's existing Talega to Capistrano utility corridor to accommodate the new 230kV double-circuit line; and
- Relocate and underground all existing 12kV circuits to positions in the new 12kV switchgear.

3.2 PROPOSED PROJECT LOCATION AND REGIONAL CONTEXT

As shown in Figure 3-1, Project Vicinity Map, the Proposed Project components are primarily located in portions of the cities of San Juan Capistrano and San Clemente as well as unincorporated Orange and San Diego Counties. A complete list of jurisdictions crossed by the Proposed Project is included in Section 4.9, Land Use and Planning. The Proposed Project and its associated components will be located primarily within existing SDG&E ROW or underground in franchise position (i.e., city streets). South Orange County is composed of residential, commercial, industrial, recreational, and open space land uses. The transmission line crosses Interstate 5 (I-5) east of the Capistrano Substation, a major regional transportation corridor, and continues on to span San Juan Creek east of I-5. At the approximate middle section of the transmission line route, the ROW is located to the east of the Prima Deshecha Landfill. The remaining portion of the transmission line travels southeast through the city of San Clemente, unincorporated Orange and San Diego Counties, and ending at the Talega Substation at the border of United States Marine Corps Base Camp Pendleton (Camp Pendleton) and Orange County.



G:\SOCRUP\MXD\Project Description 2012\Fig 3-1 VicinityMap.mxd 02-24-2012 ks

South Orange County Reliability Enhancement Project

Project Vicinity Map

Figure 3-1

Created For:	Created By:
Mary Turley	TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Substations
- Proposed Overhead Transmission Lines
- Proposed Underground Transmission Lines
- County Boundary

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-1

3.2.1 Capistrano Substation Site

The existing Capistrano Substation is a 6.4 acre industrial zoned site located within an urbanized area in the city of San Juan Capistrano in South Orange County (see Figure 3-1 and Figure 3-2, Project Overview Map). This community is known for blending a mix of residential, commercial, and tourism uses in the surrounding area. The existing 138/12kV Capistrano Substation is bounded by residential streets Calle Santa Rosalia to the east and Calle Bonita to the south, by a parking/storage lot to the southeast, residential developments to the south and north, and a major thoroughfare, Camino Capistrano, to the west. The existing Capistrano Substation site has an upper and lower yard, with the upper yard occupied by a 138/12kV operating substation and the lower yard containing an old, abandoned concrete structure and remnant facilities previously utilized for utility purposes. The existing substation property has a change in elevation of approximately 47 feet from west to east with three existing pad areas. The concrete structure is located on the west end of the lower yard and has an approximate 1.1 acre flat pad. On the north end of the property is an approximate 0.45 acre pad where former facilities were located. The eastern third of the property contains the upper yard which consists of an approximately two-acre flat pad where the currently operating 138/12kV substation is situated.

The majority of the site's storm water drainage currently flows to a discharge structure located at the southwest corner of the site and from there is discharged via an 18-inch pipe into the existing 57-inch city storm drain running along Camino Capistrano. A portion of the northwestern quadrant of the site drains by sheet flow to the curb inlets along the east side of Camino Capistrano. The site contains no native vegetation, wetland habitat, steep slopes, or other natural features.

3.2.2 Talega Substation Site

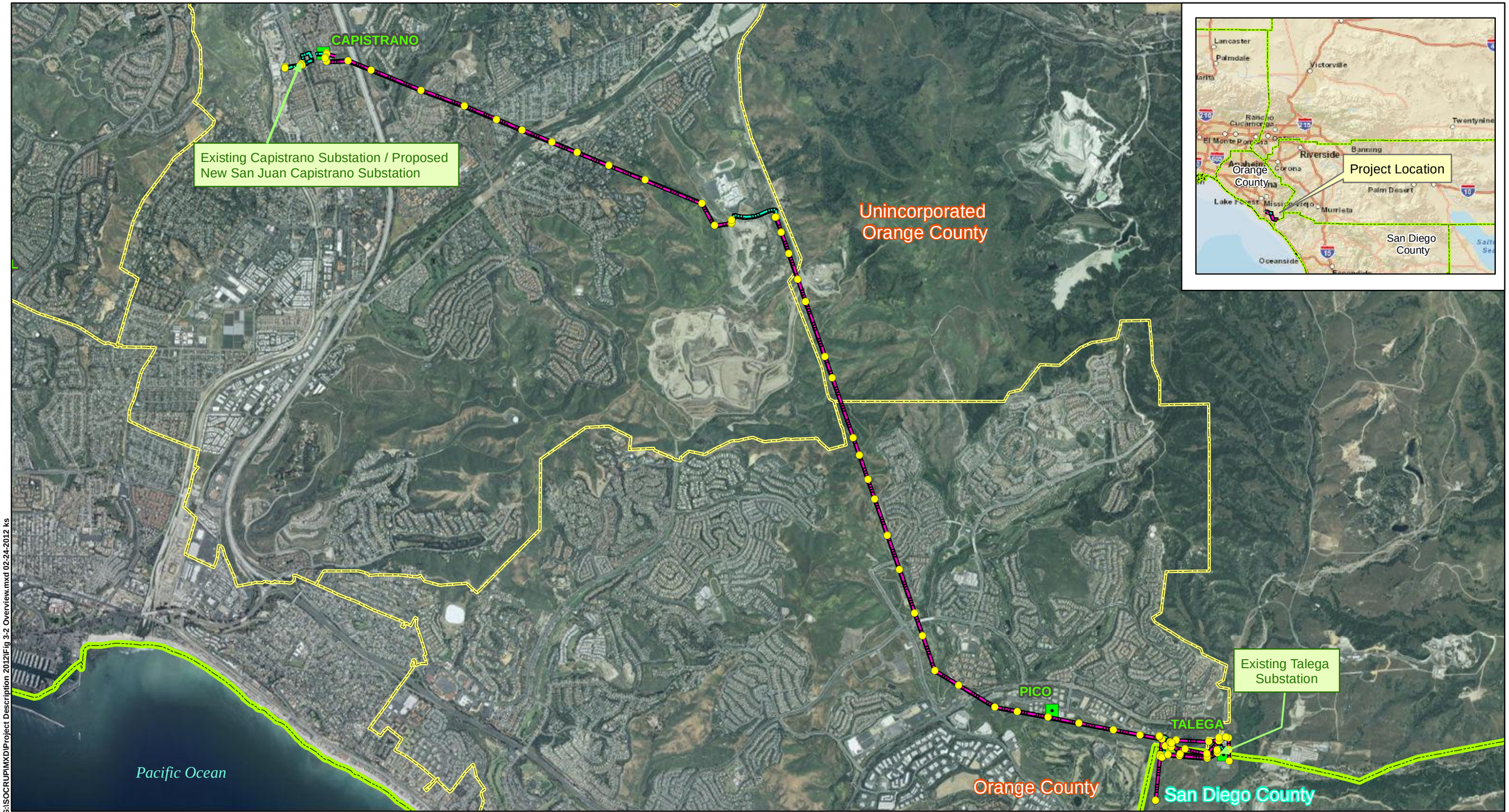
SDG&E's Talega Substation is located partially within the Orange and San Diego Counties, on land owned and operated by Camp Pendleton (refer to Figure 3-1). The Talega Substation is surrounded by undeveloped land to the north, east and south. The western boundary of the Talega Substation is occupied by existing SDG&E's 69kV, 138kV, and 230kV transmission lines and associated ROW. The nearest existing development to the Talega Substation includes the Bella Colina Towne and Golf Club 2,000 feet west, residential development 1,000 feet northwest and Camp Pendleton facilities 1,000 feet east. The Talega Substation occupies approximately 6.1 acres and is a flat site with no variation in topography.

3.3 EXISTING REGIONAL ELECTRIC SYSTEM

3.3.1 Capistrano Substation

The existing SDG&E Capistrano Substation is approaching 60 years old. The current 138/12kV air insulated substation consists of three 138kV transmission lines (TL13816, TL13834, and TL13837), seven 12kV circuits, one 138kV capacitor, two 12kV capacitors, two 138/12kV transformers, and a control shelter (see Figure 3-3, Existing Capistrano Substation Layout).

THIS PAGE IS INTENDED TO BE LEFT BLANK



G:\SOCRUP\MXD\Project Description 2012\Fig 3-2 Overview.mxd 02-24-2012 ks

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed New Transmission Line Structures (Including 69kV, 138kV and 230kV)
- Proposed New Transmission Line - Overhead
- Proposed New Transmission Line - Underground
- Capistrano, Pico and Talega Substations
- County Boundary
- City Boundary

Notes: Transmission line structure locations based upon preliminary engineering.

N

0 0.25 0.5 1 Miles

South Orange County Reliability Enhancement Project

Project Overview Map

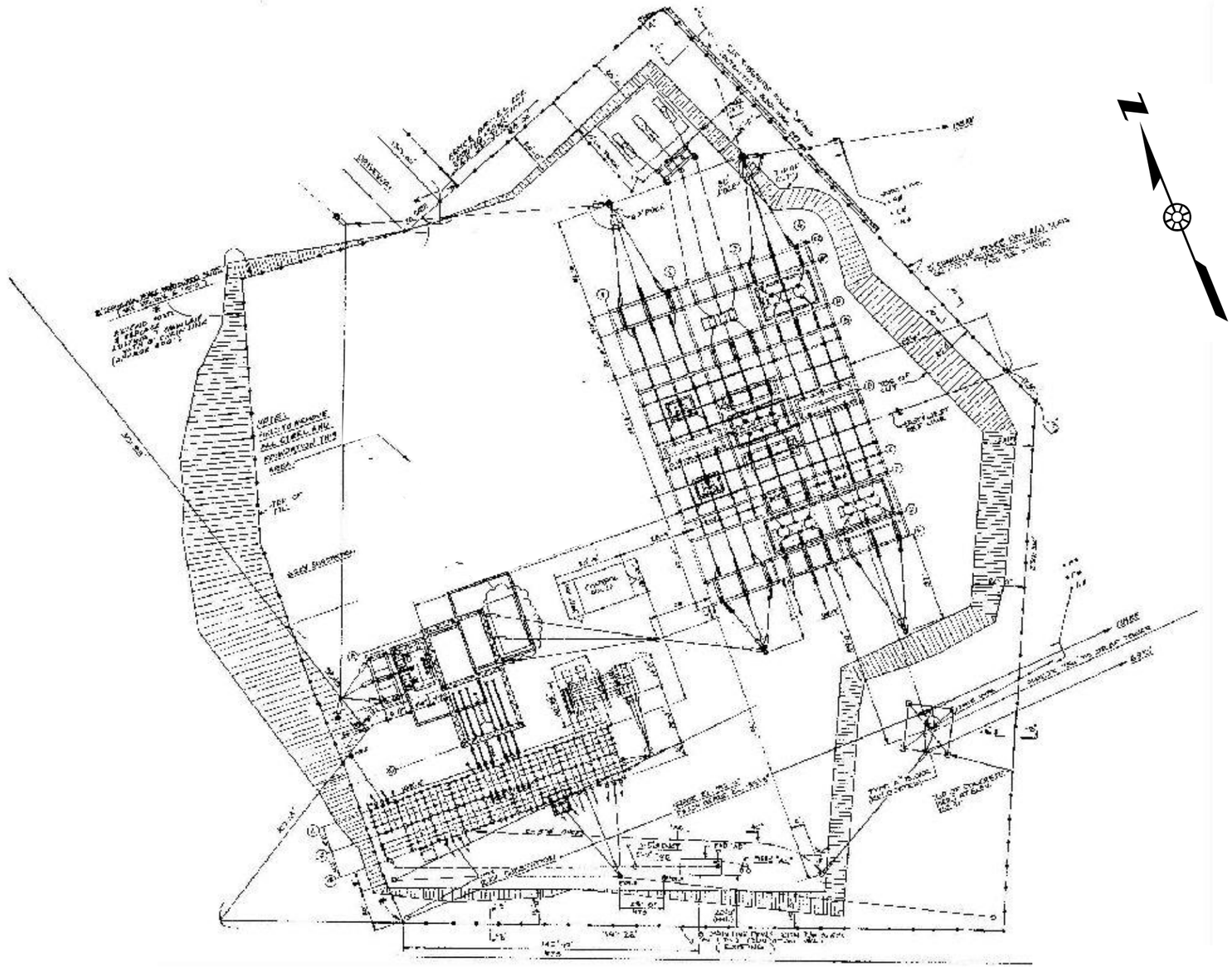
Figure 3-2

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 3-2



G:\SOCRUP\MXD\Project Description 2012\Fig 3-3 ExistingCapistrano.mxd 02-24-2012 ks

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Source: SDG&E, December 2011

South Orange County Reliability Project

Existing Capistrano Substation Layout

Figure 3-3

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-3

The existing SDG&E 138/12kV substation is located on the eastern (upper yard) portion of the SDG&E property and consists of an open rack design with poles approximately 50 feet high and the accompanying transmission and distribution poles (refer to Figure 3-4, Existing Capistrano Substation Site Overview). Two additional 138kV transmission lines (TL13833 and TL13835) pass next to (but do not connect to) the Capistrano Substation along the southern property line.

3.3.2 Talega Substation

The existing SDG&E Talega Substation is a 230/138/69kV bulk transmission substation located at the east end of Pico Avenue on the border of unincorporated Orange and San Diego Counties. The substation is also partially located on Camp Pendleton. The Talega Substation consists of one 69kV, four 138kV, and three 230kV transmission lines along with one 138/69kV transformer, four 230/138kV transformers, two 230kV capacitors, one Static Synchronous Compensator (STATCOM), and a control shelter (see Figure 3-5, Existing Talega Substation Layout).

3.3.3 Transmission Lines

The existing 138kV transmission system in the South Orange County service area forms a loop that begins and ends at the Talega Substation. This 138kV loop connects the existing San Mateo, Pico, Laguna Niguel, Capistrano, Trabuco, Margarita, and Rancho Mission Viejo SDG&E Substations. The loop consists of double-circuit transmission lines on the west side and single-circuit transmission lines on the east side. The Talega Substation is the only power source serving the South Orange County area, and is the only substation with 230kV capacity.

There is currently only one double-circuit 138kV transmission line (TL13816/TL13836 and TL13833) that provides service between the Talega and Capistrano Substations. TL13836 connects the Talega Substation to the Pico Substation and TL13816 connects the Pico Substation to the Capistrano Substation. Therefore, the combination of TL13816 and TL13836 combine to provide 138kV service between the Capistrano and Talega Substations. The TL13816/TL13836 and TL13833 double-circuit, along with one other 138kV transmission line (TL13835), are all located within SDG&E ROW between Capistrano and Talega Substations and are supported on a combination of steel lattice towers, wood poles, and steel poles. There is an approximate 2,000 foot long section of the existing transmission route that is located in an underground position within Vista Montana immediately south of San Juan Hills High School. The existing transmission line routes and poles are shown on the Talega to Capistrano Existing Transmission Line Map, which has been included as Appendix 3-A.

SDG&E has continuously operated and maintained these existing electric transmission, distribution and substation facilities for decades and will continue to operate and maintain these facilities both pending agency review of the Proposed Project and after the Proposed Project is constructed and in service. Existing and proposed operation and maintenance activities are discussed in Section 3.8, below.

THIS PAGE IS INTENDED TO BE LEFT BLANK



G:\SOCRUP\MXD\Project Description 2012\Figure 3-4 Substation.mxd

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

SDG&E Property Boundary

N

0 50 100 200 Feet

Source: Aerial Bing Maps 2011

South Orange County Reliability Enhancement Project

Existing Capistrano Substation Site Overview

Figure 3-4

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 3-4

Figure 3-5: Existing Talega Substation Layout

THIS FIGURE HAS BEEN OMITTED – IT HAS BEEN SUBMITTED UNDER CONFIDENTIAL COVER

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 3-5

3.4 PROPOSED PROJECT FACILITIES

The Proposed Project includes the following three main components:

- Complete re-build and modification of the Capistrano Substation within the existing property footprint;
- Minor alterations to the Talega Substation within the existing substation footprint including the addition of one new 138kV connection and the removal of one 230kV connection; and
- Removal, installation, and relocation of multiple transmission lines resulting in the upgrading of an existing 138kV line to 230kV.

Each of these general Proposed Project components is discussed in detail within the following subsections. Table 3-1, Proposed Project Cost Estimate, presents the estimated total cost for construction of the Proposed Project.

Table 3-1: Proposed Project Cost Estimate

TABLE 3-1 HAS BEEN OMITTED –
IT HAS BEEN SUBMITTED UNDER CONFIDENTIAL COVER

3.4.1 Substations

The Proposed Project includes the rebuilding of the existing Capistrano Substation into a new combined 230/138/12kV transmission and distribution substation on the existing SDG&E property. The new substation will be named the San Juan Capistrano Substation. The Proposed Project will include the replacement of the aging substation equipment by rebuilding and modernizing the existing 138/12kV substation that currently exists on the Capistrano Substation site as well as the addition of a new 230kV substation. The existing 138/12kV facilities are currently located on the upper yard portion of the property and will be re-built on the lower yard portion of the property (refer to Figure 3-4). The upper yard portion of the property will then be utilized for the construction of the new 230kV substation. Both the 138kV and the new 230kV substation will utilize gas insulated substation technology. The Talega Substation will undergo alterations to accommodate the 138kV transmission line addition and the 230kV rearrangement of the Proposed Project. The following subsections provide a detailed description of the proposed new facilities at each substation site. It is anticipated that environmental monitors will not be required for work within substation fenced areas since they are fully developed sites. Furthermore, due to safety concerns all work within developed energized substation fence areas will be completed under strict safety enforcements which may include restricting access to non-construction workers.

3.4.1.1 San Juan Capistrano Substation

The proposed rebuild and modification of the existing 138/12kV Capistrano Substation will result in a 230/138/12kV substation to be re-named the San Juan Capistrano Substation. This substation will occupy the full 6.4 acres of SDG&E electric facility property of the existing Capistrano Substation site (approximately 360 feet wide by 700 feet long at its widest points) The existing property is irregular shaped with a maximum depth of approximately 700 feet and a

width ranging from 330 feet to 530 feet at the widest point. Once complete, the San Juan Capistrano Substation will initially connect to seven 12kV distribution circuits, six 138kV transmission lines and two 230kV transmission lines.

The completed substation would include permanent cut and fill slopes and retaining walls constructed within the existing property boundary. The substation will be enclosed by a 10 foot high masonry screen wall on the south, east, and west sides. The existing fence on the north side will be replaced with an approximate eight foot high chain link fence with vinyl slats and two feet of barbed wire. Along the north property boundary, the masonry screen wall will be set back a minimum of 10 feet from the property line to provide a landscaped buffer zone between the wall and the adjacent home owner's property. A six to eight foot high chain link fence without barbed wire will be installed along this property line to provide separation for the private residences adjacent to the substation property.

Access to the substation will continue to be from Camino Capistrano with two 30 foot wide driveways leading to locked access gates installed in the west perimeter screen wall. Each of the access gates will consist of two approximately eight foot high by 15 foot wide vinyl slated chain link sliding style gates with barbed wire. The existing southernmost access drive will be reconstructed and widened to a 30 foot width in the current location of the existing south access drive to the property. The existing northern access drive to the property will be abandoned and rebuilt as typical curb, gutter and sidewalk. A 30 foot wide access drive to replace the north access drive will be constructed approximately 100 feet north to accommodate the new substation arrangement and better facilitate access to the upper yard area.

The Proposed Project will implement water quality standards and hydromodification controls consistent with the requirements of the Regional Water Quality Control Board (RWQCB), District 9 and the South Orange County MS4 Permit requirements. Doing so will include construction of hydromodification control best management practices (BMP's) and facilities such as bioswales paralleling the access roads and installation of bioretention facilities, such as open water quality basins and/or subsurface vaults to provide flow duration control of the site runoff to a level consistent with the city of San Juan Capistrano's requirements.

The San Juan Capistrano Substation initial configuration will be designed to include the following components:

- A 230kV yard with double 230kV busses and three bays of breaker and a half configuration. Each of the three bays will consist of three breakers, six disconnects, potential transformers, and protection equipment. This equipment will be of gas insulated substation technology and be housed in a steel framed, metal sided building approximately 65 feet wide by 180 feet long and 50 feet tall.
- Two 230/138kV, 352 MVA transformers will be installed with oil spill containment basins. One fire wall, approximately 52 feet wide by 30 feet tall, will be installed between the two transformers. Two 55 foot steel deadend structures will be installed at the transformer locations to terminate the 230kV and 138kV bank leads. This equipment will be installed outside of the gas insulated substation building.
- Two approximately 55-foot steel deadend structures will be installed to terminate the 138kV bank leads into the gas insulated substation building.

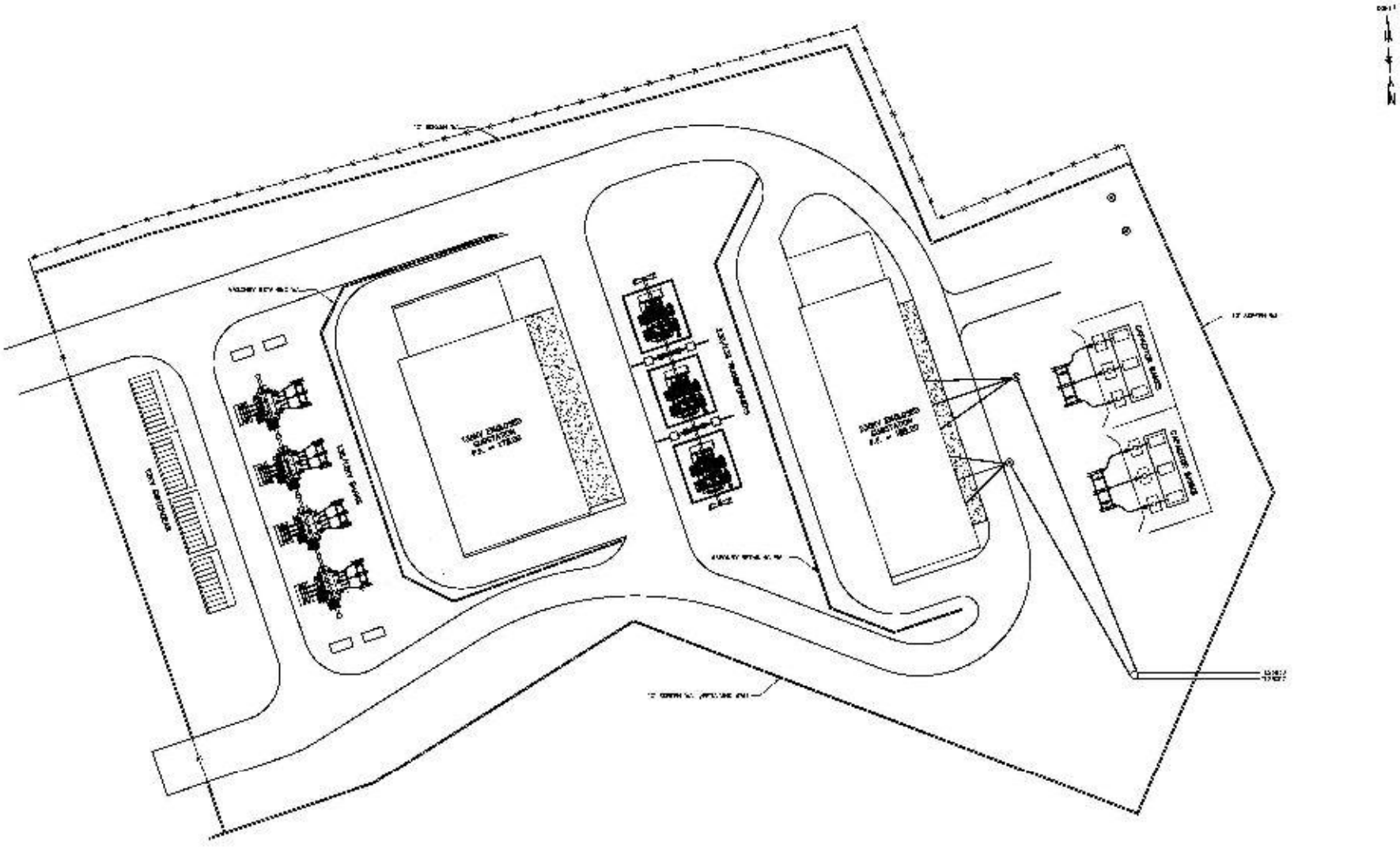
- Two 230kV transmission lines will be installed overhead into the gas insulated substation structure. The overhead lines will be installed via the addition of one 120 foot double-circuit pole and two approximately 80 foot single-circuit poles located inside the 230kV substation yard.
- Two 230kV capacitors will be installed outside of the gas insulated substation building.
- One concrete masonry block control shelter will be installed to house the 230kV relays, controls, and batteries. This shelter will measure approximately 55 feet by 32 feet by 12 feet high.
- A 138kV yard with double 138kV busses and eight bays of breaker and a half configuration. Each bay will consist of three breakers, six disconnects, potential transformers, and protection equipment. This equipment will utilize gas insulated substation technology and be housed in a steel framed, metal sided building approximately 85 feet wide by 150 feet long and 45 feet tall.
- Six 138kV transmission lines installed with underground getaways.
- Three 138/12kV, 30MVA transformers will be installed with oil spill containment basins. Two fire walls, approximately 32 feet wide by 16 feet tall, will be installed between the three transformers. Three approximately 30 foot high H-framed structures will be installed to terminate the 138kV bank leads.
- Three 12kV capacitors will be installed.
- Three ¼ sections of 12kV switchgear will be installed with twelve 12kV circuit positions will terminate inside the switchgear.
- One concrete masonry block control shelter will be installed for the 138kV and 12kV relaying and controls, measuring approximately 70 feet by 32 feet by 12 feet high. This control shelter will house the relay and controls and station batteries for the 138kV and 12kV yards respectively.
- An AT&T communication line and SDG&E fiber communication lines will be upgraded from the current lines installed at the existing Capistrano Substation.

Substation lighting will be installed in the 230kV, 138kV, and 12kV yards with the purpose to:

- Allow for safe entry and exit from substation.
- Allow for safe driving around busses/racks, corners, and roadways.
- Allow for a preliminary visual inspection of substation inspection.
- Lights are not for security and are not to be left on at night.
- Lighting designs will result in approximately 0.5 foot-candles in walkway areas with high pressure sodium used for gate entry light only and, metal halide used for all yard lights. Different light types will be used for the wall/control shelters and deadend structures, if necessary. All lights will be shielded and aimed downward.

The ultimate arrangement would be as depicted in Figure 3-6, Ultimate San Juan Capistrano Substation Layout. The ultimate list of components, which is in addition to the components of the initial arrangement listed above, is:

- One 230/138kV, 352 MVA transformers will be installed with an oil spill containment basin. One fire wall, approximately 52 feet wide by 30 feet tall, will be installed between the second and third transformers. One approximately 55 foot steel deadend structure will be installed at the third transformer location to terminate the 230kV and 138kV bank leads.
- One additional approximately 55 foot deadend structure will be installed to terminate the 138kV bank leads into the gas insulated substation building.
- One additional 230kV transmission line will be installed into the gas insulated substation structure terminated with associated circuit breakers, disconnects, controls and protection.
- One additional 138/12kV, 30 MVA transformer will be installed with oil containment basin. One fire wall, approximately 32 feet wide by 16 feet tall, will be installed between the third and fourth transformers. One approximately 30 foot high H-framed structure will be installed to terminate the 138kV bank leads.
- One additional 12kV capacitor will be installed.
- One additional ¼ section of 12kV switchgear will be installed with four 12kV circuit positions terminating inside the switchgear.
- All additional relay and protection equipment will be housed inside the two masonry block control shelters previously discussed for the 138kV and 230kV yards respectively.
- An AT&T communication line and SDG&E fiber communication lines will be upgraded from the current lines installed at the existing Capistrano Substation.



G:\SOCRUP\MXD\Project Description 2012\Figure 3-6 UltimateSanJuanCapLayoutApril2012.mxd 04-23-2012 ks

South Orange County Reliability Enhancement Project

Ultimate San Juan Capistrano Substation Layout

Figure 3-6

Created For:	Created By:
Mary Turley	TRC
Date: 4/25/2012	

SDG&E is providing this map with the understanding that the map is not survey grade.

Source: Nolte, December 2011

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-6

The approximate sequencing of work at the San Juan Capistrano Substation site for all 12kV, 138kV and 230kV work will be as follows:

1. Demolish the existing structure and foundation pads in the lower yard and regrade the lower yard area (Phase 1 grading).
2. Construct a temporary getaway to remove the existing two 12kV circuits crossing the lower yard.
3. Construct the new 138kV gas insulated substation facility and the new 12kV air insulated substation facility in the lower yard portion of the Capistrano Substation site.
4. Connect and energize the following existing 138kV transmission lines, in no particular order:
    - Connect TL13834 to the new 138kV gas insulated substation facility.
    - Loop TL13833 into new 138kV gas insulated substation facility. Cut TL13837 over to the new 138kV gas insulated substation facility.
    - Connect TL13816 to the new 138kV gas insulated substation facility.
    - Tie portion of TL13835 connecting at Laguna Niguel Substation into new 138kV gas insulated substation facility.
    - Install a temporary 138kV position at San Juan Capistrano Substation utilizing existing poles and equipment to allow for construction work on the 230kV transmission facilities.
    - Energize 138/12kV transformers.
5. Connect seven existing 12kV circuits to new 12kV substation and energize.
6. De-energize the existing 138kV and 12kV air insulated substation.
7. Remove the old 138kV and 12kV air insulated substation system and all equipment from the upper yard.
8. Re-grade upper yard (Phase 2 grading).
9. Construct the new 230kV gas insulated substation.
10. The new 230kV lines (TL23030 and Tl23007) will be connected into the new 230kV gas insulated substation facility.
11. Adjust relays at remote ends of transmission lines as required
12. Energize the 230/138kV transformers
13. Energize the 230kV capacitors

3.4.1.2 Talega Substation

At the Talega Substation, one 138kV transmission line (TL13835) will be connected to the Talega Substation and one 230kV transmission line (TL23007) will disconnected from the Talega Substation and instead be rerouted and connected to the San Juan Capistrano Substation. To accommodate these changes, existing 138kV and 230kV poles within the Talega Substation

will have to be re-arranged to accommodate the crossing of the 230kV line. Approximate sequencing of work at the Talega Substation will be as follows:

1. Relocate TL13831 to a new bay position. One new breaker and disconnects will be added. Existing pole will be relocated to accommodate the new bay position.

2. Relocate TL13812 to the position vacated by TL13831, including installation of one new 138kV cable pole and approximately 700 feet of new underground cable.

3. Tie in TL13835 to the Talega Substation in the position vacated by TL13812.

4. Rearrange existing TL23030 at Talega Substation by installing two new poles (and removing one existing pole) inside Talega Substation and extending the existing transmission line to continue onto San Juan Capistrano Substation creating a three terminal transmission line.

5. Disconnect TL23007 from the Talega Substation.

6. Remove transformer Banks 60 and 62 from service at Talega Substation.

3.4.2 Substation Getaways

3.4.2.1 San Juan Capistrano Substation

Distribution Getaways

All 12kV circuits will leave the San Juan Capistrano from the 12kV switchgear underground into Camino Capistrano.

West San Juan Capistrano Substation 138kV Getaways

Four of the six 138kV transmission lines will exit the substation site via an underground conduit system and cross Camino Capistrano heading west to four new steel cable poles (Pole Nos. 1a, 2a, 4a, and 5a – see Figure 3-7, Proposed Transmission Line Route, Sheet 1). One new steel pole (Pole No. 3a) will also be installed west of the San Juan Capistrano Substation site, immediately adjacent to the existing railway line. One steel and six wood 138kV poles will be removed from the same area west of the San Juan Capistrano Substation site. Two of the four lines will then transfer to overhead positions on Pole Nos. 4a and 5a before heading north. The remaining two 138kV transmission lines will be installed under the existing railway line using the jack-and-bore method (refer to Figure 3-7, Sheet 1). Typical jack-and-bore diagrams and photographs have been included within Appendix 3-B. These two 138kV transmission lines will continue west in an underground position through existing private recreational area (within existing SDG&E ROW) until transitioning to an overhead position via Pole Nos. 1a and 2a (located along Avenida de la Vista) before continuing to the west. Three new 138kV splice vaults will be installed west of the railway line and one new 138kV splice vault will be located within Camino Capistrano. The new 138kV trench packages will be approximately three feet wide by six to eight feet deep.

East San Juan Capistrano Substation 138kV Getaways

Two of the six 138kV transmission lines will exit the substation site via two new steel cable poles that will be installed in the northeast corner of the substation site. Also within the substation property, approximately nine existing wood and one steel lattice structure will be removed. Typical diagrams of 138kV single-circuit steel cable poles, 138kV wood poles, and 138kV steel lattice towers have been included within Appendix 3-B.

230kV Getaways

The new 230kV transmission lines will enter into the new 230kV gas insulated substation on two new steel poles and one double-circuit new steel pole located on the east end of the Capistrano Substation site (refer to Figure 3-7, Sheet 1 and Appendix 3-B).

3.4.2.2 Talega Substation

Existing TL13831 will be transferred in the Talega Substation on a new overhead steel pole connecting to a new bay position. Existing TL13812 will then be relocated to its new bay position (now vacated by TL13831). A new 138kV cable pole (refer to typical 138kV steel pole diagram included within Appendix 3-B) will be located within the fence line of the substation (on the western end of the substation) and approximately 700 feet of underground duct bank package will be constructed completely within the fence line of the existing substation (refer to Figure 3-7, Sheet 18 for the location of new poles and underground cable within the Talega Substation). TL13835 will then be connected to Talega Substation by overhead connection at the existing bay position now vacated by TL13812. Existing 230kV transmission line TL23007 will be reconfigured to bypass the Talega Substation. TL23007's existing line drops will be removed from its current deadend position at Talega Substation.

Existing TL23030 will be re-arranged at the Talega Substation by installing two new transmission poles and removing one existing pole inside the Talega Substation and extending the existing TL23030 to continue onto the new San Juan Capistrano Substation creating a three terminal transmission line, connecting the Escondido, Talega, and San Juan Capistrano Substations.

3.4.3 Transmission Lines

The Proposed Project will involve the installation and removal of 69kV and 138kV poles and the installation of new 230kV poles along with associated overhead conductor and underground cable (refer to Appendix 3-B for typical pole diagrams and Figure 3-7 (Sheets 1-19) for the location of all proposed new transmission line poles). Additionally, the Proposed Project will include removal and relocation of existing transmission poles and modifications at two existing substations.

A substantial portion of the transmission line work will be completed within SDG&E's existing ROW between the existing SDG&E Capistrano and Talega Substations (refer to Figure 3-7, Sheets 1-20). A small portion of the work will be completed within a segment of acquired ROW near the Talega Substation (refer to Figure 3-7, Sheet 19). In addition, the existing ROW used for the Proposed Project contains two 138kV transmission lines that will not be affected by this Proposed Project.

THIS PAGE IS INTENDED TO BE LEFT BLANK



G:\SOCR\PM\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

Sheet 1 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 1)



G:\SOCRUP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmsssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

Sheet 2 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 2)



G:\SOCR\PIM\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

Sheet 3 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 3)



G:\SOCR\PIMXD\Project Description 2012\Fig 3-7 Proposed\TransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

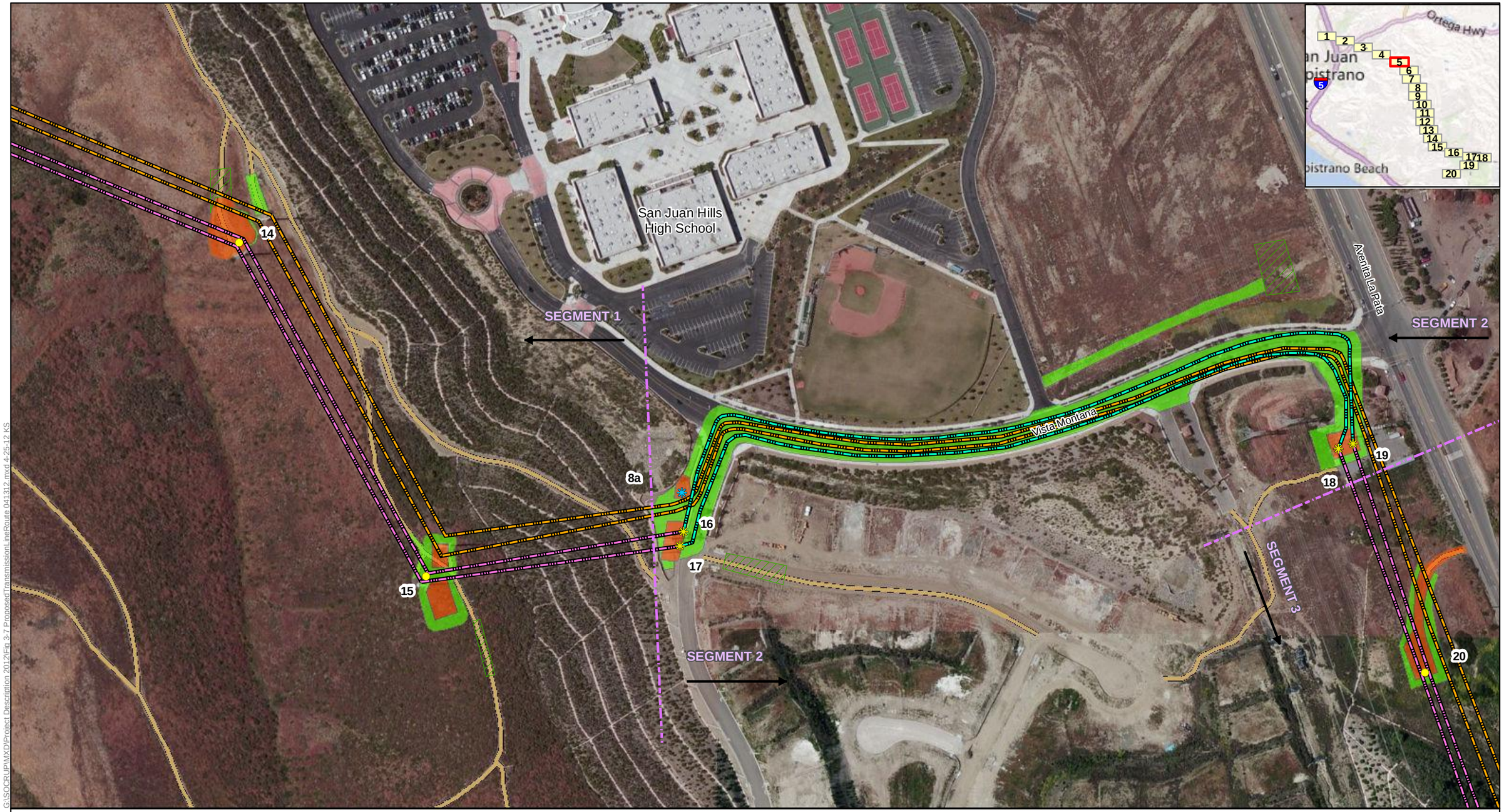
Sheet 4 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 4)



G:\SOCR\UP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

Sheet 5 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 5)



G:\SOCR\PIMX\DProject Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

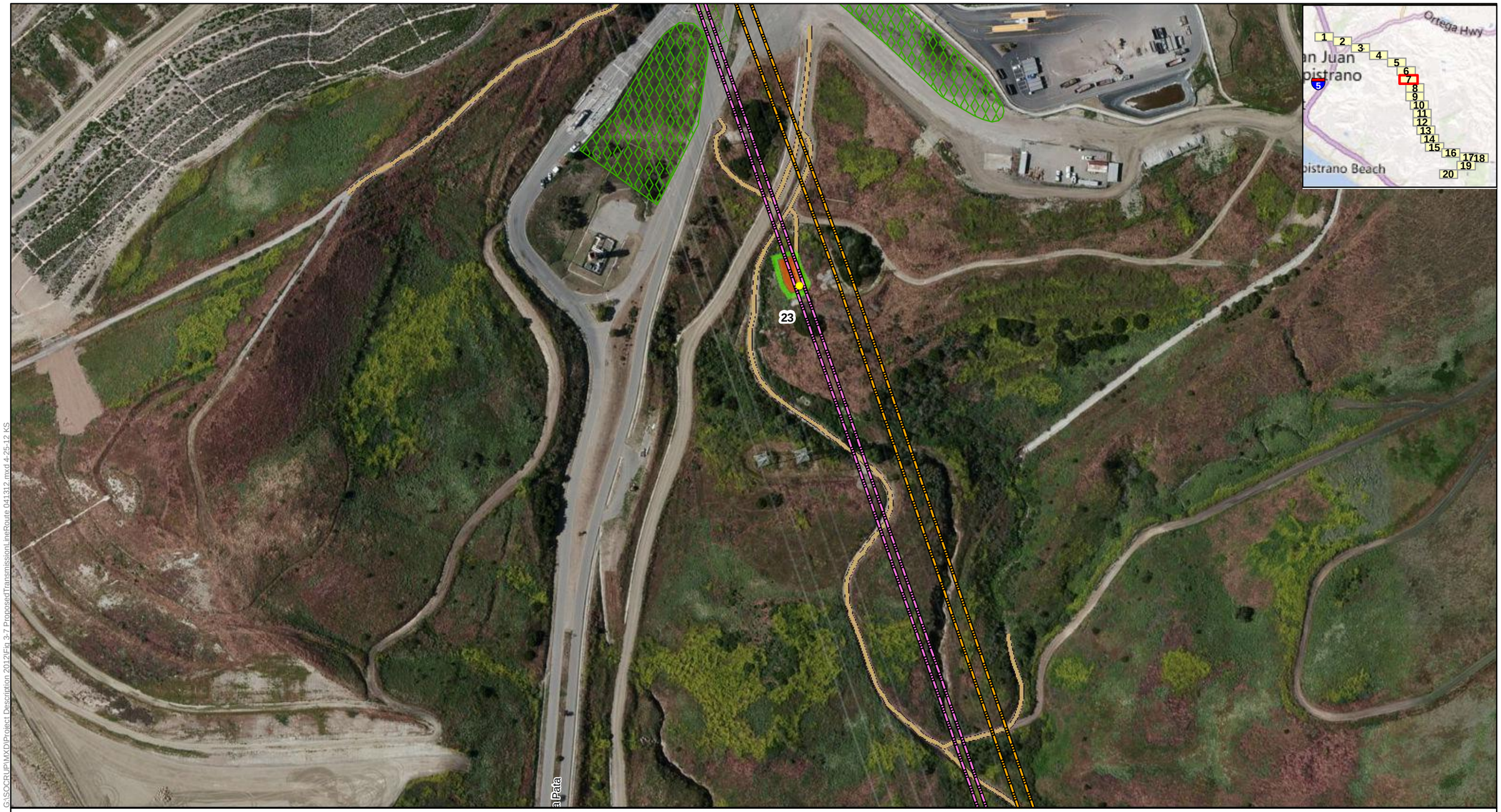
Sheet 6 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 6)



G:\SOCRUP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

Sheet 7 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 7)



G:\SOCR\UP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmsission Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

Sheet 8 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 8)



G:\SOCR\UP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

Sheet 9 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 9)



G:\SOCR\UP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

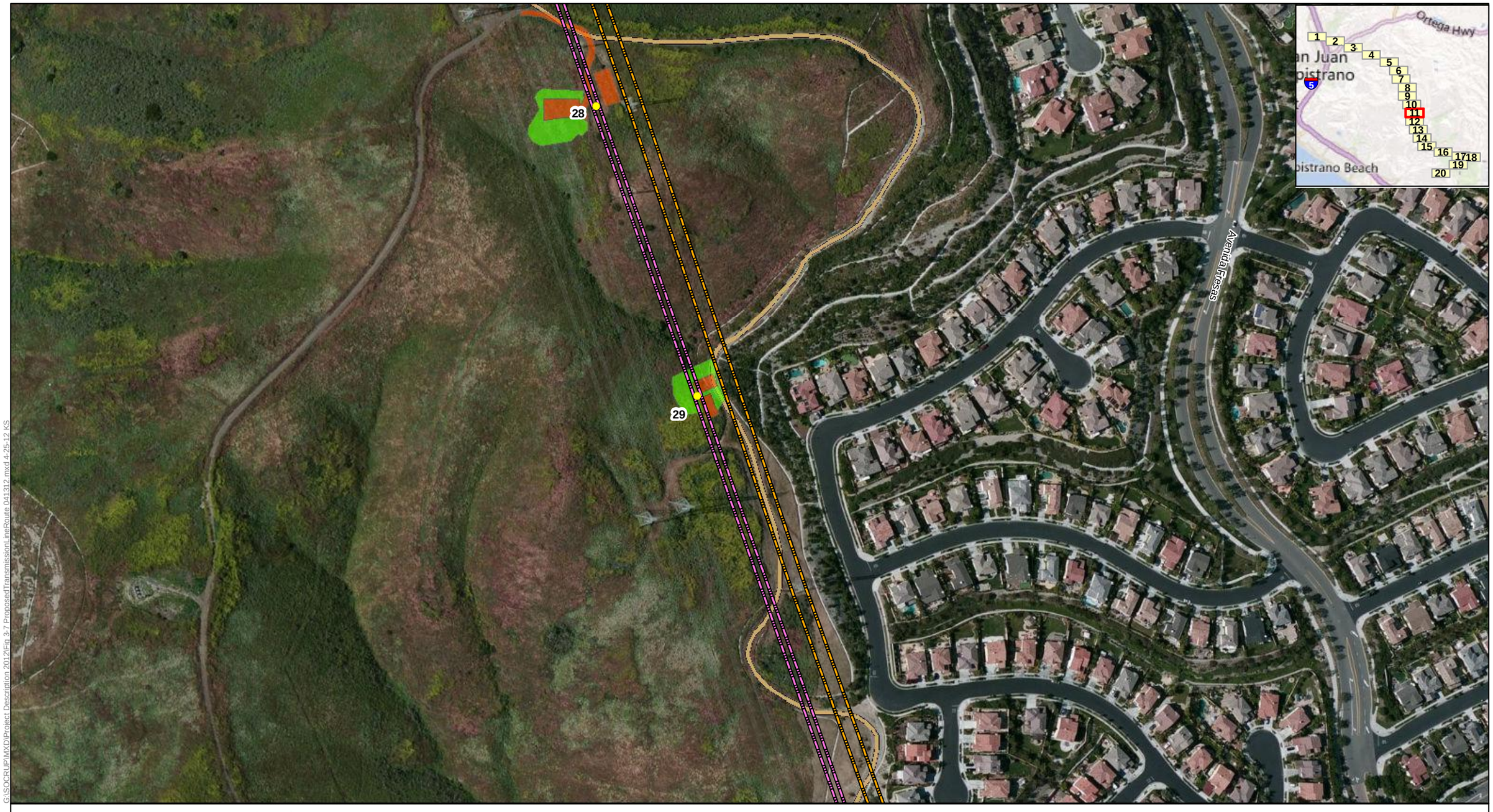
Sheet 10 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 10)



G:\SOCR\UP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

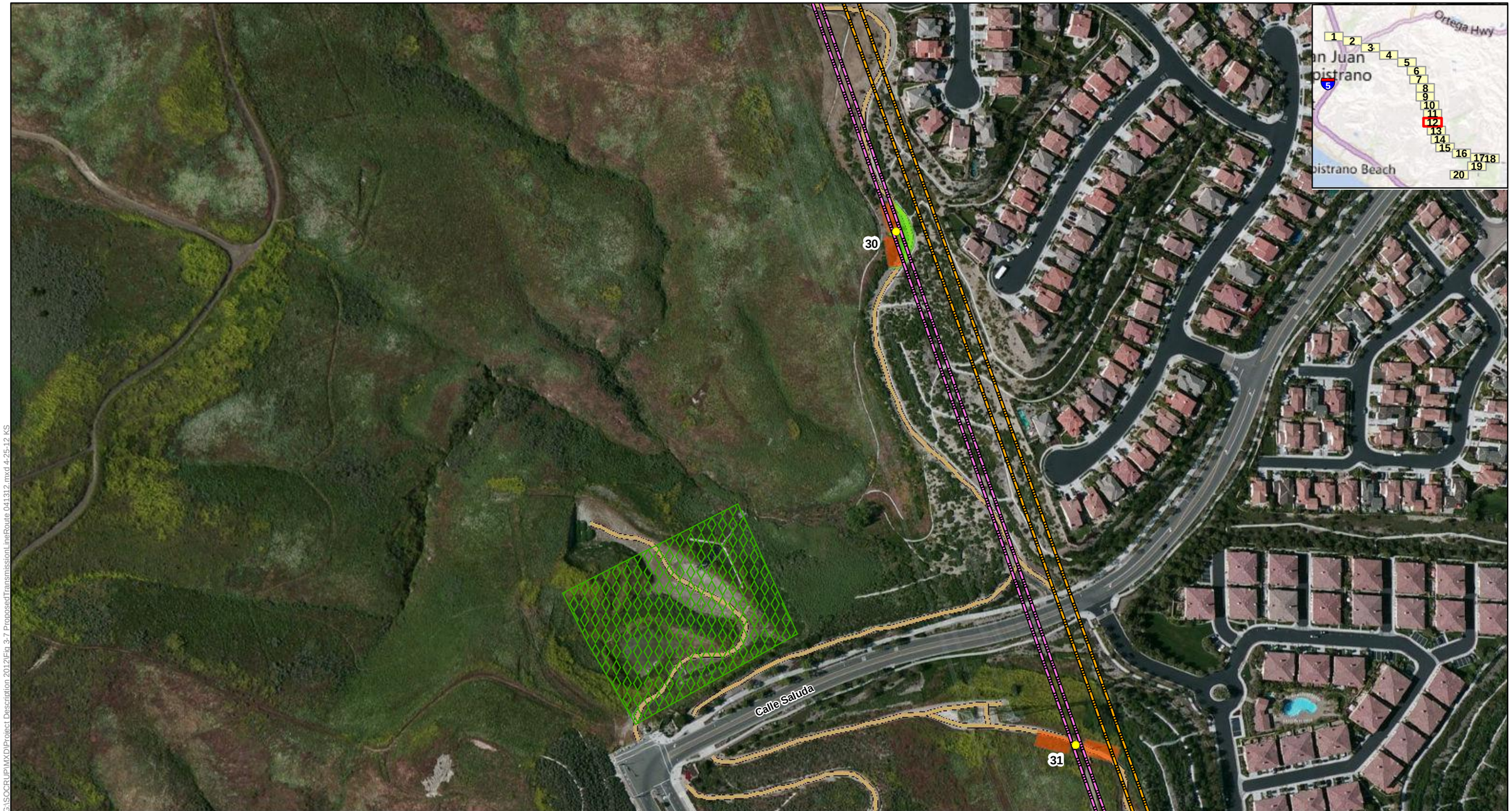
Sheet 11 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 11)



G:\SOCR\UP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

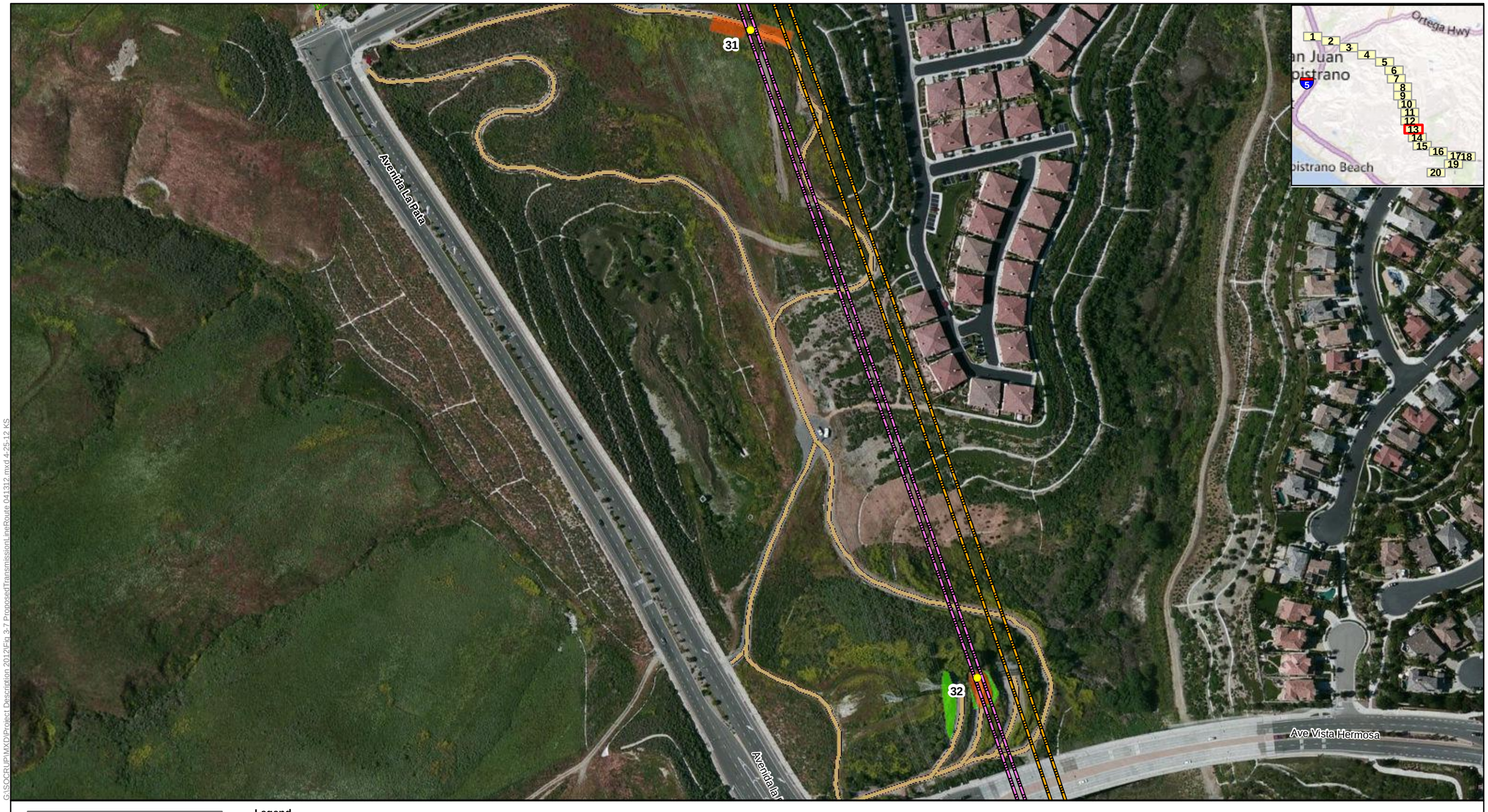
Sheet 12 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 12)



G:\SOCR\PIMXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

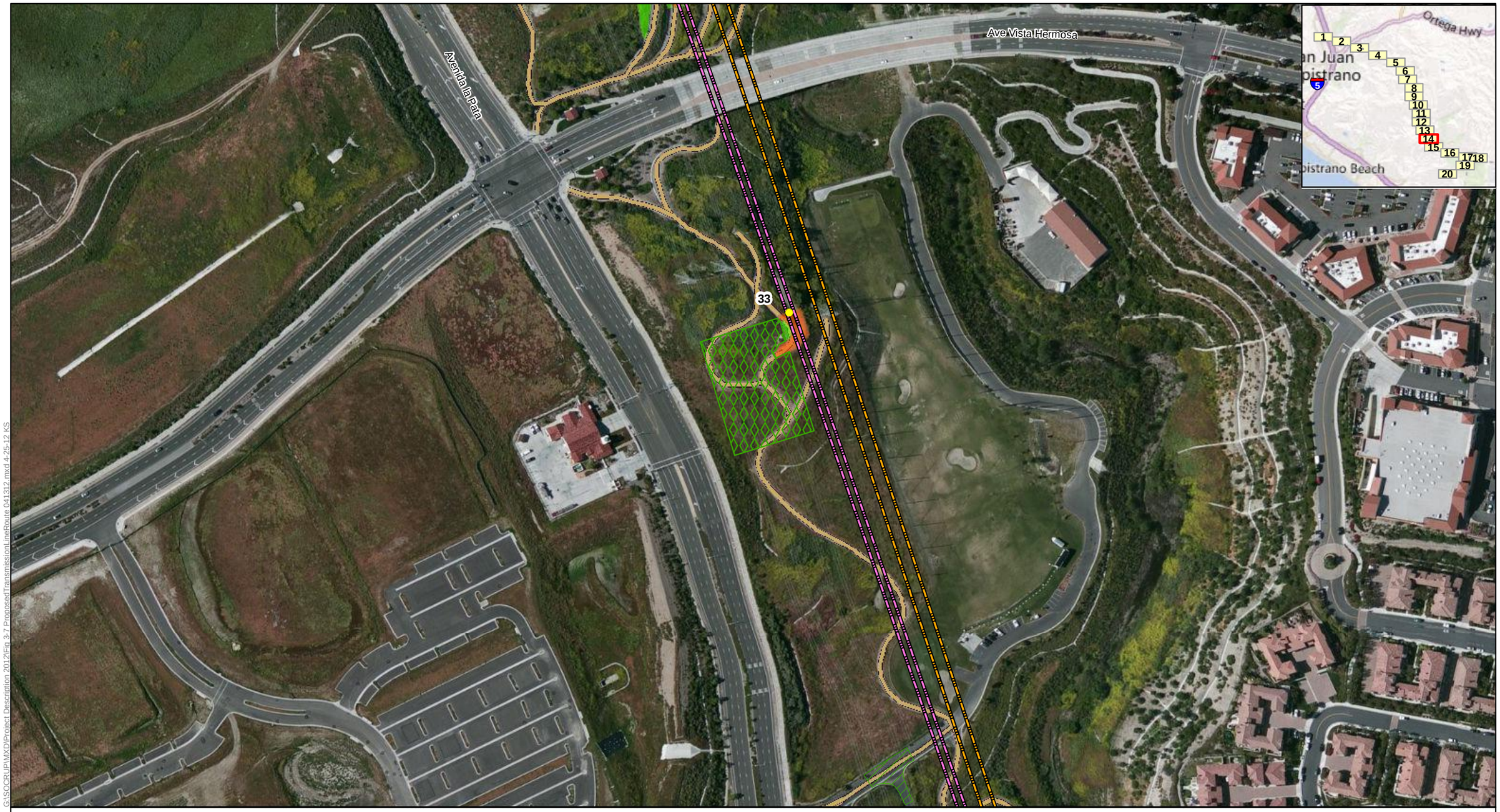
Sheet 13 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy® utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 13)



G:\SOCR\UP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

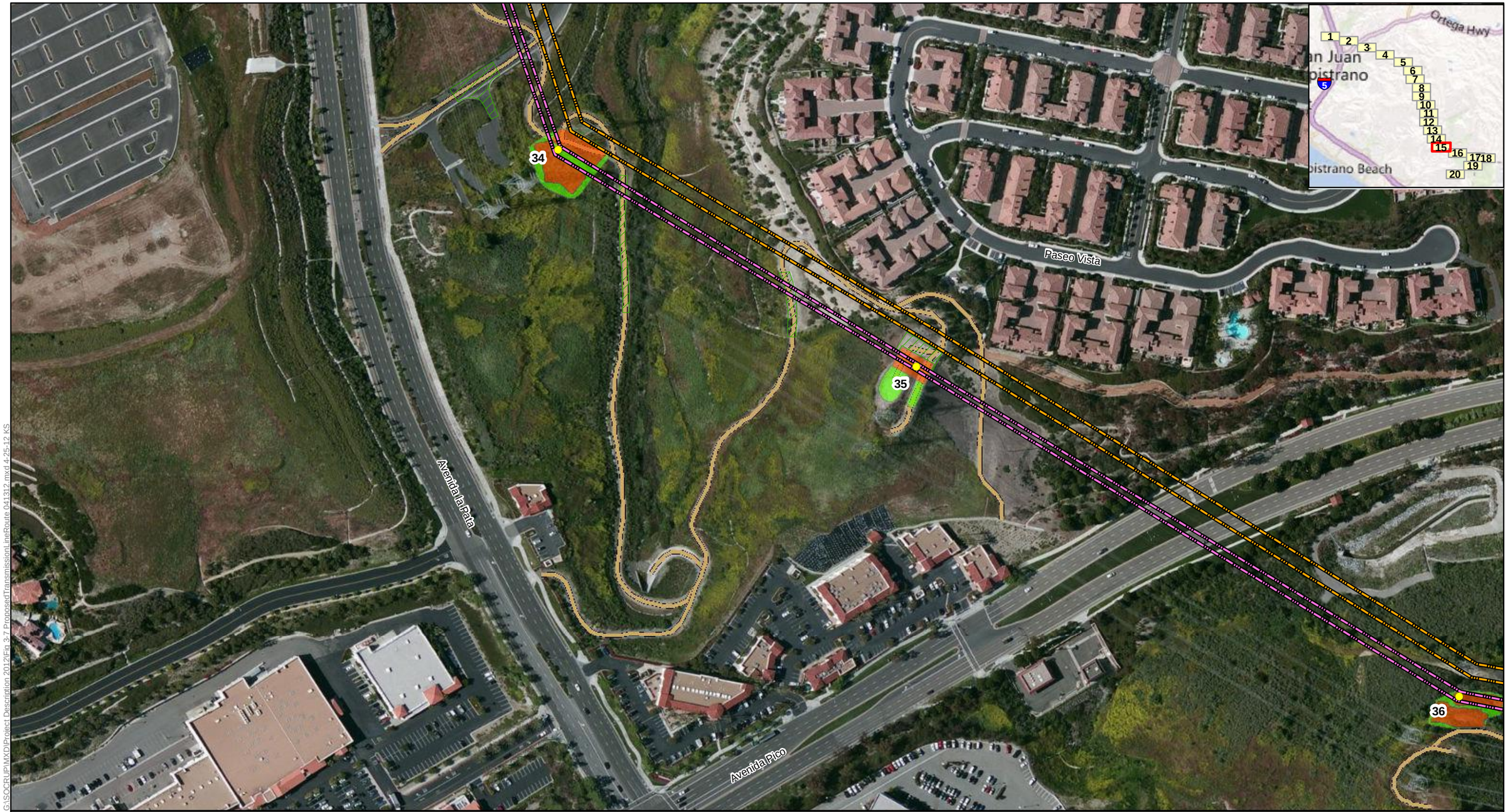
Sheet 14 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 14)



G:\SOCR\UP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

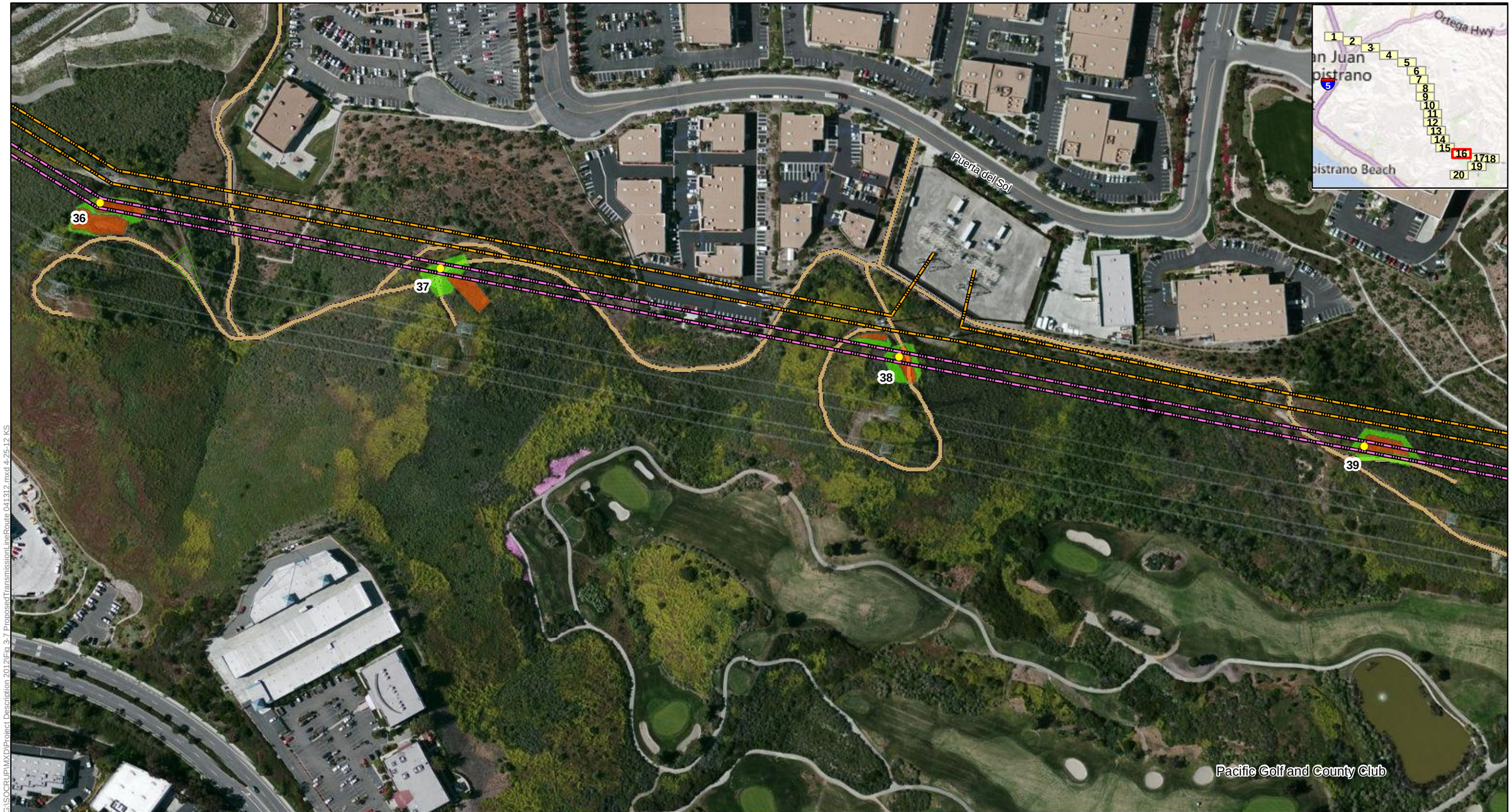
Sheet 15 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 15)



G:\SOCRUP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

Sheet 16 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 16)



G:\SOCR\UP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

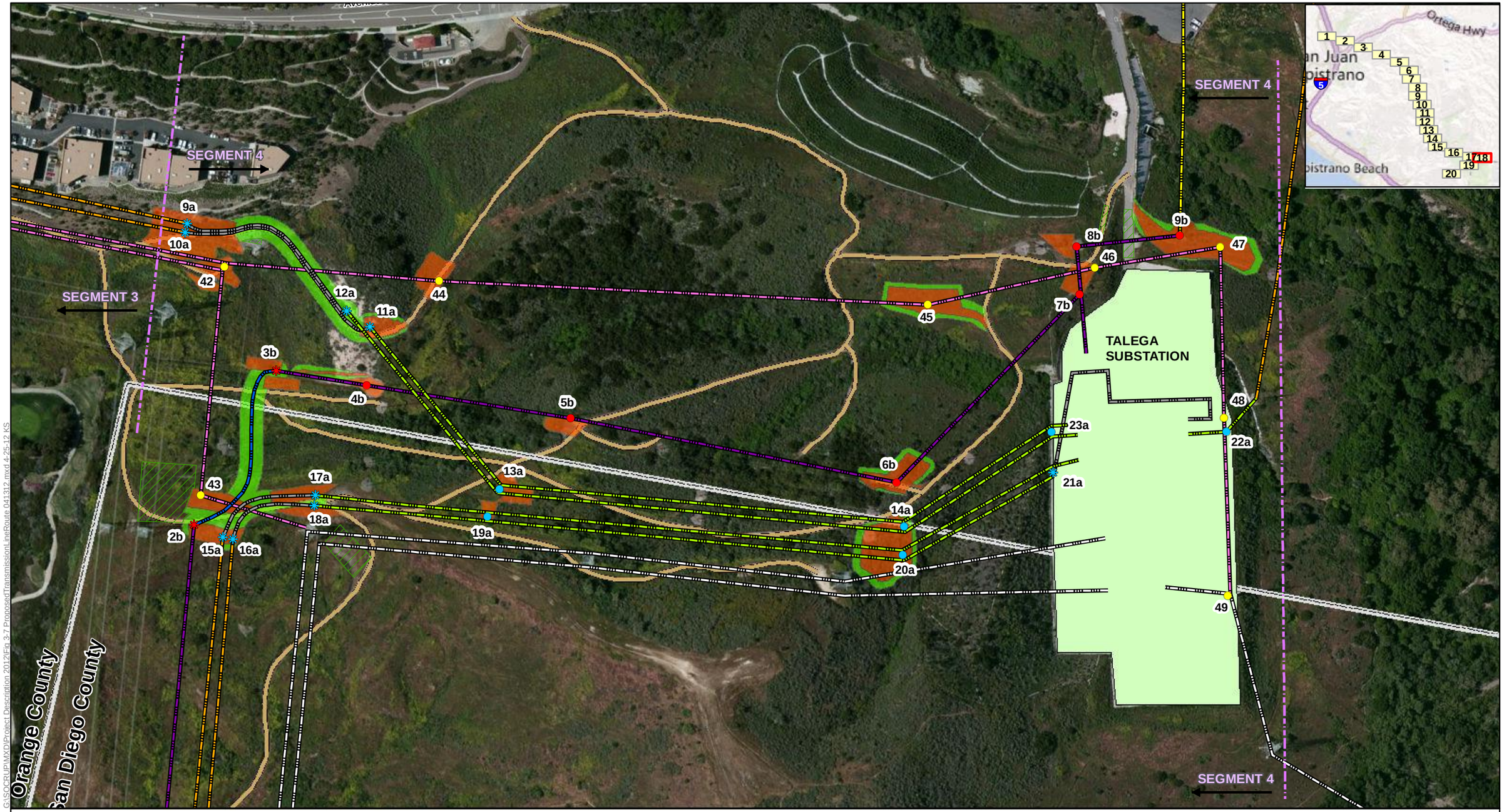
Sheet 17 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 17)



G:\GOCRUP\MXD\Project Description 2012\Fig. 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

Sheet 18 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 18)



G:\SOCR\UP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

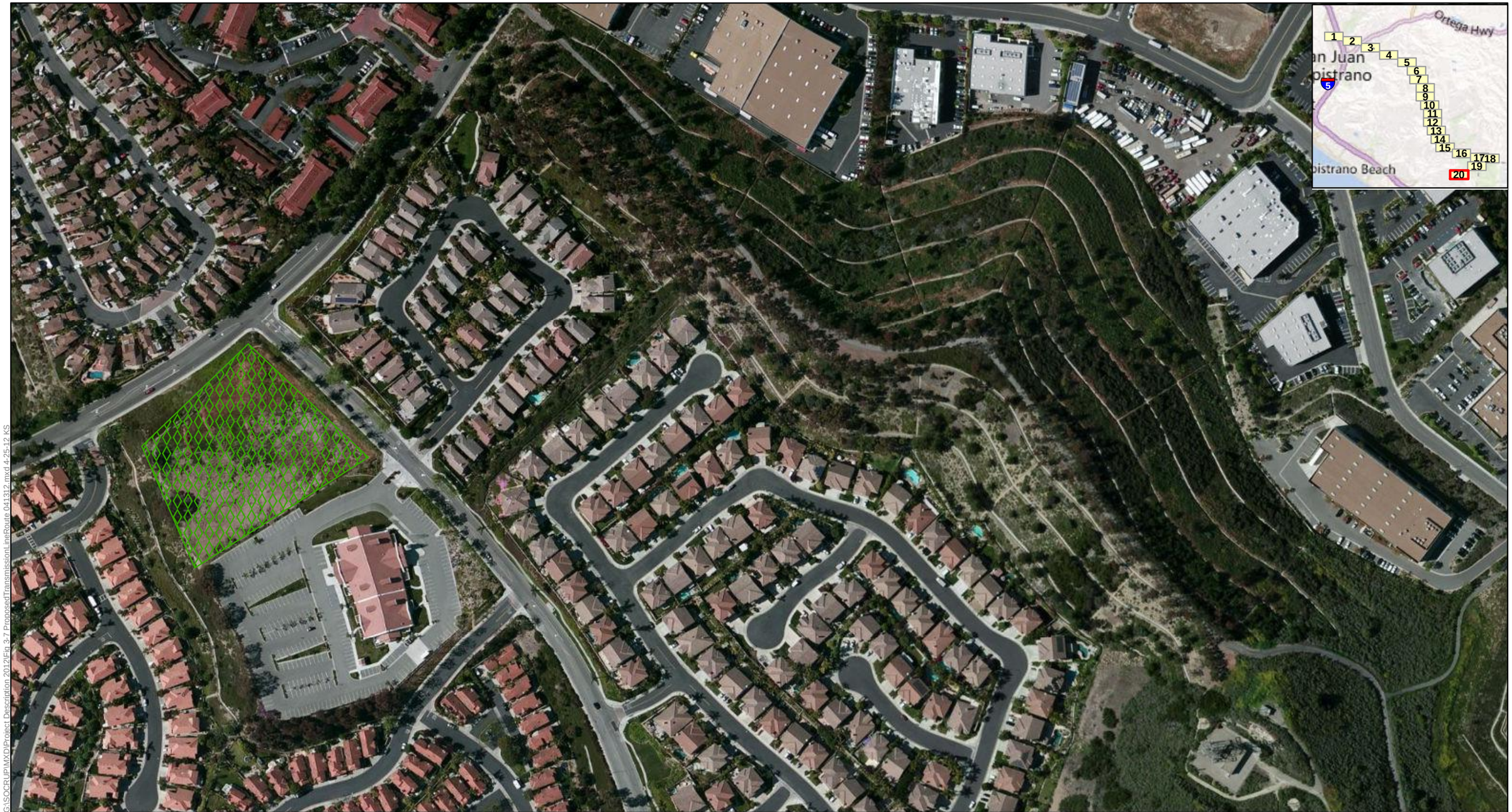
Sheet 19 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 19)



G:\SOCRUP\MXD\Project Description 2012\Fig 3-7 ProposedTransmissionLineRoute 041312.mxd 4-25-12 KS

Created For: Mary Turley

Created By: TRC

Date: 5/8/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Project Segment Boundary

Proposed Transmission Lines

- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles

- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Temporary Impact Area
- Permanent Impact Area
- Stringing Sites
- Lay Down Areas
- Existing Access Road
- Existing138kV Transmission Line
- Existing 230kV Transmission Line
- Existing 69kV Transmission Line

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Proposed Transmission Line Route

Figure 3-7

Sheet 20 of 20

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-7 (SHEET 20)

For the purposes of this discussion, the transmission line work associated with the Proposed Project has been divided into segments, as defined in Table 3-2, Transmission Line Segments. Table 3-3, Proposed New 230kV Poles provides a list of proposed new 230kV poles by type and height (all new 230kV poles will be steel), Table 3-4, Proposed New 138kV Poles provides a list of proposed 138kV poles by type and height (all new 138kV poles will be steel), Table 3-5, Proposed New 69kV Poles provides a list of proposed new 69kV poles by type and height (all new 69kV poles will be steel), and Table 3-6, Transmission Structures/Poles to be Removed provides the list of transmission poles to be removed (including 230kV, 138kV, and 69kV poles). Typical drawings and/or representative photographs of each type of structure to be removed are included in Appendix 3-B and the location of all of the poles to be removed is included in Appendix 3-A. Table 3-7, Transmission Pole Diameters provides the approximate structure diameters for the transmission poles associated with the Proposed Project.

Table 3-2: Transmission Line Segments

Segment Name	Approximate Mile Post[1]		Approximate Length	230kV Transmission Line Type
	Begin	End		
Segment 1 – San Juan Capistrano Substation to Rancho San Juan	0.0	2.66	2.66 mile (14,100 feet)	Overhead
Segment 2 - Rancho San Juan	2.66	3.02	0.36 mile (1,900 feet)	Underground
Segment 3 - Rancho San Juan to Talega Hub	3.03	7.20	4.19 miles (22,150 feet)	Overhead
Segment 4 – Talega Hub to Talega Substation	7.21	7.91	TL23030 – 0.5 mile (2,600 feet) TL23007 – 0.11 mile (600 feet)	Overhead

Notes: Table contents based upon preliminary engineering.
[1] Mile posts based upon new 230kV transmission lines. Mile post 0.0 is defined to be at the first 230kV structure
Source: SDG&E

The remainder of this page is intentionally left blank.

Table 3-3: Proposed New 230kV Poles

Pole No.[1]	Proposed Pole Type	Proposed Pole Height (feet)	Pole No.[1]	Proposed Pole Type	Proposed Pole Height (feet)
1	DE[2]	80	26	TGT	140
2	DE	80	27	TGT	125
3	DE	120	28	DE	145
4	DE	120	29	DE	150
5	DE	120	30	TGT	155
6	TGT[3]	140	31	TGT	145
7	TGT	155	32	TGT	145
8	TGT	110	33	TGT	115
9	DE	130	34	DE	140
10	DE	130	35	TGT	105
11	TGT	110	36	DE	95
12	TGT	145	37	TGT	115
13	TGT	145	38	TGT	110
14	DE	160	39	TGT	135
15	DE	135	40	TGT	130
16	DE/CP[4]	160	41	TGT	125
17	DE/CP	160	42	DE	120
18	DE/CP	160	43	DE	135
19	DE/CP	160	45	DE	150
20	DE	120	45	DE	140
21	TGT	120	46	DE	120
22	TGT	125	47	DE	140
23	TGT	155	48	DE	130
24	TGT	155	49	DE	120
25	TGT	140			

Notes: Table contents based upon preliminary engineering.
[1]Refer to Figure 3-7 for pole locations
[2]DE = Deadend pole
[3]TGT = Tangent pole
[4]CP = Cable pole
Source: SDG&E

Table 3-4: Proposed New 138kV Poles

Pole No.[1]	Proposed Pole Type	Proposed Pole Height (feet)	Pole No.[1]	Proposed Pole Type	Proposed Pole Height (feet)
1a	DE[2]/CP[3]	125	13a	DE	125
2a	DE/CP	125	14a	DE	115
3a	DE	90	15a	DE/CP	100
4a	DE/CP	90	16a	DE/CP	100
5a	DE/CP	90	17a	DE/CP	100
6a	DE/CP	90	18a	DE/CP	100
7a	DE/CP	90	19a	DE	105
8a	DE/CP	90	20a	DE	150
9a	DE/CP	100	21a	DE/CP	110
10a	DE/CP	100	22a	DE	65
11a	DE/CP	100	23a	DE	100
12a	DE/CP	100			

Notes: Table contents based upon preliminary engineering.
[1]Refer to Figure 3-7 for pole locations
[2]DE = Deadend pole
[3]CP = Cable pole
Source: SDG&E

Table 3-5: Proposed New 69kV Poles

Pole No.[1]	Proposed Pole Type	Proposed Pole Height (feet)	Pole No.[1]	Proposed Pole Type	Proposed Pole Height (feet)
1b	DE	75	6b	DE	90
2b	DE[2]/CP[3]	75.5	7b	DE	55
3b	DE/CP	75.5	8b	DE	50
4b	TGT[4]	56.5	9b	DE	65
5b	TGT	75			

Notes: Table contents based upon preliminary engineering.
[1]Refer to Figure 3-7 for pole locations
[2]DE = Deadend pole
[3]CP = Cable pole
[4]TGT = Tangent pole
Source: SDG&E

Table 3-6: Transmission Structures/Poles to be Removed

Structure/Pole No.[1]	Structure/Pole Type	Structure/Pole Size (in feet)	
		Height above ground	Embedded length
Z228473	138kV Wood Structure	70	10
Z228467	138kV Wood Structure	70	10
Z643274	138kV DE[2] Steel Lattice Tower	90	-
Z223182	138kV DE Steel Lattice Tower	100	-
Z223181	138kV DE Steel Lattice Tower	115	-
Z223180	138kV DE Steel Lattice Tower	135	-
Z327353	138kV DE Steel Pole	135	-
Z327354	138kV DE Steel Pole	90	-
Z327355	138kV DE Steel Pole	90	-
Z630977	138kV DE Steel Pole	100	-
Z198318	3-Structure DE Wood Pole	56.5	8.5
Z198319	2-Structure H-Frame TGT[3]	56.5	8.5
Z198320	2-Structure H-Frame TGT	52	8
Z198321	2-Structure H-Frame TGT	65.5	9.5
Z198322	138 2-Structure Wood H-Frame DE	52	8
Z196606	DC- DE 138kV Steel Pole	125	-
Z203022	DC- DE 138kV Steel Pole	115	-
Z203021	138kV FND Steel DE/CP[4]	95	-
Z203020	138kV FND Steel DE/CP	95	-
Z20318	138kV FND Steel DE/CP	103	-
Z206511	138 2-Structure Wood H-Frame DE	56.5	8.5
Z221660	2-Structure H-Frame TGT	56.5	8.5
Z221659	2-Structure H-Frame TGT	56.5	8.5
Z221658	2-Structure H-Frame TGT	52	8
Z221657	2-Structure H-Frame TGT	61	9
Z221656	2-Structure H-Frame TGT	56.5	8.5
Z221655	2-Structure H-Frame TGT	65.5	9.5
Z221654	2-Structure H-Frame TGT	61	9
Z221653	138 2-Structure Wood H-Frame DE	65.5	9.5
Z221652	2-Structure H-Frame TGT	52	8
Z221651	2-Structure H-Frame TGT	56.5	8.5
Z221650	2-Structure H-Frame TGT	61	9
Z221649	2-Structure H-Frame TGT	52	8
Z221648	2-Structure H-Frame TGT	70	10
Z221647	2-Structure H-Frame TGT	65.5	9.5
Z221646	2-Structure H-Frame TGT	61	9
Z221645	2-Structure H-Frame TGT	61	9
Z221644	2-Structure H-Frame TGT	56.5	8.5
Z221643	2-Structure H-Frame TGT	65.5	9.5
Z221642	2-Structure H-Frame TGT	65.5	9.5

Table 3-6 (Cont.): Transmission Structures/Poles to be Removed

Structure/Pole No.[1]	Structure/Pole Type	Structure/Pole Size (in feet)	
		Height above ground	Embedded length
Z221641	2-Structure H-Frame TGT	47.5	7.5
Z221640	3- Structure DE Wood	79	11
Z327403	2-Structure H-Frame TGT	56.5	8.5
Z221638	3- Structure DE Wood	52	8
Z221637	2-Structure H-Frame TGT	61	9
Z221636	2-Structure H-Frame TGT	61	9
Z221635	2-Structure H-Frame TGT	65.5	9.5
Z221634	2-Structure H-Frame TGT	61	9
Z221633	2-Structure H-Frame TGT	65.5	9.5
Z327416	2-Structure H-Frame TGT	65.5	9.5
Z221631	3- Structure DE Wood	52	8
Z247455	138kV DE Wood Structure	74.5	10.5
Z247439	138kV DE Wood Structure	80	10
Z36515	138kV Wood Structure	61	9
Z36516	138kV Wood Structure	61	9
Z36517	138kV Wood Structure	61	9
Z36518	138kV Wood Structure	74.5	10.5
Z322484	138kV Wood Structure	61	9
Z220837	138kV Wood Structure	65.5	9.5
Z322485	138kV Wood Structure	65.5	9.5
Z220836	138kV Wood Structure	61	9
Z322479	138kV Wood Structure	83.5	11.5
Z247440	138kV DE Wood Structure	52	8
Z247256	138kV DE Wood Structure	79.5	10.5
Z322487	138kV Wood Structure	65.5	9.5
Z322488	138kV Wood Structure	52	8
Z322489	138kV Wood Structure	56.5	8.5
Z322490	138kV Wood Structure	61	9
Z322483	138kV Wood Structure	65.5	9.5
Z322482	138kV Wood Structure	65.5	9.5
Z322481	138kV Wood Structure	65.5	9.5
Z322480	138kV Wood Structure	65.5	9.5
Z322476	138kV Wood Structure	65.5	9.5
Z322477	69kV Wood Structure	52	8
Z327418	69kV Wood Structure	65	9.5
Z322486	138kV Wood Structure	70	10
Z226466	138kV Wood Structure	74.5	10.5
Z220835	138kV Wood Structure	79	11
Z164835	138kV Wood Structure	65	9.5

Table 3-6 (Cont.): Transmission Structures/Poles to be Removed

Structure/Pole No.[1]	Structure/Pole Type	Structure/Pole Size (in feet)	
		Height above ground	Embedded length
Z171166	69kV 2-pole TGT Wood Structure	56.5	8.5
Z220838	69kV Wood Structure	74.5	10.5
Z220839	69kV Wood Structure	70	10
Z105996	69kV Wood Structure	56.5	8.5
Z220840	69kV Wood Structure	79	11
Z225613	138kV Wood Structure	65.5	9.5
Z225614	138kV Wood Structure	70.5	9.5
Z225615	138kV Wood Structure	74.5	10.5
Z227134	138kV Wood Structure	74.5	10.5
Z227576	138kV Wood Structure	79	11
Z228470	138kV Wood Structure	74.5	10.5
Z228466	138kV Wood Structure	74.5	10.5
Z36513	138kV Wood Structure	65.5	9.5
Z228465	138kV Wood Structure	56.5	8.5
Z122016	138kV DE Steel Pole	70	-
Z222799	138kV DE Steel Pole	77.45	12.55
Z228471	138kV Wood Structure	81.7	13.3
Z228472	138kV Wood Structure	81	9
Z228473	138kV Wood Structure	70	10
Z228467	138kV Wood Structure	70	10
Z125642	138kV DE Steel Pole	70	10

Notes: Table contents based upon preliminary engineering.
[1] Refer to the Talega to Capistrano Existing Transmission Lines Map in Appendix 3-A for location of poles to be removed.
[2] DE = Deadend pole
[3] TGT = Tangent pole
[4] CP = Cable pole
Source: SDG&E

Table 3-7: Transmission Pole Diameters

Pole Type	Approximate Diameter (feet)	
	Pole Base	Pole Top
230kV Cable Pole	5 – 6	2 – 3
230kV DE[1]/TGT[2] Pole	5 – 6	2 – 3
138kV Cable Pole	4 – 5	1.5 – 2
138kV DE/TGT Pole	4 – 5	1.5 – 2
69kV Cable Pole	3 – 4	1.5
69kV DE/TGT Pole	3 – 4	1.5

Notes: Table contents based upon preliminary engineering.
[1] DE = Deadend pole
[2] TGT = Tangent pole
Source: SDG&E

The following subsections provide a detailed description of the scope of work for each segment of the transmission line work in the Proposed Project. Refer to tables above for structure/pole heights. In general, for all segments, the new 230kV steel poles will range in height from approximately 100 feet to 160 feet and will be located approximately 600 to 2,000 feet apart depending on the topography of the route.

3.4.3.1 Segment 1 – San Juan Capistrano Substation to Rancho San Juan

Segment 1 will involve construction of a new 230kV double-circuit overhead transmission line between the new 230kV gas insulated substation at the proposed San Juan Capistrano Substation and the Rancho San Juan residential development located at the intersection of La Pata Avenue and Vista Montana. Segment 1 will involve the installation of approximately 15 new 230kV steel poles (refer to Figure 3-7, Sheets 1 through 5). Segment 1 will also include the removal of two 138kV poles. The description of work on Segment 1 is described in detail below for 230kV and 138kV transmission work, respectively. Table 3-8, Scope of Work for Segment 1 summarizes the scope of work for Segment 1 of the Proposed Project.

Table 3-8: Scope of Work for Segment 1

Structure/Pole Type	Installed	Structure/Pole Numbers (refer to Figure 3-7, sheets 1-5)	Removed
230kV double-circuit steel pole	13	3 through 15	--
230kV single-circuit steel pole	2	1 & 2	--
138kV steel cable pole	6	1a, 2a, and 4a through 7a	--
138kV steel pole	1	3a	9
138kV steel lattice towers	--	--	4
138kV wood transmission line poles	--	--	20
138kV Splice Vaults	4	N/A	--

Notes: Table contents based upon preliminary engineering.
Source: SDG&E

Segment 1 – 230kV Work

The San Juan Capistrano Substation to Rancho San Juan Segment of the Proposed Project begins at the new 230kV gas insulated substation at the proposed San Juan Capistrano Substation site located in the city of San Juan Capistrano. The San Juan Capistrano Substation to Rancho San Juan segment of the Proposed Project will involve the installation of approximately 2.66 miles of double-circuit 230kV overhead conductor on approximately 15 new 230kV double-circuit steel poles (refer to the Typical 230kV Steel Tubular Structure Diagram included within Appendix 3-B).

Segment 1 is located entirely within the city of San Juan Capistrano. The two new 230kV steel poles will be installed within SDG&E's existing 150 feet ROW and will require concrete foundations. In addition, all poles require a cleared, flat work space (referred to as a "pad") of varying size on each side of the pole. In some cases a single pad will be utilized due to physical constraints and SDG&E safe working practices. Segment 1 begins at the proposed San Juan Capistrano Substation where the new 230kV transmission lines will leave the substation to the east, spanning over Junipero Serra Park and I-5, and continue general southeast in an overhead position for approximately 2.5 miles until reaching San Juan Hills High School. The new 230kV poles will be installed adjacent to the existing 138kV transmission line poles where possible. The new 230kV transmission lines will be designed for double 900 aluminum-clad steel supported (ACSS/AW) thousand circular mils (kcmil) 54/7 Canary conductor designed pursuant to current carrying capability established by SDG&E Transmission Planning. Insulators will be installed on new 230kV pole using a V-string configuration (refer to the Typical 230kV Steel Tubular Structure Diagram included within Appendix 3-B). All overhead conductors will be sagged and spaced with clearances meeting or exceeding Rule 37, Table-1 and Rule 38, Table-2 in G.O. 95. A single Optical Ground Wire (OPGW) overhead Alumoweld shield wire (approximate ½ inch diameter) with fiber optic inner-core will be installed on top of the pole line. Within this segment, approximately four 138kV steel lattice towers, six 138kV steel poles, and four 138kV wood H-frame poles and all existing 138kV conductor and hardware will be removed.

Segment 1 – 138kV Work

Following the completion of the new San Juan Capistrano 138kV gas insulated substation, six 138kV transmission lines will connect to the new facility (refer to Figure 3-7, Sheet 1). These six 138kV transmission lines will be connected to the new gas insulated substation via underground cables. The description of how these six 138kV transmission lines leave the San Juan Capistrano Substation (getaways) is provided below.

West San Juan Capistrano Substation Getaways

Four of the six 138kV transmission lines will exit the substation site via an underground conduit system and cross Camino Capistrano heading west to four new steel cable poles (Pole Nos. 1a, 2a, 4a, and 5a – refer to Figure 3-7, Sheet 1). One new steel pole (Pole No. 3a) will also be installed west of the San Juan Capistrano Substation site, immediately adjacent to the existing railway line. One steel and six wood 138kV poles will be removed from the same area west of the San Juan Capistrano Substation site. Two of the four lines will then transfer to overhead positions on Pole Nos. 4a and 5a before heading north. The remaining two 138kV transmission lines will be installed under the existing railway line using the jack-and-bore method (refer to Figure 3-7, Sheet 1). Typical jack-and-bore diagrams and photographs have been included within Appendix 3-B. These two 138kV transmission lines will continue west in an underground position through existing private recreational area (within existing SDG&E ROW) until transitioning to an overhead position via Pole Nos. 1a and 2a (located along Avenida de la Vista) before continuing to the west. Three new 138kV splice vaults will be installed west of the railway line and one new 138kV splice vault will be located within Camino Capistrano. The new 138kV trench packages will be approximately three feet wide by six to eight feet deep.

East San Juan Capistrano Substation Getaways

Two of the six 138kV transmission lines will exit the substation site via two new steel cable poles that will be installed in the northeast corner of the substation site. Also within the substation property, approximately nine existing wood and one steel lattice structure will be removed. Typical diagrams of 138kV single-circuit steel cable poles, 138kV wood poles, and 138kV steel lattice towers have been included within Appendix 3-B.

3.4.3.2 Segment 2 – Rancho San Juan

The Rancho San Juan Segment of the Proposed Project will involve the installation of two separate 230kV underground cable systems in conduit packages. The first 230kV transmission line (TL23030) will be located in a franchise position within Vista Montana between Via Pamplona and La Pata Avenue, and is approximately 0.3 mile in length. The second 230kV transmission line (TL23007) will be installed within Vista Montana, on the opposite side of the roadway, within an existing 30-foot easement. Table 3-9, Scope of Work for Segment 2 summarizes the scope of work for Segment 2 of the Proposed Project. The trench packages will be comprised of six eight-inch diameter conduits encased in concrete and will measure approximately three feet wide by six to eight feet deep. The trench package will also carry communication conduit for fiber optic cables for SDG&E's use only. Within this underground segment, cross-linked polyethylene-insulated solid-dielectric, copper-conductor cable will be utilized.

Approximately four underground 230kV concrete splice vaults will be installed in line with the two duct banks. The pre-cast vaults are expected to be approximately 26 feet long by 12 feet wide by 10 feet tall (outside dimensions). Refer to Appendix 3-B for a diagram of a typical splice vault. The 230kV transmission line will transition on both sides of Vista Montana from underground to overhead via two new 230kV steel cable poles at each end of the Rancho San Juan segment for a total of four new 230kV steel cable poles (refer to the Typical 230kV Steel Cable Pole Diagram included within Appendix 3-B). These poles will be set on concrete foundations. It should be noted that this segment removes two existing 138kV steel cable poles, one on each end of Vista Montana, and the associated 138kV cable as they are no longer necessary (refer to the Typical 138kV Steel Cable Pole Diagram included within Appendix 3-B). One existing 138kV double-circuit steel cable pole (TL13833 and TL13816) located near the intersection of Vista Montana and Via Pamplona will be replaced. The replaced pole will be installed just north of the existing pole to make room for the new 230kV (TL23030) underground cable system (refer to Figure 3-7, Sheet 5).

The remainder of this page is intentionally left blank.

Table 3-9: Scope of Work for Segment 2

Structure/Pole Type	Structure/Pole Numbers (refer to Figure 3-7, Sheets 5 and 6)	New	Replaced	Removed
230kV single-circuit steel cable pole	16 through 19	4	0	0
138kV double-circuit steel cable pole	8a	0	1	3
Splice Vault	N/A	4	0	1
Notes: Table contents based upon preliminary engineering. Source: SDG&E				

3.4.3.3 Segment 3 – Rancho San Juan to Talega Hub

Segment 3 of the Proposed Project will include the installation of approximately 4.19 miles of new 230kV transmission line. The specific work associated with Segment 3 is described below for the 230kV and 138kV transmission lines, respectively. Table 3-10, Scope of Work for Segment 3 summarizes the scope of work for Segment 3 of the Proposed Project.

Table 3-10: Scope of Work for Segment 3

Structure/Pole Type	Structure/Pole Numbers (refer to Figure 3-7, Sheets 6 - 17)	Installed	Removed
138kV wood structures	N/A	0	30
230kV double-circuit steel cable pole	20 through 41	22	0
Notes: Table contents based upon preliminary engineering. Source: SDG&E			

Segment 3 of the Proposed Project will include the installation of approximately 4.2 miles of new 230kV overhead on approximately 22 230kV double-circuit steel poles (refer to the Typical 230kV Steel Tubular Structure Diagram included within Appendix 3-B) located within the cities of San Juan Capistrano and San Clemente, as well as within unincorporated Orange County (refer to Figure 3-7, Sheets 5 through 17). Segment 3 begins after Pole Nos. 18 and 19, where the new transmission lines will transition to an overhead position adjacent to the proposed Rancho San Juan residential development. Segment 3 ends where the parallel SDG&E/SCE transmission line corridor turns south, approximately 0.3 mile west of the Talega Substation. This area is referred to as the Talega Hub (refer to Figure 3-7, Sheets 17 and 18). Within Segment 3, approximately 30 138kV wood poles (two and three pole structures currently used to support TL13835) will be removed along with all associated 138kV conductor and hardware to make room for the new 230kV transmission lines and poles (refer to the Typical 230kV Steel Tubular Structure Diagram included within Appendix 3-B).

3.4.3.4 Segment 4 – Talega Hub to Talega Substation

Segment 4 of the Proposed Project will include the installation of approximately 3,230 feet of new single-circuit 230kV transmission line (600 feet for TL23007 and 2,630 feet for TL23030) as well as relocation of existing 138kV and 69kV lines in the area between the Talega Hub and the Talega Substation (this area is referred to as the Talega Corridor) to allow for the construction of the proposed new 230kV transmission lines. The specific work associated with Segment 4 is described below for 230kV, 138kV, and 69kV transmission line work, respectively. Table 3-11, Scope of Work for Segment 4, summarizes the work included within Segment 4 of the Proposed Project.

Table 3-11: Scope of Work for Segment 4

Structure/Pole Type	Structure/Pole Numbers (refer to Figure 3-7, Sheets 17 through 19)	Installed	Removed
69kV wood structure	--	--	13
69kV steel pole	1b, 4b - 9b	7	--
69kV single-circuit steel cable pole	2b & 3b	2	--
138kV wood structure	--	--	21
138kV double-circuit steel pole	13a, 14a, 19a, 20a, & 23a	5	--
138kV single-circuit steel pole	22a	1	1
138kV single-circuit steel cable pole	9a – 12a, 15a – 18a, & 21a*	9	--
138kV double-circuit steel lattice	N/A	--	1
230kV single-circuit steel pole	43 – 49	7	1
230kV double-circuit steel pole	42	1	--
138kV Splice Vault	N/A	4	--
69kV Splice Vault	N/A	1	--

Notes: Table contents based upon preliminary engineering.
*Pole No. 21a is a combination 138kV double-circuit pole with one circuit transitioning underground.
Source: SDG&E

Segment 4 – 230kV Work

Within Segment 4 of the Proposed Project, the two new 230kV transmission lines will follow separate routes. Therefore, each new 230kV transmission line is described separately below by circuit number.

TL23007

The TL23007 will be rerouted to bypass Talega Substation and connect at San Juan Capistrano Substation (refer to Figure 3-8, Sheet 18). This bypass will be accomplished by connecting Poles Nos. 42, 43, and an existing lattice tower located at the southeast corner of the Talega Hub area.

TL23030

Going east from Pole No. 42, the new TL23030 will traverse until turning south at Pole No. 46 (refer to Figure 3-7, Sheet 17). The line will end at the existing TL23030 transmission line at Pole No. 49. Pole No. 49 will replace an existing 230kV deadend steel pole.

Segment 4 – 138kV Relocation Work

Prior to the start of the Proposed Project, four 138kV transmission lines terminate into the Talega Substation (TL13831, TL13835, TL13836, and TL13846). As part of the Proposed Project, a total of five 138kV transmission lines will terminate in the Talega Substation (TL13812, TL13831, TL13835, TL13836, and TL13846). The four transmission lines that currently terminate in the Talega Substation will be relocated within the Talega Corridor to make room for the new 230kV transmission lines. Specifically, work required for each 138kV transmission line is described in the following subsections, organized by transmission line number.

TL13836 and TL13846

Existing lines TL13836 and TL13846 currently enter the Talega Hub in an overhead position from the west. At new Pole Nos. 9a and 10a (refer to Figure 3-7, Sheet 18), both lines will switch to an underground position and head southeast to new Pole Nos. 11a and 12a at which point they return to overhead positions. TL13836 and TL13846 will be relocated to this underground position to allow passage of the new TL23030 extension (refer to Figure 3-7, Sheet 18). Following Pole Nos. 11a and 12a, both lines will head south until they reach new Pole No. 13a, at which point they turn northeast (via Pole No. 14a) and enter the Talega Substation via new Pole No. 23a. From the new Pole No. 23a, the lines terminate at the west side of the Talega Substation. Within Segment 4, the relocation of TL13836 and TL13846 will require the installation of four new 138kV steel cable poles and three 138kV steel double-circuit poles. In addition, one 138kV steel lattice structure and approximately 14 138kV wood poles will be removed. Refer to Appendix 3-B for typical diagrams of 138kV wood and steel poles.

TL13835 and TL13812 (Future)

Existing transmission line TL13835 currently enters the Talega Hub in an overhead configuration from the south (and terminates at the Talega Substation to the east and the Laguna Niguel Substation to the northwest). Following completion of the Proposed Project, TL13835

and TL13812 will terminate at the Talega Substation on common poles. At new Pole Nos. 15a and 16a (refer to Figure 3-7, Sheet 18), both lines will switch to an underground position that routes the lines to the east, towards the Talega Substation, under the new TL23007 extension. After completing the turn to the east, both lines return to an overhead configuration at Pole Nos. 17a and 18a and enter the Talega Substation by new Pole Nos. 19a, 20a, and 21a. TL13812 and TL13835 deadend on a steel pole on the west side of the substation. TL13812 will transition to an underground position upon reaching the substation (Pole No. 21a) and will traverse to the rack position on the east side of the substation. TL13835 will traverse overhead and will terminate at the rack on the west side of the substation (refer to Figure 3-7, Sheet 18). Within Segment 4, the relocation of TL13835 and TL13812 will require the installation of approximately five new 138kV steel cable poles and two 138kV double-circuit steel poles. In addition, approximately seven 138kV wood poles will be removed. Refer to Appendix 3-B for typical diagrams of 138kV wood and steel poles.

TL13831

Existing TL13831 approaches the substation from the north. A new Pole No. 22a will be installed inside the substation (refer to Figure 3-7, Sheet 18), to maintain overhead clearance of TL23030. From Pole No. 22a, the line terminates into the rack on the east side of the substation. TL13831 will be moved over one bay position to the south to make room for the relocated TL13812. One existing steel pole will be removed.

Segment 4 – 69kV Relocation Work

Within Segment 4 of the Proposed Project, one 69kV transmission line (TL695) will have to be relocated to make room for the two new 230kV transmission lines. Existing 69kV transmission line TL695 currently connects to the Talega Substation from the north and continues to the west and south. A total of approximately nine new steel poles (Pole Nos. 1b through 9b) will be installed and approximately 13 wood poles will be removed (refer to Figure 3-7, Sheets 17 through 19 and Appendix 3-A). To alleviate clearance issues with the crossing of TL23007 on the south end of the Talega Hub, a small portion of TL695 will be undergrounded, requiring two new 69kV cable poles and one new splice vault.

3.4.4 Distribution Lines

3.4.4.1 Distribution Overview

Alterations to distribution lines and substation equipment as a result of the Proposed Project are discussed because they are a component of the Proposed Project. Distribution infrastructure is permitted through franchise agreements with individual local municipalities and alterations to distribution facilities are included in this PEA for informational purposes only. The CPUC does not regulate distribution infrastructure; therefore, potential impacts for the following description of distribution work are not analyzed within this document.

3.4.4.2 Distribution Project Description

Distribution facilities that are affected by the San Juan Capistrano Substation rebuild and construction of new 230kV transmission lines will be relocated. Preferred and alternate

distribution line routes are discussed, as applicable, in the following subsections. The proposed distribution route is depicted graphically in Appendix 3-C, Proposed Distribution Route Map.

San Juan Capistrano Substation Rebuild

Seven distribution circuits from the existing Capistrano Substation will be relocated to the new 12kV facility. The substation will be designed for an ultimate 120 MVA four transformer bank and ultimately 16 circuits. Initially, three transformer banks will be installed. Grading and site preparation are required for new substation facilities construction as described in Section 3.5.3, Substation Site Development. A few temporary poles may be installed in the existing substation property to allow for temporary re-routing of two 12kV circuits during grading and construction of the lower yard.

Distribution Facilities from the San Juan Capistrano Substation to Rancho San Juan

Circuits 196, 197, and 315 will be relocated outside the San Juan Capistrano Substation to accommodate the new 230kV line connection (refer to Appendix 3-C). The existing distribution getaway from the substation to Junipero Serra Park, east across Calle Santa Rosalia, has Circuits 196 and 197 attached to an existing overhead distribution-only pole line on the south side of Junipero Serra Park. Circuit 315 from the substation east is under-built on 138kV poles in the park and crosses I-5. A section of Circuit 315 will be removed to accommodate the new 230kV line.

The circuits would leave the western side of the San Juan Capistrano Substation, underground for approximately 1,000 feet, traveling from Camino Capistrano south to Calle Bonita, and then travel west to Calle Santa Rosalia at Juniper Serra Park. Approximately 500 feet of conduit installation and cable pulling would occur through the north side of Juniper Serra Park. This work would require temporary closure of that portion of the park during construction for conduit and handhole installation and cable pulling. Construction of this section would last approximately six weeks and would include the installation of six 5-inch conduits, subsurface poles, concrete cover, and backfill and repaving. This work would require partial closure of the roads and/or diversion of traffic. New 1000 kcmil underground cable would then be installed from various underground poles along the route. One new 55 foot tall steel cable pole would be installed at the northeast corner of the park to carry the three circuits across I-5. Existing poles on the south side of the park for Circuits 196 and 197 will be removed. Heavy equipment and vehicles would be set up in the park during construction. The grass areas would be repaired upon completion of construction.

On the east side of I-5, a 55 foot-tall steel cable pole would be required in the area of the existing cable pole for Circuits 196 and 197 along Rancho Viejo Road, to support the three circuits. Circuit 315 would require installation of approximately 6,600 feet of 1000 kcmil cable south from the new cable pole. This 1000 kcmil line would be installed underground in existing conduit along Rancho Viejo Road to connect with a new padmount four way switch at Ortega Highway (also known as State Route [SR] 74).

Construction on this segment would take approximately ten weeks and would require lane closures and/or traffic control. Lay down areas for equipment would be the same as used by transmission. Generally, no night time work is anticipated; however, depending on loading requirements some or all cutovers may occur after normal business hours or on the weekends

and/or nights. After the facilities are energized, they will continue to be inspected and maintained on the same schedule as existing facilities. Equipment would include cranes, booms, backhoes, bucket trucks, cable pulling trucks and dollies, and crew trucks. The vehicles would need to be parked in proximity to work areas. Up to two or three crews of usually three or four people and multiple crews may work at one location or in parallel on each segment. Some equipment may be left on site overnight.

Distribution Facilities from Rancho San Juan to Talega Substation

For the preferred route, Circuit 315 will take over existing Circuit 1242 at Ortega Highway/La Pata Avenue and will require upgrading conductor size to 636 aluminum conductor, steel reinforced (ACSR) overhead wire for about 6,000 feet on the existing poles of Circuit 1242 south.

Circuit 204 will be removed from the 138kV pole line from a pole north of Avenida Pico until a pole south and east of Calle Avanzado. Then, a new cable pole will need to be set in the proximity of just south of where Circuit 204 turns south and east again after the east end of Calle Avanzado. Circuit 204 will be attached to new 69kV transmission line poles. Circuit 204 will run underground north towards a new four-way switch adjacent to a transformer and branch south under the new 230kV line to a new cable pole and continues south on Circuit 204 existing lines. This portion will require about 1,300 feet of trench, conduit, and cable, as well as 1,200 feet of 636 ACSR overhead wire.

3.5 CONSTRUCTION METHODS

This section includes an overview of the typical methods that will be used for construction of the Proposed Project. Specifically, this section describes typical construction methods for overhead and underground transmission lines, substation construction and alteration, and temporary construction work areas.

3.5.1 Overhead Transmission Lines

The procedures for bringing personnel, materials, and equipment to each structure site, installing the supporting structure foundations, erecting the supporting structure, and stringing the conductors may vary slightly along each segment or at any particular structure site. However, the following steps provide the general methods used to construct an overhead transmission line.

3.5.1.1 Step 1—Access Road Construction

The first step in constructing the overhead line is to install the new spur roads required to access the new structure sites. These roads will be graded and will generally be 14 feet wide for straight sections and up to 20 feet wide at curves to safely allow movement of construction equipment and vehicles. Due to the fact the Proposed Project will follow an existing transmission corridor; construction access to most new structure sites will be available by way of existing access roads.

3.5.1.2 Step 2—Installing the Support Structure Foundations

Prior to installing the support structure foundations, vegetation at each of the structure sites will be cleared and the area will be graded either flat or in a terraced fashion, as needed. At some

sites, soil may be imported as necessary to raise the elevation of the structure pads, and retaining walls may be needed. Material removed during the process will be spread over existing access roads and work pads as appropriate, or disposed of off-site according to all applicable laws.

Steel Poles

A large auger will be used to excavate holes that will typically be nine feet in diameter and approximately 20 to 40 feet deep for the support structure foundation. Following excavation, a reinforcing steel cage and anchor bolt cage will be installed in each hole. The steel cages will be assembled at the materials storage and staging areas and transported to each of the structure sites. The anchor bolt cages will be assembled offsite and delivered to each structure site. Approximately 50 to 100 cubic yards of concrete will be placed into the holes and the foundation will extend two feet above the ground surface. The concrete curing period is approximately one month, during which time workers will remove the concrete forms and place backfill around the foundations.

Some steel poles may be direct buried. This method uses concrete as backfill and as protection against corrosion. It does not require the installation of reinforcing steel or an anchor bolt cage.

It is not currently anticipated that blasting will be required to complete construction of the Proposed Project. However, in some locations where significant or dense rock is present, blasting may be required. Prior to blasting, SDG&E will assess the area, make any required site measurements (e.g., distance to utilities or houses, etc.) and engineer the blast for a safe and effective explosion. Pre-blast notifications to residents, utilities, etc. will be made as appropriate. Once the notifications are complete, the holes will be drilled and the explosive charges loaded into the holes. If the blast is located near sensitive receptors (e.g., houses, power lines, roads, etc.), special protective measures (e.g., gravel or blast mats) will be installed to control flying rock from the blast site. In addition, the area will be secured to avoid inadvertent entry by the public or other personnel. After the area is secured, the appropriate pre-blast warning signals will be given and the blast detonated. After detonation, a post-blast safety inspection will be conducted to ensure that the blast is completely discharged and personnel may enter safely to excavate the blasted material. Compliance with SDG&E's Project Blasting Preparation and Protection Plan Requirements for Review Package Submittal will be required.

Dewatering may also be necessary in some locations. Prior to construction, SDG&E will acquire a National Pollutant Discharge Elimination System (NPDES) permit from the RWQCB and prepare a Storm Water Pollution Prevention Plan (SWPPP). The NPDES permit and the SWPPP will detail project information, dewatering procedures, storm water runoff prevention control procedures, monitoring and reporting procedures, and BMPs.

In general, the following construction dewatering procedures will be implemented during construction:

- A submersible pump will be installed.
- Groundwater will be pumped to a de-siltation tank (baker tank) at one end for sedimentation and filtering. Baffles will be installed in the tank to increase sedimentation. Water in the tank will be allowed to flow out from the opposite end.

- Turbidity testing will be performed periodically to ensure compliance with the NPDES requirements. If turbidity measurements do not meet permit requirements, additional baker tanks or filtering may be required.

3.5.1.3 Step 3 – Structure Erection

Depending on site accessibility and the construction schedule, ground equipment or helicopters may be used to complete some or all of the structure erection activities described below. Permits to operate helicopters for Proposed Project construction will be acquired as necessary.

Steel Poles

The steel poles will be delivered in two or more sections to each site via flatbed truck or helicopter and assembled on-site using a small truck-mounted crane or helicopter. The poles will typically have six crossarms that will support one circuit on each side. The crossarms will be bolted to the pole, and the insulators will be bolted to the crossarms. After assembly, a large crane or helicopter will be used to lift and set the pole sections into place on the anchor bolts embedded in the concrete foundation. The nuts on the foundation will then be tightened and secured.

For pole erection, helicopters may be used to transport, lift, and set the poles. The length of time that this activity will take will depend on whether the poles come preassembled or in sections, but in general the helicopter will spend only a few minutes at each pole location while the ground crew secures the pole onto the foundation. The aircraft may need to make multiple trips for each pole location, but each trip would be short in duration. For the Proposed Project, helicopters may be used during the erection of Pole Nos. 10-14 (refer to Figure 3-7, Sheets 3 through 5).

3.5.1.4 Step 4 – Pole Removal

As previously described, construction of the Proposed Project segments will involve the removal of existing transmission poles (both wood and steel). Refer to Appendix 3-A for the location of all poles to be removed. The old poles and components will be dismantled by cranes, helicopter, or by hand, and will be hauled away by truck. After the poles have been removed, any existing concrete foundations will be jack hammered to below grade, and debris will be removed. The hole will then be backfilled with soil or materials similar to the surrounding area and the site will be restored. All structural removal will be completed from existing work pads (typically 35 feet by 75 feet) located at each existing pole site. No new impact areas will be required. These areas are kept clear of vegetation for operation and maintenance activities.

3.5.1.5 Step 5 – Guard Pole Installation

Prior to installing the new overhead conductor, SDG&E will install temporary wood, H-frame guard poles at road crossings and other locations where the new conductor could come in contact with existing electrical and communication facilities, or vehicular and/or pedestrian traffic in the event the line accidentally falls during stringing operations. An auger will be used to excavate the holes where the guard poles will be installed and a crane will lift the poles into place. No concrete foundations are required to set the guard poles and no grading or other site work is anticipated. The temporary guard poles will be removed following the completion of conductor

stringing operations and the holes will be backfilled with excavated soil. As an alternative, SDG&E may use flaggers to temporarily hold traffic for brief periods of time while the overhead line is installed at road crossings. Typically, guard structures are utilized at larger crossings such as large roadways, sensitive waterways, and utility crossings. Traffic control is typically utilized for small roadway crossings. For extremely large crossings such as freeways, both guard structures and traffic control may be used.

3.5.1.6 Step 6 – Conductor Stringing

Conductor stringing operations begin with the installation of travelers or "rollers" on the bottom of each of the insulators using helicopters or aerial manlifts (bucket-trucks). The rollers allow the conductor to be pulled through each structure until the entire line is ready to be pulled up to the final tension position. Following installation of the rollers, a sock line (a small cable used to pull the conductor) is pulled onto the rollers from structure to structure using helicopters or aerial manlifts traveling along the ROW. Once the sock line is in place, it is attached to the conductor and used to pull or "string" the conductor into place on the rollers using conventional tractor-trailer pulling equipment located at pull and tension sites along the line. The conductor is pulled through each structure under a controlled tension to keep it elevated and away from obstacles, thereby preventing third-party damage to the line and protecting the public.

After the conductor is pulled into place, the sags between the poles are adjusted to a pre-calculated level. The line will be installed with a minimum ground clearance of 30 feet (25 feet where there is pedestrian access only). The conductor is then clipped into the end of each insulator, the rollers are removed, and vibration dampers and other accessories are installed.

During the conductor stringing, the shield wire with fiber optics is also strung on top of the transmission line poles in a similar fashion to the conductor stringing.

A helicopter may be used during stringing operations to install the sock line that will be used to pull in the conductor. For stringing operations, it will generally take about half a day to pull in three phases of conductor for approximately 12,000 feet of transmission line. The helicopter would then not be needed again for two to three weeks until the next section of line is ready to be pulled. Helicopter activities will be staged out of existing airports where possible, and helicopter landing/staging areas along the existing ROW will be located away from residences and other land uses (generally at least one mile from sensitive noise receptors). A staging yard will be located at Prima Deshecha Landfill and would likely be used for helicopter operations.

3.5.1.7 Step 7 - Site Cleanup

SDG&E will restore all areas that are temporarily disturbed by the Proposed Project activities (including pull sites, reel sites, structure removal sites, and staging areas) to near preconstruction conditions following the completion of construction. Restoration will include grading and restoration of sites to original contours and reseeding, as appropriate. In addition, all construction materials and debris will be removed from the Proposed Project area and recycled or properly disposed of off-site. SDG&E will conduct a final survey to ensure that cleanup activities are successfully completed as required.

3.5.2 Underground Transmission Lines

The following steps provide the general methods used to construct an underground transmission line.

3.5.2.1 Step 1 – Trenching and Duct Bank Installation

Trenching

Prior to trenching, SDG&E will notify other utility companies (via Underground Service Alert) to locate and mark existing underground utilities along the proposed underground alignment. SDG&E will also conduct exploratory excavations (i.e., potholing) to verify the locations of existing facilities in the field. SDG&E will coordinate with local jurisdictions to secure encroachment permits for trenching in city streets, as required. Where partial or complete road closures are required, proper traffic controls will be implemented as outlined within individual encroachment permits obtained from the local municipality. Specific road closures anticipated during construction of the Proposed Project are discussed in Section 3.5.5, Road Crossings.

The majority of the duct bank will be installed using open-cut trenching techniques. Most of the duct bank will have a double-circuit vertical duct bank configuration, with occasional transitions to a flat configuration to clear substructures in highly congested areas or to fan out to termination structures at the transition area. The typical trench dimensions for installation of a double circuit vertical duct bank will be a minimum of six feet deep and three feet wide, although depth may vary depending on soil stability and the presence of existing substructures. The trench will be widened and shored where necessary to meet California Occupational Safety and Health Administration safety requirements. If trench water is encountered, trenches will be dewatered using a portable pump and disposed of in accordance with acquired permits. General dewatering procedures were previously described for overhead transmission construction in Step 2 – Installing the Support Structure Foundations (Section 3.5.1.2) and similar procedures would be implemented during underground transmission line construction.

Trenching operations will be staged in intervals so that only a maximum of 300 to 500 feet of trench will be left open on each street at any one time or as allowed by permit requirements. This will generate approximately 400 cubic yards per day of excavated material. Steel plating will be placed over the open trenches to maintain vehicular and pedestrian traffic across areas that are not under active construction. Traffic controls will also be implemented to direct local traffic safely around work areas, as stipulated within individual encroachment permit conditions. SDG&E will coordinate provisions for emergency vehicle and local access with local jurisdictions as necessary.

Throughout trench excavation and installation of the duct bank and vaults; asphalt, concrete, and excavated materials will be hauled to a materials storage yard. Excavated materials will be tested and may be used as backfill if the material is suitable as a thermal backfill. All unused, non-hazardous materials would be transported to Prima Deshecha Landfill.

Should hazardous materials be found, SDG&E would transport this material to an approved disposal facility.[1] The number of truck trips to haul excavated materials to storage yards will vary based on the rate of the trenching, the area excavated to install the vaults, and proximity of the storage yards to the ROW. However, approximately one to two truck trips per day will be required during trenching activities at one site. Truck trips for materials hauling will increase for the Proposed Project as a whole when trenching activities occur at multiple locations. Jackhammers will be used sparingly to break up sections of concrete that the saw-cutting and pavement-breaking machines cannot reach. Other miscellaneous equipment will include a concrete saw, back hoe, excavator, roller compactor, water truck, various paving equipment, and standard 1-ton pickup trucks.

Duct Bank Installation

As the trench for the underground 230kV and 138kV duct banks are completed, SDG&E will install the cable conduits (separated by spacers) and pour concrete around the conduits to form the duct banks. The duct banks will typically consist of 8-inch diameter polyvinyl chloride (PVC) conduits, which house the electrical cables. The dimensions of the duct banks will be approximately 3 feet wide by 6 feet in height. Additional ducts for communication cables used for system protection and communication purposes will also be installed in the same trench as the conductor cables.

Once the PVC conduits are installed, engineered backfill will be utilized to fill most of the remainder of the trench. Finally, a road base backfill or slurry concrete cap will be installed and the disturbed road surface will be restored in compliance with local requirements. While the completed trench sections are being restored, additional trench will be opened further down the street. This process will continue until the entire transmission line is in place. Each duct bank will have a minimum of 36 inches of cover. Larger trenches will be excavated where vaults are installed (refer to Section 3.5.2.2 Step 2 - Vault Installation).

Where the duct banks cross or run parallel to other substructures that have operating temperatures at earth temperature, a minimum radial clearance of 18 inches will be required. These substructures include gas lines, telephone lines, water mains, storm drains, and sewer lines. Where the duct banks cross or run parallel to other substructures that have operating temperatures that significantly exceed earth temperature, an increased radial clearance may be required. Such heat-radiating facilities may include other underground transmission circuits, primary distribution cables (especially multiple-circuit duct banks), steam lines, or heated oil lines. In addition, increased radial clearance may be required where the new duct banks cross other heat-radiating substructures at right angles.

3.5.2.2 Step 2 – Vault Installation

SDG&E will excavate and place precast concrete splice vaults during the trenching operation. The vaults will be used initially to pull the cables through the conduits and later to splice cables together. During operation, the vaults will provide access to the underground cables for

[1] SDG&E has identified two potential hazardous waste disposal facilities. The first is the Waste Management Kettleman Hills Facility, located approximately 230 miles north of the Proposed Project in Kettleman City, California. The second facility is Clean Harbor Environmental Services in Buttonwillow, California, which is located approximately 180 miles north of the Proposed Project.

maintenance inspections and repairs. The vaults will be constructed of prefabricated or cast-in-place, steel-reinforced concrete. Each vault will have two manhole covers measuring approximately 36 inches in diameter. Installation of each vault will occur over a one-week period with excavation and shoring of the vault pit followed by delivery and installation of the vault, filling and compacting the backfill, and repaving the excavated area. The backfill may be concrete (not requiring soil backfill).

3.5.2.3 Step 3—Cable Pulling, Splicing, and Termination

After installation of the conduit, SDG&E will install cables in the duct banks. Each cable segment will be pulled into the duct bank, spliced at each of the vaults along the route, and terminated at the transition area where the line converts to overhead conductor. To pull the cable through the ducts, a cable reel is placed at one end of the section and a pulling rig is placed at the other end.

The electric cables and the communication cable will be pulled through the individual ducts at the rate of approximately two segments between vaults per day. A splice trailer will be positioned adjacent to the vault manhole openings to facilitate cable splicing at the vaults after the cables are pulled through the ducts. The vaults must be kept dry at all times to keep the unfinished splices dry and prevent other impurities from affecting the cables. At each end of the underground segment, the cables will rise out of the ground and terminate on equipment within the transition station or substation.

3.5.2.4 Step 5—Jack-and-Bore

The jack-and-bore underground construction method is proposed to install new 138kV transmission line under existing railway line west of the existing Capistrano Substation site. The jack-and-bore method pushes a steel casing through the soil, removing excess soil with a rotating auger. The general method for installing underground transmission lines utilizing the jack-and-bore method is as follows (refer to Appendix 3-B for example diagrams and pictures of jack-and-bore construction):

1. Two pits are excavated at each end of the bore (one bore pit and one receiving pit).
2. The bore equipment is placed within the bore pit (which for the Proposed Project will be approximately 40 feet long and 12 feet wide – per bore pit).
3. The bore equipment is used to insert (or push) the steel casing through the soil.
4. Water may be used (depending upon site-specific soil conditions) to lubricate the casing as it is pushed through the soil.
5. The pieces of casing are welded together in segments, within the bore pit.
6. Once the casing has been inserted to the receiving pit (which for the Proposed Project will be approximately 20 feet long by 12 feet wide), the duct banks are inserted through the casing utilizing plastic spacers to secure the duct banks in place.
7. The depth of the casing will be determined by local and railroad requirements.
8. Once the duct banks are inserted and connected to each end of the standard underground transmission line duct banks, the bore pit and receiving pits are filled in.

3.5.2.5 Step 4—Site Cleanup

As part of the final construction activities, SDG&E will:

- Restore all removed curbs, gutters, and sidewalks;
- Repave all removed or damaged paved surfaces;
- Restore landscaping or vegetation as necessary; and
- Remove all construction materials from the construction site.

3.5.3 Substation Site Development

3.5.3.1 Capistrano Substation

The construction of the Proposed Project at the San Juan Capistrano Substation site will occur within the existing property boundary and no adjacent properties or uses will be required to be relocated. At the San Juan Capistrano Substation property, the site development will commence and follow the recommendations contained within the Phase II Environmental Site Assessment completed for the lower yard area in 2009. Any contaminated soils encountered during construction will be excavated and disposed at an appropriately licensed facility, pursuant to all applicable hazardous waste regulations. All building materials (e.g., concrete, steel, and wood) will be recycled or scrapped, also in accordance with all applicable regulations.

Site development will be performed in two phases and will involve regrading most of the existing property resulting in four separate and distinct pads in a terraced configuration from west to east. At the west end will be the lowest pad of approximately 1.1 acre where the 12kV facility and the 138kV transformers will be located. The next pad to the east will be 12 to 14 feet higher and will be approximately 1.4 acres where the 138kV gas insulated substation building and the 230/138kV transformers will be located. The third pad will be nine to 10 feet higher than the second and will be approximately 0.9 acre with the 230kV gas insulated substation building located here. The fourth and uppermost pad will be about seven feet higher and approximately 0.8 acre with the 230kV capacitor banks located here. The far east end of this upper pad will have an eight to 10 feet high embankment at a 2:1 slope to meet the existing sidewalk elevation along Calle Santa Rosalia.

The following steps will occur during Phase One site development:

- Remediate existing structure in lower yard of asbestos and lead paint, as needed. An asbestos investigation was completed in 2008 for the existing abandoned structure and proper asbestos abatement will be required prior to demolition of this structure.
- Demolish the existing abandoned concrete structure and its foundation (approximately 5200 square feet).
- Remove existing miscellaneous items such as remnant foundations, fencing, concrete steps, water lines, sewer lines, septic tanks, paving, and plugging an abandoned well.
- Re-route existing 12kV circuits crossing the lower yard property.
- Develop the lower yard area into two terraced pads to accommodate the new 138/12kV substation on the west half of the property. This lower yard area is underlain by shallow,

undocumented fill soils and loose alluvial sands. To provide uniform support of the new pads and poles the upper three to five feet of these soils will be over excavated and re-compacted prior to placing new fill and grading of the pads. The Phase One grading will result in approximately 38,000 cubic yards of cut and 43,500 cubic yards of fill thus requiring the import of approximately 5,500 cubic yards of fill material.

- Construct a security fence encompassing both the upper and lower yards while the screen walls are being constructed.
- Regrade along the north property line and installation of the relocated north access road off of Camino Capistrano as one of the first activities. The completion of north access road is required to provide 24 hours a day, seven days a week access to the existing substation on the upper yard while the remainder of the lower yard area is being constructed.
- Reconstruct the existing 20 foot wide south access drive into a 30 foot wide access drive.
- Construct an approximately 10 foot high masonry or concrete retaining wall to separate the two lower pads.
- Begin construction on the new masonry screen walls along the north, south, and west borders of the lower yard portion of the property.
- Construct the bioretention facilities.
- Landscape along Camino Capistrano and along the north property line.
- Upon completion of the Phase One site grading, place a 12-inch layer of Class II aggregate throughout the lower yard and pave the access roads.

Once the existing 138kV transmission lines and 12kV circuits are connected to the new substation, the existing 138/12kV substation (in the upper yard) will be de-energized. A Phase II Environmental Site Investigation of the upper yard will be conducted to determine the presence or absence of soil contamination from transformer oil. Any contaminated soil encountered within the upper yard will be excavated and disposed of offsite at an appropriately licensed facility, pursuant to applicable hazardous waste regulations. If soil from the upper yard is disposed of offsite due to contamination, clean imported soil or excess soil from the lower yard will be utilized to replace the contaminated soil. Upon completion of the Phase II Environmental Site Investigation, Phase Two site development will commence.

Phase Two site development (to start after the existing 138/12kV substation is de-energized) will consist of the following:

- Remove all existing structures and foundations in the upper yard.
- Extend the 138kV pad area to the east to accommodate the 230/138kV transformers. Construct an eight feet high masonry or concrete retaining wall across the eastern end of this pad to allow development of the third terraced pad for the 230kV gas insulated substation building. The fourth pad, for the 230kV capacitor banks, will then be graded and the existing embankment at the far east end of the property rebuilt at a 2:1 slope. The Phase Two grading will result in approximately 22,200 cubic yards of cut and 14,400 cubic yards of fill thus requiring the export of approximately 7,800 cubic yards of cut material.

- Complete construction of the north and south screen wall.
- Remove and replace the existing east fence.
- Complete the remainder of the exterior landscaping.
- Upon completion of the Phase 2 site grading, place a 12-inch layer of Class II aggregate throughout this upper yard and pave the remainder of the access roads.

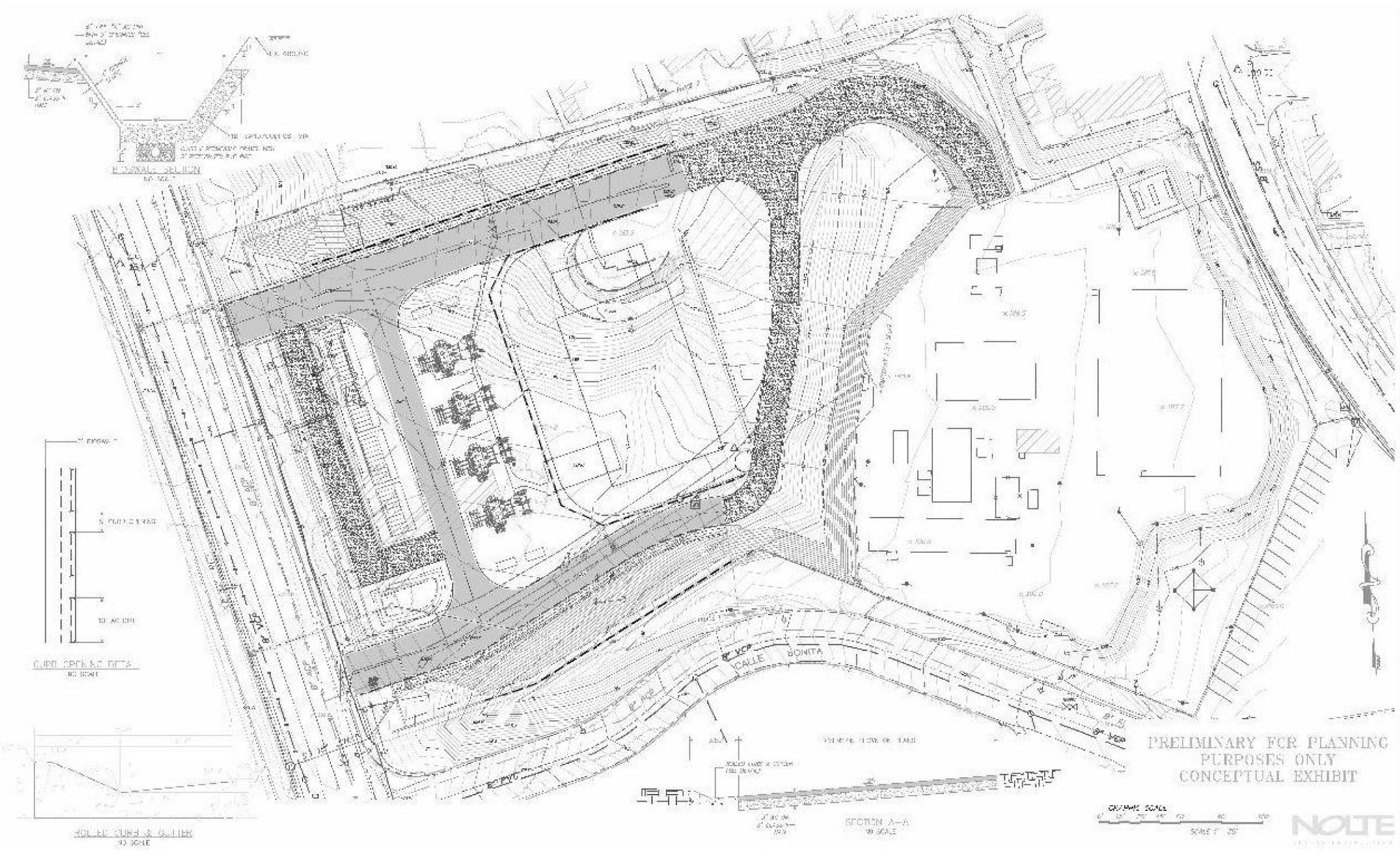
Site storm water drainage will be collected through a series of inlets, culverts, and bioswales and conveyed to the bioretention facilities at the southwest corner of the site. The bioretention facilities will have a controlled discharge to the existing 57-inch storm sewer running underneath Camino Capistrano. There will be no additional sheet flow runoff from the site to the curb and gutters on Camino Capistrano.

All substation site development would be performed on previously disturbed areas within the proposed site. Figure 3-8, San Juan Capistrano Preliminary Grading Plan, depicts the proposed grading.

The ultimate substation design includes a replacement of the existing security fencing along the east side and a new screen wall along the north, west and south sides to enclose both the upper and lower yards as mentioned above. The new screen wall will be 10 feet high and would partially screen the substation equipment from view (refer to Figure 3-6). The new screen walls and access gates will be designed to be consistent with SDG&E's operational and safety guidelines. In addition, a six- to eight foot tall chain link fence would be erected along the north property line to provide separation for the private residences adjacent to the substation property. Figure 3-9, San Juan Capistrano Substation Preliminary Landscape Screening Diagram illustrates a preliminary wall design and vegetative landscaping to soften the visual appearance of the screening wall. SDG&E will work with the local community and a city of San Juan Capistrano ad hoc aesthetics committee as designated by the city of San Juan Capistrano.

Following Phase One site development and grading, construction of the 138/12kV substation will commence with the following steps (refer to Figure 3-6):

- Below grade foundation work will be constructed for all the 138kV equipment including the control shelter, the gas insulated substation building and equipment, 138kV cable poles, and the transformer 138kV termination stands.
- Below grade foundation work will be constructed for the 12kV equipment including the 138/12kV transformers (including oil containment and fire walls), switchgear pads, and capacitor pads.
- Control, telecommunication, and, security ducts will be installed.
- Power ducts (12kV and 138kV) will be constructed and stubbed outside the substation.
- Ground grid will be installed.



G:\SOCRUPWXD\Project Description 2012\Fig 3-8 Capistrano Concept Grading.mxd 02-24-2012 ks

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Source: Nolte, December 2011

South Orange County Reliability Enhancement Project

San Juan Capistrano Substation Preliminary Grading Plan

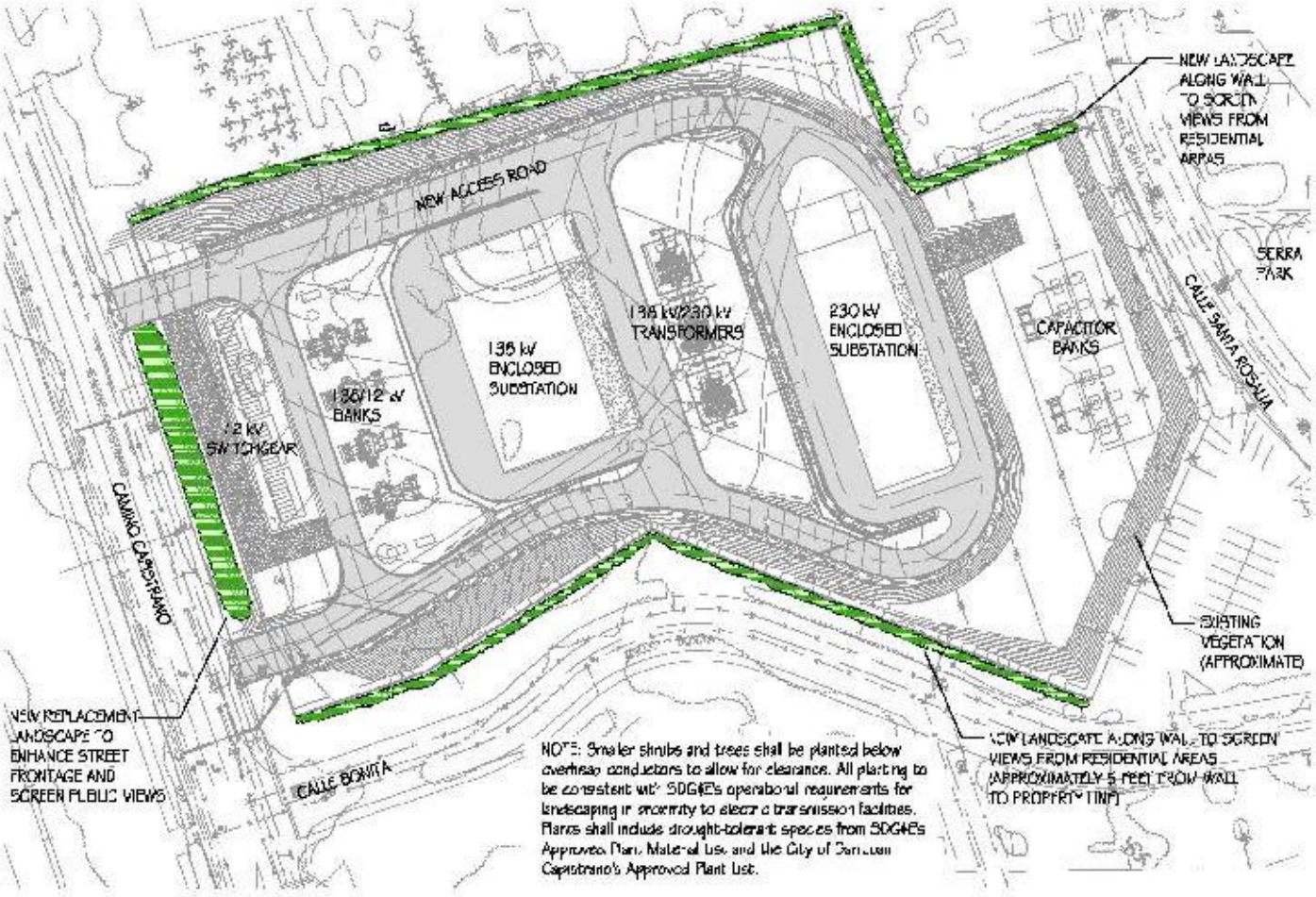
Figure 3-8

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-8



Path: G:\SOCRUP\MXD\Project Description 2012\Figure 3_9.mxd

South Orange County Reliability Enhancement Project

San Juan Capistrano Substation
Preliminary Landscape Screening Diagram

Figure 3-9

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Source: SDG&E

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 3-9

138kV above grade work will start construction as foundation work is completed. The gas insulated substation building and masonry block control shelter will be constructed. The wiring of the equipment controls and protection devices is performed concurrently with construction:

- The 138kV equipment will be installed in the new gas insulated substation building consisting with double 138kV busses and eight bays of breaker and a half configuration. Each bay will consist of three breakers, six disconnects, potential transformers, protection equipment, and associated wiring and bus work.
- The control/protection panels, equipment, and batteries will be installed and wired in the control shelter.
- Three 138kV transformer termination stands will be constructed.
- 138kV cable poles will be installed.
- 138kV cable will be installed.
- Station light, power transformers and their associated 12kV and secondary cable will be installed.
- Telecommunications, AT&T, and security cable will be installed.

12kV equipment will be installed as foundation work is completed. The wiring of the equipment controls and protection devices is performed concurrently with construction:

- Two fire walls will be constructed between the 138/12kV transformers.
- Three 138/12kV transformers will be placed on their foundations and assembled.
- Three ¼ sections of switchgear will be installed on their foundations and assembled.
- Three capacitors will be installed on their foundations and assembled.
- Control cable will be installed.
- 12kV cable will be installed.

Equipment testing will be performed following installation of equipment, relay panels, controls, batteries, telecommunication, and station light and power system.

Primary access to the 138/12kV yard will be from Camino Capistrano using the rebuilt south driveway (refer to Figure 3-5). All construction equipment, vehicles, and personnel would be accommodated within the property lines of the SDG&E Capistrano Substation property. Material staging may occur at the existing Capistrano Substation and four existing storage yards located at Miguel Substation, Talega Substation, Peñasquitos Substation, and Kearny Yard.

Upon construction completion, reconfiguration of the 138kV transmission lines and 12kV circuits to the new 138/12kV substation would be done in a manner that maintains minimal interruptions of electric service to customers. The transfer of the 138kV transmission lines and 12kV load from the existing substation to the new substation will commence upon the completion of the final equipment testing and distribution and transmission circuit work.

Depending on loading requirements, some or all of these cutovers may occur after normal business hours or on the weekends and/or nights. Night and weekend work will also be required to accommodate delivery of large equipment and transformer vacuum filing of each transformer. A temporary 138kV TL (Talega to Capistrano) will be installed using an existing position in the new gas insulated substation and existing poles of the previous 138kV TL13835, which connected the Talega and Laguna Niguel Substations.

Following Phase Two site development and grading, actual construction of the 230kV substation will commence with the following steps (refer to Figure 3-6):

- Below grade foundation work will be constructed for all the 230kV equipment including the control shelter, the gas insulated substation building and equipment, and the transformer deadend poles, transformer pads (oil containment and fire walls), capacitor foundations, steel pole foundations.
- Control, telecommunication, and security ducts will be installed.
- Station light and power ducts (12kV) will be constructed.
- Ground grid will be installed.

230kV above grade work will start construction as foundation work is completed. The gas insulated substation building and masonry block control shelter will be constructed. The wiring of the equipment controls and protection devices is performed concurrently with construction:

- The 230kV equipment will be installed in the gas insulated substation building consisting of double 230kV busses and three bays of breaker and a half configuration. Each bay will consist of three breakers, six disconnects, potential transformers, protection equipment, and associated wiring and bus work.
- The control/protection panels, equipment, and batteries will be installed and wired in the control shelter.
- Two 230kV transformer deadend poles will be constructed.
- One fire wall will be constructed between the transformers.
- Two 230kV capacitors will be installed.
- 12kV station light and power cable will be installed from the 138kV yard.
- Three 230kV poles will be installed.

Equipment testing will be performed following installation of equipment, relay panels, controls, batteries, telecommunication, and station light and power system.

During construction of the new 230kV yard, construction access would be from the relocated north access road located along the northern boundary of the Capistrano Substation property. A temporary chain link security fence will be constructed along the south side of the access road to keep construction vehicles and personnel out of the active 138/12kV yard. Construction equipment, vehicles, and personnel, would be accommodated within the property lines of the SDG&E property. Additional equipment storage areas may include existing SDG&E storage

yards at Miguel Substation, Clairemont Substation, Peñasquitos Substation, and the Margarita and Kearny Yards and a temporary construction staging yard at an undeveloped portion of a Church-owned property located near Segments 3 and 4 and the Talega Substation (refer to Figure 3-7, Sheet 20).

Once the 230kV substation has been constructed and tested, the new 230kV transmission lines will be connected into the new substation, energizing the 230kV equipment. The 230/138kV transformers will be energized after the 230kV busses are energized. This cutover will be done at a time that will limit exposure and ensure reliability to our customers. This may mean the actual cutover will occur at night or other than normal working hours. The construction of the 230kV gas insulated substation facility is expected to take approximately 15 months. Night and weekend work will also be required to accommodate delivery of large equipment and transformer vacuum filing of each transformer. The temporary 138kV TL13835 will be de-energized prior to energizing the new 230kV transmission lines.

3.5.3.2 Talega Substation

The addition of one new 138kV transmission line will not require any site development work at the Talega Substation. The proposed transmission work will require rearrangements and trenching inside the existing substation but will not require additional grading. All substation construction activities, including foundation work, will be contained within the existing Talega Substation property and no adjacent properties or uses will be required to be relocated.

3.5.4 Temporary Work Areas

A total of approximately 21 acres will be temporarily disturbed for Proposed Project construction (refer to Figure 3-7). Figure 3-7 depicts all of the temporary and permanent work areas required to construct the Proposed Project. This disturbance will include conductor pull and tension sites, splice sites, temporary access roads, structure sites, guard structure sites, and materials storage and staging areas. A working zone around all transmission poles will be kept clear of shrubs and other obstructions for inspection and maintenance (permanent work zone). Table 3-12, Summary of Proposed Project Disturbance Areas, provides a summary of all ground disturbance activities resulting from Proposed Project activities. Temporary work areas will be graded, grubbed, and cleared of vegetation as needed. Mowers and D-9 bulldozers would be used to clear the areas required for structure/structure installation and removal as well as at pull/tension sites and staging areas as needed. Depending on the local topography, these areas may also be graded flat or in a terraced fashion. Soil may be imported, as necessary, to raise the elevation of the work areas. Material removed during the process or the subsequent excavation would be spread over existing access roads and work pads as appropriate, or disposed of offsite in accordance with all applicable laws. All temporary work sites and areas will be restored, reseeded or allowed to re-vegetate, as appropriate, to preconstruction conditions following the completion of the Proposed Project.

Table 3-12: Summary of Proposed Project Disturbance Areas

Proposed Project Component	Temporary Impacts		Permanent Impacts		Total Impact Area
	Land Use	Area (acres)	Land Use	Area (acres)	
Transmission lines	Structure Work Areas (84)[1] and underground installation work areas	9.66	Structure Sites (84)	6.93	16.59
	Stringing Sites[2] (19)	2.02			2.02
	Splice Sites	Splicing will be conducted from other temporary work areas.			
	Guard Structure Sites (10)	0.02			0.02
	Access Roads	Proposed Project will utilized existing access roads. Any impacts from new spur roads are included within permanent.			
	Staging Areas[3] (6)	11.02			11.02
Capistrano Substation	Staging Areas[4]		Substation Rebuild	6.38	6.38
Talega Substation	Staging Areas[4]		Substation Alterations	7.1	7.1
Totals		**22.72**		**20.41**	**43.13**

Notes: Table contents based upon preliminary engineering.
[1]Most of the work area for structure installation will be maintained for operation and maintenance needs, and therefore is only counted as a permanent impact. In addition, temporary and permanent work areas for poles installed within the boundaries of the Capistrano and Talega Substations are counted under the substation disturbance area.
[2]Some stringing will be conducted from within structure work areas. This area represents only stringing areas that are not part of another temporary or permanents disturbance areas.
[3]Materials storage and staging at existing SDG&E facilities are not included within the disturbance area. Only new or temporary staging areas are included. These areas correspond to those included on Figure 3-7.
[4]Materials staging and storage for substation construction will occur from existing SDG&E facilities and from the Capistrano and Talega Substation properties.
Source: SDG&E

3.5.4.1 Materials Storage and Staging Areas

Construction of the Proposed Project will utilize approximately 14 staging and disposal areas (six within or immediately adjacent to the ROW, seven at existing SDG&E owned or leased facilities, and one at a church-owned property approximately 0.7 mile from the ROW) to store materials and construction equipment and dispose of soil and other materials during the construction process. To the extent feasible, SDG&E will store or dispose of soil and materials and stage equipment at existing commercial facilities near the Proposed Project area. However, if the distance between existing facilities and the ROW is too great, temporary staging and

disposal areas will be required closer to the Proposed Project ROW. Refer to Figure 3-7, Sheets 1 through 20 for potential staging area locations along the Proposed Project alignment. SDG&E will make attempts to locate previously disturbed areas along the route to temporarily store materials and stage equipment. If the staging areas are located outside of SDG&E's existing ROW or franchise ROW, SDG&E will acquire new rights of entry as required. The staging areas will generally be two acres in size and will only be used temporarily during construction. Land disturbed at the staging areas, if any, will be restored to preconstruction conditions following the completion of Proposed Project activities. Restoration will include, as appropriate, re-contouring and reseeding/re-vegetation.

Each staging area will be enclosed by an approximately six foot high chain link security fence and locking gate. No new permanent power sources will be installed at the staging areas and no additional improvements are anticipated to be required.

Substation construction staging yards are anticipated to be located at existing sites, including the Kearny Yard, Miguel Substation, Clairemont Substation, Peñasquitos Substation, Margarita Yard, Talega Substation, and Capistrano Substations.

3.5.4.2 Pull/Tension Sites and Reel Sites

Installation of the overhead transmission line will require approximately 19 distinct pull and reel sites (not including where existing substation properties or structure sites will be utilized for stringing) to aid in stringing the conductor. These stringing sites are depicted on Figure 3-7. The pull/tension sites are typically required every one to four miles and will be approximately 35 feet by 50 feet in size, but will often vary in size depending upon the amount of space available. However, the number and location of the pull sites may vary slightly based on the alignment of the segment, topography, and span lengths between poles. Reel sites are generally located opposite pull/tension sites and will also be approximately 35 feet by 50 feet in size.

Pull/tension and reel sites are needed to set up the tractors and conductor reel trailers, as well as the trucks with the tensioning equipment. To the extent practical, pull/tension and reel sites will be located within SDG&E's ROW and at historical pull and tension sites (refer to Figure 3-7, Sheets 1-20). However, further engineering study as part of the final design may determine that some sites are required outside the ROW and at non-historical locations. Depending on the topography, some minor grading may be required at pull and tension sites to create level work areas for equipment. These work areas will only be used temporarily to facilitate conductor stringing operations, and the land will be restored following the completion of construction as described preceding section.

The pull and tension equipment that will be used during conductor stringing operations will typically remain in place for up to five days per pull per segment. For any underground work along city streets, materials will be removed from the work area on a daily basis to minimize traffic impacts. However, some larger equipment may be left overnight during active construction.

3.5.4.3 Pole Sites

Installation of the new 230kV steel poles throughout the Proposed Project as described in Section 3.4.3 above will require approximately 150 foot by 150 foot areas of disturbance (this area may be smaller or larger at various locations). All new 138kV and 69kV steel poles typically require an approximately 150 foot diameter work space (75 feet from the pole in each direction). However, because most of the new poles will be located in the immediate vicinity of existing poles, the existing work areas will be utilized (and in some cases expanded) for the construction and maintenance of the new poles. Figure 3-7 depicts the anticipated work areas for transmission line construction. These work spaces provide a safe working area for equipment, vehicles, and materials during pole installation and maintenance. A minimum of 15 feet of clearance (approximately 700 square feet) will be maintained around each new transmission pole for the purposes of maintenance and inspection activities. In addition (and in many cases overlapping), each new pole will require one to two maintenance pads, which are typically 35 by 70 feet in size. These areas are considered a permanent work space and will be kept relatively flat and un-vegetated. It is important to note that the 15 feet of clearance around each pole and the required maintenance pads will often overlap. Any work space not required for safety operation and maintenance will be restored to pre-construction conditions following the completion of the Proposed Project. In addition, because most of the construction of the new poles will occur within existing maintenance pads, much of the required space for construction will be kept for pole maintenance. Figure 3-7 depicts all anticipated temporary (construction) and permanent (operations and maintenance) work areas. All pole removal will be completed from existing operation and maintenance pads and access roads.

3.5.4.4 Splice Sites

Temporary construction areas will be utilized for splicing activities (at underground vault locations). To the extent practical, the splice sites will be located within SDG&E's existing ROW. Splice sites are temporary work areas and, as such, any physically disturbed splice sites will be restored following the completion of the Proposed Project. Refer to Figure 3-7 for the location of potential splice sites.

3.5.4.5 Guard Structures

Temporary wood H-frame guard structures will be utilized for the overhead portion of the Proposed Project at all major road crossings, sensitive waterway crossings, and at overhead utility crossings to protect the new conductor cable, existing utility lines, and to avoid traffic disruption during pulling. Guard structures are comprised of two H-frame structures on each side of the crossing (refer to typical H-frame guard structure photograph included within Appendix 3-B).

Approximately 100 square feet of space is required (10 feet by 10 feet) to install each guard structure and most of this area is typically located along the curb-line of the street immediately adjacent to the guard structure location. Each structure has a diameter of two feet and the guard structures are as wide as the newly strung conductor package. There are approximately 10 major road, utility, and sensitive waterway crossings within the Proposed Project area that will likely require guard structures. Any physically altered guard structure sites will be restored following the completion of the Proposed Project.

3.5.4.6 Temporary Right-of-Way

Construction is anticipated to occur within existing and newly acquired ROW and minimal temporary construction easements are anticipated to be required.

3.5.4.7 Access Roads

Equipment and vehicles will primarily access the transmission line segments, temporary work areas, and substation sites by utilizing existing access roads and a small number of new spur roads to new structure locations and vault locations. Refer to Figure 3-7 for the location of existing access roads and new spur roads. New spur roads will traverse from existing access roads to new structure locations, as needed. The roads will be approximately 14 feet in width. Some construction associated with the Proposed Project may occur within urban areas where public roads will primarily be used to access certain areas of the Proposed Project alignment during construction. Please refer to Section 4.14, Transportation and Traffic, for a list of potential public roads to be utilized by construction vehicle access. In accordance with local requirements, any damage to existing roads as a result of construction will be repaired once construction is complete.

3.5.4.8 Underground Transmission Lines

Construction of new underground transmission line segments will require room for the safe operation of construction equipment and personnel. The majority of the underground transmission line construction included as part of the Proposed Project will utilize the cut and cover construction method, which typically requires 25 feet of space for construction, but can in some cases be limited to less space depending upon physical constraints. Therefore, a 1,000 foot segment of new underground transmission line would require a total of 25,000 square feet of construction area.

3.5.5 Road Crossings

The proposed transmission line route will cross approximately 15 roadways ranging from I-5 to undivided two-lane residential streets. Standard overhead roadway crossings are completed without special permit or other special procedure. Only the utilization of guard structures or traffic control differentiates standard road crossings from overhead transmission line work at other locations. Typically, guard structures are used for larger road crossings and traffic control is utilized for locations where overhead lines cross smaller roads. Where traffic control is utilized at crossings, encroachment permits are required from the applicable municipal agency. Guard structures are discussed in Section 3.5.4.5 above. However, special conditions exist for freeway crossings and underground transmission road crossings. These two cases are discussed below in specific relation to the Proposed Project.

3.5.5.1 Interstate 5 Overhead Crossing

The I-5 is located approximately 1,000 feet from the Capistrano Substation and will be crossed with 230kV overhead conductor replacing existing 138kV conductor. SDG&E will procure a specific permit from the California Department of Transportation (Caltrans) to string the new conductor across the I-5. All guard structure usage, traffic stops, and timing restrictions shall be conducted according to the specific Caltrans permit conditions.

3.5.5.2 Underground Construction within Existing Roadways

The proposed transmission line route will involve the installation of underground transmission lines within one roadway, located within Segment 2 of the Proposed Project. New line segments for TL23030 and TL23007 will be installed within Vista Montana (a public street). During construction, partial closure of Vista Montana roadway will occur. An encroachment permit or equivalent approval from the city of San Juan Capistrano will be required. Also new ROW will need to be obtained from the Rancho San Juan developer (Woodbridge Homes). All traffic control measures implemented for work at these locations will be consistent with the conditions outlined within the encroachment permit from the city. Potential traffic and transportation impacts associated with the closure of these two roadways are discussed in Section 4.14, Transportation and Traffic.

3.5.6 Helicopter Usage During Transmission Line Construction

Helicopters may be utilized as a construction tool during stringing of overhead conductor cable and other transmission line construction activities (such as the setting of new poles) associated with the Proposed Project. Stringing operations will take a total of approximately one year and helicopter use may occur intermittently, at certain locations. Typically, helicopters are utilized to string the sock line that is attached to the conductor to allow the conductor to be strung from pole to pole. In general, the helicopter is used for approximately half of a day to pull in three phases of conductor for approximately 12,000 feet of transmission line. The helicopter would then not be needed again for two to three weeks until the next section of line is ready to be pulled. Depending upon specific site conditions, helicopters may also be utilized to install rollers or even to remove and/or position new transmission structure themselves. Where helicopters are utilized to set new poles (where access is limited for cranes and flatbed trucks), the helicopter is only utilized for a few hours at a time.

Helicopters may also be utilized to remove and install transmission line structures. Each structure site will be evaluated individually during final transmission line construction planning. The transmission line contractor has the authority to utilize helicopter for structure removal and/or installation where it is deemed preferable.

Helicopters will only be utilized during daylight hours, and flight paths will be limited to the existing transmission line ROW except for ingress and egress from the helicopter landing/staging yards. Helicopter utilized for transmission line construction will have a maximum payload of 6,000 pounds.

The final decision on whether or not helicopters are utilized, what type of helicopter is utilized, and to what extent helicopters are used will be made by the transmission line construction contractor. If helicopters are utilized during the construction of the Proposed Project, the fly yard (temporary base where the helicopter flies to and from while carrying out construction activities) will be located at existing airports and landing areas wherever feasible. Helicopters may also be staged and refueled at designated Proposed Project staging and laydown areas located within the transmission line ROW. Typically, a 100 foot by 100 foot fly yard is delineated at an existing laydown area and all helicopter refueling, loading, and unloading is carried out within this designated area. As long as helicopters are being utilized on the Proposed Project, the fly yards will be kept clear of all other activity. All helicopter utilization will be

compliant with all applicable usage permits including Federal Aviation Administration (FAA) and Caltrans.

It is currently anticipated that helicopters may be utilized during construction and stringing activities for new 230kV Pole Nos. 11 through 14 (refer to Figure 3-7, Sheets 4 and 5).

3.5.7 Retired Structures/Poles, Materials, and Components

It is SDG&E's policy to re-use or recycle all old structures/poles, materials, and components following the retirement of substations, transmission lines, and structures/poles. Whatever cannot be re-used or recycled is disposed of at an appropriate facility pursuant to all applicable laws. Table 3-13, Common Destination of Retired Project Components, outlines how some major retired project components are often disposed of following construction.

Table 3-13: Common Destination of Retired Project Components

Project Structure, Material, or Component	Common End Use or Destination
Steel transmission and substation structures/poles	Recycled (sold for scrap)
Wood transmission structures/poles	Donated for re-use or sanitary disposal
Conductor cable	Recycled
Insulators	Sanitary disposal
Scrap steel, copper and other metal	Recycled
Concrete	Recycled
Waste oils (substation)	Tested and disposed of pursuant to applicable laws
Soils	Tested and disposed of pursuant to applicable laws
Batteries	Recycled
Source: SDG&E	

3.5.8 Construction Equipment and Personnel

It is estimated that approximately 60 people per day will be required to construct the Proposed Project at its peak, with up to 20 people working at a substation at one time, and the rest working at various points along the transmission line. SDG&E will supplement its workforce as required during construction from a contractor's pool of experienced personnel. Construction work force is discussed in the subsections below in relation to each phase of construction.

3.5.8.1 Transmission Line Construction

Transmission line construction will be conducted utilizing stringing crews to string the conductor, foundation crews that work on the transmission structure construction and preparation for stringing, and grading crews who prepare the structure sites for construction. In addition, construction crews for the installation of underground transmission lines will also be utilized. Typically, the grading crews prepare each structure site and the foundation crews complete all of the required work on the transmission structures prior to any stringing activities. However, foundation crews and stringing crews could work simultaneously on different sections of the transmission line route to complete construction over a shorter period of time. In addition,

multiple foundation crews and/or grading crews could be working at different structure sites at the same time. Transmission crews are typically composed of four to five workers and three trucks plus any required stringing/pulling equipment. Foundation crews are also typically comprised of four to five people and one to two trucks plus any required foundation construction equipment (such as a concrete truck, drill rig, and backhoe). For the Proposed Project, up to nine crews (foundation and transmission) and approximately 40 to 45 workers could be utilized at one time during transmission line construction. Refer to Section 3.5.8.3, Construction Equipment, for a complete list of construction equipment, including all equipment utilized during transmission line construction and Appendix 3-D for a detailed construction vehicle use breakdown by Proposed Project Component.

3.5.8.2 Substation Construction

Substation construction will consist of grading and site development (San Juan Capistrano Substation only), below grade construction, above grade construction, and testing/energization. The grading and site development crew (which includes hazards abatement and demolition of existing structures) will consist of approximately nine workers for demolition and 11 workers for grading/site development (San Juan Capistrano Substation only). The below grade construction will be conducted by an average of approximately seven to eight workers, and the above grade construction will be conducted by an average of seven to 16 workers. Finally, relay testing, cutover, and energization will be conducted by an average of six to eleven workers. Construction of the San Juan Capistrano Substation will require more workers than the improvements to the Talega Substation thus corresponding to the higher end of the worker estimates listed above. Refer to Section 3.5.8.3 and Appendix 3-D for a complete list of construction equipment, including all equipment utilized during transmission line construction.

3.5.8.3 Construction Equipment

Table 3-14, Standard Construction Equipment and Usage lists the typical construction equipment and their respective uses with respect to the Proposed Project. A detailed list of construction equipment that will be utilized for construction of the Proposed Project has been included as Appendix 3-D.

Table 3-14: Standard Construction Equipment and Usage

Equipment Type	Equipment Use
2-ton flatbed trucks	Haul materials (including new poles)
25-ton crane	Set guard structures
Aerial bucket trucks	Access poles, string conductor, modify structure arms, and other various uses
Aerial man-lifts	Access poles, string conductor, modify structure arms, tree trimming/removal and other various uses
Air compressors	Operate air tools
Backhoe	Excavate trenches

Table 3-14 (cont.): Standard Construction Equipment and Usage

Equipment Type	Equipment Use
Bulldozer	Prepare structure sites, upgrade or establish new access roads
Cable reel trailers	Transport cable reels and feed cables into conduit
Chipper trailer	Trimming and removal of trees
Compactor	Access road work
Concrete truck	Pour concrete
Condor boom truck	Access structures over 100 feet high
Drill rig with augers	Install fences, excavate foundation holes, and bores
Drilling rig	Excavate for structure foundations
Dual bull-wheel tensioner	Pull conductor
Dump truck	Haul excavated materials/import backfill
Excavator	Earth excavation
Flatbed boom truck	Haul and unload materials
Forklift	Move materials on-site
Helicopter	Transport crews and materials, string conductor, and install and remove travelers, set structures
Hydraulic press	Press together the conductor ends at dead end structures
Bore rig (jack-and-bore)	Install transmission line for jack-and-bore method
Line truck	Install clearance structures
Mechanic truck	Service and repair equipment
Mobile cranes	Load and unload materials
Mobile office trailers	Supervision and clerical office
Motorized scaffolding	Position personnel
Pickup trucks	Transport construction personnel
Pile drivers	Install piles
Portable generators	Operate power tools
Pullers	Pull conductor
Reel winders	Install conductor
Rigging truck	Haul tools and equipment
Road grader	Road construction, maintenance, and upgrading

Table 3-14 (cont.): Standard Construction Equipment and Usage

Equipment Type	Equipment Use
Rollers	Repave streets over trench and manhole locations
Splice trailer	Store splicing supplies/air condition manholes
Take-up trailers (sock line)	Install conductor
Tensioner	Pull conductor
Tool van	Tool storage
Water truck	Dust control
Winch truck	Install and pull rope into position in conduits
Source: SDG&E	

3.6 CONSTRUCTION SCHEDULE

SDG&E estimates that construction of the Proposed Project will take a total of approximately 48 months to complete depending on outages. Construction is scheduled to begin in November 2013 and run through November 2017. The complete construction schedule, outlined by task, is summarized in Table 3-15, Proposed Construction Schedule, below. A detailed construction schedule, organized by project component, has been included within Appendix 3-D.

Table 3-15: Proposed Construction Schedule

Proposed Project Segment/Task	Months	Anticipated Start Date*
Construct 138 and 69kV from Talega Hub to Talega Substation (Segment 4)	8	November 2013
Below grade 138kV addition in Talega Substation	3	November 2013
Construct 138kV addition in Talega Substation	6	February 2014
Energize 138kV addition in Talega Substation	1	July 2014
Obtain San Juan Capistrano City grading permits	4	September 2013
138kV Capistrano Substation getaways (Segment 1)	5	November 2013
Reroute 2-12kV circuits to temporary position	1	November 2013
Remediate & Demo existing buildings in lower yard	2	October 2013
Lower yard site grading (Phase 1)	6	December 2013

Table 3-15 (Cont.): Proposed Construction Schedule

Proposed Project Segment/Task	Months	Anticipated Start Date*
Lower yard site development (walls, drainage, etc)	3	March 2014
Lower yard (138/12kV) below grade construction	8	June 2014
Lower yard 138/12kV substation construction	13	January 2015
Construct 12kV distribution circuits	10	June 2015
Lower yard 138/12kV testing and energizing	6	August 2015
Construct 138kV cable poles and cable into gas insulated substation	5	September 2015
Cutover existing 138/12kVsubstation to new 138/12kV substation	1	February 2016
Construction pad and access road grading for 230kV structure sites between San Juan Capistrano and Talega substations (Segments 1 – 4)	8	September 2015
Construct structure foundations for new 230kV poles (Segments 1 – 4)	7	October 2015
De-energize TL13835 & construct underground 230kV ducts along Vista Montana (Segment 2). Re-energize TL13835	4	March 2016
Construct new 230kV overhead transmission lines (set poles and pull conductor – Segments 1 – 4)	4	March 2016
Construct temporary TL13835 at San Juan Capistrano Substation	1	March 2016
Remove equipment and foundations in upper yard	2	March 2016
Remediate and grade upper yard (Phase 2)	3	May 2016
Upper yard (230kV) substation below grade construction	6	August 2016
Upper yard (230kV) substation construction	10	December 2016
De-energize TL138xx & 13816 and construct underground 230kV ducts along Vista Montana (Segment 2). Re-energize TL138xx and 13816	7	December 2016

Table 3-15 (Cont.): Proposed Construction Schedule

Proposed Project Segment/Task	Months	Anticipated Start Date*
230kV testing and energizing at San Juan Capistrano Substation	5	June 2017
De-energize temporary TL13835 & install Bank 60's 138kV line position	1	November 2017
Proposed Project In Service Date		November 2017
Site and ROW Restoration	4	March 2018
*Dates are dependent on when all permits are obtained. Source: SDG&E		

3.7 PERMANENT LAND AND RIGHT-OF-WAY REQUIREMENTS

The following discussion describes the permanent land and ROW requirements for each Proposed Project component. These requirements are also summarized in Table 3-16, Permanent Land and ROW Requirements.

Table 3-16: Permanent Land and ROW Requirements

Proposed Project Component		Approximate Area (feet)	Approximate Area (acres)
Capistrano Substation Rebuild		None	None
Talega Substation Alterations		None	None
Transmission Line Installation and Re-Location Work	New 230kV Lines – Segment 1	None	None
	New 230kV Lines – Segment 2	4,550	.10
	New 230kV Lines – Segment 3	None	None
	New 230kV Lines – Segment 4	420,000	9.64
	Re-located 138kV and 69kV – Segment 4	17,000	.39
Notes: Table contents based upon preliminary engineering. Source: SDG&E			

3.7.1 San Juan Capistrano Substation Rebuild

The new San Juan Capistrano Substation will be constructed within the existing Capistrano Substation property footprint and no new permanent land or ROW will be required.

3.7.2 Talega Substation Alterations

The alterations to the Talega Substation will all be located within the existing facility footprint and no new permanent land or ROW will be required.

3.7.3 Transmission Line Installation and Re-location

The transmission line work associated with the Proposed Project is discussed herein by segment as defined within Table 3-2.

3.7.3.1 Transmission Line Segment 1 – Capistrano to Rancho San Juan

This segment of the transmission portion of the Proposed Project consists of approximately 2.6 miles of overhead transmission line located within an existing transmission ROW. No new permanent land or ROW will be required for the transmission line installation within this segment.

3.7.3.2 Transmission Line Segment 2 – Rancho San Juan

This segment of the Proposed Project will involve installation of new 230kV cable within an underground position within Vista Montana. TL23030 will be placed within franchise position within Vista Montana. TL23007 will be installed within an existing easement within Vista Montana. Two small sections of new ROW will be required (approximately 0.04 total new ROW) where the new and relocated underground transmission lines will be located within Via Pomplona (private road). This new ROW will be acquired from the property owner, Woodbridge Homes.

3.7.3.3 Transmission Line Segment 3 – Rancho San Juan to Talega Hub

Transmission line work within Segment 4 will include installation of approximately 4.2 miles new overhead 230kV within existing ROW. No new permanent land requirements or ROW will be required for Segment 3 of the Proposed Project.

3.7.3.4 Transmission Line Segment 4 – Talega Hub to Talega Substation

Transmission line work within Segment 4 will include both installation of new overhead and underground transmission lines for the new 230kV lines as well as the re-location of existing 138kV and 69kV transmission lines both within new and existing ROW. The new ROW requirements are outlined below.

New 230kV Transmission Lines

Transmission line work within Segment 4 of the Proposed Project will require approximately 9.64 acres (420,000 $feet^2$) of new ROW to install new 230kV transmission line TL23030. This new ROW will be acquired from the Talega Home Owners Association and Transportation Corridor Agency (TCA)**.**

Relocation of Existing 138kV and 69kV Transmission Lines

Relocation of existing 138kV and 69kV transmission lines will require approximately 0.39 acres (17,000 feet^2) of new permanent ROW.

3.8 OPERATION AND MAINTENANCE (EXISTING AND PROPOSED)

The Proposed Project will replace and upgrade existing electric transmission, distribution, and substation facilities. SDG&E currently operates and maintains these facilities consistent with SDG&E's standard protocols and procedures, including SDG&E's *Natural Community Conservation Plan* (NCCP), which is described in greater detail in Section 4.4, Biological Resources and below. No change in SDG&E's operations and maintenance protocols and procedures is anticipated or included as part of the Proposed Project. SDG&E's existing protocols and procedures, including SDG&E's *NCCP*, have been incorporated into the design of the Proposed Project and are also reflected in the baseline from which impacts of the Proposed Project have been evaluated. Specific *SDG&E Subregional NCCP* Operation Protocols, Habitat Enhancement Measures and Mitigation incorporated into the Proposed Project include the following:

- Vehicles would be kept on access roads and limited to 15 miles per hour (Section 7.1.1, 1.).
- No plants would be collected (Section 7.1.1, 2.).
- Measures to prevent or minimize wild fires would be implemented, including exercising care when driving and not parking vehicles where catalytic converters can ignite dry vegetation (Section 7.1.1, 9.).
- Field crews would refer all environmental issues, including questions regarding environmental impacts, to the Environmental Surveyor (Section 7.1.1, 10.).
- All SDG&E personnel would participate in an environmental training program conducted by SDG&E, with annual updates (Section 7.1.2, 11.).
- The Environmental Surveyor would conduct preactivity studies for all activities occurring in natural areas, and would complete a preactivity study form including recommendations for review by a biologist and construction monitoring, if appropriate. The form would be provided to CDFG and USFWS but does not require their approval (Section 7.1.3, 13.).
- The Environmental Surveyor would flag boundaries of habitats to be avoided and, if necessary, the construction work boundaries (Section 7.1.3, 14.).
- The Environmental Surveyor would conduct monitoring as recommended in the preactivity study form (Section 7.1.4, 35.).
- Fugitive dust would be controlled by regular watering and speed limits (Section 7.1.4, 39.).
- New access roads would be designed and constructed according to the SDG&E *Guide for Encroachment on Transmission Rights-of-Way (4/91)* (Section 7.1.6, 46.). No wildlife, including rattlesnakes, would be collected or harmed, except to protect life and limb (Section 7.1.1, 2. and 7).

- Feeding of wildlife is not allowed (Section 7.1.1, 4.).
- No pets are allowed within the right-of-way (Section 7.1.1, 5.).
- Littering is not allowed, and no food or waste would be left on the ROW or adjacent properties (Section 7.1.1, 8.).
- Field crews would refer all environmental issues, including wildlife relocation, dead or sick wildlife, or questions regarding environmental impacts to the Environmental Surveyor. Biologists or experts in wildlife handling may be necessary to assist with wildlife relocations (Section 7.1.1, 10.).
- Supplies, equipment, or construction excavations where wildlife could hide (e.g., pipes, culverts, pole holes, trenches) would be inspected prior to moving or working on/in them (Section 7.1.4, 37. and 38.).
- During the nesting season, the presence or absence of nesting species (including raptors) shall be determined by a biologist who would recommend appropriate avoidance and minimization measures (Section 7.1.6, 50).

SDG&E will continue to regularly inspect, maintain, and repair the transmission lines and substations pending agency review of the Proposed Project and following completion of Proposed Project construction. Operations and maintenance activities would not increase in intensity, frequency or duration with implementation of the Proposed Project and would be substantially similar to existing operations and maintenance activities except where otherwise noted in the PEA. Typical activities involve both routine inspections and preventive maintenance to ensure service reliability, as well as emergency work to maintain or restore service continuity. SDG&E performs aerial and ground inspections of Proposed Project facilities and patrols aboveground components annually. Inspection for corrosion, equipment misalignment, loose fittings, and other common mechanical problems is performed at least every three years (per G.O. 165) for transmission lines.

SDG&E uses helicopters in the visual inspection of overhead facilities. SDG&E patrols each electric transmission line annually or as required via helicopter. SDG&E may also use helicopters to deliver equipment, position poles and structures, string lines, and position aerial markers, as required by FAA regulations. SDG&E's Transmission department uses helicopters for patrolling transmission lines during trouble jobs (e.g., outages/service curtailments) in areas that have no vehicle access or rough terrain. For patrolling during such jobs, the helicopter picks up the patrolman at the district yard. For new construction or maintenance, the helicopter needs a flat staging area for fueling and picking up material, equipment, and personnel. The area required for small helicopter staging is generally 100 feet by 100 feet. The size of the crew needed varies from four to 10 crewmembers, two helicopter staff, and a water truck driver to apply water for dust control at the staging area. Most helicopter operations take only one day.

SDG&E maintains a clear working space area per G.O. 95 around all poles. SDG&E keeps these areas clear of shrubs and other obstructions for inspection and maintenance purposes. In addition, vegetation that has a mature height of 15 feet or taller are not allowed to grow within 10 horizontal feet of any conductor within the ROW for safety and reliability reasons.

Typical transmission line operation and maintenance activities include security and other inspections, ROW and access repairs, pole brushing in accordance with fire break clearance requirements, herbicide application, emergency and non-emergency repairs and replacements, insulator washing, and tree trimming. These activities are performed on an as needed basis.

As to substation operations and maintenance, both the Talega and San Juan Capistrano Substations will continue to be unmanned substations. In general, routine substation operations will be same as what occurs at the existing substations. The new substations will continue to require workers to visit each substation several times a week for switching and several times a year for equipment maintenance. Maintenance activities will include equipment testing, equipment monitoring and repair, and emergency and routine procedures for service continuity and preventive maintenance. Typically, a major maintenance inspection will take place annually for approximately one week.

Routine vegetation clearing would continue to occur at each substation on an as-needed basis for purposes of safety, access, and aesthetics. Vegetation clearing activities would typically involve the presence of one to two small maintenance vehicles and one or more employees to clear or trim vegetation to achieve the minimum working space around the substation facilities. Operations and maintenance activities at San Juan Capistrano Substation will vary slightly from existing conditions due to the introduction of additional equipment and gas-insulated design. Using SDG&E's existing protocols, which are consistent with United Stated Environmental Protection Agency (USEPA) guidelines, the new gas insulated portion of the San Juan Capistrano Substation will be electronically monitored remotely from SDG&E's central operations center. All equipment that utilizes sulfur hexafluoride (SF_6) will be monitored for variation in pressure and an automatic alarm system will be utilized to signal substation crews in the event of a significant change in pressure within any piece of gas insulated substation equipment.

An electronic inventory of SF_6 bottles will be maintained by substation operations personnel. Data on bottle weight, number, and SF_6 volume will be included within the inventory. Routine inventory inspections will be conducted to keep track of on-site stock and usage rates. The volume of gas in each piece of gas insulated substation equipment will also be monitored, tracked, and recorded. Inspection sheets will be utilized to document weight and volume of SF_6 gas used, which piece of equipment it is used in, and what storage bottle it came from.

Safety lighting at the substation will be provided inside the substation for the purpose of safe nighttime access inside the substation. Because night activities are expected to occur only infrequently, the safety lighting inside the substation fence will normally be turned off.

3.9 ENVIRONMENTAL PROCEDURES AND PROTOCOLS

In addition to the Proposed Project components previously discussed, SDG&E will incorporate existing procedures, protocols and other requirements into the Proposed Project description. Consistent with its existing operations and maintenance practices, SDG&E will implement these throughout Proposed Project design, construction, operation, and maintenance to avoid and minimize potential environmental impacts.

The following are procedures that are implemented by SDG&E at the program level. These are not project specific and are implemented more or less uniformly throughout SDG&E's various endeavors, operations, and practices. They are not necessarily evaluated and updated based upon project type and/or scope, rather they ensure a consistent level of impact avoidance and minimization relating to any and all work performed by, or for, SDG&E.

3.9.1 SDG&E's Natural Community Conservation Plan

As discussed in Section 4.4, Biological Resources, in December 1995, SDG&E entered into an agreement with the USFWS and the CDFG, establishing *SDG&E's Subregional NCCP*. The Proposed Project would incorporate the standard set of operational protocols and mitigation set forth in *SDG&E's Subregional NCCP*. The *SDG&E's Subregional NCCP* is a Habitat Conservation Plan permitted under Section 10A of the ESA for incidental take and a NCCP permitted under a management authorization pursuant to Section 2835 of the Fish and Game Code. SDG&E entered into an Implementation Agreement with the United States Fish and Wildlife (USFWS) and California Department of Fish and Game (CDFG), respectively, for the management and conservation of multiple species and their associated habitats as established according to the federal and state endangered species acts and the state's NCCP Act. Through the avoidance of resources, application of protective measures and mitigation in the *SDG&E Subregional NCCP*, and habitat enhancement, Proposed Project impacts to biological resources would be less than significant.

SDG&E's NCCP establishes a comprehensive, long-term, habitat-based agreement among SDG&E, the USFWS, and the CDFG for the management and conservation of multiple species covered in the plan and their associated habitat. As such, the NCCP provides protection for those species while allowing SDG&E to develop, install, maintain, operate, and repair necessary electric and gas utility facilities in the region.

The NCCP prescribes as "protocols" various protection, mitigation, and conservation measures SDG&E must implement as part of its covered activities to ensure the survivability and conservation of protected species and their habitat, according to applicable law. SDG&E has successfully completed over 1,000 utility projects under and in compliance with the NCCP, ranging from maintenance to new construction.

Under its NCCP, SDG&E consults with the USFWS and CDFG on certain projects or activities in natural areas by preparing "pre-activity surveys" that evaluate the scope and nature of potential impacts in advance of construction or maintenance activities. The pre-activity survey, when submitted, initiates consultation with the USFWS and CDFG under established timeframes to identify potential impacts and feasible avoidance, minimization, and/or mitigation measures, as described in the NCCP.

The benefits to the public health, safety, and welfare through reliable and cost-effective utility service and the long-term management and conservation of covered species and their habitat made possible by a programmatic conservation plan such as the NCCP are substantial. SDG&E's NCCP directly applies to all components of the Proposed Project, and the management and conservation of the biological resources within the Proposed Project area. The NCCP protocols and mitigation requirements have been incorporated directly into the Proposed Project description to ensure that impacts to biological resources are less than significant.

3.9.2 SDG&E's Water Quality Construction Best Management Practices Manual

SDG&E's *Water Quality Construction BMPs Manual* (*BMP Manual*) was created to organize SDG&E's standard water quality protection procedures for various specific actions that routinely occur as part of SDG&E's ongoing construction, operations, and maintenance activities. The primary focus of most BMPs is the reduction and/or elimination water quality impacts during construction of linear projects such as the Proposed Project. The BMPs described within the *BMP Manual* were derived from several sources including the State of California guidelines as well as the Caltrans Water Quality BMPs. The *BMP Manual* will be utilized during construction, operation, and maintenance of the Proposed Project to ensure that all SDG&E and applicable government-mandated water quality standards are fully complied with.

3.9.3 Fire Prevention and Fire Safety Standards

The Proposed Project will be constructed consistent with Electric Standard Practice 113.1 – Wildland Fire Prevention and Fire Protection. Electric Standard Practice 113.1 outlines practices and procedures for SDG&E activities occurring within areas of potential wildland fire threat within SDG&E's service territory. The Proposed Project design includes replacement of wood poles with steel poles, increased conductor spacing to maximize line clearances, installation of steel poles to withstand 85 miles per hour (mph) winds, and undergrounding of a portion of the transmission line. These design components of the Proposed Project minimize the fire risk through enhanced safety and reliability of the transmission system, particularly during extreme weather conditions. The standard practices in Electrical Standard Practice 113.1 include avoidance and minimization measures to comply with state and local fire ordinances. No work will occur during times of high fire threat such as Red Flag Warnings issued by the National Weather Service or other severe fire weather conditions as identified by SDG&E.

3.9.4 Other SDG&E Environmental Procedures and Protocols

SDG&E will also employ the following during construction, operation, and maintenance of the Proposed Project:

- Management of Contaminated Equipment and Materials, Hazardous Materials Business Plan - Addresses the evaluation of potentially hazardous materials that may be present due to former or present on-site uses, as well as hazardous waste that may be generated during construction or operation of proposed land uses.

- Standard Traffic Control Procedures – Measures to address potential disruption of traffic circulation during construction activities and address safety issues.

- SDG&Es Approved Herbicides and Application Procedures – Identification of approved herbicides and measures for the proper application of herbicides during operation and maintenance activities.

- Compliance with applicable state and local regulations covering grading, water quality and erosion.

- Implementation of engineering structural design specifications to withstand physical stresses from wind, geologic conditions and hydrologic conditions.

3.10 APPLICANT PROPOSED MEASURES

In addition to the above protocols and procedures included as part of the Proposed Project description, SDG&E will also incorporate the Applicant Proposed Measures (APMs) that have been identified and developed specifically for the Proposed Project during the preparation of the PEA. Table 3-17, Applicant Proposed Measures by Resource Area identifies the APMs that are applicable to each resource area and Table 3-18, Applicant Proposed Measures, details the complete APMs. The various resource sections of this document outline how and when the APMs will be applied to avoid or minimize impacts to a less than significant level. Where application of APMs to avoid or reduce the effect of a project activity to a less than significant level is not feasible, additional suitable mitigation measures to do so are also proposed within the relevant resource sections.

Linear electric infrastructure projects, such as this one, typically traverse multiple jurisdictional boundaries, natural resource features, and habitat types. Until final design, and in some cases until installation, utility projects remain more flexible in the definition of their ultimate configuration and placement than most non-linear projects. The Proposed Project may encounter unique topographical and natural features or site-specific engineering challenges along the transmission line ROW that could not be reasonably foreseen and specifically planned for through standard mitigation. The APMs take into consideration the potential for the Proposed Project to encounter such features and enhance SDG&E's ability to modify the final design during the installation phase to maximize overall project feasibility, while avoiding or minimizing impacts to sensitive environmental resources.

The APMs are designed to take advantage of project design flexibility by avoiding or minimizing environmental impacts, to the extent feasible. As defined in CEQA, "feasible" is defined as being "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" while attaining the project's basic objectives and its purpose and need.[2]

SDG&E would be responsible for overseeing the assembly of the construction and environmental teams that would implement and evaluate the Proposed Project APMs. SDG&E maintains an environmental compliance management program to allow for implementation of the APMs to be monitored, documented, and enforced during each Proposed Project phase, as appropriate. All of those contracted by SDG&E to perform this work would be contractually bound to properly implement the APMs to ensure their effectiveness in reducing potential environmental effects. Table 3-18, Applicant Proposed Measures, details each of the 22 APMs that will be implemented during construction, operation, and maintenance of the Proposed Project.

[2] Public Resources Code, Section 21061.1 and California Code of Regulations Title 14, Section 15126.6.

Table 3-17: Applicant Proposed Measures by Resources Area

Resource Area	Relevant Applicant Proposed Measures
Aesthetics	AES-1 through AES-3
Air Quality	AIR-1
Cultural Resources	CUL-1 through CUL-9
Geology, Soils, and Mineral Resources	GEO-1 and GEO-2
Hazards and Hazardous Materials	HAZ-1
Noise	NOISE-1
Public Services	PS-1 and PS-2
Transportation and Traffic	TR-1 through TR-3

The remainder of this page is intentionally left blank.

Table 3-18: Applicant Proposed Measures

APM Number	Description	Justification	Applicable Project Component		
			San Juan Capistrano Substation	Talega Substation	Transmission Lines
Aesthetics					
AES-1	Clean Construction Work Areas. SDG&E will make an effort to keep construction activities as clean and inconspicuous as practical.	Ensure that potential aesthetic impacts during construction are less than significant.	**X**	**X**	**X**
AES-2	Restoring Appearance of Disturbed Areas. When Proposed Project construction has been completed, all disturbed terrain will be restored through recountouring and revegetation in order to re-establish a natural appearing landscape and reduce potential visual contrast between disturbed areas and the surrounding landscape.	Ensure that physical alterations during construction do not become long-term aesthetic impacts following the completion of construction.	**X**	**X**	**X**
AES-3	Visual Screening- San Juan Capistrano Substation. Landscaping and a screening wall will be installed in key areas along the perimeter of San Juan Capistrano Substation to partially screen views of substation structures and to visually integrate the new substation facilities with the existing setting. Figure 4.1-4 depicts the general location of new substation landscaping. Plant material will be appropriate to site-specific conditions and the local landscape setting. Landscaping will also be consistent with technical requirements for Proposed Project operations and maintenance and will incorporate input from the City of San Juan Capistrano, local residents, and SDG&E's facility security.	Ensure that the new San Juan Capistrano Substation perimeter is landscaped, where possible, to provide partial screening of the new substation.	**X**		

The remainder of this page is intentionally left blank.

Table 3-18 (Cont.): Applicant Proposed Measures

APM Number	Description	Justification	Applicable Project Component		
			San Juan Capistrano Substation	Talega Substation	Transmission Lines
Air Quality					
AIR-1	Operations Emissions Controls. SDG&E has developed APM AIR-1 as part of the Proposed Project to ensure that sulfur hexafluoride is properly managed. SDG&E will implement its existing sulfur hexafluoride mitigation strategies during the operation and maintenance of sulfur hexafluoride-containing equipment installed as part of the Proposed Project. These strategies include: • Recording company-wide sulfur hexafluoride purchases, use, and emissions rates to comply with the USEPA's requirements for Electrical Transmission and Distribution Equipment Use (Mandatory Reporting of Greenhouse Gases, 40 C.F.R. Part 98, Subpart DD) and the CARB's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (Code Regs. tit. 17, § 95350-95359) • Implementing a sulfur hexafluoride recycling program • Training employees on the safety and proper handling of sulfur hexafluoride • Continuing to report GHG emissions with the The Climate Registry. • Implementing SDG&E's sulfur hexafluoride leak detection and repair program. This program includes monthly visual inspections of each GCB, which includes checking pressure levels within the breaker and recording these readings in SDG&E's Substation Management System. During the installation or major overhaul of any GCB, the unit is tested over a 24-hour period to ensure no leaks are present. Minor overhauls of each GCB are conducted every 36 to 40 months to check overall equipment health. This process includes checking gas pressure, moisture ingress, and sulfur hexafluoride decomposition. If the GCB fails any of these checks, the unit is checked for leaks and repaired. In addition, all GCBs are equipped with a gas-monitoring device and alarm that automatically alerts SDG&E's Grid Operations Center. If gas pressure approaches minimum operating levels, an alarm is immediately reported to SDG&E's Substation Construction and Maintenance Department. The GCB is usually inspected for leaks within 24 hours of such an alarm. SDG&E's leak detection practice includes the following three methodologies: o Spraying a leak-detection agent onto common leak points—including O rings, gaskets, and fittings. o Using a field-monitoring device (sniffer) to detect the presence of sulfur hexafluoride gas. o Using a laser-detection camera to detect the presence of sulfur hexafluoride gas when the above two methods are unsuccessful in finding a leak.	Minimize impacts associated with the utilization of sulfur hexafluoride at the new San Juan Capistrano Substation.	**X**		

Table 3-18 (Cont.): Applicant Proposed Measures

APM Number	Description	Justification	Applicable Project Component		
			San Juan Capistrano Substation	Talega Substation	Transmission Lines
Cultural Resources					
CUL-1	Prior to the initiation of construction or ground-disturbing activities, all SDG&E, contractor, and subcontractor personnel would 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 resources and paleontological resources and to recognize possible buried resources. Training shall inform all construction personnel of the anticipated procedures that would be followed upon the discovery or suspected discovery of archaeological materials, including Native American remains, and their treatment, as well as of paleontological resources.	Ensure that construction workers are educated about the potential cultural and paleontological resources and laws so that potential impacts from unanticipated discovery are minimized.	**X**	**X**	**X**
CUL-2	A qualified archaeologist would attend preconstruction meetings, as needed, and a qualified archaeological monitor would monitor ground disturbing activities in the vicinity of all known cultural resources within the Proposed Project area. The requirements for archaeological monitoring would be noted on the construction plans. The archaeologist's duties would include monitoring, evaluation of any finds, analysis of collected materials, and preparation of a monitoring results report conforming to Archaeological Resource Management Reports guidelines.	Ensure that potential impacts to cultural resources from unanticipated discovery are less than significant.	**X**	**X**	**X**
CUL-3	Known cultural resources that can be avoided would be demarcated as Environmentally Sensitive Areas. Construction crews would be instructed to avoid disturbance of these areas.	Ensure that known resources are protected during construction activities to avoid potential adverse effects.	**X**	**X**	**X**
CUL-4	In the event that cultural resources are discovered, the archaeologist would have the authority to divert or temporarily halt ground disturbance to allow evaluation of potentially significant cultural resources. The archaeologist would contact SDG&E's Cultural Resource Specialist and Environmental Project Manager at the time of discovery. The archaeologist, in consultation with SDG&E's Cultural Resource Specialist, would determine the significance of the discovered resources. 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, a Research Design and Data Recovery Program would be prepared and carried out to mitigate impacts.	Ensure that potential impacts to cultural resources from unanticipated discovery are less than significant.	**X**	**X**	**X**
CUL-5	All collected cultural remains would be cataloged, and permanently curated with an appropriate institution. All artifacts would be analyzed to identify function and chronology as they relate to the history of the area. Faunal material would be identified as to species.	Ensure that potential impacts to cultural resources from unanticipated discovery are less than significant.	**X**	**X**	**X**

Table 3-18 (Cont.): Applicant Proposed Measures

APM Number	Description	Justification	Applicable Project Component		
			San Juan Capistrano Substation	Talega Substation	Transmission Lines
CUL-6	An archaeological monitoring results report (with appropriate graphics), which describes the results, analyses, and conclusions of the monitoring program, would be prepared and submitted to SDG&E's Cultural Resource Specialist and Environmental Project Manager following termination of the program. Any new cultural sites or features encountered would be recorded with the SCCIC or SCIC.	Ensure that potential impacts to cultural resources from unanticipated discovery are less than significant.	**X**	**X**	**X**
CUL-7	Native American monitoring may be implemented if transmission line construction has the potential to impact identified and mapped traditional locations or places. The role of the Native American monitor shall be to represent tribal concerns and communicate with the tribal council. Appropriate representatives will be identified based on the location of the identified traditional location or place.	Ensure that identified traditional locations or places that could be impacted by project components are appropriately monitored by tribal representatives.			**X**
CUL-8	A paleontological monitor would work under the direction of a qualified Project paleontologist and would be on site to observe excavation operations that involve the original cutting of previously undisturbed deposits with high paleontological resource sensitivity (i.e., Monterey, Santiago, and Capistrano Formations). A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.	Ensure that any potential impacts from unanticipated discovery of fossils during construction activities are less than significant.			**X**
CUL-9	In the event that fossils are encountered, the paleontological monitor would have the authority to divert or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains in a timely fashion. The paleontologist would contact SDG&E's Cultural Resource Specialist and Environmental Project Manager at the time of discovery. The paleontologist, in consultation with SDG&E's Cultural Resource Specialist would determine the significance of the discovered resources. 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. Because of the potential for recovery of small fossil remains, it may be necessary to set up a screen-washing operation on site. When fossils are discovered, the paleontologist (or paleontological monitor) would recover them along with pertinent stratigraphic data. In most cases, this fossil salvage can be completed in a short period of time. Because of the potential for recovery of small fossil remains, such as isolated mammal teeth, recovery of bulk-sedimentary-matrix samples for off-site wet screening from specific strata may be necessary, as determined in the field. Fossil remains collected during monitoring and salvage would be cleaned, repaired, sorted, cataloged, and deposited in a scientific institution with permanent paleontological collections, and a paleontological monitoring report would be written.	Ensure that any potential impacts from discovery of fossils during construction activities are less than significant.			**X**

Table 3-18 (Cont.): Applicant Proposed Measures

APM Number	Description	Justification	Applicable Project Component		
			San Juan Capistrano Substation	Talega Substation	Transmission Lines
Geology, Soils, and Mineral Resources					
GEO-1	Conduct an Engineering-level Geotechnical Investigation for Liquefaction Potential and Implement Recommended Design Measures. A geologic hazard evaluation was conducted by URS in 2008 to evaluate the pole locations along the Proposed Project transmission line route for the presence of geologic hazards that may affect the new towers and poles The geologic hazard evaluation indicated the presence of geologic conditions potentially susceptible to liquefaction at the locations of proposed Pole Nos. 8, 9 and 10. Prior to construction, an engineering-level geotechnical investigation would be performed at these locations under the supervision of a California Certified Engineering Geologist or California licensed Geotechnical Engineer to further evaluate the liquefaction potential at each of these pole locations and to develop design measures to minimize the potential for damage to Proposed Project structures in the event of strong ground shaking. Recommendations of the geotechnical investigation would be incorporated into the final design for these structures. These recommendations would include augmented grading practices, expanded erosion control measures and deeper foundations.	Ensure that potential liquefaction hazards are accounted for during final design.			**X**
GEO-2	Conduct an Engineering-level Geotechnical Survey for Landslides and Implement Recommended Design Measures to Ensure Slope Stability is not Impacted and the Potential for Damage to Protect Structures is Minimized. A geologic hazard evaluation was conducted by URS in 2008 to evaluate the structure locations along the Proposed Project transmission line route for the presence of geologic hazards that may affect the new towers and poles. The geotechnical hazard evaluation identified areas with recent and ancient landslides along the Proposed Project transmission line route due to unstable slope conditions in portions of both the Capistrano and Monterey formations. Prior to construction, an engineering-level geotechnical investigation would be performed at each pole location along the transmission line route that is in or near a mapped landslide or other unstable slope condition. This investigation would be performed under the supervision of a California Certified Engineering Geologist or California licensed Geotechnical Engineer, and would identify protection measures to be designed and implemented to ensure that the Proposed Project does not materially increase slope stability risks and to minimize potential for damage to Proposed Project structures in the event of landslides. These recommendations would include augmented grading practices, expanded erosion control measures and deeper foundations.	Ensure that potential landslide hazards are accounted for during final design.			**X**
Hazards and Hazardous Materials					
HAZ-1	Prior to the start of earth disturbance activities at the upper yard portion of the existing Capistrano Substation site, a Phase II Environmental Site Assessment (soil sampling) would be performed and, if any contaminated soil is found to be present, contaminated soils would be managed, removed, transported, and disposed of in accordance with all applicable laws, ordinances and safety standards.	Ensure that potential soil contamination is identified so that any potential hazards are removed through adherence to applicable laws, regulations, and SDG&E standards.	**X**		

Table 3-18 (Cont.): Applicant Proposed Measures

APM Number	Description	Justification	Applicable Project Component		
			San Juan Capistrano Substation	Talega Substation	Transmission Lines
Noise					
NOISE-1	Any endeavors during the construction phase wherein nighttime and weekend activities are necessary (such as due to Caltrans transportation constraints for oversized/ overweight loads), will be limited to the extent feasible so that noise will not exceed the pertinent maximum noise level limits or the hourly L_{50} limits when measured at the nearest residential property. For example, to minimize potential noise disturbances during nighttime deliveries of transformers, the Applicant will make every reasonable effort to minimize the duration of trucking activities at the project site. This will entail pulling the delivery vehicle onto the project site, parking it overnight, and unloading/installing the item(s) during normal, daytime construction hours. If nighttime or weekend activities cannot be conducted to meet the city's noise standards, SDG&E will communicate the exception to the City of San Juan Capistrano in advance of conducting the work that may exceed the threshold(s). This APM is consistent with the conditions deemed acceptable by the CPUC for the similar situation at the Silvergate Transmission Substation Project.	Ensure that where nighttime construction is required that impacts are less than significant.	**X**	**X**	**X**
Public Services					
PS-1	Construction within existing public parks would not completely restrict access through the parks. Where necessary, SDG&E will create temporary foot and bicycle paths along with appropriate advanced notice and signage to direct and allow for the pedestrian and bicycle access through each affected park.	Minimize potential direct impacts to existing parks and recreational areas during construction of the Proposed Project.			**X**
PS-2	All recreational facilities that are physically impacted during construction activities will be returned to an approximate pre-construction state, allowing for SDG&E operation and maintenance activities, following the completion of the Proposed Project. SDG&E will make replacements of any public damaged or removed equipment, facilities, and infrastructure, in a timely manner.	Ensure that any physically impacted to parks and recreational areas are restored following construction so that no permanent impacts result.			**X**
Transportation and Traffic					
TR-1	Construction generated traffic associated with the San Juan Capistrano Substation and construction of the 138kV getaways (new underground cable packages and new Pole Nos. 1a through 7a) would avoid the start and ending time for the Saddleback Valley Christian School and the JSerra Catholic High School. Workers would arrive at construction sites by 7:30 AM and would not leave prior to 3:30 PM.	Minimize potential traffic congestion impacts associated with construction-related traffic.	**X**		**X**

Table 3-18 (Cont.): Applicant Proposed Measures

APM Number	Description	Justification	Applicable Project Component		
			San Juan Capistrano Substation	Talega Substation	Transmission Lines
TR-2	Construction generated traffic associated with the San Juan Capistrano Substation and construction of the 138kV getaways (new underground cable packages and new Pole Nos. 1a through 7a) would avoid the SR-74 off ramp from I-5. Avoidance of the SR-74 and I-5 interchange would ensure that construction generated traffic would not exacerbate existing conditions on the stretch of road between the intersections of SR-74 and Rancho Viejo Road and SR-74 and Del Obispo.	Minimize potential traffic congestion impacts associated with construction-related traffic.	**X**		**X**
TR-3	SDG&E will coordinate with local emergency response agencies during all construction within existing roadways. Coordination with local emergency response agencies (such as Orange County Sheriff's Department and Orange County Fire Authority) would ensure that impacts to emergency access are less than significant.	Minimize potential impacts to emergency service during construction within existing roadways.			**X**

The remainder of this page is intentionally left blank.

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF TABLE 3-18

3.11 ELECTRIC AND MAGNETIC FIELDS SUMMARY

The following provides an overview of Electric and Magnetic Fields (EMF) information. The specific report for the proposed project can be found in Appendix 3-E, South Orange County Reliability Enhancement Electric and Magnetic Fields Studies.

3.11.1 Electrical Effects

This section describes potential effects from exposure to EMF associated with the proposed South Orange County Reliability Enhancement Project.

EMFs are present wherever electricity flows—around appliances and transmission lines, in offices, schools, and homes. Electric fields are invisible lines of force created by voltage and are shielded by most materials. Magnetic fields are invisible lines of force created by electric current, and magnetic fields are not shielded by most materials. These fields are low-energy, extremely low-frequency, and should not be confused with high-energy or ionizing radiation such as X-rays and gamma rays.

Some studies have reported a weak association between estimates of residential magnetic field exposure and childhood leukemia. These epidemiological (human statistical) studies have not shown that the exposure to magnetic fields from powerlines actually causes leukemia because other explanations for the association, such as study bias, cannot be ruled out. And virtually all controlled laboratory studies on animals, tissues and cells fail to support a causal association. Some studies on workers have also found associations between estimated magnetic field exposure and some forms of cancer and other disorders, but these results have been highly inconsistent.

3.11.2 Background

The transport of electricity is described in terms of both its voltage and current flow. Using these terms, the transport of electricity is analogous to the flow of water through a pipe. The pressure driving the water is the counterpart to the voltage on the powerline, and the amount of water flowing in the pipe is the counterpart to the amount of electric current on the line.

Electrical lines and equipment produce an electric field as a result of the voltage applied to their wiring. The strength of the electric field is expressed in volts per meter (V/m) or kilovolts per meter (kV/m). The electric field strength falls off sharply with distance from the source. Objects such as trees, houses, concrete and other building materials shield electric fields. Thus, even in proximity to powerlines or substations, the electric field in nearby residences is largely a result of internal sources; external sources of electric fields are effectively shielded from indoor environments.

The flow of current in electrical lines and equipment produces a magnetic field. The strength of the magnetic field is measured in units called Gauss (G) or Tesla (T). Because these units are much too large for expressing magnetic field intensities encountered in daily life, magnetic field intensities are most often expressed in milligauss (mG), which is one-thousandth of a Gauss, or microtesla (μT), which is one-millionth of a tesla. Ten mG is equal to 1.0 μT. The unit μT generally is used internationally and in technical literature. The field intensity varies with the amount of current flow. Like electric fields, the intensity of the magnetic field decreases as

distance from the source increases. But unlike electric fields, magnetic fields are not shielded by buildings, trees, and most other objects.

Electrical transmission and distribution systems are not the only sources of magnetic fields. Within homes and workplaces, local sources of magnetic fields include building wiring and plumbing, electric blankets, electric stoves, computer terminals, bedside clocks, ceiling fans, and other appliances that people may use for prolonged periods. Indeed, some of the common sources of higher magnetic fields are appliances and electrical devices found within the home. The magnetic field levels from such sources in typical use can range up to thousands of mG or higher; however, the duration of exposure from many appliances is typically much shorter than that from other sources. Thus, exposure to both electric and magnetic fields occurs continuously and is not simply a function of living or working near a powerline or electrical facility. Exposure depends on the many sources and field strength present where a person lives, works, or otherwise spends time.

3.11.3 History

In the late 1960s and early 1970s, the possibility of adverse health effects resulting from exposures to electric fields received considerable attention. This attention was motivated by reports from the Soviet Union of various health complaints among utility workers in high-voltage switchyards. Subsequent research on electrical utility workers in Europe and North America failed to confirm the complaints; Soviet investigators later indicated that their concerns had been "overstated."

In the 1980s, interest shifted primarily to magnetic fields for two major reasons. First, Wertheimer and Leeper in 1979 published a paper reporting a statistical association between childhood cancer and the apparent current-carrying capacity of the powerlines near the study residences. Second, it was recognized that exposure to electric fields from outside sources is limited because of effective shielding by most materials. This was confirmed in studies that failed to find associations between the capacity of outside powerlines and electric fields levels within homes. The shift away from electric field research has been further justified by subsequent residential studies that fail to report an association between measured electric fields and cancer in either children or adults.

3.11.4 Current Research

To assess potential health risks from an environmental agent such as power frequency EMF, interdisciplinary groups of scientist must consider the results from epidemiological investigations and laboratory research on cells, tissues, and a variety of animal species.

3.11.4.1 Epidemiology

Epidemiology investigates the distribution, patterns, and potential causes of disease within human populations. The objective of epidemiology is to evaluate and measure the association between exposures to environmental factors (e.g., asbestos, benzene) and health outcomes (e.g., lung disease, leukemia).

Epidemiological studies look for associations between the exposure of a group of people to an agent (possible risk factor) and the occurrence of disease in that group. Epidemiology deals with people in their natural environments, so exposures cannot be controlled or limited to the factors being studied. Thus, epidemiology addresses associations with disease outcomes; generally, it does not establish whether a particular agent causes disease.

Some documented epidemiological studies conducted in community settings have reported weak associations between childhood cancer and estimates of exposure to magnetic fields. Other epidemiological studies, equally well-designed and well-conducted, have reported no associations between proximity to powerline sources of magnetic fields and cancer. Those studies reporting associations are not consistent with respect to cancer type. Two pooled analyses, which combined data from multiple studies, reported an association between rates of childhood leukemia and measured magnetic fields above three or four mG, but found little or no association with so-called "wire codes" (proximity and current-carrying capacity of nearby powerlines). In earlier individual studies, the opposite pattern seemed to predominate: "wire codes" showed a significant association, while measured fields did not.

Exposure assessment is a universal deficiency in the epidemiological literature. The ability of surrogate measures—such as wire codes, proximity, and current-carrying capacity of powerlines—to predict power-frequency magnetic field exposures is limited. In the occupational setting, some studies have reported weak associations between work in electrical occupations and some health outcomes such as leukemia or brain cancer, but the findings are inconsistent. And, in many occupational studies, exposure is inferred from job title classifications.

3.11.4.2 Laboratory Studies

A wide range of magnetic field intensities at extremely low frequency (ELF) exposures have been studied in the laboratory to attempt to elicit biological responses and identify the conditions and mechanisms under which they can be produced. No accepted biophysical mechanism currently exists that can readily explain how a cell could respond to low-intensity, low-frequency magnetic fields. Any imposed external electric and magnetic fields must compete with fundamental physical fluctuations (e.g., thermal noise) and endogenous background biological fields (e.g., those generated by the normal activity of the heart, brain, skeletal muscle, and smooth muscle in the gut and airways). Most laboratory studies have involved exposures hundreds to thousands of times higher than those typically found in residential backgrounds and some occupational settings. From several thousand studies in the literature, relatively few biological responses are confirmed to occur with exposure to time-varying magnetic fields at intensities of less than 1,000 mG, and those that have been confirmed have not been linked to adverse health effects. Although there is considerable interest in determining whether there is any biological basis for a cause-and-effect relationship between exposure to power frequency magnetic fields and cancer, the available laboratory data have not provided substantive support for this hypothesis.

3.11.4.3 Research Conclusions

Nationally and internationally recognized scientific organizations and independent regulatory advisory groups have been organized to conduct scientific reviews of the EMF research and peer reviewed publications. Their ability to assemble experts from a variety of disciplines to review

the full body of research on this complex issue gives their reports credibility. Without exception, these major reviews have reported that the body of data, as large as it is, does not demonstrate that exposure to power-frequency magnetic fields causes cancer or poses other health risks, although the possibility cannot be dismissed. Because of the uncertainty, most reviews recommend further research, and, appropriately, research is ongoing worldwide. The weakness of the reported epidemiological associations, the lack of consistency among studies, and the severe limitations in exposure assessment in the epidemiological studies, together with the lack of support from laboratory research, were key considerations in the findings of the scientific reviews. Examples of these advisory groups and summaries of their findings are provided below.

3.11.4.4 International Reviews

In 2007, the World Health Organization (WHO) released its review of EMF research, *Extremely Low Frequency Fields Environmental Health Criteria (EHC) Monograph No. 238*. In brief, the review updates and affirms the findings of the International Agency for Research on Cancer (IARC) in its 2002 classification of EMF as a "possible human carcinogen" with respect to childhood leukemia. The WHO document also affirms IARC's previous finding that evidence for all other childhood cancers and all adult cancers is "inadequate." Evidence for all other non-cancer diseases studied also is classified "inadequate."

The EHC reports that epidemiology (human statistical) studies show a "consistent" association between childhood leukemia and various surrogate measures of long-term residential exposure to low-level power frequency magnetic fields. This epidemiological evidence is classified as "limited" because other explanations, such as study bias, cannot be ruled out. And, "virtually all" controlled laboratory studies on animals, tissues and cells fail to support a causal association.

While rejecting exposure limits for ordinary residential environments, the WHO does recommend "precautionary approaches" to reduce exposure if it can be done without compromise to the "essential health, social and economic benefits of electric power." The EHC states,

> "*Given the weakness of the evidence for a link between exposure to ELF ['extremely low frequency' includes power frequency] magnetic fields and childhood leukemia and the limited potential impact on public health, the benefits of exposure reduction on health are unclear and thus the cost of reducing exposure should be very low." More specifically, the EHC recommends that: "Changes to engineering practice to reduce EMF exposure from equipment or devices should be considered, provided that they yield other additional benefits, such as greater safety, or involve little or no cost."*

In 2004, the National Radiological Protection Board (NRPB) in the United Kingdom published its *Review of the Scientific Evidence for Limiting Exposure to Electromagnetic Fields (0-300GHz)*. The report states:

> *"It is concluded that currently the results of these [epidemiological and experimental] studies on EMF's and health, taken individually or as collectively reviewed by expert groups, are insufficient either to make a conclusive judgment*

on causality or to quantify appropriate exposure restrictions."

The Health Council of the Netherlands released an Annual Update to the Dutch government in January 2004 on "the possible health effects of ELF electromagnetic fields."

> *The (Health Council of the Netherlands) Committee, like the IARC itself, points out that there is no evidence to support the existence of a causal relationship here. Nor has research yet uncovered any evidence that a causal relationship might exist. Nevertheless, new suggestions for possible mechanisms … are regularly put forward. However, none of these hypotheses can presently explain how ELF magnetic fields exposure might lead to cancer.*

The IARC, a part of the WHO, conducted a major EMF review. The organization's Fact Sheet No. 263 on that review states:

> In *June 2001, an expert scientific working group of IARC reviewed studies related to the carcinogenicity of static and ELF electric and magnetic fields. Using the standard IARC classification that weighs human, animal and laboratory evidence, ELF magnetic fields were classified as possibly carcinogenic to humans based on epidemiological studies of childhood leukemia. Evidence for all other cancer in children and adults, as well as other types of exposures (i.e., static fields and ELF electric fields) was considered not classifiable either due to insufficient or inconsistent scientific information.*
>
> *"Possibly carcinogenic to humans" is a classification used to denote an agent for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence for carcinogenicity in experimental animals.*
>
> *This classification is the weakest of three categories ("is carcinogenic to humans," "probably carcinogenic to humans," and "possibly carcinogenic to humans") used by IARC to classify potential carcinogens based on published scientific evidence.*
>
> *Examples of "Possibly Carcinogenic to Humans" are: Coffee, styrene, gasoline engine exhaust, and welding fumes.*

In March 2001, an independent advisory group to the NRPB in the United Kingdom published a wide-ranging and thorough review of scientific research on EMF. The review covers work published since the NRPB's first major review of the topic in 1992 and supplementary reports in 1993 and 1994. The report concludes that the possibility of an effect cannot be dismissed:

> *Laboratory experiments have provided no good evidence that extremely low frequency electromagnetic fields are capable of producing cancer, nor do human epidemiological studies suggest that they cause cancer in general. There is, however, some epidemiological evidence that prolonged exposure to higher levels of power frequency magnetic fields is associated with a small risk of leukemia in children. In practice, such levels of exposure are seldom encountered by the general public in the UK. In the absence of clear evidence of a carcinogenic effect in adults, or of a plausible explanation from experiments on animals or*

> *isolated cells, the epidemiological evidence is currently not strong enough to justify a firm conclusion that such fields cause leukemia in children. Unless, however, further research indicates that the finding is due to chance or some currently unrecognized artifact, the possibility remains that intense and prolonged exposures to magnetic fields can increase the risk of leukemia in children.*

3.11.5 Federal Electric and Magnetic Fields Program

In 1992, the United States Congress authorized the Electric and Magnetic Fields Research and Public Information Dissemination Program (EMF-RAPID Program) in the Energy Policy Act (PL 102486, Section 2118). Congress instructed the National Institute of Environmental Health Sciences (NIEHS), National Institutes of Health and the United States Department of Energy (DOE) to direct and manage a program of research and analysis aimed at providing scientific evidence to clarify the potential for health risk from exposure to extremely low-frequency electric and magnetic fields (ELF-EMF). The EMF-RAPID Program had three basic components: 1) a program focusing on health effects research, 2) information compilation and public outreach, and 3) a health assessment for evaluation of any potential hazards arising from exposure to ELF-EMF. This program was completed in December 1998.

In June 1999, NIEHS published its report, *Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields*, with its findings and conclusions from this program of research. The Executive Summary of the report concluded that:

> *"The scientific evidence suggesting that ELF-EMF exposures pose any health risk is weak … The NIEHS concludes the ELF-EMF exposure cannot be recognized an entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard. In our opinion, this finding is insufficient to warrant aggressive regulatory concern." Panels charged with recommending exposure limits for electric and/or magnetic fields have concluded that there are no meaningful experimental data (e.g., no dose-response information is available) on which to base standards or limits to which the public is exposed.*

In 1999, the National Academy of Sciences published a report *Research on Power-Frequency Fields Completed Under the Energy Policy Act of 1992*. In response to a request from the DOE, following the directives of the Energy Policy Act of 1992, the National Research Council (NRC) established a committee of scientists and engineers to review the activities conducted under the EMF-RAPID program.

The 1999 NRC report concluded that:

> *An earlier Research Council assessment of the available body of information on biologic effects of power-frequency magnetic fields (NRC 1997) led to the conclusion "that the current body of evidence does not show that exposure to these fields presents a human health hazard. Specifically, no conclusive and consistent evidence shows that exposures to residential electric and magnetic fields produce cancer, adverse neurobehavioral effects, or reproductive and developmental effects". The new, largely unpublished contributions of the EMF-*

RAPID program are consistent with that conclusion. We conclude that no finding from the EMF-RAPID program alters the conclusions of the previous NRC review on the Possible Effects of Electromagnetic Fields on Biologic Systems (NRC 1997).

3.11.6 California Electric and Magnetic Fields Policy

In January 1991, the CPUC issued an Order Instituting Investigation I.91-01-012 to develop policies and procedures for addressing potential health effect of magnetic fields from utility facilities. The CPUC formed the California Consensus Group (CCG), a committee of 17 stakeholders representing diverse interests and perspectives, to provide guidance on interim EMF measures the CPUC might adopt while waiting for resolution of scientific uncertainties.

In March 1992, the CCG issued its report. In part, the report recommended that the CPUC authorize utilities to implement magnetic field reduction techniques if those techniques could be implemented at little or no cost. In November 1993, the CPUC issued Decision D.93-11-013 adopting an interim policy regarding EMF. The CPUC found that the scientific community had not concluded that an EMF health hazard actually exists.

Further, the CPUC stated, "It is not appropriate to adopt any specific numerical standard in association with EMFs (sic) until we have a firm scientific basis for adopting any particular value." However, "public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure." In response, California's electric utilities were authorized to implement no-cost and low-cost field management techniques to reduce EMF levels from new and upgraded electrical facilities if a noticeable reduction could be achieved.

The CPUC's Commission Advisory and Compliance Division (CACD) set and chaired informational EMF Design Guideline workshops to incorporate concepts and criteria addressed in the Order and to share information on field reduction options. SDG&E's *EMF Design Guidelines for Electrical Facilities* describe engineering techniques for reducing exposure to magnetic fields created by its electrical facilities.

The CPUC acknowledged in its Order that the feasibility and cost of implementing specific magnetic field reduction techniques vary among utility systems and from project to project. Therefore, the CPUC provided that the manner in which individual utilities apply design guidelines must be determined within the constraints of each new construction project.

The CPUC charged the California Department of Health Services (CDHS) with managing the California EMF Program. As a key work product of that program, the CDHS EMF Risk Evaluation report was issued in October, 2002. The report was written by three CDHS staff scientists whose opinions were expressed in terms of the degree to which each "believed" EMF was likely to cause various health effects. They report that "[t]o one degree or another all three of the CDHS scientists are inclined to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's Disease, and miscarriage." The three epidemiologists report that "[t]hey strongly believe that EMFs are not universal carcinogens…" and that "[t]o one degree or another they are inclined to believe that EMFs do not cause an increased risk of breast cancer, heart disease, Alzheimer's Disease, Depression, or symptoms attributed by some to a sensitivity to EMFs."

The CDHS report is consistent with other agency reviews in that it concludes that an EMF health risk has not been scientifically established and that additional research is necessary to resolve the question. However, the CDHS differs from all other reviewing agencies in the increased likelihood it places on the existence of an EMF health risk for some diseases, and the CDHS report acknowledges this disparity. Other agencies find EMF health risks 'possible' but not 'probable.' Agencies that have expressed an opinion as to the strength of evidence for a risk have neither found EMF risks to be likely, nor the evidence to be strong.

> *In January, 2006, the CPUC issued its Decision D.06-01-042, Opinion On Commission Policies Addressing Electromagnetic Fields Emanating From Regulated Utility Facilities. The decision concludes that "a direct link between exposure to EMF and human health effects has yet to be proven despite numerous studies including a study ordered by this Commission and conducted by [C]DHS."*

The Decision also affirms the CPUC's November 1993 decision on "low-cost/no-cost Policy" to reduce EMF levels from new utility transmission and substation projects. The CPUC's retained cost guidance, stating, "[a]s a measure of low-cost mitigation, we continue to use the benchmark of 4% of transmission and substation project costs for EMF mitigation, and combine linked transmission and substation projects in the calculation of the 4% benchmark." Finally, the ruling "adopted rules and policies to improve utility design guidelines for reducing EMF and called for a utility workshop to implement these policies and standardize design guidelines."

3.11.7 Electric Magnetic Field Summary

After several decades of study regarding potential public health risks from exposure to power line EMF, research results remain inconclusive. Several national and international panels have conducted reviews of data from multiple studies and state that there is not sufficient evidence to conclude that EMF causes cancer or other adverse health effects. The IARC and the CDHS both classified EMF as a possible carcinogen. The WHO review, Environmental Health Criteria Monograph 238, affirms IARC's classification of EMF as a possible carcinogen regarding childhood leukemia and agrees that evidence for all other childhood cancers and all adult cancers is "inadequate." And the WHO classified evidence "inadequate" for all non-cancer diseases studied. Neither California nor the United States Federal government has developed EMF exposure guidelines, standards or regulations related to EMF levels from power lines. The WHO Environmental Health Criteria Monograph 238 recommends that: "changes to engineering practice to reduce EMF exposure from equipment or devices should be considered, provided that they yield other additional benefits, such as greater safety, or involve little or no cost." CPUC Decisions D.93-11-013 and D.06-01-042 implemented rules and policies for low-cost and no-cost magnetic field reduction measures, and this project incorporates measures consistent with these decisions.

3.11.8 California Environmental Quality Act

Given the uncertainty of EMF effects and the inability of scientific investigations to identify any unsafe level or component of EMF exposure, potential EMF impacts are appropriately addressed as speculative in accordance with the *CEQA Guidelines*, Section 15145:

"If after thorough investigation a particular impact is found to be too speculative for evaluation, the conclusion shall be noted, and the discussion terminated."

3.12 REQUIRED APPROVALS

The CPUC is the lead California agency for the Proposed Project. SDG&E must comply with the CPUC's G.O. No. 131-D, which contains the permitting requirements for the construction of the Proposed Project. This PEA is being prepared as part of an application to obtain a CPCN for the Proposed Project.

In addition to the CPCN, SDG&E will be required to obtain other approvals from federal, state and local agencies to implement the Proposed Project. Table 3-19, Anticipated Permit, Approval, and Consultation Requirements identifies other permits, approvals, and licenses that SDG&E anticipates may be required for the Proposed Project.

The remainder of this page is intentionally left blank.

Table 3-19: Anticipated Permit, Approval, and Consultation Requirements

Permit/Approval/Consultation	Agency	Jurisdiction/Purpose
Federal Agencies		
National Environmental Policy Act (NEPA) Compliance	Department of the Navy	The Department of the Navy serves as the Lead NEPA agency for ROW modification on Camp Pendleton
Section 106 Review, National Historic Preservation Act	Advisory Council on Historic Preservation	Construction, operation, and maintenance on land that may affect cultural or historic resources
State Agencies		
CPCN	CPUC	Overall project approval and CEQA review
NPDES–Construction Stormwater Permit	RWQCB	Stormwater discharges associated with construction activities disturbing more than one acre of land
Encroachment Permit	Caltrans	Construction, operation, and maintenance within, under, or over state highway ROW
State Historic Preservation Officer (SHPO) Consultation	SHPO	Cultural resources management (if appropriate)

The remainder of this page is intentionally left blank.

Table 3-19 (cont.): Anticipated Permit, Approval, and Consultation Requirements

Permit/Approval/Consultation	Agency	Jurisdiction/Purpose
Local Agencies		
Demolition Permit	City of San Juan Capistrano (ministerial)	Demolition of the existing abandoned utility structure.
Grading Permit	City of San Juan Capistrano (ministerial)	On-site grading activities at the Capistrano Substation.
Traffic Control Plan	County of Orange San Juan Capistrano and San Clemente	Construction within, under or over city or county road ROW.
Right of Way Encroachment	Southern California Regional Rail Authority	Construction within and under (jack-and-bore) railway ROW.
Building (Substation Perimeter Wall) Permit	City of San Juan Capistrano (ministerial)	Substation perimeter wall construction.
Street Improvements	City of San Juan Capistrano (ministerial)	Sidewalk and curb improvements.

The remainder of this page is intentionally left blank.

3.13 REFERENCES

Ahlbom, A. and Day, N. et al. 2000. "A pooled analysis of magnetic fields and childhood leukemia." British Journal of Cancer (83):692-698.

American Cancer Society. 1996. *Electromagnetic Field Exposure and Cancer: A Review of Epidemiologic Evidence*.

American Conference of Governmental and Industrial Hygienists. 1991. *Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.*

American Medical Association. 1995. *Effects of Electric and Magnetic Fields, Report 7 of the Council of Scientific Affairs*.

American Physical Society. 1995. *Background Paper on Powerline Fields and Public Health.*

California Department of Health Services. 2002. *An Evaluation of the Possible Risks From Electric and Magnetic Fields (EMFs) From Power Lines, Internal Wiring, Electrical Occupations and Appliances.*

California Public Utilities Commission/California Department of Health Services. 1989. *Potential Health Effect of Electric and Magnetic Fields From Electric Power Facilities*.

California Public Utilities Commission. 1993. *Order Instituting Investigation on the Commission's own motion to develop policies and procedures for addressing the potential health effects of electric and magnetic fields of utility facilities.*

California Public Utilities Commission. 2006. *Opinion On Commission Policies Addressing Electromagnetic Fields Emanating From Regulated Utility Facilities.*

Connecticut Academy of Science and Engineering. 1992. *Electromagnetic Field Health Effects*.

Danish Ministry of Health. 1993. *Report on the Risk of Cancer in Children Living in Homes Exposed to 50 Hz Magnetic Fields From High Voltage Lines.*

Health Council of the Netherlands. 2001. *Electromagnetic Fields, Annual Update 2001*.

Institut National de la Santé et de la Recherche Médicale. 1993. *Synthesis of the Literature on Health Effects From Very Low Frequency Electric and Magnetic Fields.*

International Agency for Research on Cancer. 2002. *Static and Extremely Low Frequency Electric and Magnetic Fields*, Vol. 80.

SDG&E (San Diego Gas & Electric). December 15, 1995. *Subregional Natural Community Conservation Plan*.

San Diego Gas & Electric Company. July, 2009. *Electric Standard Practice No. 113.1 – Wildland Fire Prevention and Fire Safety*.

4.0 ENVIRONMENTAL IMPACT ASSESSMENT

This section of the PEA presents an evaluation of the potential impacts associated with the Proposed Project for identified environmental resource areas derived from CPUC requirements, PUC Section 1001-1013, and CEQA requirements, Public Resources Code Section 21080 et seq.

For each resource area, the analysis includes a description of the existing environment and an evaluation of potential adverse and beneficial environmental consequences (also referred to as environmental impacts or effects) associated with the construction, operation and maintenance of the Proposed Project. To the extent operation and maintenance of the Proposed Project will occur in the same location as existing facilities and would have the same or substantially the same impacts, frequency and duration as operation and maintenance activities of the existing facilities, such activities are incorporated into the existing environmental setting and baseline for assessing impacts. Cumulative impacts are considered to account for other activities in the area which, when considered together with the Proposed Project, could potentially compound or increase environmental impacts.

The analyses presented in this section are based on the following: (1) details of the Proposed Project as presented in Section 3.0, Proposed Project Description; (2) requirements under CEQA and the *CEQA Guidelines;* (3) CPUC requirements, including G.O. 131-D and guidance materials; and (4) consideration of input from responsible and reviewing agencies.

Potential impacts are identified and evaluated based upon the significance criteria outlined in Appendix G of the *CEQA Guidelines*. A completed CEQA checklist for each resource area is provided at the beginning of each resource chapter. For example, the completed aesthetics CEQA checklist is provided on Page 4.1-1 of the Aesthetics Section of the PEA. Furthermore, applicant proposed minimization and avoidance measures or APMs are outlined at the end of each impact assessment section and have been incorporated into the design of the Proposed Project where potentially significant impacts are found to be present for a particular resource area. The complete list of APMs included as part of the Proposed Project is provided in Table 3-18, Applicant Proposed Measures.

The individual impact assessments for each of the resource areas are organized within Section 4 of this PEA as follows:

- 4.1 – Aesthetics
- 4.2 – Agriculture and Forestry Resources
- 4.3 – Air Quality and Greenhouse Gases
- 4.4 – Biological Resources
- 4.5 – Cultural Resources
- 4.6 – Geology, Soils, and Minerals

- 4.7 – Hazards and Hazardous Materials
- 4.8 – Hydrology and Water Quality
- 4.9 – Land Use and Planning
- 4.10 – Noise
- 4.11 – Population and Housing
- 4.12 – Public Services
- 4.13 – Recreation
- 4.14 – Transportation and Traffic
- 4.15 – Utilities and Service Systems
- 4.16 – Cumulative Impacts

Technical support and reference for the impact assessments are provided in the following technical appendices:

- Appendix 4.3-A: Emissions Calculations
- Appendix 4.4-A: Biological Resources Assessment
- Appendix 4-5-A: Cultural Resources Assessment Report
- Appendix 4-5-B: Historic Property Evaluation
- Appendix 4.5-C: Paleontological Resources Record Search
- Appendix 4.7-A: EDR Corridor Study
- Appendix 4.7-B: Historic Aerial Photographs of the Capistrano Substation Site
- Appendix 4.7-C: MSDS for Sulfur Hexafluoride
- Appendix 4.10-A: Basics of Noise and Vibration
- Appendix 4.10-B: Ambient Noise Survey Report

TABLE OF CONTENTS

4.1 AESTHETICS 4.1-1
4.1.1 Introduction 4.1-1
4.1.2 Methodology 4.1-1
4.1.3 Existing Conditions 4.1-3
4.1.4 Potential Impacts 4.1-42
4.1.5 Applicant Proposed Measures 4.1-87
4.1.6 References 4.1-88

LIST OF FIGURES

Figure 4.1-1: Regional Landscape Context 4.1-5
Figure 4.1-2a: Photograph Viewpoint Locations – San Juan Capistrano 4.1-9
Figure 4.1-2b: Photograph Viewpoint Locations – San Clemente 4.1-11
Figure 4.1-3a: Photographs 1 and 2 ..... 4.1-15
Figure 4.1-3b: Photographs 3 and 4 ..... 4.1-16
Figure 4.1-3c: Photographs 5 and 6 ..... 4.1-17
Figure 4.1-3d: Photographs 7 and 8 ..... 4.1-18
Figure 4.1-3e: Photographs 9 and 10 ..... 4.1-20
Figure 4.1-3f: Photographs 11 and 12 ..... 4.1-21
Figure 4.1-3g: Photographs 13 and 14 ..... 4.1-22
Figure 4.1-3h: Photographs 15 and 16 ..... 4.1-23
Figure 4.1-3i: Photographs 17 and 18 ..... 4.1-24
Figure 4.1-3j: Photographs 19 and 20 ..... 4.1-25
Figure 4.1-3k: Photographs 21 and 22 ..... 4.1-27
Figure 4.1-3l: Photographs 23 and 24 ..... 4.1-28
Figure 4.1-3m: Photographs 25 and 26 ..... 4.1-31
Figure 4.1-3n: Photographs 27 and 28 ..... 4.1-32
Figure 4.1-3o: Photographs 29 and 30 ..... 4.1-33
Figure 4.1-3p: Photographs 31 and 32 ..... 4.1-34
Figure 4.1-3q: Photographs 33 and 34 ..... 4.1-36
Figure 4.1-3r: Photographs 35 and 36 ..... 4.1-37
Figure 4.1-4: Preliminary Landscape Screening Diagram 4.1-47
Figure 4.1-5: Existing View and Visual Simulation from Avenida De La Vista 4.1-51
Figure 4.1-6: Existing View and Computer Rendering from Camino Capistrano 4.1-55
Figure 4.1-7: Existing View and Computer Rendering from Calle Santa Rosalia 4.1-57
Figure 4.1-8: Existing View and Computer Rendering from Calle Bonita 4.1-59
Figure 4.1-9: Existing View and Visual Simulation from Junipero Serra Park 4.1-63
Figure 4.1-10: Existing View and Visual Simulation from Via Priorato 4.1-65
Figure 4.1-11: Existing View and Visual Simulation from Arroyo Park 4.1-69
Figure 4.1-12: Existing View and Visual Simulation from San Juan Creek Road 4.1-71
Figure 4.1-13: Existing View and Visual Simulation from San Juan Hills High School 4.1-73
Figure 4.1-14: Existing View and Visual Simulation from Via Ceramica 4.1-77
Figure 4.1-15: Existing View and Visual Simulation from Calle Saluda 4.1-79

Figure 4.1-16: Existing View and Visual Simulation from Talega Park 4.1-83
Figure 4.1-17: Existing View and Visual Simulation from Cristianitos Road 4.1-85

LIST OF TABLES

Table 4.1-1: Summary of Landscape Units 4.1-13
Table 4.1-2: Summary of Simulation Views 4.1-49

4.1 AESTHETICS

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☑	☐	☐
d.	Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

4.1.1 Introduction

This section of the PEA describes the existing conditions relating to visual and aesthetic resources within the Proposed Project area and potential impacts to these resources that could result from the construction, operation, or maintenance of the Proposed Project.

Visual or aesthetic resources are generally defined as both the natural and built features of the landscape that are seen and that contribute to the public's experience and appreciation of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which its presence would alter the perceived visual character and quality of the environment. Implementation of APMs will ensure that potential impacts of the Proposed Project to aesthetic resources will be less than significant**.**

4.1.2 Methodology

The visual analysis is based on review of technical data including Proposed Project maps and drawings provided by SDG&E, aerial and ground level photographs of the Proposed Project area, local planning documents, and computer-generated visual simulations. Field observations were conducted in March and November 2008, June 2010, September 2011, and February 2012 to document existing visual conditions in the Proposed Project area and to identify potentially affected sensitive viewing locations.

This visual study employs assessment methods based, in part, on the U.S. Department of Transportation (DOT), Federal Highway Administration's (FHWA), and other accepted visual analysis techniques as summarized by Smardon, et al. (1986). This study also addresses the *CEQA Guidelines* for visual impact analysis. Included are systematic documentation of the

visual setting and an evaluation of visual changes associated with the Proposed Project. In order to convey a sense of existing visual conditions, a set of 36 photographs depict representative public views of the Proposed Project area. As depicted in these photographs, public views of the Proposed Project area currently include extensive electric transmission, distribution, and substation facilities. These existing conditions constitute the baseline from which visual impacts are evaluated.

Consistent with FHWA methods, this impact analysis describes change to existing visual resources and assesses viewer response to that change. Central to this assessment is an evaluation of representative views from which the Proposed Project would be visible to the public. In order to document the visual change that would occur, visual simulations, presented as "before" and "after" images, show the Proposed Project from key representative public viewpoints, or Key Observation Points (KOPs). The visual impact assessment is based on evaluation of the changes to the existing visual resources that would result from construction and operation of the Proposed Project. These changes were assessed, in part, by evaluating the "after" views provided by the computer-generated visual simulations and comparing them to the existing visual environment.

4.1.2.1 Visual Simulation Methods

As part of the aesthetic impact evaluation of the Proposed Project, visual simulations were produced using computer-modeling and rendering techniques. The simulations illustrate the visual change associated with the Proposed Project as seen from publicly accessible KOPs within the Proposed Project area. The visual simulations are the results of an objective computer modeling process; the technical methods employed for producing the computer-generated simulation images are outlined below.

Digital photographs and computer modeling and rendering techniques were employed to produce a set of images that illustrate "before" and "after" visual conditions in the Proposed Project transmission line features. These images employ photographs taken using a digital single lens reflex (SLR) camera with a 50 millimeter (mm) equivalent lens which represents a horizontal view angle of 40 degrees. The simulations portray the location, scale, and appearance of the Proposed Project as seen from selected KOPs.

Three–dimensional modeling for proposed transmission structures was developed using engineering design data supplied by SDG&E and combined with geographic information system (GIS) and engineering data and digital aerial photographs of the existing site to produce digital modeling for visual analysis and simulation of the Proposed Project. For the simulation viewpoints, photograph locations were incorporated based on global positioning system (GPS) field data, using 5 feet as the assumed eye level.

Computer "wireframe" perspective plots were overlaid on the photographs to verify scale and viewpoint locations. Digital visual simulation images were then produced based on computer renderings of the 3-D modeling combined with selected digital site photographs. The final "hardcopy" visual simulation images contained in this visual analysis were printed from the digital image files and produced in color on 11x17 inch sheets. A summary of the ten simulation

views and a description of the particular Proposed Project changes portrayed in each of the views are included in Section 4.1.4.7.

In addition to the set of visual simulations prepared specifically for this visual analysis, three existing photographic views and computer renderings that portray the new San Juan Capistrano Substation were prepared as part of the substation design and community outreach processes, and have been included within this section of the PEA. These renderings portray the Proposed Project, including conceptual landscaping and perimeter wall along the Proposed Project's Camino Capistrano street frontage where applicable.

4.1.3 Existing Conditions

4.1.3.1 Regional and Local Landscape Setting

The Proposed Project area is situated in southern California, amidst a series of mountain ranges that generally run north to south. The landscape's geography includes the Peninsular Ranges to the east, a group of mountain ranges running approximately north-south and stretching from Los Angeles south into Baja Mexico with peaks over 10,000 feet. Landforms include the Santa Ana Mountains to the north and lower ranges of hills that slope directly to the coastline. Creeks running south to the Pacific Ocean provide more level, valley areas, where development tends to occur. Elevations along the Proposed Project route range from 130 feet to 750 feet above sea level. Figure 4.1-1, Existing Landscape Context, shows the Proposed Project's regional context.

Along much of the Proposed Project route native vegetation has been replaced with landscaping at residential and other developments. The entire route the Proposed Project would follow currently has existing electric transmission and distribution facilities located in the immediate vicinity. Existing transmission and distribution structures in the Proposed Project area include substation facilities as well as steel lattice towers, steel poles, wood utility poles and overhead power lines. The Proposed Project route currently contains from three to six existing electric transmission or distribution lines. The majority of the undeveloped areas surrounding the Proposed Project are located at the Prima Deshecha Landfill site.

The Proposed Project is located primarily in South Orange County within urbanized areas in the cities of San Clemente, a community of 34,000 residents, and San Juan Capistrano, a community with 50,000 residents, and within unincorporated portions of the county. Both cities maintain trail systems for public recreational use. In addition, the Proposed Project includes some changes that involve the relocation of adjacent existing power lines at Camp Pendleton, a United States Marine Corps (USMC) facility in San Diego County. Although the Proposed Project area was settled as early as the 1700s, when the Mission San Juan Capistrano was established, most development along the route occurred since the 1950s and, most recently, the Talega area in northern San Clemente was developed within the past decade.

I-5 runs north-south through the area connecting the region with Los Angeles and the Central California Valley to the north and San Diego to the south. SR-74, known as the Ortega Highway, runs approximately east-west through the area connecting the coast with inland areas.

THIS PAGE IS INTENDED TO BE LEFT BLANK



South Orange County Reliability Enhancement Project

Regional Landscape Context

Figure 4.1-1

Created For: Mary Turley

Created By: ENVIRONMENTAL VISION

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Proposed Transmission Line

Substation

County Boundary

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.1-1

The Proposed Project route also crosses and parallels other local arterials including Avenida Pico and Avenida Vista Hermosa in San Clemente and Rancho Viejo Road and San Juan Creek Road in San Juan Capistrano.

Nighttime lighting in the Proposed Project area includes highway and street lighting, as well as localized lighting sources associated with residential and commercial development, public facilities such as parks and schools, and the existing San Juan Capistrano and Talega Substations.

4.1.3.2 Proposed Project Viewshed

The Proposed Project viewshed is defined as the general area from which a project is visible or can be seen. For purposes of describing a project's visual setting and assessing potential visual impacts, the viewshed can be broken down into distance zones of foreground, middleground, and background. The foreground is defined as the zone within a quarter to a half-mile from the viewer. Landscape detail is most noticeable and objects generally appear most prominent when seen in the foreground. The middleground can be defined as a zone that extends from the foreground up to three to five miles from the viewer, and the background extends from about three to five miles to infinity.

For the purpose of this analysis, the potential effects on foreground viewshed conditions are emphasized, particularly those areas within 0.25 mile of the Proposed Project. Given topographic conditions and the presence of intervening vegetation as well as the length of the overall Proposed Project route, the Proposed Project would not be visible in its entirety from any single viewing location. Portions of the Proposed Project would be visible from residential areas, public roadways, and/or open space. However, as seen from many places within the surrounding area, intervening landform and vegetation would partially or fully screen views of the Proposed Project.

Within the Proposed Project area, transmission structures, including steel and wood poles, lattice towers, and overhead conductors, associated with several existing transmission lines including the Proposed Project, are established features seen within the landscape setting.

4.1.3.3 Landscape Units and Representative Views

The Proposed Project area includes the existing Capistrano and Talega Substations and the 7.75-mile route that follows an existing transmission line connecting these two substations. A set of five distinct sub-areas, or landscape units, have been identified for purposes of documenting and describing the Proposed Project's foreground viewshed. Table 4.1-1, Summary of Landscape Units, summarizes the landscape units identified within the Proposed Project viewshed. Figure 4.1-2a and 4.1-2b (Photograph Viewpoint Locations) delineate the Proposed Project route, and photograph viewpoint locations. Figures 4.1-3a through 4.1-3r (Photographs of the Project and Vicinity) present a set of 36 photographs that show representative visual conditions and existing public views within the Proposed Project area, from the points shown on Figures 4.1-2a and 4.1-2b.

As depicted in the photographs of representative views, extensive electric transmission, distribution and substation facilities are visible in all of the landscape units and throughout the entire Proposed Project area.

THIS PAGE IS INTENDED TO BE LEFT BLANK



Created For: Mary Turley
Created By: ENVIRONMENTAL VISION
Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Proposed Transmission Line - Overhead
Proposed Transmission Line - Underground
City Boundary

1 Viewpoint Location and Direction
9 Simulation Viewpoint Location and Direction
A Rendering Viewpoint Location and Direction

Base Image: ESRI

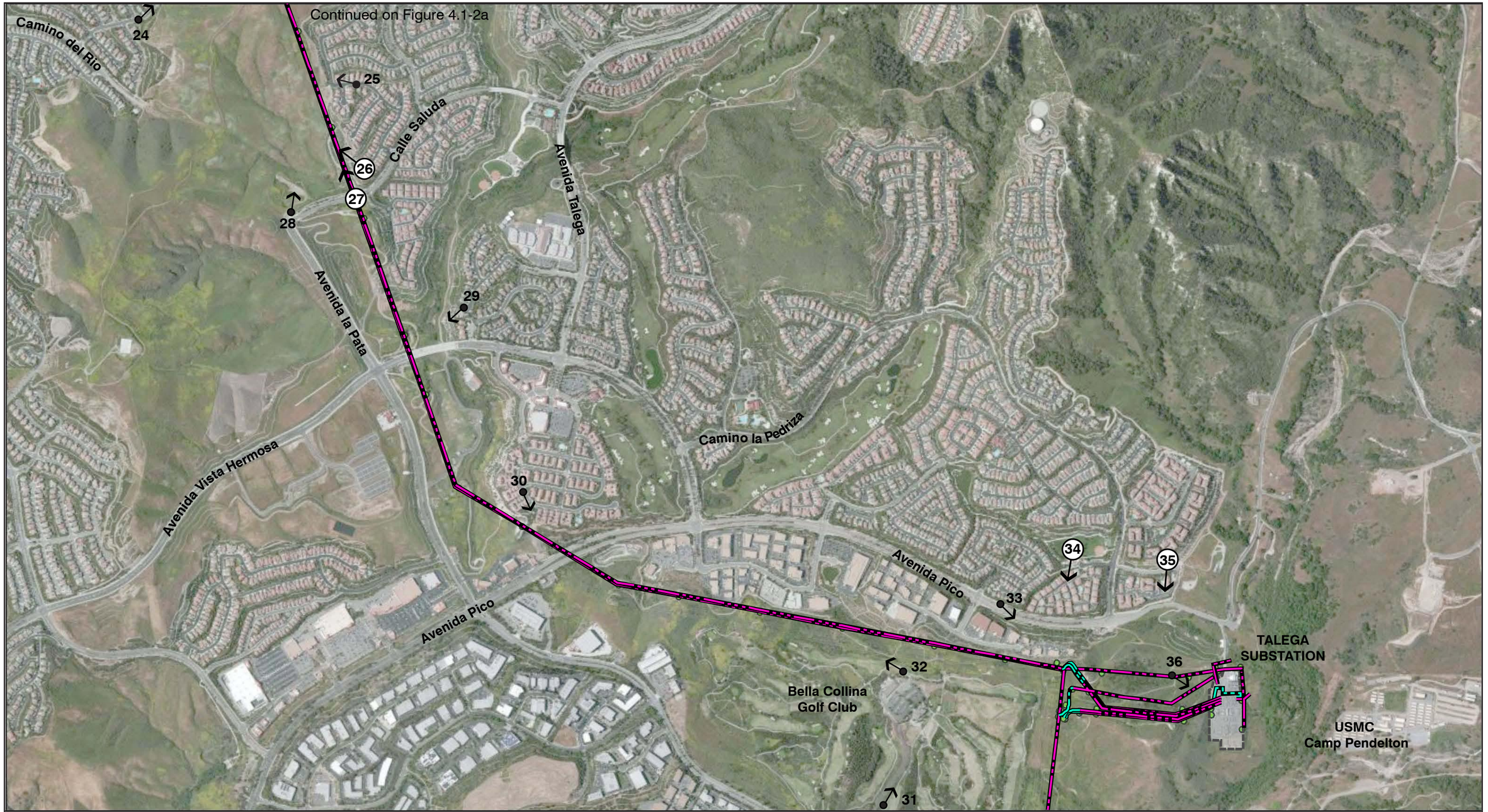
N
0 1,000 2,000 feet

South Orange County Reliability Enhancement Project
Photograph Viewpoint Locations - San Juan Capistrano
Figure 4.1-2a

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT
SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.1-2A



Created For: Mary Turley
Created By: ENVIRONMENTAL VISION
Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Proposed Transmission Line - Overhead
Proposed Transmission Line - Underground
Viewpoint Location and Direction
Simulation Viewpoint Location and Direction

Base Image: ESRI

N
0 1,000 2,000 feet

South Orange County Reliability Enhancement Project
Photograph Viewpoint Locations - San Clemente
Figure 4.1-2b

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT
SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.1-2B

Table 4.1-1: Summary of Landscape Units

Landscape Unit (Approximate length/size)	Primary Affected Viewers	Representative Photograph Numbers*	Representative Simulation KOPs*
Capistrano Substation (6.4 acre)	Motorists, residents, recreationalists	1 through 8	A-C (substation) 1 and 2 (transmission line)
Capistrano Substation to Juliana Farms (2 miles)	Motorists, residents	9 through 20	9, 13, 17 and 20
Juliana Farms to Forster Ridge (2.5 miles)	San Juan Hills High School students, local motorists, recreationalists	21 through 23	22
Forster Ridge to Talega Substation (3 miles)	Local motorists, residents, recreationalists	24 through 36	26, 27, 34 and 35
* Refer to Figures 4.1-2a and 4.1-2b for viewpoint locations			

Capistrano Substation (Photographs 1 through 8)

Located within the city of San Juan Capistrano, 0.5 mile north of the historic Mission San Juan Capistrano and 700 feet west of I-5, Capistrano Substation lies within a developed area that is primarily residential. The substation site is bordered by Camino Capistrano, Calle Santa Rosalia, and Calle Bonita. Portions of the substation are visible from places along public streets as well as from limited nearby residential areas.

Photograph 1 (refer to Figure 4.1-3a) is a view from Avenida De La Vista of the western end of the Proposed Project route, where two new steel cable poles would be installed in place of existing steel poles and overhead conductor adjacent to an existing condominium complex. Two transmission poles and overhead conductors are visible against the sky, near the center of the photograph. Photographs 2 and 3 (refer to Figures 4.1-3a and 4.1.-3b), from Camino Capistrano, represent both motorists' views and views from an adjacent public greenway. From these vantage points mature landscaping screens most of the substation site. A wall provides additional screening with respect to views of the substation; however, two transmission poles and several sets of overhead lines can be clearly seen from the road.

Portions of the substation are somewhat more visible from the residential streets surrounding the south and east sides of the site, and from Junipero Serra Park, located to the east, across Calle Santa Rosalia. In Photograph 4 (refer to Figure 4.1-3b), a view from Calle Bonita, taken near Camino Capistrano, perimeter landscaping partially screens the substation structures; however, transmission poles, lattice towers, and upper portions of the substation are visible, against the sky, near the center of the photograph. As shown in Photographs 5 through 8 from Via El Rosario and Calle Santa Rosalia (refer to Figures 4.1-3c and 4.1-3d), taller structures including transmission poles and other substation components are visible beyond the perimeter fence. Street lights, street signs, wood utility poles and other vertical elements are part of this landscape setting. In Photographs 5 and 6 (refer to Figure 4.1-3c) vehicles parked in a storage facility

adjacent to the site appear in the foreground. In these views substation elements are visible against the sky and/or a backdrop of distant hillsides.

Primary viewers in this landscape unit include motorists on Camino Capistrano and local roadways as well as recreationalists such as people using Junipero Serra Park. In addition there are a limited number of nearby residential viewers.

The remainder of this page is intentionally left blank.



1. Avenida De La Vista near Calle San Diego looking south*



2. Camino Capistrano looking southeast

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3a

* Photograph used for simulation on Figure 4.1-5

Refer to Figure 4.1-2a for photograph viewpoint locations

Source: Environmental Vision

041812



3. Camino Capistrano near Calle Bonita looking north



4. Calle Bonita near Camino Capistrano looking east

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Refer to Figure 4.1-2a for photograph viewpoint locations

Figure 4.1-3b

Source: Environmental Vision

041812



5. Via El Rosario looking north



6. Calle Santa Rosalia at Calle Bonita looking northwest

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Refer to Figure 4.1-2a for photograph viewpoint locations

Figure 4.1-3c

Source: Environmental Vision

041812



7. Serra Park looking west



8. Calle la Bomba at Calle Santa Rosalia looking southwest

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Refer to Figure 4.1-2a for photograph viewpoint locations

Figure 4.1-3d

Source: Environmental Vision

041812

Capistrano Substation to Juliana Farms (Photographs 9 through 20)

From the Capistrano Substation the route runs southeast, for approximately two miles, through residential areas in the northern and eastern parts of the city of San Juan Capistrano. In this landscape unit the transmission line that would be replaced by the Proposed Project is paralleled by an adjacent transmission line that is similar in appearance.

Photograph 9 taken at Junipero Serra Park (refer to Figure 4.1-3e), on Calle Santa Rosalia, shows the transmission line that would be replaced by the Proposed Project as well as an adjacent transmission line. From the park, the route crosses I-5 where overhead conductors and transmission poles are visible from the roadway (refer to Photograph 10 on Figure 4.1-3e).

East of I-5 the route continues through residential neighborhoods in eastern San Juan Capistrano (Photographs 11 through 20). Photograph 11 (refer to Figure 4.1-3f), taken from Rancho Viejo Road, shows dense mature roadside vegetation with upper portions of two transmission poles and overhead conductors silhouetted against the sky. As shown in Photograph 12 (refer to Figure 4.1-3f), the line that would be replaced by the Proposed Project and the parallel transmission lines are visible from Marbella Country Club, although vegetation screens the lower portions of the poles. Photographs 13 through 15 (refer to Figures 4.1-3g and 4.1-3h) demonstrate that, although vegetation typically provides some screening, the transmission poles are a relatively prominent landscape element in some views from this residential area. Approximately one-mile from the Capistrano Substation, the transmission line crosses SR-74. Photograph 14, a view from this roadway, includes the upper part of a Proposed Project route transmission pole, seen against the sky, near the center of the photograph. A line of utility poles that runs parallel to the highway appears to the left of the roadway. In addition a lattice steel tower on the adjacent line is barely discernible to the right of this pole. Overhead conductors of both lines are visible against the sky. Photographs 17 through 19 (refer to Figures 4.1-3i and 4.1-3j) show the area where steel poles support the existing line along the Proposed Project route and lattice steel towers support the adjacent line. These photographs portray close-range views of the poles silhouetted against the sky, from both residential streets and public parks. South of San Juan Creek Road, the Proposed Project route transitions from San Juan Capistrano residential areas into open terrain. Within this transition area the existing transmission line along the Proposed Project route is supported by structures comprised of multiple wood poles; Photograph 20 (refer to Figure 4.1-3j), taken from San Juan Creek Road at Juliana Farms Road, shows two of these wood multi-pole transmission structures. Near the center of this photograph, lattice steel towers of the adjacent line are visible, and wood poles of an adjacent utility line can be seen to the right.

Primary viewers in this landscape unit include residents in the northern portions of San Juan Capistrano as well as motorists using I-5, SR-74 and San Juan Creek Road and numerous roadways. A smaller viewer group includes people using nearby public spaces such as Arroyo Park and recreational trails within the city of San Juan Capistrano.



9. Serra Park near Calle Santa Rosalia looking east*



10. Interstate 5 northbound looking north

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3e

* Photograph used for simulation on Figure 4.1-6

Refer to Figure 4.1-2a for photograph viewpoint locations

Source: Environmental Vision

041812



11. Rancho Viejo Road looking southeast



12. Marabella Country Club looking northwest

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Refer to Figure 4.1-2a for photograph viewpoint locations

Figure 4.1-3f

Source: Environmental Vision

041812



13. Via Priorato near Paseo Boveda looking north*



14. Belford-Marabella Trail at Calle de la Rosa looking southeast

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3g

* Photograph used for simulation on Figure 4.1-7
Refer to Figure 4.1-2a for photograph viewpoint locations

Source: Environmental Vision

041812



15. Calle de la Rosa looking north



16. Highway 74 looking northeast

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3h

Refer to Figure 4.1-2a for photograph viewpoint locations

Source: Environmental Vision

041812



17. Arroyo Park from Sundance Drive looking southeast*



18. Calle del Campo looking south

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3i

* Photograph used for simulation on Figure 4.1-8
Refer to Figure 4.1-2a for photograph viewpoint locations

Source: Environmental Vision

041812



19. San Juan Creek Road near Avenida La Mancha looking north



20. San Juan Creek Road at Juliana Farms Road looking southeast*

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3j

* Photograph used for simulation on Figure 4.1-9

Refer to Figure 4.1-2a for photograph viewpoint locations

Source: Environmental Vision

041812

Juliana Farms to Forster Ridge (Photographs 21 through 23)

The route continues roughly southeast, from the area near San Juan Creek Road and Juliana Farms for approximately 2.5 miles before entering the city of San Clemente near Forester Ridge. This landscape unit consists predominantly of undeveloped land, and, in this area, the Proposed Project site is paralleled by multiple transmission lines.

As the Proposed Project route leaves the residential areas of San Juan Capistrano and enters open space it is roughly followed by the Juliana Farms Trail. Photograph 21 (refer to Figure 4.1-3k) is from this trail, looking northwest, toward the trailhead, approximately 0.5 mile away. Near the center of this view a set of wood multi-pole structures and steel poles that support the Proposed Project line are visible within open undulating terrain and the hillsides of San Juan Capistrano appear in the backdrop. A set of lattice steel towers associated with an adjacent line can be seen to the right of the Proposed Project poles; a line of wood utility poles is also visible to the left. Overhead conductors from all three of these power lines are visible against the sky.

San Juan Hills High School is located in San Juan Capistrano, approximately 1.25 mile south of SR-74 at La Pata Avenue, within a landscape setting of mostly undeveloped rolling hillsides. South of the high school, the Proposed Project line and the adjacent transmission line are transferred underground by a set of cable poles. In Photograph 22 (refer to Figure 4.1-3k), taken from the high school's southern parking area, these cable poles appear near the center of the view, seen partially against the hills of the surrounding open space and partially against the sky. Overhead conductors can be seen against the sky, running from the cable poles, to the right side of the photograph, and several light standards are visible in the parking lot.

Photograph 23 (refer to Figure 4.1-3l) is a view from La Pata Avenue (also known as Cow Pasture Road) looking south toward its intersection with Vista Montana. Two cable poles, one associated with the Proposed Project line and the other with the adjacent line, can be seen near the center of the photograph, to the right of La Pata Avenue, just beyond Vista Montana. The Proposed Project route continues from this location, as an overhead line, in a southerly direction, paralleled by at least three other transmission lines. Numerous vertical elements are visible from this location, including lattice steel towers, wood utility poles, street lights and traffic signals. These elements appear in varying degrees against both the hillsides and the sky. At the end of La Pata Avenue, the Proposed Project is adjacent to the Prima Deshecha Landfill site. In the southern portion of this landscape unit a trail network including the Prima Deshecha Landfill and the Forster Ridgeline Trails provides for public recreational opportunities.

Primary viewers along this portion of the route are people using nearby recreational trails and students and staff of San Juan Hills High School. Other viewers include motorists (mostly en-route to the High School or the landfill) on La Pata Avenue and a limited number of other local roadways.



21. Juliana Farm Trail looking northwest



22. San Juan Hills High School looking south*

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3k

* Photograph used for simulation on Figure 4.1-10

Refer to Figure 4.1-2a for photograph viewpoint locations

Source: Environmental Vision

041812



23. La Pata Avenue (east of San Juan Hills High School) looking south



24. Camino del Vistazo looking northwest

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3l

Refer to Figure 4.1-2a and 4.1-2b for photograph viewpoint locations

Source: Environmental Vision

041812

Forster Ridge to Talega Substation (Photographs 24 through 36)

Approximately 4.5 miles from its beginning point at the existing Capistrano Substation site the Proposed Project route reenters a developed residential area. From this point until it terminates at the Talega Substation the Proposed Project borders the Talega neighborhood, located in northern San Clemente. This neighborhood is a master-planned community and includes residences, parks, golf courses, a business park, and a shopping center. In this area local residential loop streets and cul-de-sacs are connected and separated by a system of wider arterials designed for faster moving through-traffic. Throughout this unit, several transmission and other utility lines are established features in the vicinity of the Proposed Project.

Photograph 24 (refer to Figure 4.1-3m) is a view from a residential neighborhood located west of the route. Wood pole "H" frame Proposed Project poles, as well as lattice towers of adjacent transmission lines can be seen, on the ridgeline against the sky.

Photographs 25 through 30 (refer to Figures 4.1-3m through 4.1-3o) are views from the residential neighborhood north of Avenida Pico in the southern San Clemente hills. Photographs 25 and 26 (refer to Figure 4.1-3n) show the Proposed Project as seen from local residential streets near the northwest edge of Talega. In both of these photographs, the Proposed Project as well as adjacent lines are visible on the grassy slope beyond the houses and against the sky. In this area, the Proposed Project is visible from wider arterials that provide access to the community, such as Avenida La Pata and Vista Hermosa. In this area the Prima Deshecha Trail roughly coincides with the Proposed Project ROW for approximately 3.5 miles. Photograph 27 (refer to Figure 4.1-3n) is an unobstructed view looking toward the Proposed Project route from Calle Saluda. The Proposed Project line, supported on wood "H" frame poles, is visible near the center of the photograph, and is seen, surrounded by adjacent utility lines, partially against a hillside backdrop and partially against sky. Photograph 28 (refer to Figure 4.1-3n) is a view from Calle Saluda near Avenida La Pata. In this photograph, the foreground is dominated by grassy hillsides, and houses of the Talega area are visible beyond. The Proposed Project line and various nearby utility lines, including several supported by lattice steel towers, can be seen on the right against a backdrop of houses and hills, and toward the left against the sky. Photograph 29 (refer to Figure 4.1-3o) represents views of residences south of Calle Saluda and north of Avenue Vista Hermosa. The Prima Deshecha Trail, visible near the bottom edge of the view, beyond the fence in the foreground, can be seen going under the Avenue Vista Hermosa Bridge on the left. An existing wood "H" frame pole can be seen near the center of the photograph, backdropped by grassy hillsides. Lattice steel towers that support nearby lines are visible, partially against these hillsides and partially against the sky. Photograph 30 (refer to Figure 4.1-3o), taken from the Talega residential area, north of Avenida Pico shows several utility lines, including the Proposed Project location, skylining beyond the foreground houses.

For its final 1.25 miles, the Proposed Project route borders the Bella Collina Towne & Golf located to the south. Photograph 31 (refer to Figure 4.1-3p) illustrates that vistas of the Talega neighborhood, San Clemente Hills and distant mountains are available from the golf course entry road. Several lattice towers can be seen silhouetted against the sky and mountain backdrop, and a wood multi-pole is discernible on the knoll near the center of the photograph. Photograph 32 (refer to Figure 4.1-3p), a view from the golf course, shows golf course landscaping in the foreground and several sets of utility line structures, including lattice steel transmission towers;

steel and wood poles and "H" frame poles. These structures are visible against a backdrop of nearby development and more-distant open ridgelines; the upper portions of the taller lattice towers are visible against the sky.

Viewers in this landscape unit include residents and local roadway motorists as well as people using the golf course and recreation trails, and workers at the adjacent business park. Photographs taken from this area demonstrate that views toward the Proposed Project currently include lattice steel transmission towers, overhead lines and wood poles along the Proposed Project route.

The remainder of this page is intentionally left blank.



25. Via Apuesto at Corte La Cereza looking north



26. Via Ceramica north of Calle Saluda looking northwest*

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3m

* Photograph used for simulation on Figure 4.1-11

Refer to Figure 4.1-2b for photograph viewpoint locations

Source: Environmental Vision

041812



27. Calle Saluda at Prima Desecha Trail looking northwest*



28. Calle Saluda at Avenida La Pata looking north

South Orange County Reliability Enhancement Project

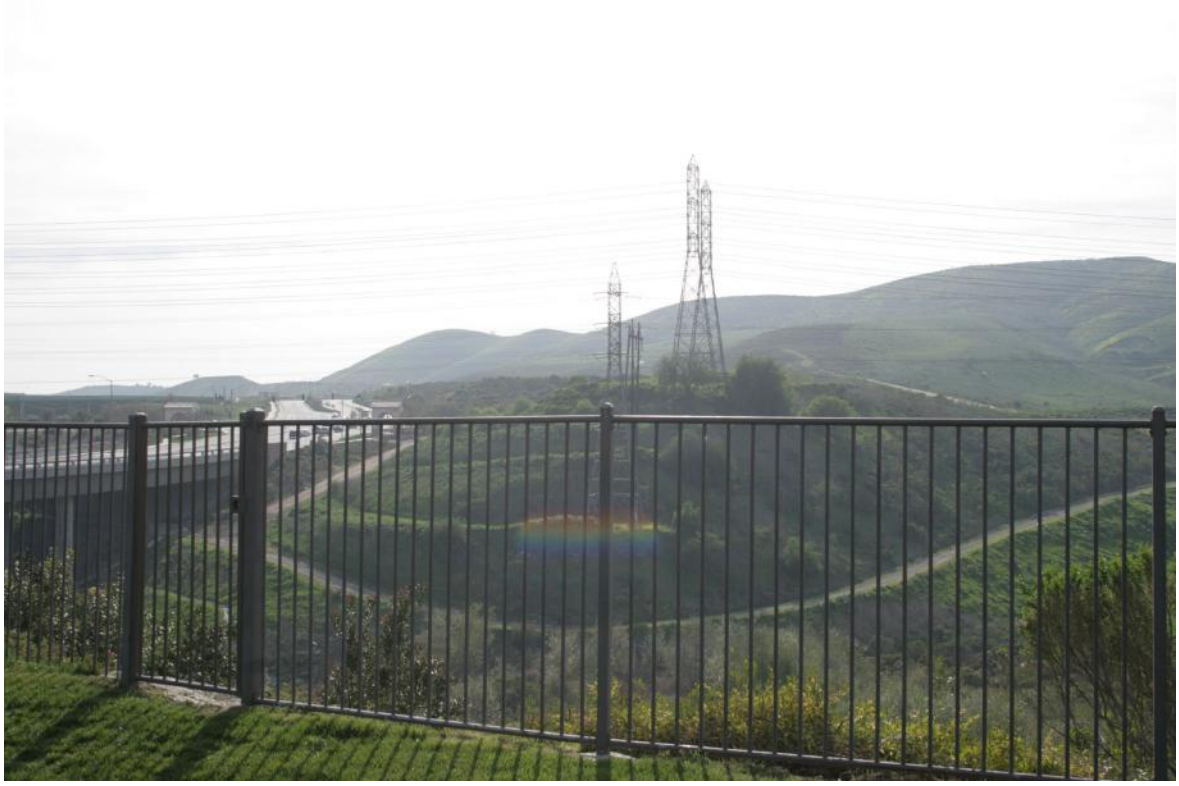
Photographs of the Existing Project and Vicinity

Figure 4.1-3n

* Photograph used for simulation on Figure 4.1-12
Refer to Figure 4.1-2b for photograph viewpoint locations

Source: Environmental Vision

041812



29. Calle Portofino looking southwest toward Avenida Vista Hermosa Bridge



30. Paseo Vista near Paso Rosa looking southeast

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3o

Refer to Figure 4.1-2b for photograph viewpoint locations

Source: Environmental Vision

041812



31. Pacific Golf and Country Club entry road looking north



32. Pacific Golf and Country Club looking northwest

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3p

Refer to Figure 4.1-2b for photograph viewpoint locations

Source: Environmental Vision

041812

Talega Substation

The Talega Substation is situated southwest of the Talega neighborhood on a relatively flat, approximately 6.1 acre site, which is located at an elevation of approximately 240 feet. Nearby hills situated to the west rise to above 400 feet in elevation. For about 2,000 feet several additional utility lines run along the ridgeline in close proximity to the route. The substation site lies downhill from Avenida Pico, an arterial road, and is situated approximately 0.25 mile from the closest Talega neighborhood residences. Intervening topography obstructs views of the substation from most of this residential area.

Photograph 33 (refer to Figure 4.1-3q) is a view from Avenida Pico near Camino Celosia. A landscaped slope and the buildings of the Talega Business Park dominate the foreground of this view. A wood three-pole structure, visible near the center of the view, is heavily screened by both buildings and vegetation. Lattice steel towers and overhead lines from adjacent routes can be seen against the sky.

The view from Talega Park shows residences and playground structures in the foreground with commercial development as well as lattice transmission towers and other utility poles visible against the sky on the ridge (Photograph 34 – Figure 4.1-3q). Photograph 35 (refer to Figure 4.1-3r), taken from Cristianitos Road at the far eastern end of the Talega neighborhood, is a hillside view looking south across nearby residential development. Talega Substation appears against a landscape backdrop at the left edge of this view. On the nearby hillside several transmission lines and other utility structures appear backdropped both by vegetation and against the sky. Photograph 36 (refer to Figure 4.1-3r) is a view of the open hilly landscape and Talega Substation as seen from the undeveloped area near the Prima Deshecha Trail south of Talega.

Viewers in this area of the Proposed Project include residents and a limited number of local roadway motorists as well as people using public parks and recreation trails. Photographs taken from this area demonstrate that views toward the Proposed Project currently include lattice steel transmission towers, overhead lines and wood poles along the Proposed Project route.

The remainder of this page is intentionally left blank.



33. Avenida Pico near Camino Celosia looking southeast



34. Talega Park looking south*

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3q

* Photograph used for simulation on Figure 4.1-13
Refer to Figure 4.1-2b for photograph viewpoint locations

Source: Environmental Vision

041812



35. Panoramic view from above Cristianitos Road looking south*



36. View from trail near the Prima Desecha Trail looking southeast

South Orange County Reliability Enhancement Project

Photographs of the Existing Project and Vicinity

Figure 4.1-3r

* Photograph used for simulation on Figure 4.1-14

Refer to Figure 4.1-2b for photograph viewpoint locations

Source: Environmental Vision

041812

4.1.3.4 Potentially Affected Viewers

Accepted visual assessment methods, including those adopted by FHWA and other federal agencies, establish sensitivity levels as a measure of public concern for changes to scenic quality. Viewer sensitivity, one of the criteria for evaluating visual impact significance, can be divided into high, moderate, and low categories. Factors considered in assigning a sensitivity level include viewer activity, view duration, viewing distance, adjacent land use, and special management or planning designation. According to the DOT *Visual Impact Assessment for Highway Projects*, research on the subject suggests that certain activities tend to heighten viewer awareness of visual and scenic resources, while others tend to be distracting. The primary potentially affected viewer groups within the Proposed Project area are described briefly below.

Motorists

Motorists, the largest viewer group that could be affected by the Proposed Project, include people traveling on I-5, SR 74, arterial roads, and some local residential streets. Local travelers, who are familiar with the visual setting, are likely the primary motorists in the Proposed Project area, although other motorists may include those using the larger roadways on a less regular basis. Affected motorists' views are generally brief in duration, typically lasting less than a few minutes. Viewer sensitivity is considered low to moderate.

Pedestrians and Cyclists

Within the Proposed Project vicinity, pedestrians and cyclists are a smaller viewer group. With their travel speeds slower than those of motorists, the view duration of pedestrians and cyclists is generally longer; therefore, this viewer group may be more likely to notice detail with respect to visual change in the environment. Viewer sensitivity of pedestrians and cyclists is considered moderate.

Recreationalists

Recreationalists, a third potentially affected viewer group, include people using the golf course, open space trails in the Proposed Project area and community parks such as Junipero Serra Park. View duration for this group could range from several minutes to several hours, and viewer sensitivity is considered moderate to high.

Residents

Residents within the neighborhoods that border the transmission line and substations comprise the fourth viewer group. Residential views tend to be long in duration; sensitivity to visual change for this viewer group is considered moderate to high.

4.1.3.5 Regulatory Background

CPUC General Order 131-D

CPUC G.O. 131-D states that local governments have no discretionary authority over construction of utility power line or substation projects. However, as part of the environmental

review process, SDG&E has considered relevant land use plans and policies that pertain to visual quality for the jurisdictions crossed by the Proposed Project route. As noted below at the end of each policy discussion, the construction and operation of this Proposed Project does not conflict with any environmental plans, policies, or regulations pertinent to aesthetics.

City of San Clemente General Plan

The *City of San Clemente General Plan* contains provisions regarding aesthetics in its Scenic Highway Element and its Resources Element.

The Scenic Highway Element includes a goal to maintain the visual quality and scenic views along designated corridors where they contribute and become an essential part of the community's urban fabric. Policy 5.1 lists major and minor scenic corridors. Among these, views of the Proposed Project may be available from the following corridors:

Avenida Vista Hermosa;

Avenida La Pata;

Avenida Pico; and

Calle del Cerro.

Policies and objectives to ensure the preservation of scenic corridors include the following:

Objective 5.3: Ensure that development is sited and designed to protect scenic corridors and open space/landscape areas; blending man-made and man-introduced features with the natural environment.

Policy 5.3.1: Require development to provide compatible landscaping themes with the visual character of the designated scenic corridors.

Policy 5.3.2: Review the heights and setbacks of all structures to ensure the preservation of visual corridors and the maintenance of an open, scenic quality within each corridor.

Policy 5.3.5: Locate new and relocated utilities underground when possible. All others shall be placed and screened to minimize public viewing.

The route crosses city designated scenic routes Avenida Vista Hermosa and Avenida Pico and may be visible from Avenida La Pata and Calle del Cerro. However, given the presence of existing utility structures, the Proposed Project would not substantially change the character of existing views from these roadways.

Chapter 3, the Environmental Resources Element also contains provisions for preserving aesthetic resources. Generally, these policies regard grading and protecting views.

Aesthetic Resources Goal: Maintain the visual character of the city.

> *Objective 10.2:* Preserve the aesthetic resources of the city, including coastal bluffs, visually significant ridgelines and coastal canyons, and significant public views.

The Proposed Project crosses and parallels ridgelines in the city. Because the Proposed Project involves changes within an existing transmission ROW where numerous existing transmission structures are visible, it would not substantially affect views of significant topographic features in the city. Therefore, it is consistent with this policy.

City of San Juan Capistrano General Plan

The *City of San Juan Capistrano General Plan* contains references to visual resources in its Community Design and Conservation and Open Space Element.

The Community Design Element includes goals to enhance and define the community identity and sense of place. The Element designates all arterials within the city as scenic drives as well as SR-74 and I-5.

> *Policy 3.3*: Preserve and enhance scenic transportation corridors, including I-5 and the railroad.
>
> *Policy 3.4:* Preserve important viewsheds.

Scenic Corridors

> Major travelways including both vehicular and rail provide the public with a visual image of the quality of life envisioned by the community. The following design criteria are provided to ensure that these scenic corridors are developed with a sense of care to aesthetic values:
>
> Buffer to screen existing unsightly features outside of the ROW. Use of innovative design features: for bicycle, sidewalks, equestrian trails, boundary walls, and parkways. Attention to building design features that are proposed adjacent to a scenic corridor.

The Conservation and Open Space Element includes the following policies and goals:

> *Goal 4:* Prevent incompatible development in areas which should be preserved for scenic, historic, conservation or public safety purposes.
>
> *Policy 4.1*: Assure incompatible development is avoided in those areas.

The Proposed Project route crosses or is visible from city designated scenic routes including SR-74, I-5, Rancho Viejo Road, San Juan Creek Road. However, because the Proposed Project involves changes to an existing utility corridor, it would not substantially affect views from these roadways and therefore is consistent with these policies.

City of San Juan Capistrano Municipal Code

Section 9-3.529 of the Municipal Code of the city of San Juan Capistrano includes standards for lighting levels in order to balance the desire to "maintain a small-village, rural atmosphere, with the need to provide for the safe movement of vehicles and people in all districts." Tables for lighting levels are provided in the code.

New lighting installed at the San Juan Capistrano Substation would be consistent with this code.

Orange County General Plan

The Transportation and Resources Elements of the *Orange County General Plan* contain goals and policies governing aesthetics in the Proposed Project area.

The Scenic Highways Component of the General Plan, contained within the Transportation Element, identifies the County's scenic highway routes and defines the policy guidelines pertaining to the implementation of the Scenic Highways Plan. It sets forth two types of scenic corridors: viewscape corridors and landscape corridors. SR-74, the Ortega Highway, which the Proposed Project crosses, is designated by the Orange County General Plan as a Landscape Corridor. According to the General Plan, a landscape corridor traverses developed or developing areas and has been designated for special treatment to provide a pleasant driving environment as well as community enhancement. Development within the corridor should serve to complement the scenic highway.

The Proposed Project involves modifying an existing transmission route and would not significantly change views from SR-74; therefore, it is consistent with this policy.

Chapter 6, the Resources Element, which includes the Natural Resources and Open Space Components, also contains goals and policies regarding aesthetic resources. The Natural Resources Component contains the following goals:

> *Goal 1:* Protect wildlife and vegetation resources and promote development that preserves these resources. To prevent the elimination of significant wildlife and vegetation through resource inventory and management strategies.
>
> *Goal 3:* Manage and utilize wisely the County's landform resources. To minimize to the extent feasible the disruption of significant natural landforms in Orange County.

The Open Space Component contains the following goal and policy that pertain to aesthetic resources:

> *Goal 4:* Conserve open space lands needed for recreation, education, and scientific activities, as well as cultural-historic preservation.
>
> *Objective 4.1:* To encourage the conservation of open space lands which provide recreational scenic, scientific, and educational opportunities.

Chapter 6, the Resources Element, also recommends the acquisition of scenic easements as part of new development.

The Proposed Project involves changes within an existing transmission ROW where numerous existing transmission structures are visible and would not substantially affect views of significant topographic or natural resource features in the county. Therefore, it is consistent with this plan.

Orange County Master Plan of Regional Riding and Hiking Trails

The Master Plan of Regional Riding and Hiking Trails shows a trail through the open space around the Prima Deshecha landfill. The route crosses this trail.

In the open space area near the Prima Deshecha Landfill, the Proposed Project involves modifying transmission structures within an existing developed utility ROW. It would not substantially affect views from trails in this area.

California Department of Transportation: Scenic Highway Program

California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a state scenic highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to the Caltrans for scenic highway approval, and receives from Caltrans the designation. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways. However, state legislation is required for designation.

There are no designated state scenic highways in the area; however, SR-74 in Orange County is an eligible state scenic highway. Because the Proposed Project involves changes within an existing transmission ROW where existing transmission structures are visible, it would not substantially affect views from this roadway.

4.1.4 Potential Impacts

4.1.4.1 Significance Criteria

The significance criteria for assessing the impacts to aesthetics come from the CEQA Environmental Checklist. According to the CEQA checklist, a project will cause a potentially significant impact if it will:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or

- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Factors considered in applying these criteria to determine significance include the extent of Proposed Project visibility from residential areas, public open space, and designated scenic routes; the extent of change in the landscape's composition and character; the degree to which the various Proposed Project elements would contrast with or be integrated into the existing landscape; and the number and sensitivity of viewers. Proposed Project conformance with public policies regarding visual quality was also taken into account.

4.1.4.3 Question 4.1a –Would the project have a substantial adverse effect on a scenic vista?

Construction and Operation & Maintenance - No Impact

The Proposed Project area includes extensive electric transmission, distribution, and substation facilities that are visible within the public viewshed. These existing facilities constitute the baseline from which impacts are measured. For purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. As such, there are no recognized scenic vistas within the Proposed Project viewshed. Therefore, the Proposed Project would not obstruct or substantially affect a scenic vista in the area.

The discussion under Section 4.1.4.5 provides detailed evaluation that indicates that the Proposed Project would not substantially alter existing views of the open hillsides and ridgelines that are currently experienced by the public.

4.1.4.4 Question 4.1b – Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Construction and Operation & Maintenance - No Impact

The Proposed Project area includes extensive electric transmission, distribution, and substation facilities that are visible within the public viewshed. These existing facilities constitute the baseline from which impacts are measured.

There are no designated State Scenic Highways within the Proposed Project viewshed; therefore, the Proposed Project would not substantially damage scenic resources within a State Scenic Highway.

The Proposed Project crosses SR-74, an eligible state scenic highway and an Orange County and city of San Juan Capistrano scenic roadway. Limited views of the Proposed Project would be seen from this roadway. Currently various transmission structures, including steel poles, lattice steel towers and overhead conductors, are partially visible from this roadway (refer to Photograph 16, Figure 4.1-3h). Given the presence of these existing transmission elements and given screening provided by intervening vegetation and topography, the Proposed Project would not be particularly noticeable and would represent a minor incremental visual change.

Therefore, the Proposed Project would not substantially affect existing views from SR-74 and no impacts would result.

4.1.4.5 Question 4.1c – Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Construction - Less than Significant Impacts with Incorporation of APMs

Construction-related visual impacts associated with the Proposed Project would not substantially degrade the existing visual character or quality of the site and its surroundings. Construction-related visual impacts would result from the presence of equipment, materials, and work crews along the Proposed Project alignment. Although these effects are relatively short-term, they would be most noticeable to residents who live in close proximity to the Proposed Project and motorists traveling along adjacent roadways. Construction activity may also be noticeable from nearby parks and open space areas. While construction of the entire Proposed Project is expected to take place over approximately 48 months, construction at specific locations along the route would take considerably less time. Construction at the San Juan Capistrano Substation site would occur over approximately 48 months, construction at the Talega Substation site would occur over approximately 10 months, and the transmission line would take approximately 25 months. All construction is spread out over an approximately 48-month period. To varying degrees, construction activities would be noticeable to local residents, motorists, and recreational users. These temporary construction-related visual impacts would be less than significant with implementation of APMs AES-1 and AES-2. Implementation of these APMs would minimize this impact by minimizing local residents' and motorists' views of construction work areas and laydown areas. As a result, impacts would be less than significant.

Operation & Maintenance – Less than Significant Impacts with Incorporation of APMs

The Proposed Project area includes numerous electric transmission, distribution, and substation facilities that are seen within the public viewshed. The baseline from which impacts are measured includes these existing facilities. The Proposed Project involves rebuilding an existing substation and an approximately 7.75-mile-long existing transmission line. In addition minor modifications are proposed to another existing substation that is located at the route's eastern terminus. The Proposed Project would replace existing electric utility structures (including steel poles, wood poles, overhead conductors, and lattice towers) with new steel poles and overhead conductors. With the exception of approximately 1,200 linear feet of new transmission line near the Talega Substation Site, all of the Proposed Project facilities would be located within existing utility property and right of way, in which electric facilities are currently seen by the public.

The Proposed Project includes removing a total of approximately 103 existing structures and installing only 81 new replacement poles. This change would result in a net decrease of approximately 22 transmission structures in the Proposed Project viewshed. In addition, all of the new poles are mono-pole structures; this structure design has a simpler form and is generally less noticeable than some (37) of the existing structures being removed that are two and three-pole structures. The existing structures to be removed are between approximately 52 to 135 feet tall whereas heights of the new poles are between 50 and 160 feet. Although the replacement structures are taller than the existing transmission structures, the new pole heights are

comparable to the height of existing nearby transmission structures that are currently in place. For example, the existing 138kV transmission lines that parallel the proposed new 230kV transmission lines included within the Proposed Project include structures ranging from 90 to 150 feet in height. Therefore, this change is not anticipated to be significant. Similarly because the two substations are established features within the existing landscape setting, the visual change associated with substation modifications would generally be incremental and not substantial. APM AES-3 would ensure that visual effects are less than significant.

Close-range, unobstructed views of the Proposed Project would occur from limited places along public roadways and from a limited number of nearby residences. However, existing topography and vegetation in the Proposed Project area provides considerable screening with respect to public and residential views toward the Proposed Project. The Proposed Project's effect on existing vegetation would be minimal, consisting primarily of some tree removal in limited areas along the ROW, as well as at and near, the San Juan Capistrano Substation site. APM AES-3 includes installation of new landscape screening as well as a visual screening perimeter wall along three sides of the substation. Additionally, the Proposed Project would not obstruct views toward distant ridgelines and mountains.

A landscape plan would be developed for the proposed San Juan Capistrano Substation; this plan would incorporate input from the city of San Juan Capistrano, local community members, facility security, CPUC and engineering requirements (refer to Section 3, Proposed Project Description). Proposed Project landscaping would be designed to partially screen public views of site facilities as well as to enhance site appearance and integrate the Proposed Project with its surrounding visual setting. Figure 4.1-4, Preliminary Landscape Screening Diagram, is a schematic diagram for the San Juan Capistrano Substation that shows the general location for new landscaping. Detailed landscape and irrigation plans would be developed in conjunction with more detailed engineering design and future input from the surrounding community. The landscape plan would comply with the City's Water Efficient Landscape Ordinance and with the Guidelines for Implementation of the Water Efficient Landscape Ordinance.

A set of ten before and after visual simulations depict the Proposed Project's appearance as seen from key public viewpoints along the transmission line route within the four landscape units. In addition, three panoramic view simulations of the new San Juan Capistrano Substation were prepared to depict the before and after appearance of the Proposed Project at the substation site. The location of each simulation view is depicted on Figure 4.1-2. Table 4.1-2, Summary of Simulation Views, presents an overview of the visual simulations in terms of the location of each viewpoint, visual changes depicted, and approximate viewing distance to the Proposed Project. As described in the following subsections and as shown on Figures 4.1-5 through 4.1-17, the Proposed Project represents an incremental visual change that would not substantially alter the existing landscape setting. In light of the effects described above and, as demonstrated in the set of ten before and after visual simulations of the transmission line route and the three panoramic simulations of the San Juan Capistrano Substation, the overall change brought about by the Proposed Project would not substantially degrade the existing visual character or quality of the landscape setting. As a result, impacts would be less than significant.

THIS PAGE IS INTENDED TO BE LEFT BLANK



SDG&E IS PROVIFDING THIS MAP WITH THE UNDERSTANDING THAT THE MAP IS NOT SURVEY GRADE.

South Orange County Reliability Enhancement Project
Preliminary Landscape Screening Diagram
Figure 4.1-4

Created for: Mary Turley
Created by: Environmental Vision
Base Drawing Source: SDG&E
Date: 4/18/2012

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE
A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.1-4

Table 4.1-2: Summary of Simulation Views

Viewpoint Location – VP No. (Figure No.)	Visible Proposed Project Change	Approx. Distance to Proposed Project (feet)
Capistrano Substation Landscape Unit		
Avenida De La Vista near Calle San Diego – VP 1 (Figure 4.1-5)	Introduction of 2 new cable poles and removal of 2 steel transmission poles	250
Camino Capistrano across (west) from the San Juan Capistrano Substation site – VP A (Figure 4.1-6)	Introduction of new San Juan Capistrano Substation	120
Calle Santa Rosalia, from the edge of Junipero Serra Park – VP C (Figure 4.1-7)	Introduction of new San Juan Capistrano Substation	60
Calle Bonita, south of the San Juan Capistrano Substation site – VP B (Figure 4.1-8)	Introduction of new San Juan Capistrano Substation	70
Capistrano Substation to Juliana Farms Landscape Unit		
Serra Park near Calle Santa Rosalia – VP 9 (Figure 4.1-9)	Introduction of 1 new steel pole and removal of 1 lattice steel tower	550
Via Priorato (Rancho Madrina) – VP 13 (Figure 4.1-10)	Introduction of 1 new steel pole and removal of 1 lattice steel tower	450
Arroyo Park from Sundance Drive – VP 17 (Figure 4.1-11)	Introduction of 1 new steel pole and removal of 1 steel pole	350
San Juan Creek Road at Juliana Farms – VP 20 (Figure 4.1-12)	Introduction of 2 new steel poles and removal of 3 poles and 2 multi-pole structures	450
Juliana Farms to Forster Ridge Landscape Unit		
San Juan Hills High School –VP 22 (Figure 4.1-13)	Introduction of 2 new cable poles and removal of 1 cable pole	600
Forster Ridge to Talega Substation Landscape Unit		
Via Ceramica north of Calle Saluda – VP 26 (Figure 4.1-14)	Introduction of 4 new steel poles and removal of 10 or more single and multi-pole structures	500
Calle Saluda at Prima Deshecha Trail – VP 27 (Figure 4.1-15)	Introduction of 4 new steel poles and removal of 10 or more wood single and multi-pole structures	900

Table 4.1-2 (cont.): Summary of Simulation Views

Viewpoint Location – VP No. (Figure No.)	Visible Proposed Project Change	Approx. Distance to Proposed Project (feet)
Talega Park – VP 34 (Figure 4.1-16)	Introduction of 6 new steel poles (2-138kV and 3-230kV) and 4 new cable poles removal of 3 single pole and 1 multi-pole structure, and removal of 1 lattice steel tower	1400
Cristianitos Road – VP 35 (Fig 4.1-17)	Introduction of five new steel poles (2-230kV, 3-138kV, and 1-69kV) and three cable poles (1-230kV and 1-138kV Removal of nine wood poles (138kV).	1400
* Refer to Figures 4.1-2a and 4.1-2b for all simulation locations		

The following subsections discuss and evaluate the Proposed Project's potential visual effects on key public views by landscape unit, as represented by the visual simulations. Potential changes in visual character to each landscape unit are also discussed in further detail in the subsections that follow.

Capistrano Substation

Figure 4.1-5, Existing View and Visual Simulation from Avenida De La Vista, represents a southbound motorists' view as well as a view from nearby residences. The photograph was taken from Avenida De La Vista west of the Capistrano Substation. In this photograph, the immediate foreground consists mainly of roadway and of residential structures and landscaping located adjacent to Avenida De La Vista. Two transmission poles, located in the grassy area to the left of the road, appear against the skyline near the center of the view. Overhead transmission lines are visible against the sky both to the left and to the right of the poles.

The Figure 4.1-5 visual simulation shows two replacement steel cable poles in approximately the same location as the existing structures. Additionally, the simulation portrays the removal of a limited number of trees in the vicinity of the new poles. The replacement poles would appear more prominent because the new poles are taller with larger diameters compared with the existing structures. However, because a portion of the transmission line is buried, overhead conductors appear against the sky to the right but not to the left of the new poles. A comparison between the Figure 4.1-5 existing view and visual simulation indicates that the Proposed Project could represent a noticeable visual change in the landscape at this location. However, change would be incremental (as there are existing poles and overhead conductor at this location) and the Proposed Project would not substantially alter the composition or character of the landscape seen in this location.



Existing View from Avenida De La Vista near Calle San Diego looking south (VP 1)



Visual Simulation of Proposed Project

Note: Refer to Figure 4.1-2a for photograph viewpoint location.
Preliminary, subject to change based upon final engineering.

South Orange County Reliability Enhancement Project
Existing View and Visual Simulation from Avenida De La Vista
Figure 4.1-5

Source: Environmental Vision
041812

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.1-5

Figures 4.1-6 through 4.1-8 include three panoramic view computer renderings of the new San Juan Capistrano Substation from three vantage points adjacent to the facility.

Figure 4.1-6, Existing View and Computer Rendering from Camino Capistrano, is an existing wide-angle view and computer rendering that shows street frontage of the new substation along Camino Capistrano. The existing view shows the substation site including two stucco buildings and several wood power poles, seen in the foreground, as well as steel transmission and takeoff structures, and steel substation equipment visible in the distance.

In April 2012, SDG&E hosted a Design Charrette to identify an architectural design theme for the San Juan Capistrano Substation wall. Input was provided by neighbors of the substation, the City Architectural Design Review Committee, city of San Juan Capistrano officials, and other interested residents. This was the first step in the design of the substation wall and there would be subsequent meetings with an ad hoc substation wall design committee throughout the CPUC permitting process to further refine the design. Based on the three design concepts reviewed it was determined that the appropriate architectural style for the substation wall would be mission style, which is demonstrated in general terms in Figure 4.1-6. This depiction is a computer rendering that shows the removal of the existing substation, including the stucco buildings, and several trees. Portions of the replacement substation facility are visible beyond a new mission style perimeter wall. Visible substation elements include portions of enclosures for the 138kV and 230kV yards, H-frames and new steel poles. The two poles adjacent to Camino Capistrano have been removed and the conductors running over the street have been moved to underground. The rendering also portrays new perimeter landscaping along Camino Capistrano (which may include trees, shrubs and groundcover) and the appropriate substation signage at the entrance to the new substation.

Figure 4.1-7, Existing View and Computer Rendering from Calle Santa Rosalia, is an existing wide-angle view and computer rendering showing the street frontage of the new substation along Calle Santa Rosalia looking west, from the edge of Junipero Serra Park. This close range view of the substation site shows trees, shrubs and fencing in the foreground along the street with portions of the substation facility, steel poles, a lattice tower and overhead conductors seen prominently against the sky. Part of an adjacent recreational vehicle storage facility can also be seen on the left and, on the far right, a residence adjacent to the substation is visible. Hills that lie between Laguna Nigel and San Juan Capistrano appear in the backdrop.

The Figure 4.1-7 computer rendering shows the removal of the existing substation and transmission structures as well as some overhead conductors. Visible components of the rebuilt substation include the capacitor banks, the 230kV substation enclosure, and new steel poles. New vinyl-coated fence that replaces the existing perimeter fence would partially screen the lower portion of substation components. In comparison with the existing substation facilities, the architectural treatment of the new substation enclosure's terracotta-colored roof would appear more compatible with nearby residential structures.

Figure 4.1-8, Existing View and Computer Rendering from Calle Bonita, is an existing wide-angle view and rendering from Calle Bonita looking north toward the substation. This view shows the substation site including substation components, steel poles, wood poles, lattice towers and overhead conductors with trees, shrubs and fencing in the foreground along the street.

THIS PAGE IS INTENDED TO BE LEFT BLANK



Existing View from Camino Capistrano looking east (VP A)



Computer Rendering of Proposed Project

South Orange County Reliability Enhancement Project
Existing View and Computer Rendering from Camino Capistrano
Figure 4.1-6

Source: SDG&E
041812

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.1-6



Existing View from Calle Santa Rosalia looking west (VP B)



Computer Rendering of Proposed Project

South Orange County Reliability Enhancement Project
Existing View and Computer Rendering from Calle Santa Rosalia
Figure 4.1-7

Source: SDG&E
041812

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.1-7



Existing View from Calle Bonita looking north (VP C)



Computer Rendering of Proposed Project

South Orange County Reliability Enhancement Project
Existing View and Computer Rendering from Calle Bonita
Figure 4.1-8

Source: SDG&E
041812

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.1-8

These foreground elements partially screen the substation facility. Part of the adjacent recreational vehicle storage facility can be seen at the far right, and mature street trees and residential landscaping appear at the far left with hills seen in the backdrop.

The Figure 4.1-8 computer rendering shows the removal of the existing substation, transmission structures and most of the overhead conductors. Portions of the terracotta-color roofed 138kV and 230kV substation enclosures, transformers, several steel poles, and overhead conductors would be visible from this location. The new masonry wall that replaces existing chain link fence along this street frontage would provide screening of the lower parts of new substation structures.

Capistrano Substation to Juliana Farms

The Figure 4.1-9, Existing View and Visual Simulation from Junipero Serra Park, existing photograph, taken in Junipero Serra Park near Calle Santa Rosalia, represents views from the park as well from the nearby residential area in northern San Juan Capistrano. This view encompasses the park landscape and consists mainly of grass and tree covered knolls and paved pathways; near the center of the view, a steel pole and a lattice tower are partially visible through the trees.

The Figure 4.1-9 visual simulation shows a new steel pole in place of the lattice tower. The replacement pole is taller than the existing lattice tower; however, due to its lighter color and more simplified form, the replacement pole is less noticeable. In addition, the appearance of the new pole is more similar to the existing pole seen on its left. Given the presence of existing transmission structures, the visual change associated with the Proposed Project is relatively minor and may be viewed as an improvement as seen from this vantage point. A comparison of the existing view and the simulation indicates that the Proposed Project's effect would not substantially alter the appearance of the park's landscape setting.

Figure 4.1-10, Existing View and Visual Simulation from Via Priorato, includes an existing view of the Proposed Project from Via Priorato in the private residential area of Rancho Madrina (San Juan Capistrano). Near the center and right side of this view two lattice transmission towers and numerous overhead conductors appear prominently against the sky. Vegetation and mature trees partially screen the lower portion of the Proposed Project tower, on the right. On the left a wood power pole and street light also appear silhouetted against the sky.

The Figure 4.1-10 simulation image shows a new steel pole and removal of the lattice steel tower on the right side of the view. The location of the replacement pole is similar (within 50 feet) to that of the original lattice tower; however, as seen from this viewpoint, surrounding vegetation screens slightly less of the replacement structure. The form of the new pole is simple and streamlined in appearance to the original lattice tower. A comparison of the Figure 4.1-10 existing view and visual simulation demonstrates that the Proposed Project-related visual change is relatively minor, would not substantially alter the existing visual landscape character, and may be considered as an improvement at this hillside residential location.

THIS PAGE IS INTENDED TO BE LEFT BLANK



Existing View from Serra Park near Calle Santa Rosalia looking east (VP 9)



Visual Simulation of Proposed Project

Note: Refer to Figure 4.1-2a for photograph viewpoint location.
Preliminary, subject to change based upon final engineering.

South Orange County Reliability Enhancement Project
Existing View and Visual Simulation from Serra Park
Figure 4.1-9

Source: Environmental Vision
041812

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.1-9



Existing View from Via Priorato near Paseo Boveda looking north (VP 13)



Visual Simulation of Proposed Project

Note: Refer to Figure 4.1-2a for photograph viewpoint location.
Preliminary, subject to change based upon final engineering.

South Orange County Reliability Enhancement Project
Existing View and Visual Simulation from Via Priorato
Figure 4.1-10

Source: Environmental Vision
041812

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.1-10

The upper image in Figure 4.1-11, Existing View and Visual Simulation from Arroyo Park, is an existing view from Sundance Drive looking toward the Proposed Project at Arroyo Park, located in a residential neighborhood of San Juan Capistrano. The photograph represents views at the park as well as those from the nearby residential area. In this view a house and residential landscaping, surrounded by a masonry wall, appear in the lower left side of the photograph; the grassy slopes and trees of Arroyo Park can be seen on the right. Although partially screened by mature landscaping, upper portions of the Proposed Project line, supported in this area by steel poles, as well as a nearby lattice steel transmission tower and overhead lines can be seen against the sky.

The Figure 4.1-11 visual simulation shows a replacement tubular steel pole in approximately in the same location as the existing structure. Although the replacement pole is somewhat taller, the existing and replacement structures and overhead line are similar in scale and appearance. A comparison between the Figure 4.1-11 existing view and visual simulation indicates that the overall visual change would be minor. Therefore the Proposed Project would not substantially alter the composition or character of the landscape seen in this location.

Figure 4.1-12, Existing View and Visual Simulation from San Juan Creek Road, includes a photograph taken from San Juan Creek Road, at the entrance to the private residential community of Juliana Farms, located in eastern San Juan Capistrano. The photograph represents nearby residential views as well as a motorist's brief-duration view while traveling along this arterial. This view includes the entry gatehouse and driveway and dense mature vegetation in the foreground; beyond this, overhead lines and utility structures including lattice steel towers and wood multi-pole and single-pole structures appear silhouetted against the sky.

The visual simulation in Figure 4.1-12 shows the existing wood poles replaced by a single line of new tubular steel poles. The new structures are noticeably taller than the structures that have been removed; however, the simulation illustrates that the form of the new structures is visually simpler and that the Proposed Project results in fewer transmission structures being visible from this location. Given the presence of existing transmission towers and structures and the overall reduction in the number of visible transmission structures, the visual change associated with the Proposed Project would represent a minor incremental effect, would not substantially alter the existing landscape character, and may be viewed as an improvement.

Juliana Farms to Forster Ridge

The existing view in Figure 4.1-13, Existing View and Visual Simulation from San Juan Hills High School, is a photograph taken from San Juan Hills High School in San Juan Capistrano, and includes relatively new landscaping comprised of trees and shrubs as well as a paved parking lot and pole-mounted light fixtures in the foreground, seen within a landscape setting of undeveloped hills. Two steel structures, situated in a raised area beyond the parking lot, appear prominently near the center of this view. While the lower sections of these structures are backdropped by hillsides, the upper portions appear against the sky. Because the structures are cable poles at this location, the Proposed Project line and adjacent line transition to underground. To the right of the poles, where transmission lines are above ground, the conductors can be seen against the sky.

THIS PAGE IS INTENDED TO BE LEFT BLANK


Existing View of Arroyo Park from Sundance Drive looking southeast (VP 17)



Visual Simulation of Proposed Project

Note: Refer to Figure 4.1-2a for photograph viewpoint location.
Preliminary, subject to change based upon final engineering.

South Orange County Reliability Enhancement Project

Existing View and Visual Simulation from Arroyo Park

Figure 4.1-11

Source: Environmental Vision

041812

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.1-11



Existing View from San Juan Creek Road at Juliana Farms Road looking southeast (VP 20)



Visual Simulation of Proposed Project

Note: Refer to Figure 4.1-2a for photograph viewpoint location.
Preliminary, subject to change based upon final engineering.

South Orange County Reliability Enhancement Project
Existing View and Visual Simulation from San Juan Creek Road
Figure 4.1-12

Source: Environmental Vision
041812

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.1-12



Existing View from San Juan High School looking south (VP 22)



Visual Simulation of Proposed Project

Note: Refer to Figure 4.1-2a for photograph viewpoint location.
Preliminary, subject to change based upon final engineering.

South Orange County Reliability Enhancement Project
Existing View and Visual Simulation from San Juan Hills High School
Figure 4.1-13

Source: Environmental Vision
041812

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.1-13

The Figure 4.1-13 visual simulation shows two new taller steel cable poles and removal of one existing pole (previously seen on the right in the existing view). While the new poles are taller than the existing structure, they are similar in scale, form, and appearance. Given the visual presence of existing transmission structures at this location, the Proposed Project-related change would be a minor incremental effect that would not substantially alter the existing landscape setting.

Forster Ridge to Talega

Figure 4.1-14, Existing View and Visual Simulation from Via Ceramica, represents a before and after view toward the Proposed Project route from the Talega residential area of San Clemente. This northwest facing view includes portions of several residences in the foreground with open hillsides seen in the distance. Silhouetted against the sky, multiple lattice transmission towers appear along the ridgeline, and rust-colored steel poles and wood transmission structures including H-frame and individual utility poles are also visible within the utility ROW that lies near this residential area. In some cases, existing nearby transmission lines are located within 50 feet of houses.

The Figure 4.1-14 simulation shows new steel poles silhouetted against the sky, near the center and right side of the view. The simulation also shows the removal of two sets of wood transmission line support structures. The new tubular steel structures are taller than the original wood structures; however, the new steel poles are similar in height to the existing lattice transmission towers that are currently seen along the ridgeline. Their lighter color in comparison with the existing rust-colored steel poles helps reduce their visual contrast against the sky backdrop. In addition, the introduction of replacement steel poles results in fewer transmission structures overall. A comparison of the Figure 4.1-14 existing view and visual simulation illustrates that, given the presence of multiple existing transmission structures within the utility corridor, the Proposed Project represents an incremental visual change and would not substantially alter the landscape character as seen from the Talega residential area.

Figure 4.1-15, Existing View and Visual Simulation from Calle Saluda, shows a before and an after view from Calle Saluda, a two-lane arterial in the Talega residential area. This viewpoint represents the brief-duration views of motorists as well as those of pedestrians on the sidewalks and nearby trails. Visible in the foreground are street and sidewalk pavement, and a wood fence with posted signs at the entry to the Prima Deshecha Trail, beyond this open slopes covered in dense low shrubs give way to grassy hillsides. On the right, residences in the Talega neighborhood can be seen bordering this open space. Near the center of the view, steel transmission poles, steel lattice towers, wood H-frame structures and wood single-poles support multiple sets of overhead conductors, which can be seen against the sky.

The Figure 4.1-15, simulation shows new steel poles silhouetted against the sky, near the center of the view. The simulation also portrays the removal of wood multi-pole structures and some of the individual wood poles. The steel replacement poles are taller than the existing wood structures; however, their height is comparable to the existing lattice steel towers that currently occupy the utility right of way.

THIS PAGE IS INTENDED TO BE LEFT BLANK



Existing View from Via Ceramica north of Calle Saulda looking northwest (VP 26)



Visual Simulation of Proposed Project

Note: Refer to Figure 4.1-2b for photograph viewpoint location.
Preliminary, subject to change based upon final engineering.

South Orange County Reliability Enhancement Project
Existing View and Visual Simulation from Via Ceramica
Figure 4.1-14

Source: Environmental Vision
041812

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.1-14



Existing View from Calle Saluda at Prima Desecha Trail looking northwest (VP 27)



Visual Simulation of Proposed Project

Note: Refer to Figure 4.1-2b for photograph viewpoint location.
Preliminary, subject to change based upon final engineering.

South Orange County Reliability Enhancement Project
Existing View and Visual Simulation from Calle Saluda
Figure 4.1-15

Source: Environmental Vision
041812

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.1-15

A comparison between the two Figure 4.1-15 images indicates that the visual change is not particularly noticeable and would not substantially alter the composition or character of the landscape setting as seen from the roadway or recreation trail in this residential area.

Talega Substation

Figure 4.1-16, Existing View and Visual Simulation from Talega Park, a before and an after view from Talega Park in San Clemente, represents a typical view toward the Proposed Project route from the Trinidad residential neighborhood within Talega. Because the viewpoint is somewhat elevated, it affords a slight overview of part of the park in the foreground with residential development seen beyond and hillsides in the backdrop. Transmission structures, including lattice towers seen along the skyline, lie approximately one quarter mile away. Wood multi-pole and single-pole structures are also visible on the ridgeline. As demonstrated in this photograph, views toward the Proposed Project are available from the upper portion of this park; however, mature vegetation within the park partially screens views from many locations.

The Figure 4.1-16 simulation portrays the introduction of new poles and removal of some existing structures. Two new 230kV steel poles appear on the ridgeline silhouetted against the sky, one on the left and one near the center of the view. Four new steel cable poles are also visible on the hillside, two of these appear in the center right side of the view, in front the lattice steel towers, and two are partially screened by landform and by foreground vegetation in the center left. On the left two new steel poles are visible, in the distance, beyond the new 230kV pole. Several of the utility structures that have been removed, including the original wood three-pole structure, one lattice steel tower and the upper portions of three single-pole transmission structures. The new 230kV replacement poles are noticeably taller than the existing wood structure; however, their height is similar to the existing lattice steel towers that currently appear along the ridgeline. A comparison between the Figure 4.1-16 existing view and visual simulation shows that the visual change is a minor incremental change, would not substantially alter the composition or character of the existing landscape setting as seen from this location, and may be viewed as an improvement over existing conditions.

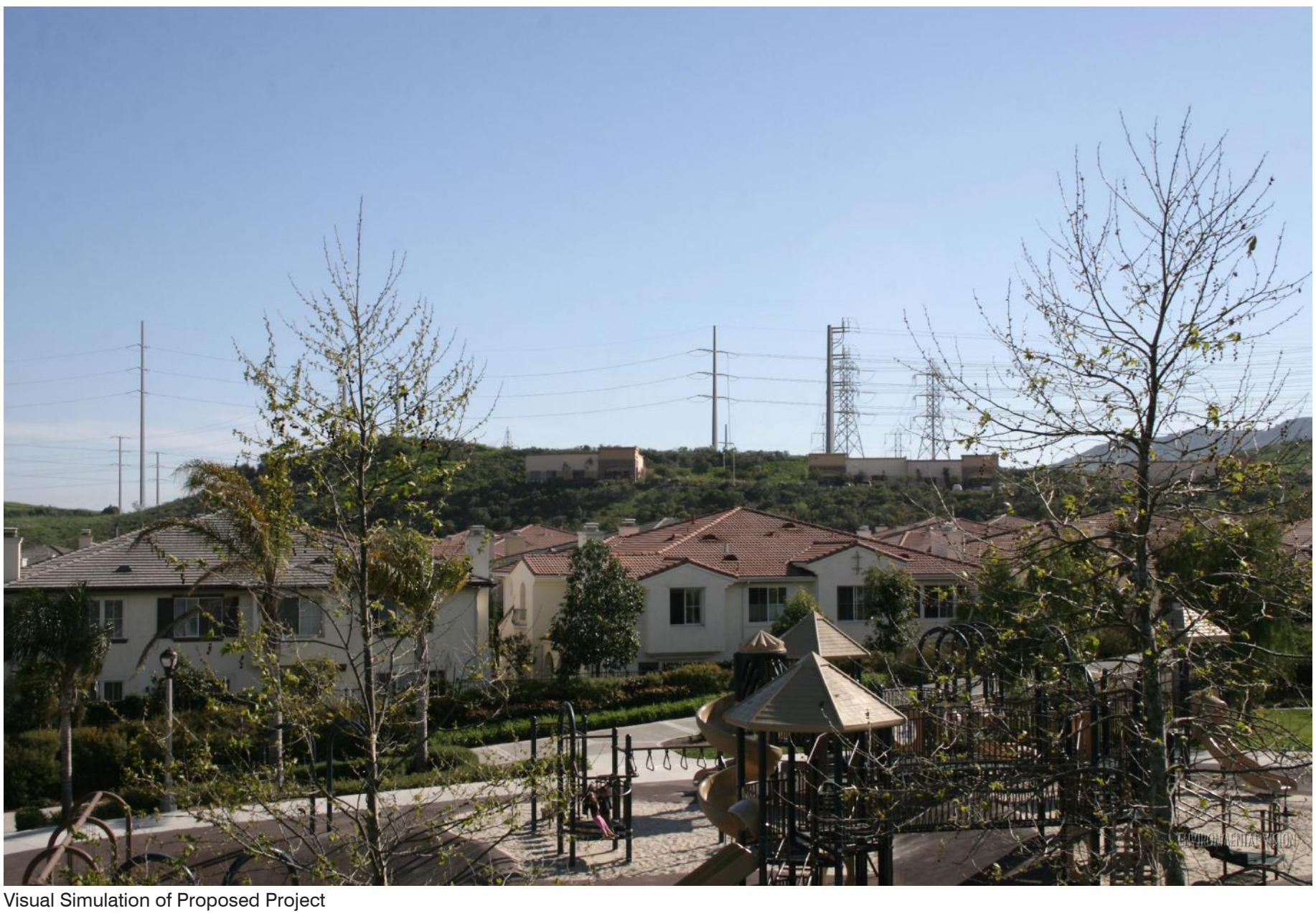
Figure 4.1-17, Existing View and Visual Simulation from Cristianitos Road, shows a before and an after view from the hillside above Cristianitos Road at the far eastern end of the Talega residential neighborhood. From this general area, views of the substation are typically screened by intervening topography and development. The Figure 4.1-14 photograph is an elevated, south-facing perspective with a relatively open view of the Talega Substation. From this location, a paved street and sidewalk and landscaped residences are seen in the foreground, against a backdrop of hillsides. At the left edge of the photograph part of Talega Substation is visible against a landscape backdrop and numerous transmission poles and lattice towers can be seen, including several along the skyline, near the center of the view.

The Figure 4.1-17 simulation shows the removal and replacement of various transmission structures. The visible project changes, seen from this location, include removal of approximately 15 wood poles and the introduction of approximately 10 new steel poles. Several new structures appear on the hillside in the foreground, most of the new poles appear partially against a landscape backdrop and partially against sky.

THIS PAGE IS INTENDED TO BE LEFT BLANK



Existing View from Talega Park looking south (VP 34)



Visual Simulation of Proposed Project

Note: Refer to Figure 4.1-2b for photograph viewpoint location.
Preliminary, subject to change based upon final engineering.

South Orange County Reliability Enhancement Project
Existing View and Visual Simulation from Talega Park
Figure 4.1-16

Source: Environmental Vision
041812

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.1-16



Existing View from above Cristianitos Road looking south (VP 35)



Visual Simulation of Proposed Project

Note: Refer to Figure 4.1-2b for photograph viewpoint location.
Preliminary, subject to change based upon final engineering.

South Orange County Reliability Enhancement Project
Existing View and Visual Simulation from Cristianitos Road
Figure 4.1-17

Source: Environmental Vision
041812

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.1-17

The replacement steel poles are somewhat taller than the existing wood structures and the change could be noticeable; however, the setting includes several existing lattice steel towers that currently appear along the ridgeline.

A comparison of the Figure 4.1-17 existing view and visual simulation illustrates that, given the presence of multiple existing transmission structures including Talega Substation as well as steel poles and lattice steel towers the Proposed Project represents an incremental visual change that would not substantially alter the landscape character as seen from this portion of the Talega residential area.

4.1.4.6 Question 4.1d – New Light or Glare

Construction – Less than Significant Impact

Only minor construction would be required at night. The transformers at the new San Juan Capistrano Substation need be filled with oil following completion of construction. This activity would last 48-96 continuous hours per transformer. However, the only lights required would be the new existing substation lighting (refer to discussion below), lights located within the oil rig trailer that would be used to pump the oil, and handheld flashlights. Therefore, this construction activity is not anticipated to have significant impacts relating to new sources of light. Minor nighttime construction may also be required at new cable pole locations during cutover of the new San Juan Capistrano Substation. Cutover activities may or may not occur at night, and the schedule of these activities is dictated by loading and outage constraints that cannot be predicted ahead of time. However, even if these activities occur at night, they would be very short in duration (two to four hours) and would not require a significant source of light. Therefore, this impact would also be less than significant.

Operations and Maintenance – No Impact

The Proposed Project area includes extensive electric transmission, distribution, and substation facilities that are visible within the public viewshed. These existing facilities constitute the baseline from which impacts are measured. Neither the existing nor proposed transmission line facilities include any permanent lighting. Lighting would be installed at San Juan Capistrano Substation for safety purposes similar to the lighting that is there now, which has hooded fixtures and is directed downward. Substation lighting would not be left on at night during normal operations and would be used to allow for nighttime emergency repair and routine maintenance access. Potential glare from overhead conductors would be similar to what currently exists within the Proposed Project area. Therefore, there are no impacts.

4.1.5 Applicant Proposed Measures

Implementation of the following APMs will reduce potentially significant impacts to aesthetics to a less than significant level:

AES-1 **Clean Construction Work Areas.** SDG&E will make an effort to keep construction activities as clean and inconspicuous as practical.

AES-2 **Restoring Appearance of Disturbed Areas.** When Proposed Project construction has been completed, all disturbed terrain will be restored through recountouring and revegetation in order to re-establish a natural appearing landscape and reduce potential visual contrast between disturbed areas and the surrounding landscape.

AES-3 **Visual Screening- San Juan Capistrano Substation.** Landscaping and a screening wall will be installed in key areas along the perimeter of San Juan Capistrano Substation to partially screen views of substation structures and to visually integrate the new substation facilities with the existing setting. Figure 4.1-4 depicts the general location of new substation landscaping. Plant material will be appropriate to site-specific conditions and the local landscape setting. Landscaping will also be consistent with technical requirements for Proposed Project operations and maintenance and will incorporate input from the City of San Juan Capistrano, local residents, and SDG&E's facility security.

4.1.6 References

Benchmark Maps. 2007. *California Road and Recreation Atlas.* Santa Barbara, California.

California Department of Transportation web site. Online: http://www.dot.ca.gov/hq/LandArch/scenic_highways/. Site visited on November 4, 2008.

California Public Utilities Commission (CPUC). 1995. *Public Utilities Commission of the State of California, General Order No. 131-D.* Adopted August 11, 1995. Decision 95-08-038.

DeLorme Mapping Company. 2005. *Southern California Atlas and Gazetteer, Seventh Edition*. Freeport, ME.

Fenneman, Nevin M. 1931. *Physiography of the Western United States.* New York: McGraw-Hill Book Company, Inc.

Google. Google Earth Pro Version 6.1. Software. Program used January 4, 2011.

Orange County. July, 2004. *Master Plan of Regional Riding and Hiking Trails.*

Orange County. 2005. *County of Orange General Plan.* Adopted September 13, 2005.

Orange County. July, 2006. *Southern Subregion Natural Community Conservation Plan – Administrative Draft.*

San Clemente, City of. 2003. *General Plan.* Adopted May 6, 1993. Amended through May 6, 2003.

San Clemente, City of. 2008. *San Clemente Trails Key Map.* Online at: http://san-clemente.org/sc/standard.aspx?pageid=347. Site visited October 30, 2008.

San Juan Capistrano, City of. 2002. *San Juan Capistrano General Plan*. December 14, 1999. Amended May 7, 2002.

San Juan Capistrano, City of. 2007. *Recreational Trail Map.* Prepared by the Department of Engineering and Building.

San Juan Capistrano, City of. 2009. *Water Efficient Landscape Ordinance Guidelines.*

San Juan Capistrano, City of. 2011. *City of San Juan Capistrano Municipal Code.* Adopted February 20, 1980. Enacted June 7, 2011.

Smardon, RC, J.F. Palmer, and J.P. Felleman, editors. 1986. *Foundations for Visual Project Analysis.* New York: Wiley.

U.S. Marine Corps. 2007. Marine Corps Base Camp Pendleton. Integrated Natural Resources Management Plan.

U.S. Department of the Interior. Bureau of Land Management. 1980. *Visual Resource Management Program.* Washington, D.C.: Department of Interior.

U.S. Department of the Interior. Bureau of Land Management. *Manual H-8410-1 - Visual Resource Inventory.* Online: http://www.blm.gov/nstc/VRM/8410.html.

U.S. Department of the Interior. Bureau of Land Management. *Manual 8431 - Visual Resource Contrast Rating.* Online: http://www.blm.gov/nstc/VRM/8431.html.

U.S. Department of Transportation, Federal Highway Administration. 1988. *Visual Impact Assessment for Highway Projects.* Washington, D.C.: Publication No: FHWA-HI-88-054.

U.S.G.S. Terraserver Maps. 1975. Online: http://terraserver-usa.com/

U.S. Census Bureau. 2008. U.S. Census of Population and Housing. Online at www.census.gov.

This page intentionally left blank.

TABLE OF CONTENTS

4.2 AGRICULTURE AND FORESTRY RESOURCES 4.2-1
4.2.1 Introduction 4.2-1
4.2.2 Methodology 4.2-1
4.2.3 Existing Conditions 4.2-2
4.2.4 Potential Impacts 4.2-5
4.2.5 Applicant Proposed Measures 4.2-8
4.2.6 References 4.2-8

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.2 AGRICULTURE AND FORESTRY RESOURCES

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☑
b.	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined Government Code section 51104(g))?	☐	☐	☐	☑
d.	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑
e.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

4.2.1 Introduction

This section of the PEA describes the existing conditions and potential project-related impacts to agricultural and forestry resources in the vicinity of the Proposed Project. In addition, this section evaluates the consistency of the Proposed Project with the Farmland Mapping and Monitoring Program (FMMP) and the Williamson Act, otherwise known as the California Land Conservation Act of 1965. The Proposed Project would not convert or otherwise adversely affect any agricultural or forestry resources and therefore no impacts would result.

4.2.2 Methodology

The agriculture and forestry resources analysis within this section involved a review of various documents including aerial photographs of the Proposed Project area, the general plans for the cities of San Juan Capistrano and San Clemente and the County of Orange, and online information sources. California Department of Conservation, Division of Land Resource Protection farmland maps was reviewed in order to determine if, and where, Prime Farmland, Unique Farmland, or Farmland of Statewide Importance were located within the Proposed Project area. The *Orange County General Plan* – Resources Element was reviewed in order to locate any existing Williamson Act contracts within the Proposed Project area. The *Orange County General Plan* Agricultural Preserve Map was also reviewed in order to determine if any County designated agricultural preserves are present within the Proposed Project area. In

addition, information from the California Department of Forestry and Fire Protection, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, were also reviewed.

4.2.3 Existing Conditions

4.2.3.1 Regulatory Setting

State

Farmland Mapping and Monitoring Program

The goal of the FMMP, administered by the California Department of Conservation, Division of Land Resource Protection, is to provide consistent and impartial data to decision makers for use in assessing present status, reviewing trends, and planning for the future of California's agricultural land resources. The basis of the mapping program is an agricultural land classification system that combines technical soil ratings based on soil classifications and current land use. The survey defines eight agricultural land categories:

- Prime Farmland: has the best combination of physical and chemical features able to sustain long-term agricultural production. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime Farmland must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.
- Farmland of Statewide Importance: is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Farmland of Statewide Importance must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.
- Unique Farmland: includes areas of lower quality soils that do not meet the criteria for Prime Farmland or Farmland of Statewide Importance, but that have been used for the production of specific high economic value crops during the two update cycles prior to the mapping date.
- Farmland of Local Importance: includes areas other than Prime Farmland, Farmland of Statewide Importance, or Unique Farmland that is either currently producing crops, has the capability of such production, or is used for the production of confined livestock. Farmland of Local Importance may be important to local economies due to its productivity or value, defined by each county's local advisory committee, and adopted by its Board of Supervisors.
- Grazing Land: is land on which the existing vegetation is suited to the grazing of livestock and includes, at a minimum, 40 acres.
- Urban and Built-up Land: is occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. Such lands include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.

- Other Land: land not included in any other mapping category, such as low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and non-agricultural land greater than 40 acres and surrounded on all sides by urban development is also mapped as Other Land.
- Water: includes perennial water bodies with an extent of at least 40 acres.

The California Department of Conservation prepares, updates, and maintains maps and data used for categorizing agricultural potential (as described above) and assessing the location, quality, and quantity of agricultural lands and conversion of these lands over time. The maps are updated every two years based on aerial photograph review, computer mapping analysis, public input, and field reconnaissance. Coverage includes 47.9 million acres (96 percent of the state's private lands) and is based on the extent of the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil surveys. Most large government land holdings, including national parks, forests, and U.S. Bureau of Land Management (BLM) land, are not included in FMMP's survey area.

The Williamson Act

The California Land Conservation Act, better known as the Williamson Act, has been the state's primary agricultural land protection program since its enactment in 1965. More than 16 million of the state's 30 million acres of farm and ranch land are currently protected under the Williamson Act. The Williamson Act creates an arrangement, whereby private landowners agree with counties and cities to voluntarily restrict land to agricultural and open-space uses. In return, the landowner receives property tax assessments that are lower than normal because the assessments are based on farming and/or open space uses rather than full market value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971. Williamson Act contracts automatically renew each year for a new 10-year period, unless either party files a "notice of non-renewal" to terminate the contract before the end of the current 10-year period. During the ensuing 10-year cancellation period following a "notice of non-renewal," property taxes are gradually raised to the applicable level for developable land.

The Williamson Act also authorizes cities and counties to establish Agricultural Preserves, referred to as Farmland Security Zones. Agricultural Preserves must include at least 100 acres, and generally are intended to avoid areas where public utility improvements and related land acquisitions may be required. Farmland Security Zone contracts require a minimum initial term of 20 years and they renew annually unless either party files a "notice of nonrenewal," similar to a Williamson Act contract. To be eligible for a Farmland Security Zone contract, the subject land must be designated on the Important Farmland Series maps as predominantly prime farmland, farmland of statewide importance, unique farmland, or farmland of local importance.

Local

City of San Juan Capistrano

The *City of San Juan Capistrano General Plan* acknowledges that the area has historically been an agricultural community; however, the majority of the land traditionally utilized for agriculture

has been developed with urban uses with only a few remaining private parcels that continue in agricultural production. As described in Section 4.2.3.2, Agricultural and Forestry Setting, Existing Conditions, below, the existing transmission lines extend over area in San Juan Capistrano that is designated Important Farmland but is currently developed with residential and commercial uses. The *City of San Juan Capistrano General Plan* includes two policies relevant to the preservation of agricultural activity.

> *Policy 3.1: Implement economic programs that promote the long-term viability of designated agricultural parcels within the City.*
>
> *Policy 3.2: Reduce the negative impacts resulting from urban uses and neighboring agricultural uses in close proximity.*

The city of San Juan Capistrano has zoning designations for Agri-Business, Farm Market, and Residential/Agriculture. A small portion of the transmission line route is located within land zoned as Residential/Agriculture by the city of San Juan Capistrano. Virtually the entire transmission line route, including the land zoned as Residential/Agriculture by the city of San Juan Capistrano, includes existing electric transmission, distribution and substation uses.

There are no policies within the *City of San Juan Capistrano General Plan* or designations within the city of San Juan Capistrano's Municipal Code regarding forestry.

City of San Clemente

The *City of Clemente General Plan* does not address agricultural uses and therefore, there are no applicable policies in this regard. In addition, the city of San Clemente does not include a zoning designation for agricultural uses, and within the city of San Clemente there is no land in the study area for the Proposed Project that is in active agricultural use.

There are no policies within the *City of San Clemente General Plan* or designations within the city of San Clemente's Municipal Code regarding forestry.

County of Orange

The *County of Orange General Plan* discusses how the County's continued growth has lead to pressure on local resources including agricultural resources, which was the County's original major economic industry. The *County of Orange General Plan* includes Goal 3, which is to, "Manage and utilize wisely the County's landform resources." In support of that goal, the *County of Orange General Plan* includes a policy relevant to the protection of agricultural resources.

> *Policy 2: To encourage to the extent feasible the preservation and utilization of agricultural resources as a natural resource and economic asset.*

The Orange County Zoning Code includes Agricultural Residential (AR) and General Agriculture (A1) zoning designations. A small portion of the Proposed Project is located on land zoned as General Agriculture, near the Prima Deshecha Landfill site (See Section 4.2.3.2 below). Virtually the entire transmission line route, including the land zoned as General Agriculture, includes existing electric transmission, distribution and substation uses.

4.2.3.2 Agricultural and Forestry Setting

Designated Farmland

The Proposed Project area does not include any land under a Williamson Act contract. The land surrounding Pole No. 6 (refer to Figure 3.7-1, Sheet 1) was designated as unique farmland by the FMMP on the 2008 Orange County Important Farmland map. However, 2010 data from the FMMP shows this area designated as Other Land. The vast majority of this historical agricultural site is now occupied by commercial and residential development and includes existing electric transmission and distribution uses.

Agricultural Zoning Designations

The County of Orange has zoned a small portion of the Proposed Project 230kV transmission line ROW as General Agriculture (see Section 4.9, Land Use and Planning) near Pole Nos. 22 through 25. However, this area is not currently used for agricultural purposes and is part of the Prima Deshecha Landfill site.

Another small portion of the 230kV transmission line route near Pole Nos. 12 and 13 is zoned Residential/Agriculture by the city of San Juan Capistrano. The Residential/Agriculture zoning designation is considered by the San Juan Capistrano Zoning Code to be a residential district (whereas the Agri-Business and Farm Market zones are considered to be agricultural districts) and the property is currently undeveloped.

Designated Forest Land

There is no land designated for forestry purposes within the Proposed Project area.

4.2.4 Potential Impacts

4.2.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to agricultural resources if it would:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Resources Agency, to non-agricultural use;

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract;

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g));

d) Result in the loss of forest land or conversion of forest land to non-forest use; or

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

4.2.4.2 Question 2a - Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Resources Agency, to non-agricultural use?

Construction – No Impact

The area surrounding Pole No. 6 was historically designated as Important Farmland; however, the area has been recently developed, and all of the farmland in the immediate vicinity has been converted to residential and commercial land uses. The current FMMP mapping data now designates this area as Other Land. The current state of development at this site dictates that there is no longer a viable agricultural resource on this site even though it recently was designated as Important Farmland. The site does not currently include agricultural uses, and in any event construction uses would be temporary. Therefore, despite the 2008 Important Farmland designation, no impact to Important Farmland would result from construction of the Proposed Project.

Operation & Maintenance – No Impact

Virtually the entire Proposed Project site contains existing electric transmission, distribution and substation uses, which would be replaced and upgraded. Because operation and maintenance of the Proposed Project would occur in the same or essentially the same locations as they occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project. Therefore, no impacts from the Proposed Project's operations and maintenance would occur.

4.2.4.3 Question 2b - Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Construction – No Impact

The small portion of the Prima Deshecha Landfill that is zoned as General Agriculture by the County of Orange is not currently utilized for agriculture, and the land surrounding the existing utility ROW in this area is controlled by the landfill, so future agricultural utilization of this land is unlikely—especially during the relatively short time during which construction for the Proposed Project would occur. The area surrounding Pole Nos. 22 through 25 (which is zoned for General Agriculture by the County of Orange) is not currently viable for agricultural use because it is in use as a landfill that is not expected to close until well after the Proposed Project is complete. Additionally, the Proposed Project is not located in any areas under a Williamson Act contract. Therefore, there would be no conflicts with agricultural zoning or Williamson Act contracts, and no impact would occur.

Operation & Maintenance – No Impact

Virtually the entire Proposed Project site contains existing electric transmission, distribution and substation uses, which would be replaced and upgraded. Because operation and maintenance of

the Proposed Project would occur in the same or essentially the same locations as they occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project. Therefore, no impacts from the Proposed Project's operations and maintenance would occur.

4.2.4.4 Question 2c - Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Construction– No Impact

The Proposed Project impact area is not zoned as forest land or timberland, and there are no forests or timber harvest areas in the vicinity of the Proposed Project. Therefore, no impact on forest land or timberland would occur as a result of the construction of the Proposed Project.

Operation & Maintenance – No Impact

Virtually the entire Proposed Project site contains existing electric transmission, distribution and substation uses, which would be replaced and upgraded. Because operation and maintenance of the Proposed Project would occur in the same or essentially the same locations as they occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project.

4.2.4.5 Question 2d - Result in the loss of forest land or conversion of forest land to non-forest use?

Construction– No Impact

There are no forests or similar areas in the vicinity of the Proposed Project and therefore no conversion of forest land to other uses would occur as a result of the construction of proposed facilities and improvements under the Proposed Project. Therefore, no impact on existing forest land or timberland would occur.

Operation & Maintenance – No Impact

Because operation and maintenance of the Proposed Project would occur in the same or essentially the same locations as they occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project.

4.2.4.6 Question 2e - Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Construction – No Impact

There is currently no utilized farmland within the Proposed Project impact area. Also, there are no forest lands or similar areas on or near the Proposed Project's physical footprint. Therefore,

the Proposed Project would not result in other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. There would be no impacts in this regard.

Operation & Maintenance – No Impact

Virtually the entire Proposed Project site contains existing electric transmission, distribution and substation uses, which would be replaced and upgraded. Because operation and maintenance of the Proposed Project would occur in the same or essentially the same locations as they occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project

4.2.5 Applicant Proposed Measures

There would be no impacts to agricultural resources as a result of the Proposed Project. Therefore, no Applicant Proposed Measures are required.

4.2.6 References

California Department of Conservation, Division of Land Resource Protection. 2008 & 2010. *Orange County Important Farmland 2008 & 2010.*

California Department of Forestry and Fire Protection. June 18, 2010. *California's Forests and Rangelands: 2010 Assessment.*

City of San Clemente. 1993. *General Plan*. As amended through May 6, 2003.

City of San Juan Capistrano. December 14, 1999. *General Plan*. As amended through May 7, 2002.

City of San Clemente. 2011. San Clemente Community View by Digital Maps Products. Online: http://maps.digitalmapcentral.com/CommView/SanClemente_cv/index.html. Site visited December 28, 2011.

City of San Juan Capistrano. San Juan Capistrano Community View by Digital Maps Products. Online: http://maps.digitalmapcentral.com/CommView/sjc_cv5/index.html. Site visited December 28, 2011.

County of Orange. 2005. *General Plan.*

TABLE OF CONTENTS

4.3 AIR QUALITY AND GREENHOUSE GASES 4.3-1
4.3.1 Introduction 4.3-1
4.3.2 Methodology 4.3-2
4.3.3 Existing Conditions 4.3-2
4.3.4 Potential Impacts 4.3-24
4.3.5 Applicant Proposed Measures 4.3-50
4.3.6 References 4.3-51

LIST OF FIGURES

Figure 4.3-1 Wind Rose, Costa Mesa Monitoring Station 4.3-21

LIST OF TABLES

Table 4.3-1: Ambient Air Quality Standards 4.3-4
Table 4.3-2: South Coast Air Basin Attainment Classification for Criteria Pollutants 4.3-6
Table 4.3-3: State of California Greenhouse Gases Emissions by Sector 4.3-9
Table 4.3-4: Global Warming Potentials and Atmospheric Lifetimes of Greenhouse Gases .. 4.3-9
Table 4.3-5: Background Air Quality Data (2008 to 2010) 4.3-23
Table 4.3-6: Air Quality Significance Thresholds 4.3-26
Table 4.3-7: Localized Significance Thresholds 4.3-28
Table 4.3-8a: Estimated Construction Emissions for Substation Construction 4.3-32
Table 4.3-8b: Estimated Construction Emissions for Transmission Line Construction 4.3-39
Table 4.3-9: Estimated Maximum Simultaneous Construction Emissions 4.3-42
Table 4.3-10: Greenhouse Gas Construction Emissions 4.3-48

LIST OF APPENDICES

Appendix 4.3-A Emissions Calculations

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.3 AIR QUALITY AND GREENHOUSE GASES

Would the Project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☑	☐	☐	☐
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☑	☐	☐	☐
d.	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
e.	Create objectionable odors affecting a substantial number of people?	☐	☐	☑	☐
f.	Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☐	☑
g.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
h.	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

4.3.1 Introduction

This section of the PEA describes the existing air quality in the Proposed Project area and potential impacts relating to air quality and greenhouse gases (GHG) associated with construction and operation of the Proposed Project. Construction may result in temporary, short-

term impacts to air quality conditions in the immediate Proposed Project area, primarily from fugitive dust and nitrogen oxide. However, the Proposed Project would not expose sensitive receptors to increased pollutant concentrations, conflict with air quality plans or standards, or otherwise significantly affect air quality. Operation and maintenance of the Proposed Project would have a less than significant impact on air quality.

4.3.2 Methodology

The existing air quality in the Proposed Project area was researched using data obtained from the South Coast Air Quality Management District (SCAQMD)'s network of air quality monitoring stations. Recent regulations and guidance from the USEPA, California Air Resources Board (CARB), CPUC, and SCAQMD were also reviewed.

Federal, state, and regional regulations and policies were consulted to determine the Proposed Project's level of compliance with and impact, if any, to applicable air quality plans and/or standards. To address construction emissions and impacts, the SCAQMD's *CEQA Air Quality Handbook* and the SCAQMD's *Localized Significance Threshold Methodology* were used. Standard methodologies to calculate construction equipment emissions were based on CARB's OFFROAD model, which provides emission factors for off-road equipment. Emissions of fugitive dust were calculated based on methodologies presented in the USEPA's *Compilation of Air Pollutant Emission Factors* references and the SCAQMD *CEQA Air Quality Handbook.*

4.3.3 Existing Conditions

4.3.3.1 Air Quality Regulatory Setting

Federal

Ambient Air Quality Standards

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act of 1970 and its 1977 and 1990 Amendments. The Clean Air Act required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for six pollutants (called "criteria" pollutants): carbon monoxide (CO), ozone, particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere.

The 1977 Clean Air Act Amendments required each state to develop and maintain a State Implementation Plan for each criteria pollutant that exceeds the NAAQS. The State Implementation Plan serves as a tool to develop strategies to reduce emissions of pollutants that cause exceedances of the NAAQS, and to achieve compliance with the NAAQS. The State Implementation Plan outlines federally enforceable rules, regulations, and programs designed to reduce emissions and bring the area into attainment of the NAAQS. In 1990, the Clean Air Act was amended to strengthen regulation of both stationary and mobile

sources of criteria pollutants, and also to implement regulations to control emissions of hazardous air pollutants and ozone-depleting substances.

In September 1997, the USEPA promulgated 8-hour ozone and 24-hour and annual national standards for particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). The USEPA has issued attainment designations for these pollutants and, as of July 15, 2005, rescinded the 1-hour ozone NAAQS.

The Clean Air Act allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards.

NAAQS and California Ambient Air Quality Standards (CAAQS) for each of these pollutants are shown in Table 4.3-1, Ambient Air Quality Standards. The South Coast Air Basin (Basin) is currently considered a nonattainment area for the CAAQS and NAAQS for ozone, PM_{10}, $PM_{2.5}$, and carbon monoxide. A brief description of the criteria pollutants follows.

Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when reactive organic compounds and nitrogen oxides, both byproducts of combustion, react in the presence of ultraviolet light. Ozone is present in relatively high concentrations in the Basin. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Carbon monoxide. Carbon monoxide is a product of combustion, and the main source of carbon monoxide in the Basin is from motor vehicle exhaust. Carbon monoxide is an odorless, colorless gas. Carbon monoxide affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. Carbon monoxide can cause health effects to those with cardiovascular disease, and can also affect mental alertness and vision.

Nitrogen dioxide. Nitrogen dioxide is also a by-product of fuel combustion, and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxides with oxygen. Nitrogen dioxide is a respiratory irritant and may affect those with existing respiratory illness, including asthma. Nitrogen dioxide can also increase the risk of respiratory illness.

Fine particulate matter. Fine particulate matter, or PM_{10}, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Particulate matter in this size range has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} arises from a variety of sources, including road dust, diesel exhaust, combustion, tire and break wear, construction operations, and windblown dust. PM_{10} can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. In 1997, the USEPA proposed a new standard for $PM_{2.5}$, which is particulate matter with an aerodynamic diameter of 2.5 microns or less. These finer particulates are considered to have the potential to lodge deeper in the lungs.

Table 4.3-1: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards [a]	
			Primary [b,c]	Secondary [b,d]
O_3	8-hour	0.070 ppm (137 µg/m^3)	0.075 ppm(147 µg/m^3)	Same as primary
	1-hour	0.09 ppm (180 µg/m^3)	—	—
CO	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
NO_2	Annual	0.030 ppm (56 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary
	1-hour	0.18 ppm (338 µg/m^3)	0.100 ppm (188 µg/m^3)(e)	—
SO_2	24-hour	0.04 ppm (105 µg/m^3)	—	—
	3-hour	—	—	0.5 ppm (1,300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)(f)	—
PM_{10}	Annual	20 µg/m^3	—	—
	24-hour	50 µg/m^3	150 µg/m^3	Same as primary
$PM_{2.5}$	Annual	12 µg/m^3	15.0 µg/m^3	
	24-hour	—	35 µg/m^3	
Pb	Rolling 3-month period	—	0.15 µg/m^3	Same as primary
	Calendar Quarter	—	1.5 µg/m^3	Same as primary
	30-day average	1.5 µg/m^3	—	—
H_2S	1-hour	0.03 ppm (42 µg/m^3)	—	—

Notes:

(a) Standards other than the 1-hour ozone, 24-hour PM_{10}, 24-hour $PM_{2.5}$, and those based on annual averages are not to be exceeded more than once a year. The 8-hour ozone national standard has replaced the 1-hour ozone national standard.

(b) Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis. Note that µg/m^3 is equivalent to micrograms per cubic meter.

(c) Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that State's Implementation Plan is approved by the USEPA.

(d) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

(e) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

(f) On June 2, 2010, USEPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.

Source: CARB, 2012

Sulfur dioxide. Sulfur dioxide is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of sulfur dioxide are found near large industrial sources. Sulfur dioxide is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to sulfur dioxide can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead in the atmosphere occurs as particulate matter. Lead has historically been emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Lead has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen.

State

Air Quality Plans and Regulations

The California Clean Air Act of 1988 established the CARB as the state agency responsible for the maintenance of air quality within the State of California. The CARB has established the more stringent CAAQS for the six criteria pollutants through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles (refer to Table 4.3-1). Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant.

The CARB is the state regulatory agency with authority to enforce regulations to achieve and maintain both the NAAQS and CAAQS. The CARB is responsible for the development, adoption, and enforcement of the State's motor vehicle emissions program, as well as the adoption of the CAAQS. The CARB also reviews operations and programs of the local air districts, and requires each air district with jurisdiction over a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS. The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations.

Health-based air quality standards have been established by California for the criteria air pollutants regulated by the NAAQS (ozone, carbon monoxide, nitrogen dioxide, PM_{10}, $PM_{2.5}$, sulfur dioxide, and lead), and additionally for sulfates, hydrogen sulfide, and vinyl chloride. These standards were established to protect sensitive receptors from adverse health impacts due to exposure to air pollution. Hydrogen sulfide and vinyl chloride are currently not monitored in the Basin because these contaminants are not seen as a significant air quality problem.

The CARB enforces the CAAQS and works with the state's Office of Environmental Health Hazard Assessment in identifying toxic air contaminants (TACs) and establishing and enforcing rules governing TAC sources, including the Air Toxics Hot Spots Information and Assessment Act of 1987. Under the Act, sources of TACs are required to report their emissions, and facilities that are identified as having the potential to expose individuals to an elevated risk must

prepare a health risk assessment and provide information to the public regarding their exposure to TAC emissions.

The CARB also regulates mobile sources in the State of California, including off-road construction equipment, marine vessels, and agricultural equipment; and on-road motor vehicles. Programs governing mobile sources include enactment of motor vehicle emission standards; programs to reduce emissions from diesel-powered off-road and on-road sources; the Portable Equipment Registration Program, and the Airborne Toxic Control Measures that apply to a variety of source categories within the State.

Attainment Status

The CARB designates portions of the State where federal or State ambient air quality standards are not met as nonattainment areas. Table 4.3-2, South Coast Air Basin Attainment Classification for Criteria Pollutants, summarizes the air quality attainment status for the Basin. Where a pollutant exceeds standards, the federal and State Clean Air Acts require air quality management plans that demonstrate how the standards will be achieved. These plans provide the basis for the implementing agencies to develop regulations governing air quality and to develop mobile and stationary source standards.

Table 4.3-2: South Coast Air Basin Attainment Classification for Criteria Pollutants

Pollutant	CAAQS Attainment Classification	NAAQS Attainment Classification
Ozone	Nonattainment	Extreme nonattainment
Carbon monoxide	Attainment	Maintenance
Nitrogen dioxide	Attainment	Maintenance
Sulfur dioxide	Attainment	Attainment
Particulate matter less than 10 microns in diameter	Nonattainment	Serious nonattainment
Particulate matter less than 2.5 microns in diameter	Nonattainment	Nonattainment
Lead	Attainment	Nonattainment
Sulfates	Attainment	Not applicable
Hydrogen sulfide	Unclassified	Not applicable
Vinyl chloride	Unclassified	Not applicable
Source: CARB, Standards and Area Designations, http://www.arb.ca.gov/desig/desig.htm		

Local

The air districts in California are responsible for regulating stationary sources within their jurisdictions, and for preparing air quality plans required under the Clean Air Act and the California Clean Air Act. While a portion of the Proposed Project is located in San Diego

County within the San Diego Air Basin, the majority of the Proposed Project is located within the Basin. The portion within San Diego County is located adjacent to the boundary with Orange County where air quality is similar to that in the Basin. Because Basin standards are more stringent than San Diego Air Basin standards, Basin standards were used to evaluate the Proposed Project

The SCAQMD is the local agency responsible for planning, implementing, and enforcing state and federal ambient air quality standards within the Basin. The SCAQMD has developed its Air Quality Management Plan (AQMP), which summarizes the measures and regulations that have been or will be implemented to govern air quality in the Basin and meet the ambient air quality standards. The AQMP includes strategies for meeting the 8-hour ozone standard and the particulate standards and a maintenance plan for the carbon monoxide standard.

Emission limitations are imposed upon sources of air pollutants operating in the Basin by the SCAQMD's Rules and Regulations, and statewide by the CARB. Operation of emission sources in the construction of the Proposed Project would not interfere with progress toward attainment of the federal and State standards, provided they are compliant with applicable regulations. The following SCAQMD rules apply to the Proposed Project:

- SCAQMD Rule 401 – Visible Emissions: This rule prohibits any activity that will create air contaminant emissions darker than No. 1 on the Ringlemann Chart for more than an aggregate of three minutes in any consecutive 60-minute period.
- SCAQMD Rule 402 – Nuisance: This rule prohibits the discharge of such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or injury or damage to property.
- SCAQMD Rule 403 – Fugitive Dust: This rule sets forth the requirements to include fugitive dust control measures for all construction activities. Rule 403 also requires implementing a fugitive dust control plan and Best Available Control Measures to reduce emissions of fugitive dust.

4.3.3.2 Greenhouse Gases and Global Climate Change Regulatory Setting

Overview

Global climate change refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns, precipitation and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), which are known as GHGs. These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere.

Gases that trap heat in the atmosphere are often called greenhouse gases, analogous to a greenhouse. GHGs are emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth's temperature. Emissions from human activities, such as burning fossil fuels for electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere.

The State of California has been at the forefront of developing solutions to address global climate change. Global climate change refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. Global climate change may result from natural factors, natural processes, and/or human activities that change the composition of the atmosphere and alter the surface and features of land.

The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The Intergovernmental Panel on Climate Change concluded that a stabilization of GHGs at 400 to 450 parts per million (ppm) carbon dioxide equivalent concentration is required to keep global mean temperature increases below 3.6º Fahrenheit (2º Celsius), which is assumed to be necessary to avoid dangerous climate change.

California Health and Safety Code Section 38505(g) defines GHGs as any of the following compounds: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Carbon dioxide, followed by methane and nitrous oxide, are the most common GHGs that result from human activity.

The State of California GHG Inventory performed by the CARB, compiled statewide anthropogenic GHG emissions and sinks, which include processes that uptake GHG emissions (Table 4.3-3, State of California Greenhouse Gas Emissions by Sector). It includes estimates for carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. The current inventory covers the years 1990 to 2008, and is summarized in Table 4.3-3. Data sources used to calculate this GHG inventory include California and federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the Intergovernmental Panel on Climate Change. The 1990 emissions level is the sum total of sources and sinks from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories in the inventory. These sectors include: Agriculture, Commercial, Electricity Generation, Forestry, Industrial, Residential, and Transportation.

The remainder of this page is intentionally left blank.

Table 4.3-3: State of California Greenhouse Gases Emissions by Sector

Sector	Total 1990 Emissions ($MMTCO_2e$)[1]	Percent of Total 1990 Emissions	Total 2008 Emissions ($MMTCO_2e$)	Percent of Total 2008 Emissions
Agriculture	23.4	5%	28.06	6%
Commercial	14.4	3%	14.68	3%
Electricity Generation	110.6	26%	116.35	25%
Forestry (excluding sinks)	0.2	<1%	0.19	<1%
Industrial	103.0	24%	92.66	20%
Residential	29.7	7%	28.45	6%
Transportation	150.7	35%	174.99	37%
Recycling and Waste			6.71	1%
High Global Warming Potential Gases			15.65	3%
Forestry Sinks	(6.7)		(3.98)	

[1] $MMTCO_2e$ refers to million metric tons of carbon dioxide equivalent emissions.

Source: Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, California Air Resources Board, November 16, 2007.

When accounting for GHGs, all types of GHG emissions are expressed in terms of carbon dioxide equivalents (CO_2e) and are typically quantified in metric tons (MT) or millions of metric tons (MMT).

GHGs have varying global warming potential. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. According to the USEPA, global warming potential is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas." The reference gas for global warming potential is carbon dioxide; therefore, carbon dioxide has a global warming potential of 1. The other main GHGs that have been attributed to human activity include methane, which has a global warming potential of 21, and nitrous oxide, which has a global warming potential of 310. Table 4.3-4, Global Warming Potentials and Atmospheric Lifetimes of Greenhouse Gases, presents the global warming potential and atmospheric lifetimes of common GHGs.

Table 4.3-4: Global Warming Potentials and Atmospheric Lifetimes of Greenhouse Gases

GHG	Formula	100-Year Global Warming Potential	Atmospheric Lifetime (Years)
Carbon Dioxide	CO_2	1	Variable
Methane	CH_4	21	12 ± 3
Nitrous Oxide	N_2O	310	120
Sulfur Hexafluoride	SF_6	23,900	3,200

Source: California Climate Action Registry General Reporting Protocol, Version 3.1. 2009. January.

Human-caused sources of carbon dioxide include combustion of fossil fuels (coal, oil, natural gas, gasoline and wood). Data from ice cores indicate that carbon dioxide concentrations

remained steady prior to the current period for approximately 10,000 years. Concentrations of carbon dioxide have increased in the atmosphere since the industrial revolution.

Methane is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure and cattle farming. Human-caused sources of nitrous oxide include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid.

Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses.

All levels of government have some responsibility for the protection of air quality, and each level (Federal, State, and regional/local) has specific responsibilities relating to air quality regulation. GHG emissions and the regulation of GHGs are a relatively new component of air quality.

Global climate change is being addressed at both the international and federal levels. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent reports from the Intergovernmental Panel on Climate Change have emphasized the scientific consensus that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.

Federal

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change. Under the Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of global climate change. Recently, the United States Supreme Court declared in the court case of Massachusetts et al. vs. the Environmental Protection Agency et al., 549 C.S. 497 that the USEPA does have the ability to regulate GHG emissions. In addition to the national and international efforts described above, many local jurisdictions have adopted climate change policies and programs.

Endangerment Finding

On April 17, 2009, USEPA issued its proposed endangerment finding for GHG emissions. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations.

Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed GHG from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

The endangerment findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the USEPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by USEPA and the DOT's National Highway Safety Administration on September 15, 2009.

Mandatory Reporting of Greenhouse Gasses, 40 C.F.R. Part 98

The USEPA's rule titled Mandatory Reporting of Greenhouse Gases (40 C.F.R. Part 98) requires mandatory reporting of GHGs for certain facilities. Subpart DD of the rule, titled Electrical Transmission and Distribution Equipment Use, applies to sulfur hexafluoride reporting from gas insulated substations. Under the final Mandatory Reporting Rule for Additional Sources of Fluorinated GHGs, owners and operators of electric power system facilities with a total nameplate capacity that exceeds 17,820 pounds (lbs) (7,838 kilograms [kg]) of sulfur hexafluoride and/or perfluorocarbon must report emissions of hexafluoride and/or perfluorocarbon from the use of electrical transmission and distribution equipment. Owners or operators must collect emissions data, calculate GHG emissions, and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting.

The rule requires that each electric power system facility must report total hexafluoride and perfluorocarbon emissions (including emissions from equipment leaks, installation, servicing, decommissioning, and disposal, and from storage cylinders) from the following types of equipment:

- Gas-insulated substations;
- Circuit breakers;
- Switchgear, including closed-pressure and hermetically sealed-pressure switchgear;
- Gas-insulated lines containing hexafluoride or perfluorocarbon;
- Gas containers such as pressurized cylinders;
- Gas carts;
- Electric power transformers; and
- Other containers of hexafluoride or perfluorocarbon.

Facilities subject to Subpart DD must begin monitoring GHG emissions on January 1, 2011 in accordance with the methods specified in Subpart DD. For 2012 only, the GHG report must be submitted to USEPA by September 28, 2012. In future years, the deadline for reporting is March 31, unless that date falls on a weekend, in which case the report is due the next business day.

State

The following subsections describe regulations and standards that have been adopted by the State of California to address global climate change issues.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed California Assembly Bill (AB) 32, the global warming bill, into law. AB 32 directs the CARB to do the following:

- Make publicly available a list of discrete early action GHG emission reduction measures that can be implemented prior to the adoption of the statewide GHG limit and the measures required to achieve compliance with the statewide limit.
- Make publicly available a GHG inventory for the year 1990 and determine target levels for 2020.
- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures.
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020, to become operative on January 1, 2012, at the latest. The emission reduction measures may include direct emission reduction measures, alternative compliance mechanisms, and potential monetary and non-monetary incentives that reduce GHG emissions from any sources or categories of sources that CARB finds necessary to achieve the statewide GHG emissions limit.
- Monitor compliance with and enforce any emission reduction measure adopted pursuant to AB 32.

AB 32 required that by January 1, 2008, CARB determine what the statewide GHG emissions level was in 1990, and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. CARB adopted its Scoping Plan in December 2008, which provided estimates of the 1990 GHG emissions level and identified sectors for the reduction of GHG emissions. The CARB has estimated that the 1990 GHG emissions level was 427 MMT net CO_2-equivalent. The CARB estimates that a reduction of 173 MMT net CO_2-equivalent emissions below business-as-usual would be required by 2020 to meet the 1990 levels. This amounts to a 15-percent reduction from today's levels, and a 30-percent reduction from projected business-as-usual levels in 2020.

The CPUC and California Energy Commission (CEC) concluded a lengthy proceeding in October 2008 to provide electricity and natural gas-specific recommendations to the CARB for inclusion in its Scoping Plan and AB 32 regulations and programs. The CARB adopted a comprehensive AB 32 Scoping Plan in December 2008 that outlined programs designed to achieve the 2020 GHG reduction goal of 174 million metric tons of carbon dioxide equivalent emissions through regulations, market mechanisms, and other actions.

For the electricity sector, the scoping plan adopted the fundamental recommendations of the CPUC for both investor-owned and publicly-owned utilities to continue and increase implementation of programs designed to reduce emissions, including energy efficiency programs, increasing the use of electricity supplies obtained from renewable generation sources to 33 percent by 2020, and the adoption of a cap and trade system to ensure an overall reduction of emissions from electric generation.

Throughout 2009, CARB staff drafted rules to implement the AB 32 Scoping Plan and held public workshops on each measure included in the AB 32 Scoping Plan. The CARB identified "Discrete Early Actions" that would be implemented to reduce GHG emissions from the years 2007 through 2012. On January 29, 2009, the CARB announced its regulatory schedule to adopt 74 separate regulations and other measures, including the enhanced energy efficiency programs and 33 percent Renewable Portfolio Standard. The early action measures identified within the AB 32 Scoping Plan took effect on January 2010.

The AB 32 Scoping Plan Measure H-6, which led to the CARB's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (CCR Title 17, § 95350-95359) applies directly to the Proposed Project due to the use of sulfur hexafluoride in substation equipment. This regulation sets the maximum emission rate for sulfur hexafluoride-containing equipment at 10 percent by 2011. The maximum allowable emission rate decreases by one percent each year. In 2020, the threshold will remain at one percent.

Senate Bill 97

Senate Bill 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directs Governor's Office of Planning and Research (OPR) to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by July 1, 2009 and directs the Resources Agency to certify and adopt the CEQA guidelines by January 1, 2010.

The OPR published a technical advisory on CEQA and Climate Change on June 19, 2008. The guidance did not include a suggested threshold, but stated that the OPR has asked CARB to, "recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of greenhouse gas emissions throughout the state." The OPR does recommend that CEQA analyses include the following components:

- Identify GHG emissions;
- Determine Significance; and
- Mitigate Impacts.

In April 2009, the OPR published its proposed revisions to CEQA to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other GHG reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the GHG emissions of proposed projects, noting that they have the freedom to select the quantitative and qualitative models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing *CEQA Guidelines*, OPR

encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.

- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the *CEQA Guidelines*.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

On July 3, 2009, the California Natural Resources Agency published a proposed amendment of regulations based on OPR's proposed revisions to CEQA to address GHG emissions. On that date, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code Section 21083.05. Having reviewed and considered all comments received, the Natural Resources Agency revised the CEQA regulation. The new regulations became effective on March 18, 2010.

Senate Bill 375

Senate Bill 375, enacted in 2009, requires the CARB to develop regional reduction targets for GHGs, and prompts the creation of regional plans to reduce emissions from vehicle use throughout the state. California's 18 Metropolitan Planning Organizations (MPOs) have been tasked with creating "Sustainable Community Strategies" (SCS). The MPOs must develop the SCS through integrated land use and transportation planning and demonstrate an ability to attain the proposed reduction targets by 2020 and 2035.

As the MPO for the Proposed Project region, the Southern California Association of Governments (SCAG) is required to do the following:

- Prepare a SCS as part of the 2012 Regional Transportation Plan (RTP). The SCS will meet a State-determined regional GHG emission reduction target, if it is feasible to do so.
- Prepare an Alternative Planning Strategy (APS) that is not part of the RTP if the SCS is unable to meet the regional target.
- Integrate SCAG planning processes, in particular assuring that the Regional Housing Needs Assessment (RHNA) is consistent with the SCS, at the jurisdiction level.
- Specific to SCAG only, allow for subregional SCS/APS development.
- Develop a substantial public participation process involving all stakeholders.

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to 1990 levels by 2020 and for an 80 percent reduction in GHG emissions by 2050. Executive Order S-3-05 also calls for the California Environmental Protection Agency (CalEPA) to prepare biennial science reports on the potential impact of continued global climate change on certain sectors of the California economy. The first of these reports, "Our Changing Climate: Assessing Risks to California,, and its supporting document "Scenarios of Climate Change in California: An Overview" were published by the California Climate Change Center in 2006.

State Standards Addressing Vehicular Emissions

California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030. The CARB has adopted amendments to the "Pavley" regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments, approved by the CARB on September 24, 2009, are part of California's commitment toward a nation-wide program to reduce new passenger vehicle GHGs from 2012 through 2016. CARB's September amendments cemented California's enforcement of the Pavley rule starting in 2009 while providing vehicle manufacturers with new compliance flexibility. The amendments also prepared California to harmonize its rules with the federal rules for passenger vehicles.

Executive Order S-21-09

Executive Order S-21-09 was enacted by the Governor on September 15, 2009. Executive Order S-21-09 requires that the CARB, under its AB 32 authority, adopt a regulation by July 31, 2010 that sets a 33 percent renewable energy target as established in Executive Order S-14-08. Under Executive Order S-21-09, the CARB will work with the CPUC and CEC to encourage the creation and use of renewable energy sources, and will regulate all California utilities.

The CARB will also consult with the CAISO and other load balancing authorities on the impacts on reliability, renewable integration requirements, and interactions with wholesale power markets in carrying out the provisions of the Executive Order. The order requires the CARB to establish highest priority for those resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health.

Global Climate Scenarios Report

The Climate Scenarios Report uses a range of emissions scenarios developed by the Intergovernmental Panel on Climate Change to project a series of potential warming ranges (i.e., temperature increases) that may occur in California during the 21st century. Three warming ranges were identified: Lower warming range (3.0 to 5.5 degrees Fahrenheit (ºF)); medium warming range (5.5 to 8.0 ºF); and higher warming range (8.0 to 10.5 ºF). The Climate Scenarios report then presents an analysis of the future projected climate changes in California under each warming range scenario.

According to the report, substantial temperature increases would result in a variety of impacts to the people, economy, and environment of California. These impacts would result from a projected increase in extreme conditions, with the severity of the impacts depending upon actual future emissions of GHGs and associated warming. These impacts are described below.

Public Health

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase by 25 to 35 percent under the lower warming range and 75 to 85 percent under the medium warming range. In addition, if global background ozone levels increase as is predicted in some scenarios, it may become impossible to meet local air quality standards. An increase in wildfires could also occur, and the corresponding increase in the release of pollutants including $PM_{2.5}$ could further compromise air quality. The Climate Scenarios Report indicates that large wildfires could become up to 55 percent more frequent if GHG emissions are not significantly reduced.

Potential health effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems (e.g., heat rash and heat stroke). In addition, climate sensitive diseases (such as malaria, dengue fever, yellow fever, and encephalitis) may increase, such as those spread by mosquitoes and other disease-carrying insects.

Climate change could affect the Proposed Project area, because warmer climates may experience more of the problems identified above related to heat, should increases in average temperature in the Proposed Project area occur.

Water Resources

A vast network of reservoirs and aqueducts capture and transport water throughout the State from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada mountain snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages. In addition, if temperatures continue to rise, more precipitation would fall as rain instead of snow, further reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. The State's water resources are also at risk from rising sea levels. An influx of seawater would degrade California's estuaries, wetlands, and groundwater aquifers.

This global climate change impact is not likely to have a direct effect on the operation of the Proposed Project.

Agriculture

Increased GHG and associated increases in temperature are expected to cause widespread changes to the agricultural industry, reducing the quantity and quality of agricultural products statewide. Significant reductions in available water supply to support agriculture would also

impact production. Crop growth and development will change as will the intensity and frequency of pests and diseases. This effect of global climate change is not anticipated to affect the Proposed Project site directly because there are no agricultural uses present.

Ecosystems/Habitats

Continued global warming will likely shift the ranges of existing invasive plants and weeds, thus alternating competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Continued global warming is also likely to increase the populations of and types of pests. Continued global warming would also affect natural ecosystems and biological habitats throughout the State. This effect of global climate change could affect current ecosystems/habitats at the Proposed Project site.

Wildland Fires

Global warming is expected to increase the risk of wildfire and alter the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the State. Should global climate change in the southern California region lead to increased risk of wildfires, this impact will not likely affect the Proposed Project area as it is in an urbanized area without a high level of adjacent wildlands and SDG&E implements safety and design standards to minimize the risk of fires (refer to Section 4.7, Hazards and Hazardous Materials).

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasing threaten the State's coastal regions. Under the high warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. A sea level risk of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten levees and inland water systems, and disrupt wetlands and natural habitats. In California, the coastal zone is defined as 1,000 yards inland from the mean high tide level. Because the Proposed Project site is not located within the coastal zone, sea level risk would not affect the Proposed Project.

SDG&E Programs

SDG&E has been engaged in programs to increase energy efficiency for many years. It has also increased the portion of its electricity generation portfolio devoted to renewable resources of energy. SDG&E is required to submit long-term procurement plans (LTPP) to the CPUC that describe its strategy for meeting forecasted load during the coming 10 years. These plans must be consistent with the "loading order" prescribed in the Energy Action Plan to meet first growth with conservation, then with renewable sources of electricity, and finally with new fossil-fueled sources to the extent necessary. New generation sources must be consistent with the LTPP. SDG&E's LTPP was approved by the CPUC in September 2008 and provides for all substantial forecasted additional reduction in GHG emissions by 2016 through the following programs:

- Energy efficiency, which will reduce needed capacity by 487 MW
- Demand response, which will reduce needed capacity by 249 MW
- Renewables, which will provide 318 MW in 2010 and 727 MW in 2016
- New peaker plants to back up intermittent renewable and support retirement of older plants

Forecasted reductions from these programs are greater than 1.5 MMT CO_2-equivalent per year. Approval by the CPUC will be required for future expenditures to implement these programs. These efforts will result in a carbon intensity reduction of one-third while accommodating continued population growth, and will ensure consistency with the applicable plans, policies and regulations adopted by the State of California for the purpose of reducing the emissions of greenhouse gases.

4.3.3.3 Existing Air Quality and Climate Conditions

Southern California's climate is characterized by hot, dry summers and mild to cold winters with seasonally heavy precipitation that occurs primarily during the winter months. The meteorological conditions in the region are influenced by the Eastern Pacific High, a strong, persistent high-pressure system that blocks migrating storm systems over the eastern Pacific Ocean. The area is also influenced by the moderating effects of the Pacific Ocean and the presence in the Proposed Project area of mountain ranges that block air flow. Seasonal variations in the position and strength of the Eastern Pacific High are key factors in the weather changes in the area. The Eastern Pacific High attains its greatest strength and most northerly position during the summer, when it is centered west of Northern California.

In this location, this high effectively shelters Southern California from the effects of polar storm systems. Large-scale atmospheric subsidence associated with the high produces an elevated temperature inversion along the West Coast. The base of this subsidence inversion is generally 1,000 to 2,500 feet above mean sea level during the summer. Vertical mixing is often limited to the base of the inversion and air pollutants are trapped in the lower atmosphere. The mountain ranges that surround the greater Los Angeles area constrain the horizontal movement of air and also inhibit the dispersion of air pollutants out of the region.

Average annual temperatures in the area as measured in Laguna Beach is 61.1 ºF. The warmest month is August, with an average maximum temperature of 78.1 ºF. The coldest month is January, with an average minimum temperature of 43.0 ºF. The region receives an average of 12.53 inches of precipitation annually. The majority of the precipitation falls in the winter months.

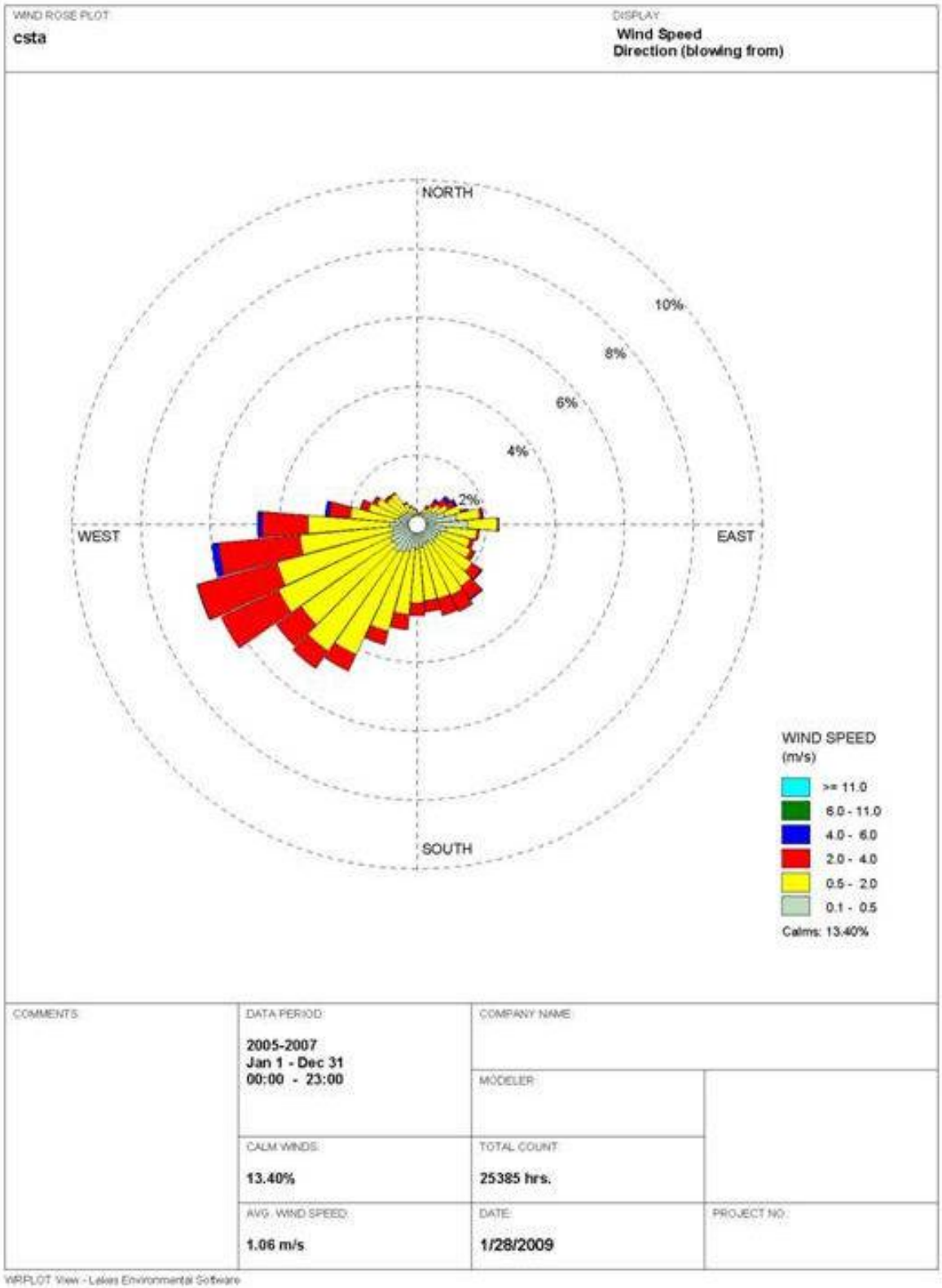
General elevation along the Proposed Project route varies between approximately 150 and 700 feet. The lower elevations are found near the existing Capistrano and Talega Substations and the highest elevations are found near Transmission Line Segment 2 (near Pole No. 14) and Segment 3 (near Pole Nos. 25 through 27).

Figure 4.3-1, South Orange County 138 kV Substation Wind Speed Diagram, provides a wind rose for Costa Mesa, which is the closest meteorological station where the SCAQMD collects meteorological data. The wind rose shows prevailing winds in the Proposed Project area.

The closest ambient air quality monitoring stations to the Proposed Project are the Mission Viejo monitoring station, which measures ozone, carbon monoxide, $PM_{2.5}$, and PM_{10}, and the Costa Mesa station, which measures nitrogen dioxide. Ambient concentrations of criteria pollutants measured at these monitoring stations during the period 2008 to 2010 are presented in Table 4.3-5, Background Air Quality Data (2008 to 2010). Ambient air concentrations were compared with the CAAQS and NAAQS. The data indicate that the area is in compliance with both CAAQS and NAAQS for carbon monoxide and nitrogen dioxide. The state 8-hour carbon monoxide standard was not exceeded during this three-year period. The maximum measured concentrations of nitrogen dioxide each year were less than the 0.18 parts per million 1-hour State standard and the national annual standard. It should be noted that the Los Angeles portion of the Basin has been designated as a nonattainment area for nitrogen dioxide.

The remainder of this page is intentionally left blank.

THIS PAGE IS INTENTIONALLY LEFT BLANK



Path: G:\SOCRUP\MXD\Project Description 2012\Figure 4_3-1wind.mxd

South Orange County Reliability Enhancement Project

South Orange County 138kV Substation
Wind Speed Diagram

Figure 4.3-1

Source: SDG&E

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.3-1

Exceedances of the ozone standards and PM_{10} and $PM_{2.5}$ standards have been recorded at the Mission Viejo monitoring station. The 8-hour NAAQS for ozone was exceeded 15 times in 2008, 10 times in 2009, and twice in 2010. Data for 2008 through 2010 indicate that exceedances of the particulate standards were observed in the Proposed Project area.

Table 4.3-5: Background Air Quality Data (2008 to 2010)

Pollutant	Averaging Time	2008[1]	2009[1]	2010[1]	NAAQS[1]	CAAQS[1]	Monitoring Station
Ozone	8 hour	0.104	0.095	0.082	0.075	0.070	Mission Viejo
	1 hour	0.118	0.121	0.117	-	0.08	Mission Viejo
PM_{10}	Annual Arithmetic Mean	22.6	23.6	18.1	-	20 $\mu g/m^3$	Mission Viejo
	24 hour	42	56	34	150 $\mu g/m^3$	50 $\mu g/m^3$	Mission Viejo
$PM_{2.5}$	Annual Arithmetic Mean	10.3	9.4	7.9	15 $\mu g/m^3$	12 $\mu g/m^3$	Mission Viejo
	24 hour	32.6	39.2	19.9	35 $\mu g/m^3$	-	Mission Viejo
NO_2	Annual	0.013	0.013	0.011	0.053	0.030	Costa Mesa
	1 hour	0.081	0.065	0.070	-	0.18	Costa Mesa
CO	8 hour	1.10	1.00	0.90	9	9.0	Mission Viejo

Notes:
[1]Units are in parts per million unless otherwise indicated.
Source: www.arb.ca.gov

4.3.3.4 Sensitive Receptors

Some exposed population groups, including children, the elderly, and the ill, can be especially vulnerable to airborne chemicals and irritants and are termed "sensitive receptors." Additionally, due to sustained exposure durations and frequencies, all persons located within residential areas are considered to be sensitive receptors.

Figure 4.9-1 shows an aerial map of the transmission line corridors and Proposed Project components. The Proposed Project transmission line corridors transit areas that include recreational (parks, golf courses) and residential receptors.

As shown on Figure 4.9-1, residential developments are located in the following areas:

- The Talega neighborhood, San Clemente, north of East Avenida Pico and west of Christianitos Road;
- San Juan Capistrano, east of I-5 on the north and south sides of SR-74; and

- San Juan Capistrano, west of I-5 near the Capistrano Substation site.

Recreational receptors near the transmission line corridor include the following:

- Bella Collina Towne & Golf Club, San Clemente;
- Junipero Serra Park, San Juan Capistrano;
- El Camino Real Park, San Juan Capistrano;
- Arroyo Park, San Juan Capistrano;
- Talega Golf Club, San Clemente;
- C Russell Cook Park, San Juan Capistrano; and
- Marbella Country Club, San Juan Capistrano.

In addition, the following schools are located within 0.25 miles of the existing and proposed transmission lines and/or substations included within the Proposed Project (See Sections 4.7, Hazards and Hazardous Materials and 4.9, Land Use and Planning for additional information on schools located within 0.25 mile of the Proposed Project):

- JSerra Catholic High School;
- Saddleback Valley Christian School;
- Capistrano Connections Academy;
- San Juan Hills High School;
- Marbella Montessori School;
- St. Margaret's Episcopal School;
- Talega Preparatory Academy;
- Vista Del Mar Middle School; and
- Harold Ambuehl Elementary School.

These receptors would be considered sensitive receptors that could be affected by the Proposed Project.

4.3.4 Potential Impacts

4.3.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to air quality if it will:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

Also under these guidelines, a project would have a potentially significant impact to GHGs if it will:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG.

The SCAQMD has adopted significance thresholds in its SCAQMD CEQA Air Quality Handbook for air quality that define whether a project could have a significant impact. These thresholds are arranged in three parts starting with the broadest and narrowing to the most specific. The general thresholds are derived from Appendix G of the state *CEQA Guidelines*, and indicate that a project could have potentially significant impacts if it could:

a. Conflict with or obstruct implementation of the applicable air quality plan

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation

c. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for ozone precursors); or

d. Expose sensitive receptors to substantial pollutant concentrations including air toxics such as diesel particulates.

The second level of significance set forth in the SCAQMD's significance thresholds presents quantitative emissions thresholds by which to evaluate whether a project's impacts could have a significant impact on air quality. The quantitative emission thresholds are included in Table 4.3-6, Air Quality Significance Thresholds.

The remainder of this page is intentionally left blank.

Table 4.3-6: Air Quality Significance Thresholds

Pollutant	Construction	Operation
Criteria Pollutants Mass Daily Thresholds		
NO_x	100 lbs/day	55 lbs/day
ROG	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
TAC, AHM, and Odor Thresholds		
Toxic Air Contaminants	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden ≥ 0.5 (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO_2e for industrial facilities	
Ambient Air Quality for Criteria Pollutants		
NO_2	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 (state) and 0.0534 (federal)	
PM_{10} 24-hour average annual average	 10.4 μg/m^3 construction and 2.5 μg/m^3 operation 1.0 μg/m^3	
$PM_{2.5}$ 24-hour average	 10.4 μg/m^3 construction and 2.5 μg/m^3 operation	
SO_2 1-hour average 24-hour average	 0.25 ppm (state) and 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	 25 μg/m^3 (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 0.0 (state/federal)	
Lead 30-day average Rolling 3-month average Quarterly average	 1.5 μg/m^3 (state) 0.15 μg/m^3 (federal) 1.5 μg/m^3 (federal)	
Notes: μg/m^3 = microgram per cubic meter; pphm = parts per hundred million; mg/m^3 = milligram per cubic meter; ppm = parts per million; TAC = toxic air contaminant; AHM = Acutely Hazardous Material Source: SCAQMD, http://www.aqmd.gov/ceqa/handbook/signthres.pdf		

To further evaluate the potential for significant impacts associated with the construction phase, the SCAQMD's *Final Localized Significance Threshold Methodology* was used because the segments of the Proposed Project relevant for air quality analysis purposes are five acres or less in size. The Localized Significance Threshold (LST) Methodology provides a look-up table for construction and operational emissions based on the emission rate, location, and distance from receptors, and provides a methodology for air dispersion modeling to evaluate whether a

construction or operation could cause an exceedance of an ambient air quality standard. The SCAQMD recommends the use of the LST Methodology to address potential localized impacts from construction and operations. While the LST lookup tables are applicable only to sources that are five acres or less in size and the Proposed Project overall has a larger footprint than five acres, it is reasonable to assume that active construction activities at any given time would be conducted on five acres in a single localized area. It is therefore appropriate to use the LST Methodology for a five-acre site as a conservative means of evaluating potential impacts. The LST Methodology applies to on-site emissions and does not apply to emissions from on-road vehicles. The LST Methodology only applies to impacts to nitrogen dioxide, carbon monoxide, PM_{10}, and $PM_{2.5}$ concentrations.

There are other limitations of the LST Methodology; for example, as discussed in the Methodology guidance document, the LST look-up tables for construction impacts were developed for a typical construction workday (8 a.m. to 4 p.m.), and activities may occur outside these work hours assumed in the derivation of the tables. The LST look-up tables were derived using the USEPA's ISC3 model, which has since been superseded by the AERMOD model. As stated in the LST Methodology: "Screening procedures are by design conservative, that is, the predicted impacts tend to overestimate the actual impacts." The LST values therefore provide a means of conducting a screening analysis to assess whether a significant impact could occur due to project construction activities.

According to the LST Methodology, the Proposed Project is located in Source Receptor Area Zone 21, the Capistrano Valley Zone. The Capistrano Valley (Zone 21) encompasses the region from San Juan Capistrano south to the Orange County/San Diego County border, and extends east to the Orange County/Riverside County border, encompassing the entire region of the Proposed Project, including the cities of San Juan Capistrano and San Clemente. The LSTs for the Capistrano Valley are shown in Table 4.3-7, Localized Significance Thresholds, based on the distance to the nearest receptor.

The remainder of this page is intentionally left blank.

Table 4.3-7: Localized Significance Thresholds

Distance to Nearest Receptor, meters[1]	Pollutant (pounds per day)					
	NOx	CO	PM_{10} - Construction	PM_{10} – Operation	$PM_{2.5}$ - Construction	$PM_{2.5}$ - Operation
1 acre						
25	158	515	3	1	3	1
50	163	751	11	3	4	1
100	188	1,212	69	17	8	2
200	244	2,335	127	30	19	5
500	380	7,648	185	44	68	17
2 acres						
25	224	700	6	1	4	1
50	224	1,108	18	4	6	2
100	243	1,653	76	18	10	3
200	289	2,899	134	32	22	6
500	407	8,338	192	46	74	18
5 acres						
25	334	1,343	11	3	8	2
50	334	1,762	36	9	11	3
100	351	2,665	95	23	16	4
200	388	4,255	154	37	30	8
500	484	10,320	213	51	90	22

Notes:

[1]25 meters = 82 feet
50 meters = 164 feet
100 meters = 328 feet
200 meters = 656 feet
500 meters = 1,640 feet

Source: South Coast Air Quality Management District Final Localized Significance Threshold Methodology (SCAQMD 2003) and South Coast Air Quality Management District Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 CEQA Significance Thresholds (SCAQMD 2006).

For the purpose of evaluating impacts using the LSTs, it was assumed that construction would be occurring on five acres at a time, and that the nearest receptor would be located 25 meters from the site. The impacts associated with the Proposed Project were evaluated for significance based on these significance criteria.

4.3.4.2 Question 3a - Conflict with or obstruct implementation of the applicable air quality plan?

Construction – Less than Significant Impact

The Proposed Project is within the SCAQMD's jurisdiction. The Proposed Project would comply with applicable federal, State, and local laws. The most recent air quality management plan adopted by the SCAQMD for the Basin is the 2007 AQMP.

The control strategies proposed in the 2007 AQMP focus on emissions of $PM_{2.5}$ and ozone precursors, and identify precursor emissions as the key source of $PM_{2.5}$ in the atmosphere, as opposed to directly emitted $PM_{2.5}$. The Proposed Project would not conflict with or obstruct implementation of the 2007 AQMP, as it will be in compliance with applicable rules and regulations adopted by the SCAQMD for the purpose of attaining and maintaining the air quality standards. The 2007 AQMP anticipates construction activities in its emissions budget and assumes that projects would comply with requirements for construction equipment and control of fugitive dust emissions, thereby reducing emissions of $PM_{2.5}$ and ozone precursors to the extent feasible. Through its compliance with applicable rules and regulations, the Proposed Project would not conflict with or obstruct implementation of the 2007 AQMP, and impacts will be less than significant.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The rebuilt substation would comply with the 2007 AQMP, however. SDG&E would also comply with ensure that all rules and regulations for gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through its compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project would not conflict with or obstruct implementation of the 2007 AQMP, and impacts will be less than significant.

4.3.4.3 Question 3b - Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction – Significant Short Term Impact

The Proposed Project's air quality impacts are mainly attributable to the construction of the substations and transmission lines. Construction activities include the following:

Capistrano Substation

- Relocate, rebuild, and expand existing 138kV facilities with a new gas insulated substation on the lower yard of the site.
- Relocate, rebuild, and expand existing 12kV facilities on the lower yard.
- Build a new 230kV gas insulated substation at the existing 138/12kV location on the upper yard of the site.

Transmission Lines

- Extend existing 230kV transmission lines TL23007 and TL23030 from the Talega Substation area to the proposed San Juan Capistrano Substation Site, approximately 8.2 miles, by replacing existing 138kV transmission line.
- Remove and relocate 12kV distribution lines from within SDG&E's existing Talega to Capistrano utility corridor to accommodate the new 230kV double-circuit line.

- Relocated existing 69kV and 138kV transmission lines near the Talega Substation in order to make room for the new 230kV transmission lines.
- Reconductor a small segment of existing 138kV transmission line near the Pico Substation.
- Upgrade remote ends of 138kV and 230kV transmission lines affected as required.

Talega Substation

- Reconfigure Talega Substation to accommodate the new transmission line connections.

The proposed construction schedule for the Proposed Project is presented in Section 3, Proposed Project Description. The overall construction is anticipated to commence in November 2013 and be completed by November 2017.

Construction emissions would be generated from heavy construction equipment, vehicles, and fugitive dust. Emissions were estimated based on the construction schedule and equipment requirements for the Proposed Project provided by SDG&E. Heavy construction emissions were estimated using OFFROAD emission factors as provided by the SCAQMD, which represent the SCAQMD construction fleet. As such, the emission factors account for the implementation of requirements to meet Tier 2, Tier 3, and Tier 4 emission standards, and include equipment that meets these standards in the emission factors The OFFROAD emission factors for the applicable year of construction (2013 through 2017) were used for each phase of construction based on the construction schedule. Based on information from the SCAQMD, use of equipment that meets at least Tier 2 standards would reduce nitrogen oxide by a minimum of 35 percent, reactive organic gases by a minimum of 70 percent, and particulate matter by a minimum of 20 percent from uncontrolled equipment. Emissions from worker vehicles and truck traffic were calculated using the EMFAC2011 emission factors on the CARB's website.

Emissions were calculated assuming fugitive dust and equipment BMPs would be employed to reduce emissions to the extent possible. These practices include fugitive dust control measures as required under SCAQMD Rule 403, and would include the following measures, listed with their anticipated emission reduction potential per SCAQMD Table XI-A, Fugitive Dust Mitigation Measures, Construction and Demolition:

- All unpaved demolition and construction areas shall be wetted at least three times daily during construction, and temporary dust covers shall be used to reduce dust emissions and meet SCAQMD District Rule 403 requirements (36-61).
- The owner or contractor shall keep the construction area sufficiently dampened to control dust caused by construction and hauling, and at all times provide reasonable dust control of areas subject to windblown erosion (36 to 61 percent).
- All loads shall be secured by covering or use of at least two feet of freeboard to avoid carry-over (91 percent).
- All materials transported offsite shall be either sufficiently watered or securely covered (91 percent).

- All earthmoving or excavation activities shall be discontinued during period of high winds (i.e., greater than 25 mph) to prevent excessive amounts of fugitive dust generation (98 percent).
- All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.
- General contractors shall maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues will have their engines turned off after five minutes when not in use. Construction activities will be phased and scheduled to avoid emission peaks, and equipment use will be curtailed during second-stage smog alerts.
- To the extent possible, power will be obtained from power poles (the electrical grid) rather than the use of large generators on site.
- Low- and non-volatile organic compound (VOC) containing coatings, sealants, adhesives, solvents, asphalt, and architectural coatings shall be used to reduce VOC emissions.
- All areas where construction vehicles are parked, staged, or operating shall be visibly posted with signs stating "No idling in excess of 5 minutes."
- Catalytic converters shall be installed on all heavy construction equipment, where feasible.
- Deliveries will be scheduled during off-peak traffic periods to reduce trips during the most congested periods of the day.

Fugitive dust emissions would be controlled by a minimum of 61 percent; therefore, without use of best management practices to reduce dust, particulate emissions would be approximately 1.6 times higher.

Table 4.3-8a, Estimated Construction Emissions for Substation Construction, presents a summary of the daily construction emissions for the substation construction, for each phase of construction, in comparison with the SCAQMD significance thresholds. Table 4.3-8b, Estimated Construction Emissions for Transmission Line Construction, presents a summary of the daily construction emissions associated with construction of the transmission lines. Table 4.3-9, Estimated Maximum Simultaneous Construction Emissions, presents the maximum simultaneous daily emissions associated with Proposed Project construction.

The remainder of this page is intentionally left blank.

Table 4.3-8a: Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Total Construction Emissions, lbs/day						
Talega Substation Site Development						
Heavy Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
Worker Vehicles	0.26	5.04	0.46	0.01	0.14	0.05
Construction Truck Trips	0.05	0.20	1.38	0.00	0.07	0.05
Fugitive Dust					61.93	18.22
TOTAL	**0.31**	**5.24**	**1.85**	**0.01**	**62.14**	**18.31**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**0.00**	**0.00**	**0.00**	**0.00**	**61.93**	**18.22**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*Yes*	*Yes*
Talega Substation Below Grade						
Heavy Construction Equipment	4.27	17.37	35.27	0.05	1.67	1.49
Worker Vehicles	0.26	5.04	0.46	0.01	0.14	0.05
Construction Truck Trips	0.52	1.97	13.81	0.02	0.73	0.48
Fugitive Dust					26.36	8.29
TOTAL	**5.05**	**24.39**	**49.54**	**0.08**	**28.90**	**10.31**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**4.27**	**17.37**	**35.27**	**0.05**	**28.03**	**9.78**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*Yes*	*Yes*

The remainder of this page is intentionally left blank.

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Talega Substation Construction						
Heavy Construction Equipment	2.45	8.25	18.09	0.03	0.78	0.69
Worker Vehicles	0.17	3.44	0.32	0.00	0.10	0.03
Construction Truck Trips	0.02	0.11	0.24	0.00	0.05	0.03
TOTAL	**2.64**	**11.79**	**18.65**	**0.03**	**0.93**	**0.75**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**2.45**	**8.25**	**18.09**	**0.03**	**0.78**	**0.69**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Capistrano Substation – Building Removal						
Heavy Construction Equipment	3.76	11.90	32.00	0.05	1.22	1.09
Worker Vehicles	0.43	8.59	0.79	0.01	0.26	0.08
Construction Truck Trips	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive Dust					39.00	8.19
TOTAL	**4.19**	**20.49**	**32.80**	**0.06**	**40.48**	**9.36**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**3.76**	**11.90**	**32.00**	**0.05**	**40.22**	**9.28**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*Yes*	*Yes*
Capistrano Substation 138kV Site Development						
Heavy Construction Equipment	40.76	128.91	360.93	0.50	12.82	11.41
Worker Vehicles	0.43	8.59	0.79	0.01	0.26	0.08
Construction Truck Trips	1.57	5.92	41.42	0.06	2.18	1.45
Fugitive Dust					61.93	18.22
TOTAL	**42.76**	**143.42**	**403.14**	**0.56**	**77.19**	**31.17**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Total On-site Emissions	**40.76**	**128.91**	**360.93**	**0.50**	**74.75**	**29.63**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*Yes*	*No*	*Yes*	*Yes*
Capistrano Substation 138kV –Below Grade						
Heavy Construction Equipment	12.55	42.66	103.07	0.17	3.95	3.52
Worker Vehicles	0.43	8.59	0.79	0.01	0.26	0.08
Construction Truck Trips	3.22	12.10	129.93	0.19	5.51	3.24
Fugitive Dust					26.36	8.29
TOTAL	**16.21**	**63.35**	**233.79**	**0.37**	**36.08**	**15.13**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions	**12.55**	**42.66**	**103.07**	**0.17**	**30.31**	**11.81**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*Yes*	*Yes*
Capistrano Substation 138kV– Substation Construction						
Heavy Construction Equipment	12.74	40.28	102.40	0.19	3.65	3.25
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04
Construction Truck Trips	0.02	0.13	0.31	0.00	0.07	0.03
TOTAL	**12.97**	**44.56**	**103.09**	**0.20**	**3.85**	**3.32**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions	**12.74**	**40.28**	**102.40**	**0.19**	**3.65**	**3.25**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Capistrano Substation 138kV– Relay Testing						
Heavy Construction Equipment	0.24	0.73	1.74	0.00	0.06	0.05
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	**0.45**	**4.95**	**2.27**	**0.01**	**0.23**	**0.11**

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**0.24**	**0.73**	**1.74**	**0.00**	**0.06**	**0.05**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Capistrano Substation 138kV– Energization						
Heavy Construction Equipment	0.47	1.46	3.47	0.01	0.12	0.10
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	**0.69**	**5.68**	**4.01**	**0.01**	**0.29**	**0.16**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**0.47**	**1.46**	**3.47**	**0.01**	**0.12**	**0.10**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Capistrano Substation 138kV– Energize Temporary Lines						
Heavy Construction Equipment	1.13	5.23	8.31	0.01	0.47	0.42
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	**1.35**	**9.45**	**8.84**	**0.02**	**0.64**	**0.48**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**1.13**	**5.23**	**8.31**	**0.01**	**0.47**	**0.42**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Capistrano Substation 230kV – Remove Existing Equipment						
Heavy Construction Equipment	3.91	13.67	29.56	0.06	1.15	1.03
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Construction Truck Trips	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	**4.12**	**17.83**	**29.95**	**0.06**	**1.29**	**1.07**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**3.91**	**13.67**	**29.56**	**0.06**	**1.15**	**1.03**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Capistrano Substation 230kV – Site Development						
Heavy Construction Equipment	15.55	58.48	123.87	0.19	4.76	4.24
Worker Vehicles	0.35	7.11	0.66	0.01	0.26	0.08
Construction Truck Trips	0.42	1.58	11.05	0.02	0.58	0.39
Fugitive Dust					61.93	18.22
TOTAL	**16.32**	**67.17**	**135.57**	**0.22**	**67.53**	**22.93**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions	**15.55**	**58.48**	**123.87**	**0.19**	**66.74**	**22.46**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Capistrano Substation 230kV – Below Grade						
Heavy Construction Equipment	11.63	43.74	86.53	0.18	3.18	2.83
Worker Vehicles	0.35	7.11	0.66	0.01	0.26	0.08
Construction Truck Trips	2.42	9.08	97.45	0.14	4.13	2.43
Fugitive Dust					32.68	10.27
TOTAL	**14.39**	**59.92**	**184.64**	**0.34**	**40.25**	**15.62**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions	**11.63**	**43.74**	**86.53**	**0.18**	**35.86**	**13.10**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*Yes*	*Yes*

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Capistrano Substation 230kV – Substation Construction						
Heavy Construction Equipment	11.95	42.90	83.88	0.20	3.02	2.69
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04
Construction Truck Trips	0.02	0.13	0.31	0.00	0.07	0.03
TOTAL	**12.16**	**46.82**	**84.54**	**0.21**	**3.22**	**2.76**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**11.95**	**42.90**	**83.88**	**0.20**	**3.02**	**2.69**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Capistrano Substation 230kV– Relay Testing						
Heavy Construction Equipment	0.22	0.72	1.53	0.00	0.05	0.05
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	**0.42**	**4.58**	**2.03**	**0.01**	**0.22**	**0.11**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**0.22**	**0.72**	**1.53**	**0.00**	**0.05**	**0.05**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Capistrano Substation 230kV– De-Energize Temporary Lines						
Heavy Construction Equipment	2.77	9.02	19.06	0.05	0.64	0.57
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	**2.97**	**12.88**	**19.57**	**0.05**	**0.81**	**0.63**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**2.77**	**9.02**	**19.06**	**0.05**	**0.64**	**0.57**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8

Table 4.3-8a (cont.): Estimated Construction Emissions for Substation Construction

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Capistrano Substation 230kV– Energization						
Heavy Construction Equipment	0.44	1.44	3.05	0.01	0.10	0.09
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04
Construction Truck Trips	0.01	0.07	0.15	0.00	0.03	0.02
TOTAL	**0.64**	**5.30**	**3.56**	**0.01**	**0.27**	**0.15**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Total On-site Emissions	**0.44**	**1.44**	**3.05**	**0.01**	**0.10**	**0.09**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*

As shown in Table 4.3-8a, emissions for individual substation construction phases would be below the SCAQMD's regional significance thresholds for all pollutants for each phase of construction, except nitrogen oxide during certain phases of substation construction. Emissions of PM_{10} and $PM_{2.5}$ will be below the SCAQMD's regional significance thresholds, but above the LSTs during activities involving earthmoving at both substations. Nitrogen oxide emissions would also exceed the LSTs during certain phases of substation construction. These emissions would cause a temporary significant impact on air quality during construction.

For the purpose of estimating emissions associated with transmission line construction, it was assumed that the transmission line construction activities could occur simultaneously due to the ability to construct the transmission line in a linear fashion, starting from one end of the line and proceeding to the other end. This assumption is consistent with the construction schedule. Table 4.3-8b, Estimated Construction Emissions for Transmission Line Construction, presents the maximum daily emissions associated with transmission line construction for each transmission line segment.

Table 4.3-8b: Estimated Construction Emissions for Transmission Line Construction

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Total Construction Emissions, lbs/day						
Transmission Segment 4: Talega Hub to Talega Substation (138/69kV)						
Heavy Construction Equipment	34.90	129.10	289.54	0.42	12.13	10.79
Worker Vehicles	1.15	22.69	2.09	0.03	0.62	0.27
Construction Truck Trips	0.78	3.02	19.89	0.03	1.14	0.74
Fugitive Dust					89.77	26.79
TOTAL	**36.83**	**154.81**	**311.53**	**0.48**	**103.65**	**38.58**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions						
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*Yes*	*No*	*Yes*	*Yes*
Transmission Segment 1: Capistrano Substation Getaways 138kV						
Heavy Construction Equipment	21.55	80.05	168.16	0.26	7.49	6.67
Worker Vehicles	0.51	10.09	0.93	0.01	0.27	0.12
Construction Truck Trips	0.52	2.03	12.99	0.02	0.77	0.50
Fugitive Dust					89.77	26.79
TOTAL	**22.58**	**92.16**	**182.08**	**0.29**	**98.31**	**34.07**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions	**21.55**	**80.05**	**168.16**	**0.26**	**97.26**	**33.46**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*Yes*	*Yes*
Transmission Segment 3: Talega to Rancho San Juan 230kV						
Heavy Construction Equipment	26.35	99.44	209.98	0.34	8.78	7.81
Worker Vehicles	0.83	16.39	1.51	0.02	0.45	0.19
Construction Truck Trips	0.71	2.71	18.27	0.03	1.01	0.66
Fugitive Dust					89.77	26.79
TOTAL	**27.89**	**118.54**	**229.76**	**0.38**	**100.01**	**35.45**

Table 4.3-8b (cont.): Estimated Construction Emissions for Transmission Line Construction

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions	**26.35**	**99.44**	**209.98**	**0.34**	**98.55**	**34.60**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*Yes*	*No*	*Yes*	*Yes*
Transmission Segment 2: Rancho San Juan 230kV						
Heavy Construction Equipment	18.03	70.67	132.99	0.24	5.96	5.30
Worker Vehicles	0.64	12.61	1.16	0.01	0.34	0.15
Construction Truck Trips	0.55	2.12	14.13	0.02	0.79	0.52
Fugitive Dust					89.77	26.79
TOTAL	**19.22**	**85.39**	**148.28**	**0.28**	**96.86**	**32.76**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions	**18.03**	**70.67**	**132.99**	**0.24**	**95.73**	**32.09**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*Yes*	*Yes*
Transmission Segment 1: Rancho San Juan to San Juan Capistrano 230kV						
Heavy Construction Equipment	22.89	87.28	181.25	0.30	7.44	6.62
Worker Vehicles	0.90	17.65	1.63	0.02	0.48	0.21
Construction Truck Trips	0.54	2.08	14.05	0.02	0.78	0.51
Helicopters	12.83	66.89	66.89	12.31	22.11	22.11
Fugitive Dust					89.77	26.79
TOTAL	**37.16**	**173.90**	**263.81**	**12.65**	**120.57**	**56.23**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions	**22.89**	**87.28**	**181.25**	**0.30**	**97.21**	**33.41**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*Yes*	*No*	*Yes*	*Yes*

Table 4.3-8b (cont.): Estimated Construction Emissions for Transmission Line Construction

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Transmission Segment 4: Talega Hub to Talega Substation 230kV						
Heavy Construction Equipment	19.07	74.56	147.96	0.25	6.18	5.50
Worker Vehicles	0.77	15.13	1.39	0.02	0.41	0.18
Construction Truck Trips	0.55	2.12	14.13	0.02	0.79	0.52
Fugitive Dust					89.77	26.79
TOTAL	**20.38**	**91.81**	**163.48**	**0.29**	**97.16**	**38.49**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions	**19.07**	**74.56**	**147.96**	**0.25**	**95.95**	**32.29**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*Yes*	*Yes*
Transmission Segment 2: Rancho San Juan 138/230kV North Runs						
Heavy Construction Equipment	19.03	74.39	132.92	0.28	5.65	5.03
Worker Vehicles	0.64	12.61	1.16	0.01	0.34	0.15
Construction Truck Trips	0.50	1.92	12.75	0.02	0.72	0.47
Fugitive Dust					89.77	26.79
TOTAL	**20.17**	**88.92**	**146.83**	**0.32**	**96.49**	**32.44**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*No*	*No*	*Yes*	*No*	*No*	*No*
Total On-site Emissions	**19.03**	**74.39**	**132.92**	**0.28**	**95.42**	**31.82**
Localized Significance Threshold	N/A	1,343	334	N/A	11	8
Above Localized Significance Thresholds?	*No*	*No*	*No*	*No*	*Yes*	*Yes*

As shown in Table 4.3-8b, emissions for individual transmission line construction phases would be below the SCAQMD's regional significance thresholds for all pollutants for each phase of construction except nitrogen oxide emissions. Emissions would also be above the LSTs for PM_{10}, $PM_{2.5}$, and nitrogen oxide during portions of transmission line construction. These emissions would cause a temporary significant impact on air quality during construction.

To identify the maximum daily emissions that would occur due to the simultaneous construction of various segments and the substation construction, the schedule was reviewed to identify the month during which maximum emissions will occur.

That time period occurs in December 2015, when the following construction activities occur simultaneously:

- San Juan Capistrano Substation – Lower Yard
  - Below Grade Construction
  - Above Grade Construction
- Transmission Segment 1 – 138/230kV
  - Steel Pole Installations
  - Cable/Conductor Pulling and Tensioning
  - Removal of Wood Pole Structures
- Transmission Segment 2 – 230kV
  - Site Grading
  - Foundation Installations
- Transmission Segment 1 – 230kV
  - Steel Pole Installations
  - Removal of Wood Structures
- Transmission Segment 4 – 230kV
  - Foundation Installations
  - Steel Pole Installations

Table 4.3-9, presents a summary of the maximum simultaneous emissions in comparison with the significance thresholds.

Table 4.3-9: Estimated Maximum Simultaneous Construction Emissions

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Total Construction Emissions, lbs/day						
San Juan Capistrano Substation Construction						
Heavy Construction Equipment	11.95	42.90	83.88	0.20	3.02	2.69
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04
Construction Truck Trips	0.02	0.13	0.31	0.00	0.07	0.03
TOTAL	**12.16**	**46.82**	**84.54**	**0.21**	**3.22**	**2.76**

Table 4.3-9 (cont.): Estimated Maximum Simultaneous Construction Emissions

Emission Source	Pollutant					
	ROG	CO	NOx	SOx	PM_{10}	$PM_{2.5}$
Transmission Segment 1: Capistrano Substation Getaways 138kV						
Heavy Construction Equipment	7.82	29.73	53.24	0.09	2.68	2.38
Worker Vehicles	0.51	10.09	0.93	0.01	0.27	0.12
Construction Truck Trips	0.52	2.03	12.99	0.02	0.77	0.50
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79
TOTAL	**22.58**	**92.16**	**182.08**	**0.29**	**98.31**	**34.07**
Transmission Segment 3: Talega to Rancho San Juan 230kV						
Heavy Construction Equipment	9.09	35.79	61.90	0.10	3.15	2.80
Worker Vehicles	0.83	16.39	1.51	0.02	0.45	0.19
Construction Truck Trips	0.71	2.71	18.27	0.03	1.01	0.66
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79
TOTAL	**27.89**	**118.54**	**229.76**	**0.38**	**100.01**	**35.45**
Transmission Segment 2: Rancho San Juan 230kV						
Heavy Construction Equipment	5.54	19.73	45.41	0.07	1.69	1.51
Worker Vehicles	0.64	12.61	1.16	0.01	0.34	0.15
Construction Truck Trips	0.55	2.12	14.13	0.02	0.79	0.52
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79
TOTAL	**19.22**	**85.39**	**148.28**	**0.28**	**96.86**	**32.76**
Transmission Segment 1: Rancho San Juan to San Juan Capistrano 230kV						
Heavy Construction Equipment	5.09	19.21	31.57	0.05	1.60	1.43
Worker Vehicles	0.90	17.65	1.63	0.02	0.48	0.21

Table 4.3-9 (cont.): Estimated Maximum Simultaneous Construction Emissions

Emission Source	Pollutant					
	ROG	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Construction Truck Trips	0.54	2.08	14.05	0.02	0.78	0.51
Helicopters	12.83	66.89	66.89	12.31	22.11	22.11
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79
TOTAL	**37.16**	**173.90**	**263.81**	**12.65**	**120.57**	**56.23**
Transmission Segment 4: Talega Hub to Talega Substation 230kV						
Heavy Construction Equipment	4.97	21.27	30.51	0.05	1.61	1.43
Worker Vehicles	0.77	15.13	1.39	0.02	0.41	0.18
Construction Truck Trips	0.55	2.12	14.13	0.02	0.79	0.52
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79
TOTAL	**20.38**	**91.81**	**163.48**	**0.29**	**97.16**	**28.92**
Maximum Simultaneous Emissions						
TOTAL	**139.39**	**608.62**	**1071.95**	**14.09**	**516.14**	**194.26**
Significance Thresholds	75	550	100	150	150	55
Above Significance Thresholds?	*Yes*	*Yes*	*Yes*	*No*	*Yes*	*Yes*

As shown in Table 4.3-9, maximum daily construction emissions would exceed the regional significance thresholds for all criteria pollutants except sulfur dioxide. Because the simultaneous emissions include construction at different locations, it is not appropriate to use the LSTs, which address localized impacts, to assess significance for multiple construction activities occurring at different sites. Implementation of BMPs to control fugitive dust emissions and reduce emissions from vehicles and heavy equipment would reduce emissions to the extent possible, however, they would not reduce maximum daily emissions to a level that is less than the SCAQMD's significance thresholds. Although the daily reactive organic gases, carbon monoxide, nitrogen oxide and particulate emissions exceed the regional significance thresholds, SDG&E will implement the most practicable and feasible measures to lower emissions from diesel construction equipment/vehicles (including enforcement of the 5-minute idling limit, use of Tier 2 or cleaner engines, and implementation of a fugitive dust plan). Thus emissions are reduced to the extent possible. Construction emissions will therefore result in a significant, but temporary, impact on the ambient air quality during construction activities.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The substation would comply with the 2007 AQMP; however, SDG&E would also comply with all rules and regulations for gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project would not result violate any air quality standard or contribute substantially to an existing or projected air quality violation.

4.3.4.4 Question 3c - Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Construction – Significant Impact

As discussed under Question 4.3b and shown previously in Table 4.3-9, maximum daily construction emissions would exceed the regional significance thresholds for all criteria pollutants except sulfur dioxide, and maximum daily emissions for localized construction projects will also exceed the LSTs for PM_{10} and $PM_{2.5}$. These emissions would therefore result in a cumulatively significant, but temporary, impact on the ambient air quality during construction activities.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The substation would comply with the 2007 AQMP, however. SDG&E would also comply with all rules and regulations for gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment.

4.3.4.5 Question 3d - Expose sensitive receptors to substantial pollutant concentrations?

Construction – Less than Significant Impact

Sensitive receptors in the Proposed Project vicinity could be exposed to emissions of TACs as a result of construction activities. The main TAC that would be released during construction would be diesel particulate matter from construction equipment and heavy-duty vehicles traveling to construction areas. Minor amounts of other TACs would be emitted from such sources as gasoline-powered worker vehicles and construction equipment.

The CARB and Office of Environmental Health Hazard Assessment have identified diesel particulate matter as a carcinogenic substance, and has also defined a reference exposure level (REL) based on chronic exposure. According to the Office of Environmental Health Hazard Assessment, human exposures greater than eight years are considered chronic exposures. Under the Office of Environmental Health Hazard Assessment guidelines for carcinogenic exposure, cancer risk should be evaluated over a 70-year lifetime.

Given that the construction of the Proposed Project is short-term relative to the exposure periods for carcinogenic and chronic risks, and given that the transmission line construction activities would move along the transmission corridors and individual substation construction activities would be shorter in duration, impacts to sensitive receptors would not result in substantial exposure to diesel particulate matter. Impacts are less than significant.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The substation would comply with the 2007 AQMP; however, SDG&E would also comply with all rules and regulations for gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through its compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, operational and maintenance impacts on sensitive receptors would be less than significant.

4.3.4.6 Question 4.3e - Create objectionable odors affecting a substantial number of people?

Construction – Less than Significant Impact

Due to the nature of the Proposed Project, odor impacts are unlikely. Typical odor nuisances include hydrogen sulfide, ammonia, chlorine, and other sulfide-related emissions. No substantial sources of these pollutant will exist during construction. Construction equipment and construction operations would emit trace pollutants that could be considered to have objectionable odors, such as diesel exhaust. These odors would be temporary in nature. Because of the temporary nature of the construction of the transmission lines and substations, odor impacts would be less than significant.

Operation & Maintenance – No Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. However, the substation would comply with the 2007 AQMP and SDG&E would ensure that all rules and regulations regarding gas insulated substations are closely followed. Moreover, SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through its compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project is not

considered a source of objectionable odors. No odor impacts would result from operation and maintenance activities.

4.3.4.7 Question 4.3f - Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?

Construction – No Impact

As described previously under compliance with an applicable air quality plan, the Proposed Project would comply with applicable air quality rules and regulations. Construction is temporary, and would not diminish an existing air quality rule or future compliance requirement that would result in a significant increase in air pollutants. There would be no impact.

Operation & Maintenance – No Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The substation would comply with the 2007 AQMP; however, SDG&E would also comply with all rules and regulations regarding gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. Through its compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project would comply with applicable air quality rules and regulations. Operation and maintenance activities would not diminish an existing air quality rule or future compliance requirement that would result in a significant increase in air pollutants. Thus, there would be no impact.

4.3.4.8 Question 4.3g - Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction – Less than Significant Impact

The main source of GHG emissions associated with the Proposed Project would be combustion of fossil fuels during construction of the Proposed Project. Emissions of GHG for construction were calculated using the same approach as criteria pollutant emissions for overall construction emissions. Estimated emissions of GHGs are summarized in Table 4.3-10, Greenhouse Gas Construction Emissions. Emission calculations are provided in Appendix 4.3-A, Emissions Calculations.

Table 4.3-10: Greenhouse Gas Construction Emissions

Construction Activity	GHG Emissions (metric tons)		
	CO_2	CH_4	N_2O
Substation Construction	**8,513**	**0.64**	**4.47**
Transmission Line Construction	**5,774**	**0.45**	**3.44**
TOTAL	**14,287**	**1.09**	**7.91**
Global Warming Potential	**1**	**21**	**310**
CO_2 Equivalent	**14,287**	**22**	**2,452**
CO_2 Equivalent Total	**16,761**		
Amortized Construction Emissions (amortized over 30 years)	**559**		

The total annualized construction CO_2-equivalent emissions of 559 metric tons are below the SCAQMD's significance threshold of 10,000 metric tons of CO_2-equivalent annually for industrial projects. This level of GHG emissions would not result in a significant impact on global climate. The Proposed Project is therefore consistent with the goals of AB 32.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. The substation would comply with the 2007 AQMP, however. SDG&E would also comply with all rules and regulations regarding gas insulated substations. SDG&E already has standard internal programs and practices that ensure compliance with the applicable air quality plan, and those programs and practices would not change as a result of the Proposed Project. By virtue of its compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project is consistent with AB 32's goals. Emissions would not differ from Business as Usual levels for operations and maintenance, and no net increase of GHG emissions would result.

4.3.4.9 Question 3h - Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Construction – Less than Significant Impact

As discussed under Question 3g, construction of the Proposed Project would be temporary. GHG emissions are below the SCAQMD's significance threshold when amortized over a 30-year period as recommended by the SCAQMD. Construction equipment and vehicles supporting the construction of the Proposed Project would comply with the requirements implemented by the CARB to reduce GHG emissions. Construction impacts are less than significant.

Operation & Maintenance – Less than Significant Impact

The only difference between the existing baseline conditions and the operation and maintenance of the Proposed Project would be that the rebuilt San Juan Capistrano Substation would be gas insulated. Sulfur hexafluoride is the gas employed for insulation in the gas insulated substation technology, is considered non-toxic and inert from a hazardous materials perspective and is

currently used by SDG&E in circuit breakers, switching gear and an existing gas insulated substation. However, sulfur hexafluoride is a GHG that exhibits potent global-warming properties when released to the atmosphere. New sulfur hexafluoride equipment is described as having a low leak rate of approximately 0.1 percent annually per industry standards. The proposed gas insulated substation would require the use of approximately 200,000 lbs of sulfur hexafluoride. This number is approximate and may vary depending upon the final manufacturer design.

The substation would comply with the CARB's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (CCR Title 17, § 95350-95359), which applies directly to the Proposed Project. This regulation sets the maximum emission rate for sulfur hexafluoride-containing equipment at 10 percent by 2011. The maximum allowable emission rate decreases by one percent each year. In 2020, the threshold will remain at one percent Under Business as Usual conditions, the leak rate of sulfur hexafluoride could be as much as 20,000 lbs of sulfur hexafluoride annually. With a global warming potential of 23,900, 20,000 lbs of sulfur hexafluoride annually would equate to 217,000 metric tons of CO_2-equivalent emissions. SDG&E reported in 2011, however, that the overall emission rate for all its substations was 0.29 percent, which is less than the maximum emission rate set for 2020.

The San Juan Capistrano Substation would include equipment and operational improvements that would decrease the emissions rate to the one percent threshold before that threshold applies. The associated emissions with new equipment with a leak rate of 0.1 percent annually would be 200 lbs of sulfur hexafluoride, for a total of 2,168 metric tons of CO_2-equivalent emissions. This falls below the 217,000 metric tons of CO_2-equivalent emissions associated with Business as Usual conditions.

Through compliance with applicable rules and regulations and its similarity to existing operation and maintenance requirements, the Proposed Project would not conflict with or any applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions, and impacts would be less than significant.

SDG&E has proposed AIR-1 as part of the Proposed Project to ensure that sulfur hexafluoride is properly managed. SDG&E will implement its existing sulfur hexafluoride mitigation strategies during the operation and maintenance of sulfur hexafluoride-containing equipment installed as part of the Proposed Project. These strategies include:

- Recording company-wide sulfur hexafluoride purchases, use, and emissions rates to comply with the USEPA's rule on Electrical Transmission and Distribution Equipment Use (Mandatory Reporting of Greenhouse Gases, 40 C.F.R. Part 98, Subpart DD) and the CARB's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (Code Regs. tit. 17, § 95350-95359)
- Continuing to participate in the USEPA Sulfur Hexafluoride Partnership
- Implementing a recycling program
- Training employees on safe and proper handling of sulfur hexafluoride
- Continuing to report GHG emissions with the The Climate Registry

- Implementing SDG&E's sulfur hexafluoride leak detection and repair program. This program includes monthly visual inspections of each gas circuit breaker (GCB), which includes checking pressure levels within the breaker and recording these readings in SDG&E's Substation Management System. During the installation or major overhaul of any GCB, the unit is tested over a 24-hour period to ensure no leaks are present. Minor overhauls of each GCB are conducted every 36 to 40 months to check overall equipment health. This process includes checking gas pressure, moisture ingress, and sulfur hexafluoride decomposition. If the GCB fails any of these checks, the unit is checked for leaks and repaired. In addition, all GCBs are equipped with a gas-monitoring device and alarm that automatically alerts SDG&E's Grid Operations Center. If gas pressure approaches minimum operating levels, an alarm is immediately reported to SDG&E's Substation Construction and Maintenance Department. The GCB is usually inspected for leaks within 24 hours of such an alarm. SDG&E's leak detection practice includes the following three methodologies:
    - Spraying a leak-detection agent onto common leak points—including O rings, gaskets, and fittings
    - Using a field-monitoring device (sniffer) to detect the presence of sulfur hexafluoride gas
    - Using a laser-detection camera to detect the presence of sulfur hexafluoride gas when the above two methods are unsuccessful in finding a leak

These sulfur hexafluoride control policies are consistent with the AB 32 Scoping Plan and reduce emissions of sulfur hexafluoride to the one percent threshold that is the most stringent proposed to be required. The Proposed Project would therefore have less than significant impacts.

4.3.5 Applicant Proposed Measures

To reduce impacts to the extent possible, APM AIR-1 will be implemented as follows:

AIR-1 Operations Emissions Controls. SDG&E has developed APM AIR-1 as part of the Proposed Project to ensure that sulfur hexafluoride is properly managed. SDG&E will implement its existing sulfur hexafluoride mitigation strategies during the operation and maintenance of sulfur hexafluoride-containing equipment installed as part of the Proposed Project. These strategies include:

- Recording company-wide sulfur hexafluoride purchases, use, and emissions rates to comply with the USEPA's requirements for Electrical Transmission and Distribution Equipment Use (Mandatory Reporting of Greenhouse Gases, 40 C.F.R. Part 98, Subpart DD) and the CARB's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (Code Regs. tit. 17, § 95350-95359)
- Implementing a sulfur hexafluoride recycling program
- Training employees on the safety and proper handling of sulfur hexafluoride
- Continuing to report GHG emissions with the The Climate Registry.

- Implementing SDG&E's sulfur hexafluoride leak detection and repair program. This program includes monthly visual inspections of each GCB, which includes checking pressure levels within the breaker and recording these readings in SDG&E's Substation Management System. During the installation or major overhaul of any GCB, the unit is tested over a 24-hour period to ensure no leaks are present. Minor overhauls of each GCB are conducted every 36 to 40 months to check overall equipment health. This process includes checking gas pressure, moisture ingress, and sulfur hexafluoride decomposition. If the GCB fails any of these checks, the unit is checked for leaks and repaired. In addition, all GCBs are equipped with a gas-monitoring device and alarm that automatically alerts SDG&E's Grid Operations Center. If gas pressure approaches minimum operating levels, an alarm is immediately reported to SDG&E's Substation Construction and Maintenance Department. The GCB is usually inspected for leaks within 24 hours of such an alarm. SDG&E's leak detection practice includes the following three methodologies:
  - Spraying a leak-detection agent onto common leak points—including O rings, gaskets, and fittings.
  - Using a field-monitoring device (sniffer) to detect the presence of sulfur hexafluoride gas.
  - Using a laser-detection camera to detect the presence of sulfur hexafluoride gas when the above two methods are unsuccessful in finding a leak.

4.3.6 References

Association of Environmental Professionals. June, 2007. *Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents.*

California Air Pollution Control Officers Association. January, 2008. *CEQA and Climate Change – Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act.*

California Air Resources Board. 2006. Health and Air Pollution. http://www.arb.ca.gov/research/health/health.htm.

California Air Resources Board. 2012. Air Quality Trend Summaries. http://www.arb.ca.gov/adam/welcome.html.

California Air Resources Board. 2011. EMFAC2011 Model. http://www.arb.ca.gov/msei/onroad/onroad.htm.

California Air Resources Board. 2007. OFFROAD2007 Model. http://www.arb.ca.gov/msei/offroad/offroad.htm.

California Air Resources Board. 2008. AB 32 Scoping Plan. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

California Air Resources Board. 2009. California Ambient air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

California Climate Action Registry General Reporting Protocol, January, 2009. Version 3.1.

California Climate Change Center. July, 2006. *Our Changing Climate, Assessing the Risks to California: A Summary Report from the California Climate Change Center*.

California Coastal Commission (CCC). December 12, 2006. *Discussion Draft – Global Warming and the California Coastal Commission*.

Intergovernmental Panel on Climate Change (IPCC). 2007. R.B. Alley, et al. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Summary for Policymakers. www.ipcc.ch/WG1_SPM_17Apr07.pdf.

South Coast Air Quality Management District. 2012a. OFFROAD Emission Factors. http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html.

South Coast Air Quality Management District. 2012b. Off-Road Engine Mitigation Measures, Table II-C, Percentage Reduction from Uncontrolled to Tiers 1, 2, 3, and 4. http://www.aqmd.gov/ceqa/handbook/mitigation/offroad/MM_offroad.html.

South Coast Air Quality Management District. 2012c. Fugitive Dust Mitigation Measures, Table XI-A, Construction and Demolition. http://www.aqmd.gov/ceqa/handbook/mitigation/fugitive/MM_fugitive.html.

South Coast Air Quality Management District. 2009. Rules and Regulations. http://www.aqmd.gov/rules/rulesreg.html.

South Coast Air Quality Management District. 2007. Air Quality Management Plan.

South Coast Air Quality Management District. October, 2006. Final –Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds.

South Coast Air Quality Management District. June, 2003. Final Localized Significance Threshold Methodology.

South Coast Air Quality Management District. 1999. CEQA Air Quality Handbook. (as updated)

USEPA. 2006a. *The U.S. Inventory of Greenhouse Gas Emissions and Sinks: Fast Facts.* www.epa.gov/climatechange/emissions/downloads06/06FastFacts.pdf.

Western Regional Climate Center. 2012. Climate Data for Laguna Beach, California, Station No. 044647.

TABLE OF CONTENTS

4.4 BIOLOGICAL RESOURCES 4.4-1
4.4.1 Introduction 4.4-1
4.4.2 Methodology 4.4-2
4.4.3 Existing Conditions 4.4-7
4.4.4 Potential Impacts 4.4-23
4.4.5 Applicant Proposed Measures 4.4-33
4.4.6 References 4.4-33

LIST OF TABLES

Table 4.4-1: Vegetation Communities in the Proposed Project Area 4.4-14
Table 4.4-2: Potentially Jurisdictional Waters in Proposed Project Survey Area 4.4-22
Table 4.4-3: Vegetation Community Impacts in Acres 4.4-25

LIST OF APPENDICES

Appendix 4.4-A Biological Resources Assessment

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.4 BIOLOGICAL RESOURCES

Would the Project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than significant Impact	No Impact
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑	☐
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☑	☐
c.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☑	☐
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☑	☐
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

4.4.1 Introduction

This section of the PEA describes the biological resources in the vicinity of the Proposed Project, and identifies potential impacts to habitats and species that could result from the construction, operation, and maintenance of the Proposed Project. Additionally, potential impacts to sensitive vegetation communities, jurisdictional wetlands and waters, and migratory wildlife corridors are addressed.

The Proposed Project would incorporate the standard set of operational protocols and mitigation set forth in *SDG&E's Subregional NCCP*. The *SDG&E Subregional NCCP* is a Habitat Conservation Plan permitted under Section 10A of the Federal Endangered Species Act (FESA) for incidental take and a NCCP permitted under a management authorization pursuant to Section 2835 of the California Fish and Game (CFG) Code. SDG&E entered into an Implementation

Agreement with the USFWS and CDFG, respectively, for the management and conservation of multiple species and their associated habitats as established according to the federal and state endangered species acts and the state's NCCP Act. Through the avoidance of resources, application of protective measures and mitigation in the *SDG&E Subregional NCCP*, and habitat enhancement, Proposed Project impacts to biological resources would be less than significant.

4.4.2 Methodology

4.4.2.1 Literature Review

Prior to performing the biological field surveys, documentation relevant to the Proposed Project and surrounding area was reviewed, and a special status species list was prepared for the Proposed Project.

Special Status Species

A special status species list was prepared from record searches for the United States Geological Survey (USGS) 7.5-minute Cañada Gobernadora, San Juan Capistrano, San Clemente, and Dana Point quadrangles within three miles of the Proposed Project. Special status species include all federally and state listed endangered and threatened species, candidates for listing, species proposed for listing, Fully Protected (FP) species, Species of Special Concern [SSC]), species listed as rare or endangered by California Native Plant Society (CNPS), and special status species that are identified under the *SDG&E Subregional NCCP* that had ranges within Orange County and suitable habitat was present along the Proposed Project alignment, including *SDG&E Subregional NCCP* Covered Species (Covered Species). A sensitive species was considered a potential inhabitant of the Proposed Project if its known geographical distribution either encompassed part of the Proposed Project or was within the vicinity of the Proposed Project (within approximately three miles), and its general habitat requirements (e.g., roosting, nesting, or foraging habitat, specific soil type, permanent water source) were within the boundaries of the Proposed Project. Sources of information that were used to compile the species list included the CDFG California Natural Diversity Data Base (CNDDB), the CNPS online inventory, and the *SDG&E Subregional NCCP* Covered Species List. A complete list of species assessed is included in Appendix 4.4-A, Biological Resources Assessment (Appendix A – CNDDB and CNPS Special Status Species Table).

Critical Habitat

The USFWS critical habitat areas for listed species were searched using geographic information systems shapefiles provided by the USFWS within three miles of the Proposed Project alignment.

Drainages and Other Water Features

The potential presence of drainages and other water resources was assessed by reviewing USGS topographic maps to identify any blue line streams, searching the USFWS National Wetlands Inventory (NWI), and by reviewing recent aerial images of the Proposed Project.

Soils

The USDA NRCS online Soil Survey was used to assess soils mapped along the Proposed Project alignment, and GIS data was used to create a map.

Field Surveys

Field surveys were conducted within a 500-foot corridor, including approximately 250 feet on either side of the proposed transmission line alignment and substation boundaries (herein referred to as the Proposed Project survey area). The Proposed Project alignment would follow an existing SDG&E ROW, and substation activities would take place within the existing Capistrano and Talega Substation facilities. Some Proposed Project activities, such as staging areas or pull/tension sites, may occur outside of the existing ROW or facilities. The following sections describe the methods used for reconnaissance-level and habitat assessment surveys, rare plant surveys, and focused species surveys. In all instances, resources were mapped in the field using a Trimble handheld GPS and/or drawn on a 200-scale color aerial photograph.

Reconnaissance-level and Habitat Assessment Surveys

Reconnaissance-level surveys and a general habitat assessment were conducted within the Proposed Project survey area by TRC Biologists Matthew Willis and Paula Potenza on February 26 through February 28, 2008 and March 25, 2008 to map existing vegetation communities and assess the potential for sensitive or listed plant and wildlife species, including species covered under the SDG&E's Subregional NCCP. Additional habitat assessments were conducted by TRC Biologist Ceri Williams-Dodd on September 28 through 30, October 11 through 12, and November 2, 2011. In addition TRC Biologist Travis Kegel conducted surveys on December 28 and 29, 2011, and February 16 and 28, 2012. Surveys were conducted using vehicles and on foot along access roads and around proposed tower locations. Meandering transects were also conducted on foot through the surrounding habitat within the 500-foot survey corridor. A meandering transect is a type of survey search pattern that minimizes overlap and maximizes survey coverage in a given area.

Suitable habitat for special status species was determined by the presence of diagnostic habitat elements, including but not limited to appropriate vegetation communities. The habitat assessment surveys were conducted along the Proposed Project in areas supporting vegetation. Therefore, in some cases, the survey corridor was less than 500 feet wide (and sometimes more due to staging areas outside) due to the presence of residential and commercial development. The assessment surveys determined which wildlife or plant species were present, had the potential to occur, or would require USFWS or CDFG protocol-level surveys. Animal species were either observed directly, with the aid of binoculars, or detected from calls, tracks, scat, or other sign.

Vegetation communities were recorded on aerial photographs and GPS, and were further refined during rare plant surveys. Mapped data was then digitized or downloaded in GIS. The vegetation mapping was based upon descriptions provided by Sawyer and Keeler-Wolf and Holland field guides.

Sensitive Status Plant Species and Vegetation Communities

Field surveys for sensitive plants were conducted in accordance with the standardized guidelines issued by the USFWS, CDFG, and the CNPS. The surveys were intended to determine the presence/absence of listed and special status plant species within the Proposed Project survey area. Surveys for sensitive plant species were conducted on April 15, 17, and 18, 2008 by TRC biologist Marc Doalson and on April 19, 20, 21, 24, and 25, 2010 by TRC Biologists Darren Burton and Ken McDonald. The Proposed Project survey area was walked on foot, except in developed or residential areas. Meandering transects were performed, and all plants encountered were identified to a level necessary to ensure detection of sensitive species. The plant nomenclature used follows The Jepson Manual: Higher Plants of California. A complete list of plant species observed during the surveys is provided in Appendix 4.4-A (Appendix B, Plants and Wildlife Observed On-site).

Drainages and Other Water Features

Suspected jurisdictional areas identified during the literature review from aerial and USGS topographic maps were field checked for the presence of definable channels and/or wetland vegetation, soils and hydrology. Field checks were not limited to suspected jurisdictional areas identified during the literature review; the entire Proposed Project survey area was assessed for the presence of drainages, wetlands, and vernal pools. This involved physically identifying hydrologic, vegetative, and geomorphic characteristics within the Proposed Project survey area in order to delineate potentially jurisdictional waters and wetlands.

"Waters of the United States" (WUS) were identified pursuant to criteria outlined in Section 401 and Section 404 of the CWA, including but not limited to the presence of an Ordinary High Water Mark (OHWM) and connection to a downstream jurisdictional water body. The OHWM was determined by observing signs of flow including but not limited to shelving, drift lines, and disturbed vegetation. "Waters of the State" regulated by CDFG were identified pursuant to criteria outlined in Section 1600 of the CFG Code, including the presence of a defined bed and bank and any associated vegetation. Drainages that appeared to meet the criteria for "Waters of the State" were considered potentially jurisdictional, as any determination is subject to verification by the regulatory agencies.

Potential wetland habitats on the site were evaluated using the methodology set forth in the 1987 Wetlands Delineation Manual (Manual) and the Regional Supplement to the Wetland Delineation Manual for the Arid West Region. This involved digging pits to inspect soils in suspected wetland areas. Soil pits were generally at locations where hydrophytic vegetation was observed, or if other wetland indicators were observed or suspected. Soils were assessed for hydric indicators, texture, consistency, and color. The color was assessed using a Munsell chart and then cross-referenced with hydric soil lists. The locations of the soil pits were recorded using a handheld GPS unit. Hydrological and vegetation conditions were recorded for each soil pit using the United States Army Corps of Engineers (ACOE) wetland delineation data forms. The wetland indicator status of the plants was determined using The National List of Plant Species that Occur in Wetlands.

Fieldwork for the delineation was conducted in May and July 2010 and December 2011 by TRC biologists Darren Burton, Ken McDonald, Travis Kegel, and Lauralyn K. Jensen. While in the

field, the jurisdictional areas (lengths and widths) were recorded onto a 200-scale color aerial photograph using visible landmarks and/or were mapped with a Garmin e-trex GPS hand-held unit. Field data was then digitized using GIS to determine acreages. Additional details on the methodology are provided in the Jurisdictional Waters and Wetlands Delineation prepared for the Proposed Project included in Appendix 4.4-A (Appendix C, Jurisdictional Waters and Wetlands Delineation).

Wildlife Surveys

Some of the vegetation communities within the Proposed Project survey area provide habitat for one or more of the special status species known to occur or with the potential to occur in the Proposed Project survey area. The region provides habitat for a number of federally endangered (FE), federally threatened (FT), state endangered (SE), and state threatened (ST) species. Appropriate habitat for the coastal California gnatcatcher (*Polioptila californica* FT, SSC), least Bell's vireo (*Vireo bellii pusillus*, FE, SE) and southwestern willow flycatcher (*Empidonax traillii extimus* FE, SE) was identified within the Proposed Project survey area. USFWS protocol-level surveys were therefore conducted in 2008 and 2010. Focused surveys for the Arroyo toad (*Bufo californicus* FE, SSC) were also conducted in 2010 to determine whether suitable breeding or upland habitat for the species was present in the Proposed Project survey area. Additional details on these surveys are provided below.

Coastal California Gnatcatcher

TRC conducted surveys for the coastal California gnatcatcher in 2008 and 2010. Permitted TRC biologists Paula Potenza (Permit No. TE-037508-1) and Vanessa Tisdale (Permit No. TE-163994-0), conducted surveys in 2008 with the aid of additional biologists under the direct supervision of an authorized biologist. The additional biologists are also listed under Permit No. TE-037508-1. Paula Potenza and supervised biologists repeated the surveys in 2010. Surveys for the coastal California gnatcatcher were conducted according to the USFWS Coastal California Gnatcatcher Presence/Absence Survey Guidelines for NCCPs. Following this protocol, a minimum of three surveys were conducted at least one week apart. Only suitable coastal California gnatcatcher habitat, consisting of coastal sage scrub (CSS) and disturbed CSS, was surveyed. All focused surveys occurred within the coastal California gnatcatcher breeding season (March 15 through June 30). Surveys were often spread over more than one day to cover all suitable habitats, and each area surveyed had a different survey window due to staggered start times.

All surveys were conducted between approximately 6:00 a.m. and 12:35 p.m. Weather conditions during the surveys consisted of temperatures from 43 to 74 degrees Fahrenheit, winds from 0 to 10 miles per hour, and cloud cover from 0 to 100 percent. During periods of excessive heat, wind, rain, fog, or other inclement weather, surveys were either halted or postponed. Taped vocalizations and "pishing" sounds were used to initially locate gnatcatchers. Taped calls were not used to elicit or prompt further behaviors from birds once identified. Surveys were conducted by slowly walking survey routes and no more than 100 acres of suitable coastal California gnatcatcher habitat were surveyed per biologist per day. A detailed description of the methodology is included in the 2008 and 2010 survey reports provided as Appendix 4.4.A (Appendix D, 2008 Coastal California Gnatcatcher Survey Report and Appendix E, 2010 Coastal California Gnatcatcher Survey Report).

Least Bell's Vireo

TRC conducted protocol surveys for the least Bell's vireo in 2008 and 2010. TRC biologists Paula Potenza and Vanessa Tisdale conducted surveys in 2008, and Paula Potenza conducted surveys in 2010. The surveys were conducted according to the USFWS Least Bell's Vireo Presence/Absence Survey Protocol with modifications pursuant to the *SDG&E Subregional NCCP*. The *SDG&E Subregional NCCP* states that "in situations where more than one visit may be necessary to identify a given species, such as certain birds, no more than three site visits shall be required" (*SDG&E's Subregional NCCP*, Section 7.1.3). As such, three surveys for least Bell's vireo occurred per habitat area. The surveys occurred within the least Bell's vireo breeding season (April 10 through July 31). Surveys were conducted in appropriate habitat for the species which included all riparian habitats within the Proposed Project survey area. Least bell's vireos were identified by calls/songs and by sight, and were watched and followed only if identification and location needed to be confirmed.

All surveys were conducted between approximately 6:45 a.m. and 11:35 a.m. Weather conditions during the surveys consisted of temperatures from 48 to 86 degrees Fahrenheit, winds from 0 to 6 miles per hour, and cloud cover from 0 to 100 percent. During periods of excessive heat, wind, rain, fog, or other inclement weather, surveys were halted or postponed. Surveys were conducted by slowly walking survey routes along the edges and through riparian vegetation. No more than 3 linear kilometers or 125 acres of least Bell's vireo habitat were surveyed per biologist per day. A detailed description of the methodology is included in the survey report provided in Appendix 4.4-A (Appendix F, 2010 Least Bell's Vireo [*Vireo bellii pusillus*] Survey Result).

Southwestern Willow Flycatcher

Protocol surveys for southwestern willow flycatcher were conducted by TRC biologist Paula Potenza in 2008, and by Peter Bloom (Bloom Biological, Inc., Permit No. TE787376) in 2010. The most recent surveys were conducted on May 15 and June 5, 11, 17, and 25, 2010 in three locations (refer to Appendix 4.4-A [Appendix G, Results of Protocol Surveys for Federally-Endangered Arroyo Toad and Southwestern Willow Flycatcher]) that contained potential breeding habitat. The surveys were conducted according to the USFWS standard protocol as outlined within Sogge, et. al. (2010). Surveys included the use of taped southwestern willow flycatcher songs to simulate a territorial intrusion by another southwestern willow flycatcher, which generally would elicit a defensive response by the territorial bird, increasing its detectability. Taped calls were not used to elicit or prompt further behaviors from birds once individuals were identified. A detailed description of the methodology is included in the survey report provided in Appendix 4.4-A (Appendix G, 45 Day Report for Arroyo Toad and Southwest Willow Flycatcher).

Arroyo Toad

Protocol surveys for Arroyo toad were conducted by Peter Bloom on April 30, May 7, 15, 23, and 29, and June 5, 2010 in three locations that contained potential breeding habitat. The surveys were conducted according to the USFWS standard protocol as outlined within the USFWS Survey Protocol for the Arroyo Toad and included both daytime and nighttime surveys. Daytime surveys were conducted by walking slowly along stream margins and in adjacent riparian habitat, visually searching for eggs, larvae, and juveniles. Nighttime surveys were

conducted by walking slowly and carefully on stream banks. Surveyors would stop periodically and remain still and silent for approximately 15 minutes at appropriate sites to wait for Arroyo toads to begin calling. A detailed description of the methodology is included in the survey report provided as Appendix 4.4-A (Appendix G, Results of Protocol Surveys for Federally-Endangered Arroyo Toad and Southwestern Willow Flycatcher).

4.4.3 Existing Conditions

4.4.3.1 Regulatory Setting

Federal

Federal Endangered Species Act

The United States Congress passed the FESA in 1973. FESA protects plants and wildlife that are listed as "endangered" or "threatened" by the USFWS and the National Marine Fisheries Service (NMFS). It also requires the evaluation of effects to "proposed" species. Section 9 of FESA prohibits the "take" of endangered wildlife, where take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct". For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging-up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law. Under Section 7 of FESA, federal agencies are required to consult with the USFWS and/or NMFS if their actions, including permit approvals or funding, could adversely affect a threatened or endangered plant or wildlife species, or could adversely affect designated critical habitat. Through consultation and the issuance of a biological opinion, the USFWS and/or NMFS may issue an "incidental take statement" allowing take of the species, provided the action would not jeopardize the continued existence of any federally listed species or result in the destruction or adverse modification of habitat of such species. Section 10 of FESA provides for issuance of incidental take permits to private parties provided a HCP is developed.

Federal Clean Water Act

The purpose of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into WUS without a permit from the ACOE. In addition, Section 401 of the CWA requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into WUS, to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. A Water Quality Certification or waiver pursuant to Section 401 is required for Section 404 permit actions, and is issued by the RWQCB.

"Discharges of fill material" are defined as the addition of fill material into WUS including, but not limited to, the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; or fill for intake and outfall pipes and subaqueous utility lines. The definition of WUS includes rivers, streams, estuaries, the territorial seas, ponds, lakes, mudflats, sandflats, sloughs, wet meadows, and wetlands. Boundaries between jurisdictional waters and uplands are

determined in a variety of ways depending on which type of water is present. A brief overview of methods for delineating wetlands and non-tidal waters are described below.

Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The methodology set forth in the Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics, often referred to as a "three-parameter wetland."

The lateral extent of non-tidal waters is determined by delineating the OHWM (33 CFR Section 328.4(c)(1)). The OHWM is defined by the ACOE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), first enacted in 1916, prohibits any person, unless permitted by regulation, to:

> *…pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatsoever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird (16 USC 703).*

As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal.

The list of migratory birds includes nearly all bird species native to the United States. The Migratory Bird Treaty Reform Act of 2004 further defined species protected under the act and excluded all non-native species. The statute was extended in 1974 to include parts of birds, as well as eggs and nests.

Birds of Conservation Concern

Birds of Conservation Concern (BCC) is a USFWS list of bird species identified to have the highest conservation priority, and with the potential for becoming candidates for listing as federally threatened or endangered. The chief legal authority for BCC is the Fish and Wildlife Conservation Act of 1980 (FWCA). Other authorities include the FESA, the Fish and Wildlife Act of 1956, and the Department of the Interior U.S Code (16 U.S.C. § 701). The 1988 amendment to the FWCA requires the Secretary of the Interior, through the USFWS, to "identify species, subspecies, and populations of all migratory nongame birds that, without additional

conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973."

State

California Environmental Quality Act

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by State and local public agencies. In addition to federal or State listed species, "sensitive" plans and animals receive consideration under CEQA. Sensitive species include but are not limited to wildlife Species of Special Concern listed by CDFG and plant species in the CNPS's List 1A (presumed extinct), List 1B (rare, threatened, or endangered in California and elsewhere; eligible for State listing) or List 2 (rare, threatened or endangered in California but more common elsewhere; eligible for State listing).

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA directs agencies to consult with CDFG on projects or actions that could affect listed species, directs CDFG to determine whether jeopardy would occur, and allows CDFG to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA generally parallels the main provisions of FESA, but unlike its federal counterpart, CESA applies the "take" prohibitions to species proposed for listing (called "candidates" by the State). "Take" is defined in Section 86 of the CFG Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Section 2080 of the CFG Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Under CFG Code Section 2081, CESA allows CDFG to authorize exceptions to the state's prohibition against "take" of a listed species (except for designated "fully protected species") if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA. Section 2080.1 of the CFG Code allows for "take" once an applicant obtains a Federal Incidental Take Statement, submits it to the CDFG Director in writing, and receives a confirmed determination that the federal statement is "consistent" with CESA (a Consistency Determination letter). There is a 30-day window for issuance of a Consistency Determination letter. If, however, the Federal Incidental Take Statement is not determined to be consistent with CESA, then a State Incidental Take Permit under Section 2081(b) of the CFG Code must be applied for. Both Sections 2081 and 2080.1 require that take be minimized and fully mitigated.

California Fully Protected Species

The State of California first began to designate FP species prior to the creation of CESA and FESA. Lists of FP species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most FP species have since been listed as threatened or endangered under CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CFG Code Section 4700) state that FP species may not be taken or possessed at any time. Furthermore, CDFG prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

In September 2011, the California Legislature sent the Governor legislation authorizing CDFG to permit the incidental take of 36 FP species pursuant to an NCCP approved by CDFG (Senate Bill 618 [Wolk]). The legislation gives FP species the same level of protection as is provided under the NCCP Act for endangered and threatened species. The NCCP Act, enacted in the 1990s, authorizes the incidental take of species "whose conservation and management" is provided for in a conservation plan approved by CDFG.

California Species of Special Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by CDFG and lead agencies during the CEQA process. Species that may be considered for review are included on a list of SSC developed by CDFG. The list tracks species in California whose numbers, reproductive success, or habitat may be in decline.

California Fish and Game Code for Birds of Prey

Section 3503.5 of the CFG Code states that it is

> *…unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.*

Disturbance activities that result in abandonment of an active bird-of-prey nest in areas adjacent to the disturbance may also be considered a violation of the CFG Code.

California Native Plant Protection Act and California Native Plant Society

The California Native Plant Protection Act of 1977 (CFG Code Sections 1900-1913) affords the CFG Commission the authority to designate native plants as endangered or rare and protects such endangered or rare plants from take. In addition, plants that are not state-listed, but meet the standards for listing, are also protected under CEQA. The CNPS maintains a list of plant species native to California with low population numbers, limited distribution, or that are otherwise threatened with extinction. Potential impacts to populations of CNPS listed plants receive consideration under CEQA review. Typically, special status plants are considered those on lists 1A, 1B, and 2. The definitions for each of the CNPS listings are below:

- List 1A: Plants presumed Extinct in California
- List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- List 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- List 3: Plants about which we need more information — A Review List
- List 4: Plants of limited distribution — A Watch List

California Lake and Streambed Alteration Program

Sections 1600 through 1616 of the CFG Code require that a Lake and Streambed Alteration Agreement (LSAA) Program Notification Package be submitted to CDFG for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFG reviews the proposed actions and, if necessary, provides the applicant with a proposal for measures to protect affected fish and wildlife resources. The final proposal on which CDFG and the applicant agree is an LSAA signed by both parties. Often, projects that require an LSAA also require a permit from the ACOE under Section 404 of the CWA and the RWQCB under Section 401 of the CWA. In these instances, the conditions of the Section 404/401 permits and the LSAA may overlap.

Local

SDG&E Subregional Natural Community Conservation Plan

In December 1995, the USFWS and the CDFG approved the *SDG&E Subregional NCCP*, developed in coordination with such agencies that addresses potential impacts to species and habitat associated with SDG&E's ongoing installation, use, maintenance, and repair of its gas and electric systems, and typical expansion to those systems throughout much of SDG&E's existing service territory. As a part of the *SDG&E Subregional NCCP*, SDG&E has been issued incidental take permits (Permit PRT-809637) by the USFWS and the CDFG for 110 Covered Species. The *SDG&E Subregional NCCP* was developed by following the multiple species and habitat conservation planning approach. Even with the *SDG&E Subregional NCCP*, SDG&E's goal is to avoid "take" of Covered Species whenever possible and to implement measures to minimize and mitigate any take to the maximum extent possible. The *SDG&E Subregional NCCP* includes mitigation measures and operational protocols that apply to construction and operations and maintenance activities. In approving the NCCP, USFWS, and CDFG determined that the mitigation measures and operational protocols avoid potential impacts and provide appropriate mitigation where such impacts are unavoidable, and ensure the protection and conservation of federal and state listed species and Covered Species. The Proposed Project falls within the area in which SDG&E's utility operations are governed by the *SDG&E Subregional NCCP* and will be applied to the Proposed Project. As such, the NCCP fully addresses all of the potential construction and operations and maintenance impacts of the Proposed Project on federal and state listed species and Covered Species. The NCCP mitigation measures and operational protocols have been incorporated as part of the Proposed Project description.

SDG&E is a public utility regulated by the CPUC. As described in the SDG&E Subregional NCCP Implementing Agreement, local governments are precluded from regulating public utilities through their zoning laws, land use laws, ordinances and other police powers (including other NCCPs or HCPs) by the exclusive jurisdiction of the CPUC. Therefore, as stated in the *SDG&E Subregional NCCP Implementing Agreement,* the *SDG&E Subregional NCCP* "*is independent of other NCCP/HCPs and the Covered Species for which Incidental Take is authorized under the Take Authorizations is not dependent upon the implementation of such plans.*"

Southern Orange County Subregional Natural Community Conservation Plan

The *Southern Orange County Subregional NCCP* is a comprehensive, long-term HCP developed to provide conservation for multiple species and the preservation of natural vegetation communities in South Orange County. The *Southern Orange County Subregional NCCP* serves as an NCCP under the NCCP Act of 2001, a Master Streambed Alteration Agreement under Sections 1600 through 1616 of the CFG Code, and as well as a HCP pursuant to Section 10(a)(1)(B) of the FESA of 1973.

The Proposed Project traverses through areas within the *Southern Orange County Subregional NCCP*, as shown within Appendix 4.4-A (Figure 2, Local Habitat Conservation Plans). The Proposed Project is proposed to occur within and follow the requirements of the *SDG&E Subregional NCCP*; therefore, no conflicts are expected with the *Southern Orange County Subregional NCCP*. No impacts to preserve areas designated by the *Southern Orange County Subregional NCCP* are proposed. If potential conflicts occur with the *Southern Orange County Subregional NCCP*, the Proposed Project would follow the requirements of the *SDG&E Subregional NCCP*. The *SDG&E Subregional NCCP* is independent of other NCCP/HCPs; and therefore is not dependent upon the implementation of such plans and is not superseded by other plans. SDG&E would coordinate with the appropriate authorities during the Proposed Project approval process to ensure that the impacts, mitigation measures, and operational protocols are implemented for the Proposed Project under the *SDG&E Subregional NCCP*.

City of San Juan Capistrano Tree Ordinance

The city of San Juan Capistrano's Municipal Code (Section 9-2.349) establishes regulations for removal of trees within their boundaries. The ordinance regulates the removal of trees over six inches in diameter measured three feet above grade. Tree removal permits are required for new development projects, utility easements, common landscape areas, nonresidential projects, city of San Juan Capistrano facilities and ROW, individual residential lots, and heritage trees.

Tree removals requiring city of San Juan Capistrano Community Development Department review and action take approximately one to three weeks. Trees requiring Planning Commission review will require one to three months for final action. Approved tree removal permits expire six months from the date of approval. If the permit expires and trees covered by the permit have not been removed, a new tree removal permit application is required.

To the extent issuance of a tree removal permit by the city of San Juan Capistrano is a discretionary action; CPUC approval of the CPCN would preempt local authority.

City of San Clemente Tree Ordinance

The city of San Clemente ordinance, City Owned Trees: Protection and Administration (Policy 301-2-1), provides the mechanism for protecting the community's urban forest and establishes a policy for managing trees owned by the city of San Clemente. The ordinance protects street trees and all trees planted on city of San Clemente land. This includes all trees at beaches, parks, golf courses, and conditionally those along public streets. This definition extends to trees that exist on any developed or undeveloped property owned and maintained by the city of San Clemente. Replacement of any trees removed would be considered and is at the discretion of the San Clemente Director of Beaches, Parks and Recreation.

To the extent issuance of a tree removal permit by the city of San Clemente is a discretionary action; CPUC approval of the CPCN would preempt local authority.

Other Conservation Plans

The Proposed Project traverses through areas with other adopted conservation plans and associated mitigation or preservation areas, including the Talega and Rancho San Juan developments. The Proposed Project is anticipated to occur within SDG&E's ROW; therefore no conflicts should occur with any other conservation plans or mitigation/preservation areas. If potential conflicts occur with mitigation or preservation areas, the *SDG&E Subregional NCCP* is independent of other NCCP/HCPs; and therefore is not dependent upon the implementation of such plans and is not superseded by theirs. SDG&E would coordinate with the appropriate authorities during the Proposed Project approval process to ensure that the impacts, mitigation measures, and operational protocols are implemented for the Proposed Project under the *SDG&E Subregional NCCP*.

The Proposed Project also traverses through Camp Pendleton, which is subject to the Integrated Natural Resources Management Plan (INRMP). The INMRP is a planning document that guides the management and conservation of natural resources under the base's control. The INRMP was produced to meet the requirements of the Sikes Act (U.S.C. Title 16, Sections 670 et. seq.) and the implementing directives of the Department of Defense, the Secretary of the Navy, and the commandant of the Marine Corps.

4.4.3.2 Biological Setting

Orange and San Diego Counties are biologically diverse regions that support rare and declining native habitats, numerous federally and state-listed plant and animal species, and an increasing amount of federally designated critical habitat for listed species.

The Proposed Project is approximately eight miles in length, and includes work at the San Juan Capistrano and Talega Substations. The Proposed Project is primarily located in portions of the cities of San Juan Capistrano and San Clemente within Orange County, as well as unincorporated Orange and San Diego Counties, and Camp Pendleton. This Proposed Project has an anticipated in-service date of 2017. The Talega Substation is on land owned by Camp Pendleton. All but 1,200 linear feet of the Proposed Project ROW would be located within an existing SDG&E ROW.

The Proposed Project survey area transects a mixture of habitats and land uses including urbanized areas where local hydrology and drainage patterns have been significantly altered, along with undeveloped land comprised of rough foothills with steep valleys and ravines. The undeveloped areas are comprised primarily of coastal sage scrub and ruderal vegetation bordered by residential and commercial land uses. Surface water runoff within the Proposed Project survey area appears to be captured by perennial creeks and underground storm water systems associated with the urban developments.

The following sections describe the existing conditions of the major vegetation communities and cover types found within the Proposed Project's ROW. Acreages of each vegetation community are summarized in Table 4.4-1, Vegetation Communities in the Proposed Project Area. The following sections also address the potential to support listed, sensitive, or covered species. The

vegetation mapping was based upon descriptions provided by Sawyer and Keeler-Wolf, *SDG&E Subregional NCCP* Section 3.1, and Holland.

Table 4.4-1: Vegetation Communities in the Proposed Project Area

Vegetation Community	Acres
Coastal Sage Scrub	121.16
Disturbed Coastal Sage Scrub	61.19
Coastal Freshwater Marsh	0.20
Southern Willow Scrub	9.18
Disturbed Southern Willow Scrub	0.78
Riparian Scrub	2.65
Ruderal	139.55
Disturbed	28.89
Ornamental	63.34
Dirt Roads	20.42
Developed	121.13

Vegetation Communities and Associated Wildlife

Coastal Sage Scrub (Holland Code 32000)

CSS is comprised of low, soft-woody subshrubs approximately one meter in height, many of which are facultatively drought-deciduous. This association is typically found on dry sites, such as steep, south-facing slopes or clay-rich soils that are slow to release stored water. Dominant shrub species in this vegetation type may vary, depending on local site factors and levels of disturbance. Plant species commonly observed within this community include coyote bush (*Baccharis pilularis*), California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), and laurel sumac (*Malosma laurina*).

CSS is the dominant native vegetation community within the Proposed Project survey area, comprising a total of 121.16 acres of CSS (refer to Appendix 4.4-A [Appendix H, Vegetation and Sensitive Species Maps]).

Plant species commonly observed within this community in the Proposed Project survey area included coyote bush, California sagebrush, California buckwheat, white sage, black sage (*Salvia mellifera*), California encelia (*Encelia californica*), toyon (*Heteromeles arbutifolia*), prickly pear cactus (*Opuntia littoralis*), goldenbush (*Isocoma menziesii*), Mexican elderberry (*Sambucus mexicana*), lemonade berry (*Rhus integrifolia*), laurel sumac, coyote gourd (*Cucurbita palmata*), ragweed (*Ambrosia psilostachya*), giant wild rye (*Leymus condensatus*), orange bush monkeyflower (*Mimulus aurantiacus*), deerweed (*Lotus scoparius*), and oaks (*Quercus* spp., including coast live oak/*Q. agrifolia*). Much of the CSS along the Proposed Project survey area is found in scattered patches surrounded by disturbed and ruderal habitats, and often in close proximity to residential areas. Several patches are located in the vicinity of the Prima Deshecha Landfill and one moderate-sized patch is located approximately 0.5 mile south of the landfill. The largest area of this vegetation community is found along the easternmost 1.5 miles of the Proposed Project where the transmission line connects to the Talega Substation. Most of this area is comprised of CSS, bordered by a commercial area to the north and a golf course to the south. Small areas of CSS located in the vicinity of the golf course near the Talega Substation are dominated by broom baccharis (*Baccharis sarothroides*). Some areas of CSS also appear to have been planted based on the presence of surface irrigation lines, possibly as mitigation, primarily in the Rancho San Juan and Talega areas.

Disturbed Coastal Sage Scrub (Holland Code 32000)

Disturbed CSS has similar characteristics to CSS with more areas of human disturbance and/or invasion of non-native plant species. This vegetation community tends to have a lower amount of native species cover and a higher amount of non-native plant species. Non-native species prevalent in Disturbed CSS include black mustard (*Brassica nigra*), thistle (*Silybum* spp.), and non-native grasses (e.g., *Bromus* spp.).

A total of 61.19 acres of Disturbed CSS occur in the Proposed Project survey area (refer to Appendix 4.4-A), most often bordering or adjacent to intact areas of CSS. The Disturbed CSS is similar in species composition and structure to intact CSS; however, the Disturbed CSS has a higher cover of non-native plant species. Non-native species observed in the Disturbed CSS include black mustard, artichoke thistle (*Cynara cardunculus*), brome grasses, fennel (*Foeniculum vulgare*), and other species also observed in adjacent ruderal areas (see below).

Coastal Freshwater Marsh (Holland 52410)

Freshwater marsh plant communities are dominated by perennial, emergent monocots, up to three meters tall. Bulrush (*Scirpus* spp.) and cattails (*Typha* spp.) are often dominant, typically forming completely closed canopies. Freshwater marsh plant communities are found in sites lacking significant flow, that are permanently flooded by fresh water, and in areas where there is prolonged saturation with the accumulation of deep, peaty soils.

A total of 0.20 acre of Coastal Freshwater Marsh areas occur within the Proposed Project survey area (refer to Appendix 4.4-A [Appendix H, Vegetation and Sensitive Species Maps, Sheets 14 and 16]). These areas are found in association with drainage systems in the south of the Proposed Project survey area, namely in Tributary to Segunda Deshecha Cañada 3, and Tributary to Christianitos Creek 1. These areas are monocultures of cattails and bulrushes within permanently saturated areas fed by urban run-off. Both areas of Coastal Freshwater Marsh were

determined to be ACOE wetlands and are described further in Appendix 4.4-C. Additionally, in both areas of Coastal Freshwater Marsh, it appears as if the area has been revegetated to create this vegetation community.

Southern Willow Scrub (Holland Code 63320)

Southern willow scrub (SWS) communities are generally composed of dense, winter-deciduous broadleaf species, dominated by a variety of willow species (*Salix* spp.). Often present are occasional Fremont cottonwood (*Populus freemontii*) and California sycamore (*Platanus racemosa*). Tree stands are generally too dense for development of an understory. These communities are found on loose, fine or sandy gravelly alluvium near stream channels and experience repeated flooding.

A total of 9.18 acres of SWS occur in the Proposed Project survey area (refer to Appendix 4.4-A), just east of the I-5 freeway at San Juan Creek, Segunda Deshecha Cañada, and near the southern terminus of the alignment in Tributary to Christianitos Creek 1. Smaller patches of SWS are also found where the Proposed Project survey area crosses smaller creeks and tributaries. Dominant species observed in this vegetation community included various willows, mulefat (*Baccharis salicifolia*), giant reed (*Arundo donax*), and cattails (*Typha latifolia*).

Disturbed Southern Willow Scrub (Holland Code 63320)

Disturbed SWS has similar characteristics to SWS with more areas of human disturbance and/or invasion of non-native plant species. This vegetation community tends to have a lower amount of native species cover and a higher amount of non-native plant species.

A total of 0.78 acre of disturbed SWS occur in the Proposed Project survey area (refer to Appendix 4.4-A), generally bordering intact areas of SWS. The disturbed SWS are similar in species composition and structure to intact SWS; however, the disturbed SWS have a higher cover of non-native plant species. Examples of non-native species observed in disturbed SWS include black mustard, artichoke thistle, brome grasses, and giant reed.

Riparian Scrub (Holland Code 63000)

Riparian Scrub is found on or adjacent to the banks of rivers or streams, typically in drier areas that experience flooding. Riparian plants can include a variety of species such as mulefat, cottonwood trees, coast live oak, and willows.

A total of 2.65 acres of Riparian Scrub occur in the Proposed Project survey area (refer to Appendix 4.4-A), predominately within and adjacent to Tributary to Prima Deshecha Cañada and Tributary to Christianitos Creek 1. Prevalent species in the Proposed Project survey area included mulefat, willow species (including arroyo willow/*Salix lasiolepis*), coast live oak, horseweed (*Conyza canadiensis*), stinging nettle (*Urtica dioica*), ragweed, and a few scattered CSS species such as California sagebush, prickly pear cactus, lemonadeberry, poison oak (*Toxicodendron diversilobum*), and California buckwheat.

Ruderal (No Holland Code)

Ruderal vegetation is dominated by non-native weedy species in areas that have been significantly disturbed by agriculture, construction, or other land-clearing activities. Ruderal communities generally occupy waste areas, often on roadsides with heavily compacted soils with little available oxygen. These areas may be maintained but not typically on a regular basis, therefore allowing the establishment of a more dense cover of vegetation. Typical species can vary depending on the site and level of disturbance, but are often dominated by herbaceous annuals and grasses. Species can include black mustard, radish (*Raphinus sativus*), wild oat (*Avena* spp.), ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), Australian saltbush (*Atriplex semibaccata*), tocalote (*Centaurea melitensis*), fennel, telegraph weed (*Heterotheca grandiflora*), crown daisy (*Chrysanthemum coronarium*), castor bean (*Ricinus communis*), pineapple-weed (*Chamomilla suaveloens*), common knotweed (*Polygonum arenastrum*), sowthistle (*Sonchus oleraceus*), horseweed, common fiddleneck (*Amsinckia menziesii*), Russian thistle (*Salsola tragus*), tree tobacco (*Nicotiana glauca*), bristly ox-tongue (*Lactuca serriola*), and goosefoot (*Chenopodium* spp.). Ornamental species may also colonize and proliferate in ruderal communities.

A total of 139.55 acres of Ruderal vegetation occur throughout the Proposed Project survey area in areas of historical disturbance (refer to Appendix 4.4-A). Weedy and disturbance-loving plants were identified in these areas included species such as artichoke thistle, brome grasses, short pod mustard, wild oats, curly dock (*Rumex crispus*), telegraph weed, Russian thistle, tree tobacco, bristly ox-tongue, doveweed (*Croton setigerus*), castor bean (*Ricinus communis*), red-stem filaree (*Erodium cicutarium*), fennel, various thistle and sunflower species (these species were dead at the time of the survey and could not be positively identified), and cheeseweed (*Malva parviflora*). Some scattered native species were also observed including, but not limited to, species such as coyote bush, goldenbush, common fiddleneck, and coast live oak. Only one ruderal area, directly north of San Juan Creek, contained coast live oak and appeared associated with a revegetation project.

Disturbed (Holland Code 11300)

Disturbed areas are composed entirely, or predominately, of unvegetated ground due to ongoing maintenance, and may support only a few isolated individuals of non-native and/or native species. These species are generally composed of the same plants found in ruderal vegetation communities.

A total of 28.89 acres of Disturbed areas occur in the Proposed Project survey area, primarily comprised of regularly maintained sites around the transmission poles (refer to Appendix 4.4-A). The areas were predominately bare with a few weedy and disturbance-loving species such as mustard, doveweed (*Croton setigerus*), red-stem filaree, and cheeseweed, in addition to scattered individuals of CSS species.

Ornamental (Holland Code 11100)

Ornamental consists of landscaped areas most commonly associated with developments (residential or commercial) and open areas such as parks, which have been planted with either a variety of non-native trees and shrubs, or monocultures of one species. These non-native plants

can include many different species including, but not limited to, pines (*Pinus* sp.) and eucalyptus (*Eucalyptus* sp.). Whilst ornamental more typically comprises non-native plants it may also include native species such as oaks (*Quercus* spp.), sycamores (*Platanus racemosa*), and cottonwoods (*Populus fremontii*). Generally ornamental areas are planted as a windbreak, or for aesthetic and horticultural purposes around houses and other developed areas. The understory of ornamental areas are typically lacking due to maintenance or, in the case of eucalyptus trees, chemicals in the leaves. These chemicals build up in the soil from debris and leaf-litter and prevent the establishment of most other plants. Eucalyptus trees are not native, but many species of eucalyptus have become naturalized and have invaded natural riparian areas. Ornamental vegetation can provide nesting habitat for several bird and raptor species.

A total of 63.34 acres of Ornamental vegetation occur throughout the Proposed Project survey area (refer to Appendix 4.4-A). These areas comprise predominately non-native species, including a small eucalyptus grove that borders the Proposed Project survey area just west of the San Juan Creek crossing that is dominated by several species of eucalyptus. Native ornamental areas were also observed, including coast live oaks and sycamores within Arroyo Park in San Juan Capistrano, and areas of CSS associated with the Talega development appeared to have been planted as landscaping. Some Ornamental areas were observed to include a mix of native and non-native species, including a park west of the Capistrano Substation that was planted with non-native pines and both native cottonwoods and sycamores. Additional species observed in Serra Park and Marbella Country Club in San Juan Capistrano included alder (*Alnus rhombifolia*), pepper trees (*Schinus terebinthifolius* and *S. molle*), bougainvillea (*Bougainvillea spectabilis*), bottlebrush (*Callistemon* spp.), and palm trees (*Washingtonia robusta* and *Phoenix* sp.).

Dirt Roads (No Holland Code)

Dirt roads are unpaved roads that are typically used for access only. A total of 20.42 acres of Dirt roads occur throughout the Proposed Project survey area (refer to Appendix 4.4-A), consisting of cleared, maintained access roads to the pole sites.

Developed (Holland Code 12000)

Developed areas typically include paved roads, structures, and associated infrastructure, and may also include ornamental landscaping.

A total of 121.13 acres of Developed areas occur throughout the Proposed Project survey area (refer to Appendix 4.4-A), primarily including paved roads, and commercial or residential structures with associated landscaping.

Sensitive Vegetation Communities

Some of the vegetation communities occurring within the Proposed Project survey area are considered sensitive or have special status due to their natural rarity and their decline as a result of development, and/or due to the number of sensitive plant or animal species dependent upon them. Sensitive habitats also include those regulated by the federal government under the CWA (i.e., jurisdictional wetlands), the FESA (i.e., site-specific designated critical habitat areas for federally listed wildlife species), or categorized as sensitive habitat by the *SDG&E Subregional NCCP* (CSS, riparian/wetland, and nonnative grassland habitats). Special status vegetation

communities in the survey area include CSS, Disturbed CSS, and riparian communities (SWS, Coastal Freshwater Marsh, and Riparian Scrub) which include jurisdictional areas (refer to Section 5.7 of Appendix 4.4-A).

CSS is considered a sensitive habitat type by both federal and state resource agencies, local jurisdictions, and conservation organizations throughout southern California. Losses of up to 85 percent have been estimated for CSS in southern California, largely attributable to residential development and agricultural activities. The trend for continued losses has resulted in the selection of this community as the focus of the state of California's first habitat-based conservation planning program, the NCCP Act. CSS provides habitat for the coastal California gnatcatcher, a federally threatened species, as well as a variety of other animal and plant species which are candidates for federal listing, state species of special concern, or considered sensitive by local jurisdictions.

All riparian communities in southern California, including SWS, are considered sensitive by federal and state resource agencies. Estimated losses of riparian habitat in southern California range as high as 95 to 97 percent. Habitat destruction and degradation has resulted from wetland conversion for agricultural purposes, urban development, and flood control projects. Riparian vegetation provides shelter, food, and breeding habitat for numerous plant and wildlife species.

Critical Habitat

Critical habitat for two species, the arroyo toad and coastal California gnatcatcher, is located within the Proposed Project survey area. Additionally, critical habitat for the thread-leaved brodiaea (*Brodiaea filifolia*) and San Diego fairy shrimp (*Branchinecta sandiegonensis*) is located approximately two miles to the northeast of the Proposed Project survey area. All special status species identified in the literature search, including the four addressed here, were assessed for their potential to occur within the Proposed Project survey area. It should also be noted that the designation of critical habitat for the coastal California gnatcatcher specifically excludes areas within functioning HCPs, such as *SDG&E's Subregional NCCP*. Specifically, essential coastal California gnatcatcher habitat owned by SDG&E and covered under the *SDG&E Subregional* NCCP was determined to have greater benefits to coastal California gnatcatcher than from lands designated as critical habitat. Arroyo toad is a covered species under the *SDG&E Subregional NCCP* which has already identified and covered impacts to arroyo toad habitat and individuals.

Sensitive Plants

Seventy four sensitive plant species were identified from the literature review as having the potential to occur within three miles of the Proposed Project survey area. Appendix 4.4-A provides a list of these species, as well as their status and potential to occur in the Proposed Project area. This list was derived from CNDDB and CNPS records searches, *SDG&E Subregional NCCP* species, and suitable habitat identified during the rare plant and habitat assessment surveys. With the exception of three species, cliff spurge (*Euphorbia misera*), white rabbit-tobacco (*Pseudognaphalium leucocephalum*), and chaparral ragwort (*Senecio aphanactis*), all plant species were surveyed for during the appropriate blooming season. Of the three species surveyed outside their blooming period, one is an obvious shrub and the other two are unlikely to occur within or adjacent to the ROW due to habitat requirements that do not exist within the

Proposed Project survey area. No special status plants were observed during the focused plant surveys. A complete list of all plant species observed during the focused surveys can be found in Appendix 4.4-A.

Five of the plant species: big-leaved crownbeard (Verbesina dissita; FT, ST), Encinitas baccharis (Baccharis vanessae; FT, SE), Laguna Beach dudleya (*Dudleya stolonifera*; FT, ST), Santa Monica dudleya (*Dudleya cymosa* ssp. *ovatifolia*; FT), and thread-leaved brodiaea (*Brodiaea filifolia*; FT, SE Covered Species) are federal or state-listed species. All None of these species were observed during the focused plant surveys or other surveys conducted for the Proposed Project, therefore none of these species are unlikely likely to occur in the Proposed Project survey area. These species are discussed in more detail within Appendix 4.4-A.

Special Status Wildlife

Some of the vegetation communities and waterways within the Proposed Project survey area provide habitat for one or more sensitive or *SDG&E Subregional NCCP* Covered Species known to occur or with potential to occur in the Proposed Project survey area. Based on the literature search, reconnaissance and habitat assessment surveys, and additional focused biological surveys, 36 special status wildlife species are known to occur or have the potential to occur in the Proposed Project survey area. These species, their status, documented occurrence, and the potential for their presence within the Proposed Project survey area are summarized in Appendix 4.4-A. A list of common and scientific names of wildlife species observed during the surveys can be found in Appendix 4.4-A.

In addition to the species identified in Appendix 4.4-A, raptor species such as the red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*) have the potential to nest within the Proposed Project survey area. During habitat assessment and focused surveys conducted for this Proposed Project between February and June 2008, several stick nests, including two active red-tailed hawk nests, were identified on various tower structures within the Proposed Project survey area. Locations of these nests can also be found in Appendix 4.4-A (Appendix H).

Of the 36 species outlined in Appendix 4.4-A, 34 sensitive wildlife species have a potential to occur (30 of which are Covered Species) and six are found within and in the vicinity of the Proposed Project survey area (of which only one, white-tailed kite, is not a Covered Species). Of the 36 species, 18 species are listed below because of their presence in the survey area and/or a moderate or high potential to occur within the Proposed Project survey area due to presence of suitable habitat. These species are discussed in further detail within Appendix 4.4-A, Section 5.6.

Special Status Wildlife Found Onsite

Six special status wildlife species were observed in the Proposed Project survey area:

- American peregrine falcon (*Falco peregrinus anatum*, BCC, FP, Covered Species)
- coastal California gnatcatcher (FT, SSC, Covered Species)
- Cooper's hawk (*Accipiter cooperii*, Watch List [WL], Covered Species)

- least Bell's vireo (FE , SE, SSC, Covered Species)
- southwestern willow flycatcher (FE, SE, Covered Species)
- white tailed kite (*Elanus leucurus*, FP)

Special Status Wildlife with Moderate to High Potential to Be On-Site

Twelve special status wildlife species were found to have a moderate to high potential for occurrence in the Proposed Project survey area:

- Arroyo Chub *(Gila orcuttii;* SSC*)*
- Arroyo Toad *(Bufo californicus*; FE, SSC, Covered Species*)*
- Burrowing Owl *(Athene cunicularia;* SSC, Covered Species*)*
- Coast horned lizard *(Phrynosoma coronatum blainvillei;* SSC, Covered Species*)*
- Mountain lion *(Felis concolor;* Covered Species*)*
- Northern red-diamond rattlesnake *(Crotalus ruber ruber;* SSC, Covered Species*)*
- Orange-throated whiptail *(Aspidoscelis hyperythra;* SSC, Covered Species*)*
- Southern California rufous-crowned sparrow *(Aimophila ruficeps canescens,* WL, Covered Species*)*
- Stephen's kangaroo rat *(Dipodomys* stephens, FE, ST)
- Two-striped garter snake *(Thamnphis hammondii; SSC*, Covered Species*)*
- Western pond turtle *(Emys marmorata; SSC*, Covered Species*)*
- Western spadefoot *(Spea hammondii; SSC,* Covered Species*)*

Jurisdictional Delineation of Waters and Wetlands

The Proposed Project survey area supports twelve different drainages (refer to Appendix 4.4-A [Appendix C]). These drainages include eight relatively permanent waters, known as Horno Creek, San Juan Creek, Segunda Deshecha Cañada, Tributary to Segunda Deshecha Cañada 1, 2, and 3, and Tributary to Christianitos Creek 1 and 3. The remaining four drainages are non-relatively permanent waters known as the Tributary to Prima Deshecha Cañada, Tributary to San Juan Creek, the Rancho San Juan Drainage, and Tributary to Christianitos Creek 2. All drainages within the Proposed Project survey area total approximately 6.69 acres of WUS of which 3.43 acres are wetland, and 13.83 acres of "Waters of the State," of which 13.52 acres are riparian. The locations and boundaries of these jurisdictional waters are depicted on the attached Appendix 4.4-A (Appendix C, Figure 2). A summary of jurisdiction by acreage is provided below in Table 4.4-2: Potentially Jurisdictional Waters in Proposed Project Survey Area.

Table 4.4-2: Potentially Jurisdictional Waters in Proposed Project Survey Area

Drainage Name	ACOE Wetland	Total ACOE[1]	CDFG Riparian	Total CDFG[2]	Linear Feet
Horno Creek	0.05	**0.19**	1.08	**1.08**	540
San Juan Creek	2.00	**3.86**	4.86	**4.86**	665
Tributary to San Juan Creek	-	**0.05**	-	**0.05**	1,630
Whispering Hills Drainage	-	**0.94**	2.55	**2.55**	960
Tributary to Prima Deshecha Cañada	-	**0.22**	0.59	**0.72**	3,880
Segunda Deshecha Cañada	0.68	**0.68**	1.38	**1.38**	1,040
Trib to Segunda Deshecha Cañada 1	0.01	**0.04**	0.01	**0.04**	155
Trib to Segunda Deshecha Cañada 2	-	**0.03**	-	**0.03**	715
Trib to Segunda Deshecha Cañada 3	0.26	**0.28**	0.55	**0.56**	515
Trib to Christianitos Creek 1	0.26	**0.34**	2.24	**2.25**	1,040
Trib to Christianitos Creek 2	-	**0.04**	-	**0.04**	610
Trib to Christianitos Creek 3	-	**0.02**	0.26	**0.27**	630
Totals	***3.26***	***6.69***	***13.52***	***13.83***	***12,380***

[1] Includes all wetlands and waters (relatively permanent water (RPW) and non-RPW).
[2] Includes bed and bank and associated riparian habitat, where present.

4.4.4 Potential Impacts

The following discussion describes the Proposed Project's potential to impact sensitive species and habitat that may occur as a result of construction and operation of the Proposed Project. As part of the Proposed Project description, SDG&E would be operating under its own NCCP, which was established according to the FESA and CESA and the state's NCCP Act. SDG&E would implement the *SDG&E Subregional NCCP* Operational Protocols, habitat enhancement, and mitigation requirements to avoid, minimize, and mitigate potential impacts to ensure the protection and conservation of listed and covered species and their habitats. The *SDG&E Subregional NCCP* is described more fully in Section 3, Project Description.

4.4.4.1 Significance Criteria

Potential impacts to biological resources are separated into those likely to occur from construction (both short and long term impacts) and those that could occur as a result of transmission line and substation operation and maintenance.

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

4.4.4.2 Question 4a - Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS?

Construction – Less than Significant Impacts

Overview

Impacts to sensitive species could result in impacts to habitats for special status species, including Covered Species. Impacts could result from blading, scraping, excavation, and erosion, along with fragmentation and human access to restricted areas. Modification of habitat may reduce the prey base or other biological resources for special status species and thereby affect their ability to survive. Impacts can also occur from take of individual animals, such as harassment, death or displacement, or impacts to habitats. Harassment is the most common impact to individual animals and can occur as an unavoidable and unintentional consequence of factors such as human activity, operation of machinery or equipment, and associated noise. Harassment can also result in the disruption of normal behaviors and abandonment of nests. Direct killing or injury to individuals may result from being struck by vehicles or equipment, or being crushed or trapped in their burrows. Displacement may occur when individual animals move away from the work area to surrounding areas, either temporarily or permanently, either due to noise or removal of nests or nesting/foraging habitat. Some wildlife may be temporarily displaced during construction, at least during daylight hours. Permanent displacement results in animals being forced to compete with other animals in new areas for food and living space. Other potential impacts include wildlife falling into and becoming trapped within transmission pole excavation areas or inside equipment/supplies. These potential impacts would be avoided, minimized, and mitigated through implementation of all measures in the *SDG&E Subregional NCCP*. A detailed description of the potential impacts and *SDG&E Subregional NCCP* Operation Protocols, Habitat Enhancement Measures and Mitigation are described below. With the implementation of the *SDG&E Subregional NCCP* as a project feature, impacts are expected to be less than significant.

Impacts to Vegetation Communities

The Proposed Project would permanently impact approximately 0.85 acre of CSS, 0.72 acre of Disturbed CSS, 2.38 acres of Ruderal vegetation, 2.83 acres of Disturbed habitat, 2.34 acres of Ornamental vegetation, 1.23 acres of existing Dirt roads and 10.05 acres of Developed land. The Proposed Project would also temporarily impact 0.44 acre of CSS, 0.86 acre of Disturbed CSS, 8.69 acres of Ruderal vegetation, 5.3 acres of Disturbed habitat, 1.16 acres of Ornamental vegetation, 1.41 acres of Dirt roads, and 4.84 acres of Developed areas. There would be no permanent or temporary impacts to Coastal Freshwater Marsh, SWS, Disturbed SWS, or Riparian Scrub habitat. Impacts to sensitive habitats are limited to CSS and Disturbed CSS. A map of temporary and permanent construction impacts to vegetation communities is provided in Appendix 4.4-A (Appendix J, Impact Maps). These impacts are also summarized in Table 4.4-3: Vegetation Community Impacts in Acres.

Table 4.4-3: Vegetation Community Impacts in Acres

Vegetation Community	Permanent Impacts	Temporary Impacts
Sensitive Habitats		
Coastal Sage Scrub	0.85	0.44
Disturbed Coastal Sage Scrub	0.72	0.86
Coastal Freshwater Marsh	0	0
Southern Willow Scrub	0	0
Disturbed Southern Willow Scrub	0	0
Riparian Scrub	0	0
Subtotal	*1.57*	*1.30*
Non-sensitive Habitats		
Ruderal	2.38	8.69
Disturbed	2.83	5.30
Ornamental	2.34	1.16
Dirt Roads	1.23	1.41
Developed	10.05	4.84
Subtotal	*18.83*	*21.4*
Total	***20.40***	***22.70***

The *SDG&E Subregional NCCP* allows for impacts to habitats when incidental to otherwise lawful activities and when conducted in full compliance with the *SDG&E Subregional NCCP*. Compliance with the *SDG&E Subregional NCCP* is designed to avoid impacts whenever possible and to implement measures to minimize and mitigate any take to the maximum extent possible. Consistent with the *SDG&E Subregional NCCP*, the Proposed Project has been designed to avoid sensitive habitat areas when possible, including not placing poles in drainage areas, using existing access roads to the greatest extent possible, and placing any new facilities, staging areas, or access roads outside habitats when feasible. Where avoidance of sensitive

habitat areas (CSS and Disturbed CSS) is not possible or where sensitive habitat areas exist adjacent to Proposed Project work areas, implementation of the measures in Section 7.1 and 7.2 of the *SDG&E Subregional NCCP* for remaining impacts to sensitive habitats would reduce these impacts to a less than significant level.

Impacts to Sensitive Plant Species

Compliance with the *SDG&E Subregional NCCP* is designed to avoid take of Covered Species whenever possible and to implement measures to minimize and mitigate any take to the maximum extent possible. Take of Narrow Endemic Covered Species, including certain plant species, is to be avoided except for emergencies and unavoidable impacts from repairs to existing facilities.

None of the sensitive plant species identified in the literature search are likely to occur within the Proposed Project survey area based on focused field surveys and observations. Based on the results of the field survey, the potential for occurrence was determined for each plant species and is included as Appendix 4.4-A. No sensitive plant species were found during habitat assessments or rare plant surveys conducted in 2008 and 2010.

Since special status plant species were not observed in the Proposed Project survey area and determined to have an unlikely potential to occur, no impacts to these species are expected. Pre-activity surveys required pursuant to the *SDG&E Subregional NCCP* would confirm absence of special status plants. If any are found, compliance with Sections 7.1 and 7.2 of the *SDG&E Subregional NCCP* would reduce any impacts to a less than significant level. These include measures outlined at the end of this section.

Impacts to Sensitive Wildlife Species

There are 34 sensitive wildlife species that have a potential to occur (30 of which are Covered Species) and six are found within and in the vicinity of the Proposed Project survey area (of which only one, white-tailed kite, is not a Covered Species). The potential presence of species is based on their known or recorded occurrence within the region, and/or appropriate habitat being present in the Proposed Project area.

In addition to the species identified in Appendix 4.4-A, raptor species such as the red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*) have the potential to nest within the Proposed Project survey area. During habitat assessment and focused surveys conducted for this Proposed Project, two active red-tailed hawk nests were identified on various tower structures within the Proposed Project survey area. Construction activities could potentially impact nesting raptors, passerines, and other sensitive bird species such as migratory birds protected under the MBTA. Impacts may include the removal of potential nesting habitat and the disruption of nesting behavior due to a temporary increase in noise from construction equipment and vehicles. SDG&E would comply with Sections 7.1 and 7.2 of the *SDG&E Subregional NCCP* (including pre-activity surveys, determining the presence or absence of nesting species, and implementing avoidance and minimization measures). These measures would also comply with the MBTA. Through

compliance with the *SDG&E Subregional NCCP*, impacts to breeding and nesting birds are would be less than significant.

Consistent with the *SDG&E Subregional NCCP*, the Proposed Project has been designed to avoid sensitive habitat areas that may support special status wildlife species when possible, including not placing poles in drainage areas, using existing access roads to the greatest extent possible, and placing any new facilities, staging areas, or access roads outside habitats when feasible. Due to the small permanent footprint of the Proposed Project, and the presence of potential foraging adjacent to the Proposed Project, wildlife habitat is not expected to be adversely affected. Where avoidance of sensitive habitat areas supporting special status wildlife is not possible, or where sensitive habitat areas exist adjacent to Proposed Project work areas, implementation of the measures in Section 7.1 and 7.2 of the *SDG&E Subregional NCCP* would reduce these impacts to less than significant, including but not limited to those listed below. The applicable *SDG&E Subregional NCCP* section is provided in brackets and can be used to reference the *SDG&E Subregional NCCP* for additional details. Compliance with the *SDG&E Subregional NCCP,* which includes mitigation for loss of habitat, would reduce impacts to Covered Species to a less than significant level. Pre-activity surveys required pursuant to the *SDG&E Subregional NCCP* would also confirm the absence of any other special status species not covered under the *SDG&E Subregional NCCP*. If any non-Covered Species special status species are found or suspected, compliance with Sections 7.1 and 7.2 of the *SDG&E Subregional NCCP* would allow avoidance, minimization and mitigation of impacts, as applicable. Based on Section 4.4.3.2 of this report, presence or potential presence of non-Covered Species is expected to be limited to white-tailed kite, arroyo chub, and Stephen's kangaroo rat. No impacts would occur to arroyo chub habitat as a result of the Proposed Project, and avoidance of any impacts to white tailed kite and Stephen's kangaroo rat (if present) is expected through compliance measures in the *SDG&E Subregional NCCP*. CDFG and/or USFWS would be consulted if impacts to non- Covered Species cannot be avoided.

Common Species

Consistent with the *SDG&E Subregional NCCP*, the Proposed Project has been designed to avoid sensitive habitat areas that may support common wildlife species when possible, including not placing poles in drainage areas, using existing access roads to the greatest extent possible, and placing any new facilities, staging areas, or access roads outside habitats when feasible. Due to the small permanent footprint of the Proposed Project, and the presence of potential foraging adjacent to the Proposed Project, wildlife habitat is not expected to be adversely affected. Where avoidance of sensitive habitat areas supporting special status wildlife is not possible, or where sensitive habitat areas exist adjacent to Proposed Project work areas, implementation of the measures in Section 7.1 and 7.2 of the *SDG&E Subregional NCCP*, as described above, would reduce these impacts to less than significant.

Transmission lines and other structures provide potential perching opportunities for raptor species, which can increase the potential for predation of wildlife by raptors. Since the Proposed Project is within an existing transmission ROW, the extent of predation on sensitive and common wildlife species is not anticipated to change from existing conditions, and therefore have a less than significant impact on common wildlife.

SDG&E Subregional NCCP Operation Protocols, Habitat Enhancement Measures and Mitigation (Incorporated Into Proposed Project Design)

- Vehicles would be kept on access roads and limited to 15 mph (Section 7.1.1, 1.).
- No plants would be collected (Section 7.1.1, 2.).
- Measures to prevent or minimize wild fires would be implemented, including exercising care when driving and not parking vehicles where catalytic converters can ignite dry vegetation (Section 7.1.1, 9.).
- Field crews would refer all environmental issues, including questions regarding environmental impacts, to the Environmental Surveyor (Section 7.1.1, 10.).
- All SDG&E personnel would participate in an environmental training program conducted by SDG&E, with annual updates (Section 7.1.2, 11.).
- The Environmental Surveyor would conduct preactivity studies for all activities occurring in natural areas, and would complete a preactivity study form including recommendations for review by a biologist and construction monitoring, if appropriate. The form would be provided to CDFG and USFWS but does not require their approval (Section 7.1.3, 13.).
- The Environmental Surveyor would flag boundaries of habitats to be avoided and, if necessary, the construction work boundaries (Section 7.1.3, 14.).
- The Environmental Surveyor would conduct monitoring as recommended in the preactivity study form (Section 7.1.4, 35.).
- Fugitive dust would be controlled by regular watering and speed limits (Section 7.1.4, 39.).
- New access roads would be designed and constructed according to the SDG&E *Guide for Encroachment on Transmission Rights-of-Way (4/91)* (Section 7.1.6, 46.). No wildlife, including rattlesnakes, would be collected or harmed, except to protect life and limb (Section 7.1.1, 2. and 7).
- Feeding of wildlife is not allowed (Section 7.1.1, 4.).
- No pets are allowed within the ROW (Section 7.1.1, 5.).
- Littering is not allowed, and no food or waste would be left on the right-of-way or adjacent properties (Section 7.1.1, 8.).
- Field crews would refer all environmental issues, including wildlife relocation, dead or sick wildlife, or questions regarding environmental impacts to the Environmental Surveyor. Biologists or experts in wildlife handling may be necessary to assist with wildlife relocations (Section 7.1.1, 10.).
- Supplies, equipment, or construction excavations where wildlife could hide (e.g., pipes, culverts, pole holes, trenches) would be inspected prior to moving or working on/in them (Section 7.1.4, 37. and 38.).

- During the nesting season, the presence or absence of nesting species (including raptors) shall be determined by a biologist who would recommend appropriate avoidance and minimization measures (Section 7.1.6, 50).

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated.

Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Any future potential maintenance-related construction projects will be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required and will be conducted in compliance with the *SDG&E Subregional NCCP*.

4.4.4.3 Question 4b - Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS?

Construction – Less than Significant Impact

Construction activities could result in impacts to sensitive natural communities. Impacts could result from blading, scraping, excavation, and erosion, along with fragmentation and human access to restricted areas. The *SDG&E Subregional NCCP* allows for impacts to habitats when incidental to otherwise lawful activities and when conducted in full compliance with the SDG&E Subregional NCCP. Compliance with the *SDG&E Subregional NCCP* is designed to avoid impacts whenever possible and to implement measures to minimize and mitigate any take to the maximum extent possible. Here, implementation of the *SDG&E Subregional NCCP* would mitigate potential impacts to a less than significant level.

As described in Section 4.4.4.2, there would be no permanent or temporary impacts to riparian habitats including Coastal Freshwater Marsh, SWS, Disturbed SWS, or Riparian Scrub habitat. Impacts to sensitive habitats are limited to 1.57 acres of permanent impact and 1.30 acres of temporary impact to CSS and Disturbed CSS habitats. A map of temporary and permanent construction impacts to vegetation communities is provided in Appendix 4.4-A. These impacts are also summarized above in Table 4.4-2: Vegetation Community Impacts in Acres.

Consistent with the *SDG&E Subregional NCCP*, the Proposed Project has been designed to avoid sensitive habitat areas when possible, including not placing poles in drainage areas, using existing access roads to the greatest extent possible, and placing any new facilities, staging areas, or access roads outside habitats when feasible. Where avoidance of sensitive habitat areas (CSS and Disturbed CSS) is not possible, or where sensitive habitat areas exist adjacent to Proposed Project work areas, implementation of the measures in Section 7.1 and 7.2 of the *SDG&E Subregional NCCP* would reduce these impacts to less than significant, including but not limited to those listed below.

SDG&E Subregional NCCP Operation Protocols, Habitat Enhancement Measures and Mitigation

- Impacts to CSS and Disturbed CSS habitat for new facilities would be mitigated for permanent impacts at a 2:1 ratio in preserve areas and at a 1:1 ratio outside preserve areas (*SDG&E Subregional NCCP* Section 7.2).
- Impacts to CSS and Disturbed CSS habitat for new facilities would be mitigated for temporary impacts through basic site remediation, including hydroseeding for erosion control, if necessary. For areas greater than 500 square feet, any acreage not meeting *SDG&E Subregional NCCP* criteria would be deducted from SDG&E Mitigation Credits at a 1:1 ratio. For areas of less than 500 square feet, success criteria would not be required to be met (Sections 7.2 and 7.4).

As a result of implementation of the above measures, potential impacts from construction would be less than significant.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated.

Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Any future potential maintenance-related construction projects will be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required and will be conducted in compliance with the *SDG&E Subregional NCCP*.

4.4.4.4 Question 4c - Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Construction– Less than Significant Impact

Construction of the Proposed Project would result in no permanent impacts to waters under the jurisdiction of the ACOE, RWQCB, and CDFG. A total of approximately 0.0006 acre of ephemeral jurisdictional waters, out of the total of 13.83 acres of waters of the State and 6.69 acres of WUS, would be temporarily impacted. The temporary impacts are to a 25-foot linear ephemeral drainage with a one-foot width located within Tributary to Prima Deshecha Cañada. This water has a low biological value and has no associated riparian vegetation. Nevertheless, SDG&E would avoid this drainage to the greatest extent possible, obtain permits from the regulatory agencies (ACOE, RWQCB, and CDFG), and mitigate for impacts as described in the *SDG&E Subregional NCCP* (Sections 7.1 and 7.2) and as required by the permitting process. Indirect impacts to jurisdictional drainages would be avoided through the use of state-of-the art technical design and construction techniques to minimize and avoid erosion and siltation into any creeks, streams, rivers, or bodies of water by use of BMPs (*SDG&E Subregional NCCP* Section 7.1.4, 20). Through compliance of the *SDG&E Subregional NCCP* and permits to be obtained

from the regulatory agencies, direct and indirect impacts to jurisdictional waters would be less than significant.

Operation & Maintenance– No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated.

Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Any future potential maintenance-related construction projects will be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required and will be conducted in compliance with the *SDG&E Subregional NCCP*. If necessary, SDG&E will obtain any wetlands permits required to conduct maintenance activities that would impact wetlands.

4.4.4.5 Question 4d - Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Construction– Less than Significant Impact

It is not anticipated that the Proposed Project would have a significant effect on wildlife movement. The Proposed Project would be located almost entirely within an existing ROW where transmission lines are currently present, and on existing SDG&E substation sites. Placement of pole and tower structures for the new overhead transmission line would occur in the vicinity of existing structures within the ROW, and due to their small footprint would maintain wide natural areas to allow the continued movement of wildlife species. The Proposed Project would also avoid or span existing drainages that often serve as wildlife movement corridors. Some local wildlife movement may be temporarily disrupted during construction, at least during daylight hours. It is expected that regional wildlife movement would not be significantly impacted by the Proposed Project due to minimal loss of protective cover (vegetation), roosts, forage habitat, or movement corridors. Furthermore, the measures outlined in Section 4.4.4.2 and 4.4.4.3 would avoid or minimize impacts associated with construction. Therefore, the potential impacts to wildlife movement are anticipated to be less than significant.

Operation & Maintenance– No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. Placement of pole and tower structures for the new overhead transmission line would occur in the vicinity of existing structures within the ROW. Due to the overall decrease in number of structures and the associated small footprint of these structures, wide natural areas would be maintained to allow the continued movement of wildlife species. Once construction is completed, no effects are expected that would preclude wildlife from returning. Therefore, impacts to wildlife movement corridors are anticipated to be less than significant.

4.4.4.6 Question 4e - Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Construction– No Impact

Local governments are precluded from regulating public utilities through their zoning laws, land use laws, ordinances and other police powers by the exclusive jurisdiction of the CPUC. To the extent issuance of a tree removal permit or other approval by a local jurisdiction is a discretionary action; CPUC approval of the CPCN would preempt local authority. Because these local policies or ordinances do not apply, there would be no impact.

Operation & Maintenance– No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Standard operational and maintenance activities, such as road grading, tree trimming, structure installation, and replacement and repairs, would not conflict with any local policies or ordinances protecting biological resources. Therefore no impacts are expected as result of operation and maintenance of the Proposed Project.

4.4.4.7 Question 4f - Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan?

Construction– No Impact

The Proposed Project traverses through areas within the *Southern Orange County Subregional* NCCP and the INRMP at Camp Pendleton. The Proposed Project would occur within and follow the requirements of the SDG&E Subregional NCCP; the SDG&E Subregional NCCP contains measures to coordinate with HCP implementing entities and to provide additional mitigation in the event of permanent impacts to HCP/NCCP preserve areas. Therefore, no conflicts are expected with the Southern Orange County Subregional NCCP or the INRMP. The SDG&E Subregional NCCP is independent of other NCCP/HCPs; and therefore is not dependent upon the implementation of such plans and is not superseded by other plans. SDG&E would coordinate with the appropriate authorities during the Proposed Project approval process to ensure that the impacts, mitigation measures, and operational protocols are implemented for the Proposed Project under the *SDG&E Subregional NCCP*. With the implementation of the *SDG&E Subregional NCCP,* no impacts are expected.

Operation & Maintenance– No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Any future operations and maintenance activities will be conducted in compliance with the *SDG&E Subregional NCCP*. Standard operational and

maintenance activities, such as road grading, tree trimming, structure installation, and replacement and repairs, would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan. Therefore there is no impact as a result of operation and maintenance of the Proposed Project.

4.4.5 Applicant Proposed Measures

Potential impacts to biological resources would be less than significant through the avoidance of resources, application of protective measures and mitigation in the *SDG&E Subregional NCCP*, and habitat enhancement, which have been incorporated as part of the Proposed Project description. Therefore, no APMs in addition to those already included in the Proposed Project as part of the *SDG&E Subregional NCCP* are required or proposed.

4.4.6 References

ACOE (U.S. Army Corps of Engineers). 1987. Corps of Engineers Wetlands Delineation Manual. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.

ACOE (U.S. Army Corps of Engineers). 2006. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-06-16. U.S. Army Engineer Research and Development Center. Vicksburg, MS.

ACOE (U.S. Army Corps of Engineers). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. U.S. Army Engineer Research and Development Center. Vicksburg, MS.

CDFG (California Department of Fish and Game). 2000. *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities.*

CDFG (California Department of Fish and Game). 2009. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities.* Online. http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf

California Native Plant Society (CNPS). 2001. *CNPS Botanical Survey Guidelines*. Pages 38-40 in California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (D.P. Tibor, editor). Sixth edition.

California Native Plant Society (CNPS). 2011. Inventory of Rare and Endangered Plants (online edition, v7-08d). California Native Plant Society. Sacramento, CA. Online: http://www.cnps.org/inventory. Site visited October 17, 2011.

California Natural Diversity Data Base (CNDDB). 2011. California Department of Fish and Game. Search for the County of Orange and the following 7.5-minute USGS Quadrangles: Cañada Gobernadora, Dana Point, San Clemente, and San Juan Capistrano.

County of Orange. September 25, 2006. *Southern Orange County Subregional NCCP.*

Federal Register. 2007. Federal Register Vol. 72, No. 243. Rules and Regulations Pg 72058-72059

Google, 2011. Aerials available at www.earth.google.com.

Hickman, J.C. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley and Los Angeles, California.

Holland, V. L. and Keil, D. J. 1995. *California Vegetation.* Kendall/Hunt Publishing Company. Dubuque, Iowa.

Holland, R. F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game.

NRCS (Natural Resources Conservation Service). 2011. Web Soil Survey. Online. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Sawyer, J.O., and Keeler-Wolf, Todd. 1995. *A Manual of California Vegetation.* California Native Plant Society, Sacramento.

Sawyer, J. O., and Keeler-Wolf, T. 2009. *A Manual of California Vegetation*. Second Edition. California Native Plant Society. Sacramento, California.

SDG&E (San Diego Gas & Electric). December 15, 1995a. *Subregional Natural Community Conservation Plan*.

SDG&E (San Diego Gas & Electric). December 18, 1995b. San Diego Gas & Electric Subregional Natural Community Conservation Plan Implementing Agreement/CESA Memorandum of Understanding. Section 7.2: 21.

Sogge, M.K., Ahlers, D., and Sferra, S.J. 2010. *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher*. USGS Survey Techniques and Methods 2A-10.

USFWS (U.S. Fish & Wildlife Service). 1992. *Least Bell's Vireo Presence/Absence Survey Protocol.*

USFWS (U.S. Fish & Wildlife Service). 1997. *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Guidelines.*

USFWS (U.S. Fish & Wildlife Service). 1998. *The National List of Plant Species that Occur in Wetlands.*

USFWS (U.S. Fish & Wildlife Service). 1998. *Vernal Pools of Southern California Recovery Plan.*

USFWS (U.S. Fish & Wildlife Service). 1999. *Arroyo Southwestern Toad (Bufo microscaphus californicus) Recovery Plan.* U.S. Fish and Wildlife Service, Portland, Oregon.

USFWS (U.S. Fish & Wildlife Service). 2000. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants.*

USFWS (U.S. Fish & Wildlife Service). 2008. *Birds of Conservation Concern 2008.* United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85. Online version available at: http://www.fws.gov/migratorybirds/

USFWS (United States Fish and Wildlife Service). August, 2011. National Wetlands Inventory Mapper Application. Online. Site visited August 2011.

USGS (United States Geological Survey). 1975. San Clemente, California 7.5-minute series topographic quadrangle. United States Department of Interior.

USGS (United States Geological Survey). 1981. Cañada Gobernadora, California 7.5-minute series topographic quadrangle. United States Department of Interior.

USGS (United States Geological Survey). 1995. Dana Point, California 7.5-minute series topographic quadrangle. United States Department of Interior.

USGS (United States Geological Survey). 1997. San Juan Capistrano, California 7.5-minute series topographic quadrangle. United States Department of Interior.

This page intentionally left blank.

TABLE OF CONTENTS

4.5 CULTURAL RESOURCES 4.5-1
4.5.1 Introduction 4.5-1
4.5.2 Methodology 4.5-1
4.5.3 Existing Conditions 4.5-4
4.5.4 Potential Impacts 4.5-16
4.5.5 Applicant Proposed Measures 4.5-22
4.5.6 References 4.5-24

LIST OF TABLES

Table 4.5-1: Previously Recorded Cultural Resources within the Proposed Project Area 4.5-13

LIST OF APPENDICES

Appendix 4.5-A Archaeological Survey Report
Appendix 4.5-B Historic Property Evaluation
Appendix 4.5-C Paleontological Resources Record Search

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.5 CULTURAL RESOURCES

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☐	☑
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☑	☐	☐
c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐
d.	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☑	☐

4.5.1 Introduction

This section of the PEA describes the archaeological, historical, and paleontological resources identified within the Proposed Project area, and identifies potential impacts that could result from construction, operation, and maintenance of the Proposed Project. Components of the Proposed Project that could affect cultural resources include removal of existing towers and transmission line, construction of new poles and stringing of transmission line, demolition of an existing substation and construction of a new substation, grading access roads or pads and clearing of footing locations, use of pulling stations, splicing stations, construction yards and laydown areas, or establishing helicopter landing zones.

Cultural resources as defined in CEQA include prehistoric and historic period archaeological sites, districts, and objects; historic buildings, structures, and traditional/cultural sites or the locations of important historic events. Although cultural resources identified within the Proposed Project site include prehistoric archaeological sites and isolates, two railroad sites, and a former utility structure, the Proposed Project will not result in significant impacts, either because the resources were found not to be significant, or were not relocated, or will not be impacted. There is a moderate to high sensitivity for paleontological resources in three of the geologic formations that underlie the Proposed Project. With the implementation of the Applicant APMs, potential impacts to cultural and paleontological resources that may result from the Proposed Project would be reduced to a less than significant level.

4.5.2 Methodology

4.5.2.1 Cultural Resources Records Search

Cultural resources information for existing conditions in the Proposed Project area was obtained from the California Historic Resources Information System (CHRIS), with the records search performed on March 5, 2008 and February 29, 2012. The CHRIS maintains regional offices that

manage cultural resource records for known cultural resource locations and related technical studies. The regional office for Orange County is the South Central Coastal Information Center (SCCIC) housed at California State University at Fullerton, and the regional office for San Diego County is the South Coastal Information Center (SCIC) housed at San Diego State University. Sources reviewed consisted of all recorded archaeological and historic sites records, and cultural resource reports within a one quarter mile radius of the Proposed Project area. Archaeological and/or historic sites recorded in CHRIS are not all deemed significant. Additional resources that were consulted for relevant information included the National Register of Historic Places, the Historic Property Data File, the California Register, the California Historical Landmarks, the California Inventory of Historic Resources, and the California Points of Historical Interest. The records search included the records available through the city of San Juan Capistrano, the Orange County Assessor/Recorder's data, Sanborn Fire Insurance Maps and other historic maps, and historic background data provided through the San Diego Historical Society, and the city of San Juan Capistrano history files (on-line data). The record search was conducted for the Cultural Resources Assessment Report and for the Historic Property Evaluation which have been included as Appendices 4.5-A and 4.5-B, respectively. The previously recorded cultural resources located within a one-quarter mile of the Proposed Project are shown in Table 4.5-1, Previously Recorded Cultural Resources in the Proposed Project Area. All previously recorded cultural resources were then evaluated further to determine whether the Proposed Project would result in a significant impact under CEQA.

4.5.2.2 Native American Scoping

In order to acquire more information about potential cultural resources located in or near the Proposed Project area, a request for information in the Sacred Lands file database was submitted to the Native American Heritage Commission (NAHC) on January 18, 2012. A list of interested Native American tribal groups and individuals for the Proposed Project area was also requested. The NAHC responded on January 18, 2012 and indicated that there are cultural resources recorded in the NAHC Sacred Lands file for the San Juan Capistrano, Cañada Gobernadora, and the San Clemente USGS quadrangle maps. There are no recorded cultural resources in the NAHC Sacred lands file within the Dana Point USGS quadrangle map. The NAHC also enclosed a list of Native American individuals and/or organizations that might have further knowledge of cultural resources in or near the Proposed Project area.

On January 20, 2012, TRC sent letters/emails with a Proposed Project location map to all the individuals and/or organizations provided on the list by the NAHC.

Mr. Andrew Salas, Chairperson for the Gabrieliño Band of Mission Indians responded via email on January 25, 2012. He said, "respectfully this project is within the territory of the San Juan Capistrano Indians Juaneño Band of Mission Indians and they can better assist you with more information."

On January 26, 2012, Ms. Joyce Perry Cultural Resources Coordinator for the Juaneño Band of Mission Indians Acjachemen Nation left a telephone message, stating that she and Mr. David Belardes (Chairperson for the tribe) would like to meet to go over the maps for the Proposed Project and point out areas of sensitivity and concern. On January 30, 2012, TRC archaeologist Susan Underbrink spoke with Ms. Perry to indicate that she would contact SDG&E to help arrange a time and place for the meeting. On March 19, 2012, Ms. Joyce Perry and Mr. David

Belardes met with TRC archaeologist Ms. Susan Underbrink, M.A., RPA, TRC lead planner Mr. Josh Taylor, as well as SDG&E personnel, Mr. Chris Terzich, Ms. Mary Turley, and Mr. Duane Cave. The meeting was to allow Mr. Belardes and Ms. Perry the opportunity to view larger scale maps of the Proposed Project, to discuss the Proposed Project in more detail, and to have the opportunity to express concerns and indicate any special areas of concern. On March 29th, 2012 Ms Perry sent an email stating, "After reviewing maps and meeting with you and representatives from SDG&E we are recommending archaeological and Native American monitors for most of the site locations. We trust that you or persons from SDG&E would keep us informed on the progress of this project." There has been no other correspondence as of this time.

4.5.2.3 Cultural Resources Field Survey Methods

TRC archaeologists conducted archaeological field surveys on March 12, March 19, and 21, 2008, and additional field visits and/or surveys occurred on September 29 and 30; October 11 and 12; and December 28 and 29, 2011. Additional field surveys occurred on February 28, 2012, and March 15, 2012. The purpose of the cultural resource field surveys was to relocate and update any previously recorded cultural resources, as well as to check for the presence/absence of any cultural resources on any previously unsurveyed portions of the Proposed Project area. During the surveys, the entire alignment was driven and each proposed and existing structure location was surveyed as well as any known staging areas, possible areas of new access roads or areas in which the roads would be widened. Each proposed and existing structure location was surveyed using transects spaced at five to ten meters. For any road widening each side of the existing access road was surveyed using five to ten meter transects. All cleared areas were thoroughly examined for artifacts. Rodent burrows were checked for additional signs of potential subsurface cultural resources. In areas of poor visibility meandering transects were utilized to cover any open areas. Whenever possible a 100 foot survey buffer on each side of the transmission line was utilized. In all cases a GPS, aerial and topographic maps were utilized; field notes and photographs were taken.

4.5.2.4 Paleontological Resources

A thorough literature and record search was conducted by the Natural History Museum of Los Angeles. Relevant published geologic maps and reports, unpublished paleontological reports and unpublished museum collection locality data were reviewed. The Proposed Project area and a one mile radius were searched for fossil localities. Upon review of the paleontological resources record search and review of geologic formations in the Proposed Project area, it was determined that the potential for paleontological resources was present, and therefore a field reconnaissance was not conducted. The paleontological record search results letter can be found in Appendix 4.5-C.

4.5.3 Existing Conditions

4.5.3.1 Regulatory Setting

Federal Regulations

National Historic Preservation Act

Enacted in 1966, the National Historic Preservation Act, 16 U.S.C. §470 et seq. (NHPA) has become the foundation and framework for historic preservation in the United States. The NHPA authorizes the Secretary of the Interior to expand and maintain a National Register of Historic Places, establishes an Advisory Council on Historic Preservation as an independent federal entity, requires federal agencies to take into account the effects of their undertakings on historic properties, affords the Advisory Council on Historic Preservation a reasonable opportunity to comment on any undertaking that may affect historic properties listed, or eligible for listing, in the National Register of Historic Places, and makes the heads of all federal agencies responsible for the preservation of historic properties owned or controlled by their agencies.

16 U.S.C. §470 (Section 106) of the NHPA governs federal regulations for cultural resources. The goal of the Section 106 process is to offer a measure of protection to sites that are determined eligible for listing on the National Register of Historic Places. The criteria for determining National Register eligibility are found in 36 Code of Federal Regulations Part 60.

Native American Graves Protection and Repatriation Act

For activities on federal lands, the Native American Graves Protection and Repatriation Act (NAGPRA), enacted in 1990, provides a framework for determining the rights of lineal descendants and Native American tribes to repatriate Native American remains, funerary objects, sacred objects, or other objects of cultural patrimony with which they are associated. NAGPRA applies to items found on federal lands, and agencies that obtain federal funding. It requires consultation with "appropriate" Indian tribes prior to the intentional excavation, or removal after inadvertent discovery, of several kinds of cultural items, including human remains and objects of cultural patrimony.

Paleontological Resource Preservation Act

On March 30, 2009, the Paleontological Resources Preservation Act, 16 U.S.C. 470aaa (PRPA) became law. This requires the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on Federal lands using scientific principles and expertise. New policies from these agencies regarding paleontological resources are in progress.

Camp Pendleton

For the portion of the Proposed Project within Camp Pendleton, the above Federal laws will apply.

State Regulations

California Environmental Quality Act

CEQA requires that impacts to cultural resources be identified and, if impacts will be significant, that mitigation measures be implemented to reduce those impacts to the extent feasible. In the protection and management of the cultural environment, both the statute and its *CEQA Guidelines* provide definitions and standards for cultural resources management. The term "historical resource" is defined as follows:

> *(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the California Register of Historical Resources.*
>
> *(2) A resource included in a local register of historical resources or identified as significant in a historical resource survey shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.*
>
> *(3) Any object, building, structure, site area, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a cultural resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources, including the following:*
>
> *a. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;*
>
> *b Is associated with the lives of persons important in our past;*
>
> *c. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or*
>
> *d. Has yielded, or may be likely to yield, information important in prehistory or history.*

The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources, or identified in a historical resources survey does not preclude a lead agency from determining that the resource may be a historical resource.

As defined in Section 21083.2(g) of CEQA, a "unique archaeological resource" is:

> *An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:*
>
> *(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.*
>
> *(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.*
>
> *(3) Is directly associated with a scientifically recognized important prehistoric or historical event or person.*

Section 15064.5(a) (3) of the *CEQA Guidelines* explains that effects on cultural properties that qualify as historical resources or unique archaeological resources would be considered adverse if they involve physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired.

The statutes and guidelines cited above specify how cultural resources are to be managed in the context of projects subject to CEQA. Briefly, archival and field surveys must be conducted, and identified cultural resources must be inventoried and evaluated in prescribed ways.

California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (Cal NAGPRA) of 2001 is contained in the California Health and Safety Code Sections 8010-8021, and 8025-8030. Cal NAGPRA provides for the repatriation of human remains and cultural items in the possession or control of a state or local agency or museum to the rightful California Native American tribe. This law defines the term California Native American tribe to include non-federally recognized groups.

California Public Resources Code

Provisions can be found under the Public Resources Code regarding the treatment of human remains. These provisions are detailed in Section 5097.9 through 5097.996. These sections explain the actions to be taken when Native American remains are found. Section 7050.5 of the California Health and Safety Code states that anyone who knowingly disinters, disturbs, or willfully removes any human remains in or from any location other than a cemetery without the authority of law is guilty of a misdemeanor, except those circumstances as described in Section 5097.99 of the Public Resource Code. Under these provisions if a county coroner determines that remains found during excavation or disturbance of land are Native American, the coroner must contact the NAHC within 48 hours, and the NAHC must determine and notify a Most Likely Descendent (MLD) who shall complete inspection of the site within 24 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Local Regulations

Orange County

The Orange County regulations and policies pertaining to cultural resources can be found in the Resources Element of the *County of Orange General Plan.* The *County of Orange General Plan* current version was adopted on March 22, 2011 (Board of Supervisors Resolution 11-044).

The Resources Element includes three goals that deal with Cultural –Historic Resources. Goal 1 is to raise the awareness and appreciation of Orange County's cultural and historic heritage, Goal 2 is to encourage through a resource management effort the preservation of the County's cultural and historic heritage. Goal 3 is to preserve and enhance buildings, structures, objects, sites, and districts of cultural and historic significance. Goal 2 has the following policies addressing archaeological, paleontological, and historical resources that shall be implemented at appropriate stage(s) of planning:

- To identify archaeological, paleontological, and historic resources through literature and records research and/or surface or on-site surveys.
- To evaluate archeological resources through subsurface testing to determine significance and extent, to evaluate historic resources through comparative analysis or through subsurface or materials testing.
- To observe and collect archaeological resources during the grading of a project; to monitor and salvage paleontological resources during the grading of a project.
- To preserve archaeological resources by maintaining them in an undisturbed condition, or excavating and salvaging materials and information in a scientific manner. To preserve paleontological resources by maintaining them in an undisturbed condition. To preserve significant historic resources by one or a combination of the following alternatives, as agreed upon: adaptive reuse of historic resource; maintaining the historic resource in an undisturbed condition; moving the historic resource and arranging for its treatment, salvage and conservation of significant elements of the historic resources; or documentation (i.e. research narrative, graphics, photography) of the historic resource prior to destruction.

City of San Juan Capistrano

The city of San Juan Capistrano has a rich historic background anchored by the founding of Mission San Juan Capistrano in 1776. The City has identified the preservation of its cultural resources as an important factor to consider when evaluating future development within San Juan Capistrano, to assist with historic preservation in the City, the cultural heritage commission (CHC) was created. The CHC compiles and maintains the City's Inventory of Historical and Cultural Landmarks (IHCL), which includes 40 developed properties and archaeological sites, six historic districts, and four historic streets. The Proposed Project does not affect any resources included on the IHCL, and is not located within any of the six historic districts.

The city of San Juan Capistrano goals and policies pertaining to cultural resources can be found in the Cultural Resources Element of the *City of San Juan Capistrano General Plan.* The majority of the *City of San Juan Capistrano General Plan* was adopted on December 14, 1999;

the housing element was approved November 2001, with a General Plan Amendment on May 7, 2002. The Cultural Resources Element includes a listing of existing historical sites. The Proposed Project does not affect any historical sites included in this listing.

The city of San Juan Capistrano has adopted a Historical and Cultural Landmark Ordinance, which forbids damage of any kind to any resource listed in the City's IHCL without first obtaining City Approval. The Proposed Project does not affect any resource listed in the City's IHCL.

The City has also adopted a Historic Preservation Ordinance. This ordinance is to protect historic resources within historic districts, and includes the following goals and policies, which are derived from the General Plan:

> *Cultural Resources Goal 1: Preserve and protect historical, archaeological, and paleontological resources.*
>
> *Policy 1.1: Balance the benefits of development with the project's potential impacts to existing cultural resources.*
>
> *Policy 1.2: Identify, designate, and protect buildings and sites of historic importance.*
>
> *Policy 1.3: Identify funding programs to assist private property owners in the preservation of buildings and sites of historic importance.*

(San Juan Capistrano Municipal Code, Sec. 9-2.327.)

The City Code further allows the City to designate a Cultural Resources/Historic Preservation District as an Environmental Overlay. The purpose of the Historic Preservation overlay is "to establish regulations for those areas of the City which, due to their historical or cultural significance, require special consideration to insure their preservation as a community resource." (San Juan Capistrano Municipal Code, Sec. 9-3.407). The Historic Preservation overlay requirements are in addition to the underlying zoning. The Proposed Project is not located within a Historic Preservation overlay area.

The City has also adopted a series of polices (City Council Policies 601, 602, 603 and 606) to address a broad range of preservation issues, including archaeological monitoring for development projects, reports for potentially historic sites, modifications to designated historic sites, and historic depiction programs for new non-residential projects.

Council Policy 601 addresses historic, archaeological and paleontological resource management. Council Policy 601 defines "Historic Resource" as "a district, site, building, structure or object significant in American history, architecture, engineering, archaeology or culture at the national, state or local level." A "Significant Historic or Cultural Resource" is defined as,

> *an artifact that can be associated with an event or person having a recognized significance in California or American history, or recognized as having scientific importance in the prehistory period, has a special or particular quality such as oldest, best example, or last surviving example of its kind; is at least 50 years old and possesses substantial stratigraphic integrity, or involves important research*

> *questions that historical research has shown can be answered only with archaeological methods.*

City of San Juan Capistrano staff has referred to the former utility structure located at the Capistrano Substation as a "historic resource."

The Proposed Project would not affect any resources that are listed on the City's IHCL, the California Register of Historic Resources, or the National Register of Historic Places, or any resources that have been formally determined to be eligible for listing in the California or National Registers.

Council Policy 601 defines a "Significant Paleontological Site" as "an area where the presence of paleontological artifacts which have a particular scientific importance such as containing a complete species [sic], or located in a unique stratigraphic location and/or geologic formation." The Proposed Project would not impact any known Significant Paleontological Site.

The City has also established a list of Buildings of Distinction (BOD). According to the city of San Juan Capistrano website, the BOD list was created between 1977 and 1987 and,

> *serves as a list of structures and sites which are potentially eligible for inclusion on the City's Inventory of Historical and Cultural Landmarks when they meet all listing criteria and/or have property owner concurrence to be added to the Inventory. The BOD is an honorary designation and imposes no restrictions nor conveys any benefits.*

The BOD list notes that proposed development on BOD sites may need to address additional issues under CEQA. The City's BOD list includes the former utility structure at Capistrano Substation, which was constructed in 1918.

The City is currently developing a Historic Town Center Master Plan, the boundaries of which are Acjachema Street to the north, the I-5 Freeway to the east, Avenue La Paloma to the south, and Paseo Adelanto to the west. This proposed Historic Town Center does not include the Proposed Project's Capistrano Substation.

City of San Clemente

The city of San Clemente goals and policies pertaining to cultural resources can be found in the Natural and Historic/Cultural Resources Element of the *City of San Clemente General Plan.* The *City of San Clemente General Plan* was adopted on May 6, 1993 with amendments through May 6, 2003. The city of San Clemente has no policies at this time directly referring to paleontological resources.

The city of San Clemente's goal is to promote the preservation and restoration of sites, structures, and districts, which have architectural, historical, archaeological and/or cultural significance to the city of San Clemente. In order to obtain this objective, the City has put forward several policies.

Policy 10.3.1 is to establish criteria for surveying archaeological resources, historic vegetation and cultural resources.

Policy 10.3.2 is to complete a comprehensive survey of cultural resources, historic vegetation and archaeological resources that encompass the city and its sphere of influence and update the current inventory of historic resources.

Policy 10.3.3 is to continue the implementation of the city's existing ordinance for preservation of designated historic sites and structures.

4.5.3.2 Cultural Setting

Historic Overview

Prehistoric Background

It is generally believed that human occupation of southern California began approximately 10,000 years before present (BP). Although there are a variety of cultural chronologies for southern California, the two most currently accepted chronologies are one that interprets the prehistory of coastal southern California through temporal horizons, and one that looks at the cultural differences not as temporal distinctions, but as local traditions. The four most recognized temporal horizons along the southern California coast are: Early Man, Milling Stone, Intermediate, and Late Prehistoric.

The Early Man Horizon spans the period from the end of the Pleistocene to approximately 8,000 BP, archaeological assemblages attributed to this horizon are characterized by large projectile points and scrapers. The limited data available suggests that prehistoric populations focused on hunting and gathering while moving around the region in small nomadic groups.

The Milling Stone Horizon is often characterized by the appearance of hand stones (manos) and grinding slabs (metates), this horizon tentatively dates to between 8,000 BP and 3,000 BP. Assemblages in the early Milling Stone period reflect an emphasis on plant foods and foraging subsistence systems. For inland locales, it has been assumed exploitation of grass seeds formed a primary subsistence activity. Artifact assemblages include choppers and scraper planes but generally lack projectile points. The appearance of large projectile points in the latter portion of the Milling Stone Horizon suggests a more diverse economy. The distribution of Milling Stone sites reflects the theory that aboriginal groups may have followed a modified central based wandering settlement pattern. In this semi-sedentary pattern, a base camp would have been occupied for a portion of the year, but a small population group seasonally occupied subsidiary camps in order to exploit resources not generally available near the base camp. Sedentism apparently increased in areas possessing an abundance of resources, which were available for longer periods of time. More arid inland regions would have provided a seasonally and a dispersed resource base, restricting sedentary occupation.

Dated to between 3,000 BP and 1,250 BP, the Intermediate Horizon represents a transitional period. Little is known about the people of this period, especially those of inland southern California. Sites assemblages retain many attributes of the Milling Stone Horizon. Additionally, Intermediate Horizon sites contain large stemmed or notched projectile points and portable mortar and pestles. The mortars and pestles suggest that the aboriginal populations may have harvested, processed, and consumed acorns. Neither the settlement-subsistence system nor the cultural evolution of this period has been well understood due to a general lack of data. It has been proposed that sedentism increased with the exploitation of storable food resources (acorns)

and that the duration and intensity of occupation of base camps increased, especially toward the latter part of this horizon.

Extending from 750 to Spanish contact in 1769, the Late Prehistoric Horizon reflects an increased sophistication and diversity in technology. The beginning of the Late Prehistoric Period occurred roughly with the appearance of the smaller "Cottonwood" points, suggesting the introduction of the bow and arrow. In addition, assemblages include steatite bowls, asphaltum, grave goods, and elaborate shell ornaments. Use of bedrock milling stations was widespread during this time. Pottery begins to appear at the end of the Late Prehistoric Period. Increased hunting efficiency and widespread exploitation of acorns provided reliable and storable food resources. These innovations apparently promoted greater sedentism.

Historic Background

The first Europeans to explore future California were in the 1542 expedition of Juan Rodriguez Cabrillo. Orange County is thought to have been first visited in 1769 by Gaspar de Portola, as he led a 62-person expedition from San Diego to Monterey. Shortly after this visit, the seventh Franciscan mission in California was founded in 1776, the Mission San Juan Capistrano.

After an initial period of exploration, the Spanish concentrated on the founding of presidios, missions, and secular towns with the land held by the Crown (1769-1821). In contrast, the later Mexican policy stressed individual ownership of the land. In 1821, Mexico declared independence from Spain and within 12 years began closing the missions. Former mission lands were granted to soldiers, other Mexican citizens, and a few wealthy foreigners. In 1841, the former mission became a Mexican pueblo named San Juan Capistrano. The Governor, Pio Pico granted two large ranchos to his sister's husband John Forster, an English immigrant. All Euroamericans were required to become Catholics, learn Spanish and become Mexican citizens prior to any marriages to Californians.

The signing of the Treaty of Guadalupe Hidalgo in 1848 ended the Mexican-American War and California became a territory of the United States. The discovery of gold at Sutter's Mill in 1848 influenced the history of the state and the nation. Thousands of settlers and immigrants poured into the state, particularly after the completion of the transcontinental railroad in 1869. California became the 31st state in 1850, primarily due to the gold rush. The 1860's and 1870's show an increase in farmers, and merchants into the area. In March 1889, the County of Orange was created, occupying 780 square miles.

Orange County remained primarily agricultural through most of the twentieth century. The early 20th century came with advanced technology, including utility distribution companies, such as water, electricity, and telephone, and paved streets. I-5 was completed in the 1950s and connected many Orange County communities with Los Angeles. By the 1980s, the county was developed with numerous master planned communities. Today Orange County is identified with amusement parks, including Disneyland, as well as its many miles of beaches.

Ethnographic Overview

The Proposed Project is located in an area known ethnographically to have been occupied by the Juaneño (now known as the Acjachemen) and the Luiseño Native American groups when the Spanish arrived in 1769.

Juaneño/Acjachemen

Ethnographic descriptions of the Juaneño or Acjachemen are often given in terms of their neighbors to the south, the Luiseno, but some also point to a separate ethnic identity. Perhaps the most important account of the Juaneño/Acjachemen culture was written by Geronimo Boscana, a friar at the Mission San Juan Capistrano from 1812 to 1826.

The Juaneño/Acjachemen were semi-sedentary hunters and gatherers. One of the most important food resources for the group was acorns gathered from oak groves in canyons, drainages, and foothills. Acorns were ground into flour using mortars and pestles. Protein was supplemented through the meat of deer, rabbits, and other animals, hunted with the bow and arrow or trapped. Shellfish was collected and eaten, and the shell was then used to make hooks for fishing, beads, and other ornaments.

The Juaneño/Acjachemen lived in villages of up to 250 people located near permanent water and a variety of food sources. The San Juan Basin was densely populated and villages were closely spaced because of the year-round availability of fresh water in San Juan Creek. Each village was typically located in the center of an established area from which resources for the group were gathered. Subsequently, small groups would leave the village for a short time to hunt fish or gather plant materials.

Luiseño

The Luiseño occupied a territory from Agua Hedionda to Aliso Creek along the coast, and Santiago Peak to the valley of San Jose inland.

The Luiseño maintained a hunting and gathering economy based around autonomous semi-sedentary village groups, each with its own hunting and gathering areas. Villages were generally in places of "vertical" territories and subsistence resources – water sources at the bottom of river valleys, surrounded by the slopes of the valley, with the saddles and flats along the ridges surrounding the valleys holding productive oak groves. Food resources in this stratified environment matured at different seasons, providing resources for the village most, if not all, of the year.

Luiseño villages were based in different ecological zones (coastal, inland, interior), and the surrounding area and resources were divided into locations owned by individuals, families, collective groups and the community as a whole. In addition, each village group appears to have also owned, or at least had rights to, land on the coast and on Palomar Mountain. Although there was regional variation in subsistence strategies, the acorn was the principle staple food throughout Luiseño territory, and plant foods in general were the dominant source of dietary calories. Fire was used to manage and enhance selective plant growth, and some researchers have argued that plant husbandry was a vital part of Luiseño food gathering. Game animals such as deer, rabbit, jackrabbit, and a number of other medium-to-small size animals provided a large amount of the dietary protein, as did anadromous fish. On the coast, shellfish, fish, and sea mammals were important to the diet.

Although the Luiseño are typically described as isolationist, marriages were often arranged between villages in different ecological niches both to ensure exchange between villages with complimentary food supplies or schedules, and to ensure political and economic ties between

villages. Exchange networks were extensive and trade items from near the Proposed Project have been found as far away as Oregon, and vice-versa.

Cultural Resources in the Proposed Project Area

Record Search Results

The records search and subsequent research identified 48 previously identified cultural resources within one-quarter mile of the Proposed Project (refer to Table 4.5-1). Thirteen previously recorded cultural resources lie within the Proposed Project area. A map of the cultural resources within the Proposed Project is included as a Confidential Attachment to the Cultural Assessment Report found in Appendix 4.5-A.

Table 4.5-1: Previously Recorded Cultural Resources within the Proposed Project Area*

Primary Number	Brief Description	Recorder and date
30-000362	Dense lithic scatter	Riddell, 1972
30-000363	Lithic scatter with groundstone	Riddell, 1972
30-000640	Light lithic scatter	Langenwalter, 1977
30-000700	Sparse flake and groundstone scatter	Schuster & Jacobs, 1977
30-000779	Minimal lithic scatter (2 flakes)	Allen, 1979
30-000780	Isolated Mortar	Allen, 1979
30-000781	Isolate-core	Allen, 1979
30-000909	Small lithic scatter with groundstone	Grove, Schwartz, Cooley, 1980; Hatheway, McKenna, 1988
30-001162	Lithic scatter-basalt flakes	Hatheway, McKenna, 1988
30-100072	Isolated felsite flake	Brown, Becker, 1989
30-176663/19-186804	BNSF Railroad	Ballester, Tang, 2002; McCormick, 2007
30-176664	Metrolink Railroad, BNSF	Smallwood, Tang, 2002;
30-179873	1917-18 SDG&E building	McKenna, 2008

**Significance is not assumed based on prior recordation as a cultural resource.*

Archaeological Field Survey Results

Many of the areas surveyed have been previously disturbed. Existing access roads and possible areas of new access roads or areas in which the roads would be widened, structures, laydown areas, new and existing pole locations, temporary storage areas, and stringing areas, as well as substations were surveyed. None of the previously recorded prehistoric cultural resources were relocated within the Proposed Project area during any of the field surveys. No new cultural resources were located during any of the cultural resource surveys. All three modern era sites 30-176663, 30-176664, and 30-179873 were found to be the same as they appeared on the site records from the information center.

Access Roads

All existing access roads and possible areas of new access roads were surveyed. Some of the existing access roads had been recently graded. Shoulders of the access roads were also surveyed; visibility for the shoulders was highly variable.

Structure Sites

Many of the existing structures had large cleared areas, and have been impacted by routine structure maintenance. Ground visibility overall was quite good for the structures. All proposed and existing structure locations were surveyed. Particular attention was given to the structures that are located within known archaeological sites.

Former Utility Structure

For the purposes of this section, "the former utility structure" refers to the 1918-constructed building that fronts on Camino Capistrano. Some City documentation may refer to this building as the "Capistrano Substation." Furthermore, the historical assessment that was prepared for this building also refers to this as the "Capistrano Substation" consistent with City documentation. The Capistrano Substation, for the purposes of this discussion and as referred to by SDG&E, is the 1950's-built currently operating substation located on the eastern end of the property.

The former utility structure (30-179873) is not listed on the IHCL, and is not located within the boundaries of the City's Historic Town Center or Historic Town Center study area but is included in the City's BOD list. The BOD was created from 1977 to 1987 "as a list of structures and sites which are potentially eligible for inclusion on the City's IHCL when they meet all listing criteria and/or have property owner concurrence to the inventory."

The BOD list is a list of properties that are considered to be important in the community, but are not formally designated as a historic property and do not meet the CEQA definition of "historical resource." A building of distinction is one which is unique and of interest to the community as a whole and may be potentially historic but that has not been designated as a historic resource. Due to perhaps age or alteration, some may not qualify for more formal designation and protection.

The existing former utility structure was studied in the Historic Assessment completed in 2008 (refer to Appendix 4.5-B), which concluded based on a preponderance of the evidence that the building does not meet the criteria for eligibility as a historic resource on the state or federal level. Although recent correspondence from the City states that the former utility structure is located "in a historic district" and that the substation is "historically significant," these claims are not supported by readily available evidence. SDG&E has asked the city of San Juan Capistrano to provide support for these statements and is awaiting a response.

Thus, based on the available evidence, the former utility structure does not meet the definition of a "historical resource" under CEQA. The inclusion of the former utility structure on the BOD list does not make the building a historic resource, and neither does the inclusion on the BOD create a presumption of significance. The Historic Assessment supports the conclusion that the former utility structure is not historically or culturally significant.

Substations

The Proposed Project area around the Talega Substation also was surveyed to determine if there were any cultural resources potentially impacted by the Proposed Project. Ground visibility was poor in most areas due to heavy ground cover. The prehistoric archaeological sites were not relocated.

Laydown Areas and Stringing Areas

All of the known and proposed laydown and stringing areas as of March 15, 2012 have been surveyed. Most of the stringing and laydown areas are within the existing SDG&E ROW. Those that are in new ROW are not in areas determined to have cultural or historic resources based on the recent surveys.

4.5.3.3 Paleontological Resources within the Proposed Project Area

Based on the records search conducted through the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County (refer to Appendix 4.5-C), no previously recorded vertebrate paleontological sites are known to exist within the Proposed Project area. However, paleontological sites do occur in similar age rock units outside the Proposed Project area but within the southern Orange County/San Diego region.

The Santiago Formation (Tsa) is a sedimentary formation, which is, more than 45 million years in age includes shallow marine and non-marine units. The lower portion of this formation consists of a coarse sandstone and conglomerate with poorly preserved marine mollusks To the south, in northern San Diego County, several shark and fish faunas have been collected from rocks of similar age.

The upper portion of this formation consists of friable coarse sand and conglomerate of presumed non-marine origin. Petrified wood is known from several areas with the upper part of the Santiago Formation. Recently, fossil reptiles, birds, and mammals have been collected from Santiago Formation at nearby Basilone Road, Camp Pendleton. The literature search revealed that there are outcrops of the Santiago Formation at and near the Talega Substation.

The Monterey Formation (Tm) consists of predominately fine-grained siltstone, mud shale, and diatomaceous shale that were deposited in a marine environment of moderate to deep in depth, some 12 to 14 million years ago. This fine-grained sequence of rocks is locally fossiliferous and has produced a number of fossils vertebrates such as dolphins, porpoises, sea cows, whales, bony fish, sharks, and birds. In southern Orange County, some reptiles and non-marine mammals are known from beds within the Monterey Formation. The literature search revealed that there are outcrops of the Monterey Formation at or near the Pico Substation.

The Capistrano Formation-Siltstone Member (Tcs) rock unit consists of yellow-gray to light gray siltstones, with interbeds of white sandstone and buff concretionary beds, and was deposited in moderately deep marine waters some six to nine million years ago.

In South Orange County, the Capistrano Formation is locally fossiliferous and has yielded scientifically important fossils including remains of mollusks, fish, sharks, turtles, birds and

marine mammals. The literature search revealed that there are outcrops of the Capistrano Formation from the south side of San Juan Creek to the vicinity of the Pico Substation.

Non-marine Terrace Deposits (Qt) consist of interbedded silt, clayey sand, and conglomeratic coarse-grained sand. Radiocarbon dates indicate that most of the terrace deposits in Orange County are older than 32,600 years. Elsewhere, fossil remains of large extinct Pleistocene-age mammals such as sabertooth cats, sloths, bison, mammoths, mastodons, and camels are known from these deposits. The literature search revealed non-marine terrace deposits on either sides of Horno and San Juan Creeks.

Quaternary alluvium (Qac) of late Pleistocene to Holocene age occur locally within active stream drainages of the Proposed Project such as Horno, San Juan, Prima Deshecha, and Segundo Deshecha Creeks. Geologic units representing stream, terrace, fluvial, alluvium fan, and floodplain deposits have been lumped under this geologic designation. The upper portion of these deposits is probably Holocene in age and are considered of limited paleontological interest.

Any excavations in the Capistrano Formation, the Monterey Formation or the Santiago Formation, exposed in the elevated portions of the Proposed Project route area, may encounter significant fossil vertebrate remains and are considered moderate to high in paleontological sensitivity.

4.5.4 Potential Impacts

4.5.4.1 Significance Criteria

Cultural Resources

Under CEQA, Proposed Project construction, operation, and maintenance effects to unique or important cultural resources must be considered. A cultural resource is considered unique or important if it meets any of the following criteria:

- Is associated with events that have made a significant contribution to the broad patters of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work on an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

The Proposed Project could have a potentially significant impact to cultural resources if it would:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

c) Directly or indirectly, destroy a unique paleontological resource or site or unique geologic feature.

d) Disturb any human remains, including those interred outside of formal cemeteries.

For purposes of the first two thresholds, a "substantial adverse change" is defined as physical destruction, demolition, relocation, or alteration of an historical resource in Section 15064.5 (b) (1) of the *CEQA Guidelines*.

4.5.4.2 Question 5a - Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

As explained below, the Proposed Project would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 unless the CPUC, as Lead Agency, determines that the former utility structure located at the Capistrano Substation meets the definition of a "historical resource." CEQA requires that any such determination be supported by substantial evidence in light of the whole record. The conclusion in this PEA is based on the readily available substantial evidence, including the Historic Assessment contained in Appendix 4.5-B.

As detailed above, the term "historical resource" is defined by CEQA to presumptively include: resources that are listed in (or determined to be eligible by the State Historical Resources Commission for listing in) the California Register of Historical Resources; resources that are included in a local register of historical resources or identified as significant in a historical resource survey; and any object, building, structure, site area, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, as supported by substantial evidence in light of the whole record.

There are only two known "historical resources" within the Proposed Project area, neither of which would be impacted by the Proposed Project. The two resources are railroad sites (30-176663, and 30-176664), which would be spanned by the new transmission lines and would not be altered or impacted by the Proposed Project. Existing transmission lines already span the railroad sites at the Proposed Project location. Therefore, the Proposed Project would not cause a substantial adverse change in the significance of a historical resource as defined by CEQA.

The city of San Juan Capistrano has referred to the former utility structure at the Capistrano Substation as an "historic resource." Notwithstanding the City's characterization, a review of the available evidence does not support the conclusion that the former utility structure meets the CEQA definition of an "historical resource."

The former utility structure is not listed in the California Register of Historical Resources, has not been determined to be eligible for listing on the California Register of Historical Resources by the State Historical Resources Commission, and there is no evidence that the State Historical Resources Commission would determine the former utility structure to be eligible for listing in the California Register of Historical Resources. Likewise, the former utility structure is not included in the City's IHCL, and has not been formally identified as significant in any historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code. The only historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code that has been submitted to CHRIS as the official repository for historical

resource surveys concluded that the structure was not significant. As discussed below and in Appendix 4.5-B, the former utility structure does not qualify for formal designation on the California Register of Historical Resources or the City's IHCL.

The former utility structure is identified as a BOD on the city of San Juan Capistrano's list. Although this is an honorary local designation that imposes no restrictions and does not constitute a finding or presumption of historical significance, sites and structures on the BOD list are still considered important to the community. For that reason a thorough Historic Assessment based on both records searches and a field survey was conducted.

The Historic Assessment was prepared by an expert who is listed on the CHRIS consultant list for architectural historians, and concluded that a preponderance of the evidence demonstrated that the former utility structure is not a historical resource as defined by CEQA (Appendix 4.5-B, page 35). In addition, the former utility structure fails to meet the minimum requirements for significance under the state or federal guidelines (refer to Appendix 4.5-B, pages 34-35) despite being included on the City's BOD list. The criteria for evaluating the building were derived from the federal (NHPA, Section 106), state (CEQA) and local (San Juan Capistrano) guidelines. As noted in the Historic Assessment, of great importance to whether a site is eligible for nomination is the integrity of the resource. A significant resource must have integrity. As discussed in more detail in the Historic Assessment found in Appendix 4.5-B, the building does not qualify for formal designation on the City's IHCL, and does not qualify as a historical resource under State or Federal law (Appendix 4.5-B, page 31-35). There have been significant alterations that have impacted the integrity of the building's exterior, as well as alterations in the interior. Based on field surveys, records search and a preponderance of the evidence, the Historic Assessment also noted that there has been a noticeable level of loss of integrity with respect to the original design. As a result, the Historic Assessment concluded that the building fails to meet the minimum requirements for recognition as an historical resource with respect to the federal and state criteria for significance. Thus, even though the building was listed on the BOD list sometime between 1977 and 1987, later expert review has determined that the structure is not eligible for state or federal registry, and therefore demolishing the building would not result in a significant impact to a "historical resource" as defined in CEQA Guidelines 15064.5.

Further evaluation of the former utility structure in the context of local historic preservation policies and regulations did not reveal any additional facts that would suggest the structure might be considered an historic resource. Specifically, the Proposed Project is outside of the city of San Juan Capistrano's historic downtown and designated Historic Town Center. Although city of San Juan Capistrano staff has indicated that the Capistrano Substation property is located within a historic district, there is no readily available information to support this statement. Rather, the formally proposed limits for the Historic Town Center planning area are Acjachema Street to the north, Paseo Adelanto to the west, Avenue La Palma to the south and the I-5 Freeway to the east, which does not include the Capistrano Substation. In fact, the former utility structure is not located within any of the city of San Juan Capistrano historic districts nor is it included as part of the *Historic Town Center Master Plan General Plan Amendment Rezone*. The former utility structure is also not discussed in the *City of San Juan Capistrano General Plan* Cultural Resources Element. In addition, the former utility structure does not fall within a City Cultural Resources/Historic Preservation District.

There is no readily available evidence to suggest that the Director of Planning has formally determined that any part of the Proposed Project is eligible for listing in the Local Register according to the standards for inclusion.

In addition, the former utility structure does not fall within the Policy's definition of a "Significant Historic or Cultural Resource," which is

> *an artifact that can be associated with an event or person having a recognized significance in California or American history, or recognized as having scientific importance in the prehistory period, has a special or particular quality such as oldest, best example, or last surviving example of its kind; is at least 50 years old and possesses substantial stratigraphic integrity, or involves important research questions that historical research has shown can be answered only with archaeological methods.*

The Historic Assessment (see Appendix 4.5-B) confirms that the former utility structure is not historically significant.

The Proposed Project would require a demolition permit. Because the building is listed as a BOD, the demolition permit could be conditioned on advertising the building for relocation; requiring preparation of updated architectural drawings prior to demolition; fully photo-documenting the building's interior and exterior; and allowing for salvaging of certain elements within the building, such as special casement windows. The City has discretion as to which if any conditions to impose. To the extent issuance of a demolition permit by the City is a discretionary action CPUC approval of the CPCN would preempt local authority.

The fact that the former utility structure is included on the city of San Juan Capistrano BOD list does not compel designation as a "historical resource." As noted above, inclusion on that list does not impose any restrictions, and the applicable thresholds relative to the significance of structures found in the city of San Juan Capistrano BOD list are those listed above under CEQA.

Nonetheless, SDG&E proposes to take the following steps found in Council Policy 602, which applies to the alteration, modification, or demolition of "significant" structures:

1. Advertise for a period of three months that the former utility structure may be available for relocation.
2. Prepare a photographic record of the former utility structure. Photographs will include 1) each elevation, 2) close-ups of any unusual or unique architectural features and 3) views of the structure from a distance. In addition, measured drawings or plans will be included.
3. If not relocated, allow the removal of any architectural elements of the former utility structure for a period of two weeks at the expense of any local historic interest group or organization removing the element**.**

It is important to note that this policy does not apply because the structure is not a "significant historic resource" under Council Policy 601.

Construction and Operation & Maintenance – No Impact

As discussed above, the Proposed Project would not impact the two known "historical resources" located within the Proposed Project Area (railroad sites 30-176663 and 30-176664), and the former utility structure does not meet the CEQA definition of a "historical resource."

4.5.4.3 Question 5b - Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Construction – Less than Significant Impact with Incorporation of APMs

Construction of the Proposed Project (including grading of access roads to Proposed Project facilities and excavation of holes for the installation of the transmission line structures) could potentially impact prehistoric archaeological sites by disturbing subsurface soils, and potentially disturbing or destroying unknown buried cultural deposits. Any possible potential impacts would be reduced to a less than significant level with the implementation of the proposed APM's CUL-1 through CUL-6.

Operation & Maintenance – No Impact

To the extent operation and maintenance of the Proposed Project would occur in the same location as existing facilities and would have the same or substantially the same impacts, frequency and duration as operation and maintenance activities of the existing facilities, such activities are incorporated into the existing environmental setting and baseline for assessing impacts. Moreover, SDG&E already has standard internal programs and practices that avoid cultural impacts and those programs and practices would not change as a result of the Proposed Project. There would be no operational impacts on cultural resources along the Proposed Project once the Proposed Project is constructed. The only activities that would occur would be regular maintenance and repairs, such as structure and insulator replacements. These activities are the same as happen today under existing conditions, and would have no effect on archaeological resources. Therefore, no impacts to cultural resources are anticipated during the continuing operation and maintenance of the Proposed Project.

4.5.4.4 Question 5c - Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

If the Proposed Project directly or indirectly destroys a unique paleontological resource, the impacts to paleontological resources would be considered significant. A fossil is defined as the remains of a prehistoric plant or animal. Fossils are considered to be non-renewable. Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. The sensitivity is based upon fossil data collected from the entire geologic unit, not just from a specific location or survey. Impacts to paleontological resources are identified from high to low. The specific criteria are defined as follows:

- High Potential Rating: Rock units with a high potential for significant paleontological resources are those known to have yielded vertebrate fossils within the Proposed Project area or region. This does not necessarily imply that vertebrate fossils would always be recovered from high potential rated rock units, but only that there are recorded occurrences within the unit.

- Moderate Potential Rating: Rock units possessing some degree of potential, such as favorable depositional environment for resource preservation or lithologically similar rock units in the region that have yielded vertebrate fossils.
- Low Potential Rating: Rock units containing lithologies that do not commonly preserve significant fossil resources such as sediments of Holocene, subHolocene or Recent age are usually considered too young (less than 10,000 years old) in geologic time to preserve fossils.

Construction – Less than Significant Impact with Incorporation of APMs

Although the Proposed Project potentially contains rock unit types that have a high potential for paleontological resources throughout the region (the Santiago, Monterey, and Capistrano Formations), the records search indicated that no previously recorded vertebrate paleontological sites are known to exist within the Proposed Project area (refer to Appendix 4.5-C). There is the potential for impacts to paleontological resources to occur when earthwork activities are performed, such as grading operations and excavation that cuts into the geological deposits (formations) within which fossils are buried, especially when the excavations go below three feet in depth. Impacts by the Proposed Project to unique paleontological resources are potentially high from the south side of San Juan Creek to the Talega Substation. However, potential impacts would be reduced to a less than significant level with the implementation of the proposed APMs CUL-1, CUL-8, and CUL-9.

Operation & Maintenance – No Impact

As discussed above, to the extent operation and maintenance of the Proposed Project would occur in the same location as existing facilities and would have the same or substantially the same impacts, frequency and duration as operation and maintenance activities of the existing facilities, such activities are incorporated into the existing environmental setting and baseline for assessing impacts. Moreover, SDG&E already has standard internal programs and practices that avoid cultural impacts and those programs and practices would not change as a result of the Proposed Project. Ground-disturbing activities associated with Proposed Project operation and maintenance would be performed at similar intensities as they are currently conducted and at the locations already disturbed for Proposed Project construction. Therefore, no impacts to paleontological resources are anticipated during the continuing operation and maintenance of the Proposed Project.

4.5.4.5 Question 5d - Disturb any human remains, including those interred outside of formal cemeteries?

Construction – Less than Significant Impact

There are no known existing cemeteries, previously recorded Native American or other human remains within or directly adjacent to the Proposed Project area. Therefore, the potential for the inadvertent discovery of Native American or other human remains during subsurface construction associated with the Proposed Project is considered low. If human remains are encountered during the course of construction, SDG&E would halt work in the vicinity of the find and would implement the appropriate notification processes as required by law (California

Health and Safety Code 7050.5 and Public Resources Code 5097.98-99, and NAGPRA). As a result, potential impacts would be less than significant.

Operation & Maintenance – No Impact

As previously discussed, to the extent operation and maintenance of the Proposed Project would occur in the same location as existing facilities and would have the same or substantially the same impacts, frequency and duration as operation and maintenance activities of the existing facilities, such activities are incorporated into the existing environmental setting and baseline for assessing impacts. Moreover, SDG&E already has standard internal programs and practices that avoid cultural impacts and those programs and practices would not change as a result of the Proposed Project. Ground-disturbing activities associated with Proposed Project operation and maintenance would be performed at locations that have been previously disturbed for Proposed Project construction. Therefore, no impacts to human remains are anticipated during the continuing operation and maintenance of the Proposed Project.

4.5.5 Applicant Proposed Measures

When implemented, the following APMs would reduce the potential adverse impacts to cultural resources to a less than significant level:

CUL-1 Prior to the initiation of construction or ground-disturbing activities, all SDG&E, contractor, and subcontractor personnel would 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 resources and paleontological resources and to recognize possible buried resources. Training shall inform all construction personnel of the anticipated procedures that would be followed upon the discovery or suspected discovery of archaeological materials, including Native American remains, and their treatment, as well as of paleontological resources.

CUL-2 A qualified archaeologist would attend preconstruction meetings, as needed, and a qualified archaeological monitor would monitor ground disturbing activities in the vicinity of all known cultural resources within the Proposed Project area. The requirements for archaeological monitoring would be noted on the construction plans. The archaeologist's duties would include monitoring, evaluation of any finds, analysis of collected materials, and preparation of a monitoring results report conforming to Archaeological Resource Management Reports guidelines.

CUL-3 Known cultural resources that can be avoided would be demarcated as Environmentally Sensitive Areas. Construction crews would be instructed to avoid disturbance of these areas.

CUL-4 In the event that cultural resources are discovered, the archaeologist would have the authority to divert or temporarily halt ground disturbance to allow evaluation of potentially significant cultural resources. The archaeologist would contact SDG&E's Cultural Resource Specialist and Environmental Project Manager at the time of discovery. The archaeologist, in consultation with SDG&E's Cultural Resource Specialist, would determine the significance of the discovered resources. 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, a Research Design and Data Recovery Program would be prepared and carried out to mitigate impacts.

CUL-5 All collected cultural remains would be cataloged, and permanently curated with an appropriate institution. All artifacts would be analyzed to identify function and chronology as they relate to the history of the area. Faunal material would be identified as to species.

CUL-6 An archaeological monitoring results report (with appropriate graphics), which describes the results, analyses, and conclusions of the monitoring program, would be prepared and submitted to SDG&E's Cultural Resource Specialist and Environmental Project Manager following termination of the program. Any new cultural sites or features encountered would be recorded with the SCCIC or SCIC.

CUL-7 Native American monitoring may be implemented if transmission line construction has the potential to impact identified and mapped traditional locations or places. The role of the Native American monitor shall be to represent tribal concerns and communicate with the tribal council. Appropriate representatives will be identified based on the location of the identified traditional location or place.

CUL-8 A paleontological monitor would work under the direction of a qualified Project paleontologist and would be on site to observe excavation operations that involve the original cutting of previously undisturbed deposits with high paleontological resource sensitivity (i.e., Monterey, Santiago, and Capistrano Formations). A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.

CUL-9 In the event that fossils are encountered, the paleontological monitor would have the authority to divert or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains in a timely fashion. The paleontologist would contact SDG&E's Cultural Resource Specialist and Environmental Project Manager at the time of discovery. The paleontologist, in consultation with SDG&E's Cultural Resource Specialist would determine the significance of the discovered resources. 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. Because of the potential for recovery of small fossil remains, it may be necessary to set up a screen-washing operation on site. When fossils are discovered, the paleontologist (or paleontological monitor) would recover them along with pertinent stratigraphic data. In most cases, this fossil salvage can be completed in a short period of time. Because of the potential for recovery of small fossil remains, such as isolated mammal teeth, recovery of bulk-sedimentary-matrix samples for off-site wet screening from specific strata may be necessary, as determined in the field. Fossil remains collected during monitoring and salvage would be cleaned, repaired, sorted, cataloged, and deposited in a scientific institution with permanent paleontological collections, and a paleontological monitoring report would be written.

4.5.6 References

Bean, Lowell John and Florence Shipek. 1978. Luiseño. In *Handbook of North American Indians*, Vol. 8, California. R.F. Heizer, ed., pp 550-563. Smithsonian Institution, Washington, D.C.

Boscana, Fr. Gerónimo, O.F.M.1933. Chinigchinich: A Revised and Annotated Version of Alfred Robinson's Translation of Father Gerónimo Boscana's Historical Account of the Belief, Usages, Customs and Extravagancies of the Indians of this Mission of San Juan Capistrano Called the Acjachemen Tribe [1846]. Phil T. Hanna, editor. Fine Arts Press, Santa Ana, California. Reprinted 1978. Classics in California Anthropology, 3. Malki Museum Press, Morongo Indian Reservation, California.

Byrd, Brian E. and L. Mark Raab. 2007. Prehistory of the Southern Bight: Models for a New Millennium. In *California Prehistory Colonization, Culture, and Complexity*, edited by T. Jones and K Klar, pp. 215-228. Alta Mira Press, New York.

California [State of], California Environmental Quality Act. 2011. *Statutes and Guidelines*. Printed by the Association of Environmental Professionals.

City of San Clemente. 2012. *City of San Clemente General Plan.* Accessed at: http://san-clemente.org/sc/Inf/Plans/General/Wd10.pdf. Accessed January 24, 2012.

City of San Juan Capistrano. 2012. *Council Policy 601 and 602*. http://www.sanjuancapistrano.org/Index.aspx?page=649. Was viewed on January 24, 2012.

City of San Juan Capistrano, Development Services Department. February 28, 2012. Agenda Report. Accessed at: AGENDA REPORT February 28, 2012 - San Juan Capistrano www.sanjuancapistrano.org/Modules/ShowDocument.aspx?...26621

County of Orange. 2011. *County of Orange General Plan.* http://www.ocplanning.net/GeneralPlan2005.aspx. Was viewed on January 24, 2012.

Kroeber, Alfred L. 1925. *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin No. 78. U.S. Government Printing Office, Washington, D.C.

McKenna, Jeanette A. 2008. An Historic Property Evaluation: The San Diego Gas & Electric Company San Juan Capistrano Substation at 31050 Camino Capistrano, San Juan Capistrano, Orange County, California. Report on file at the SCCIC.

McLeod, Samuel A. 2008. Paleontological Record Search Results letter dated March 4, 2008.

McLeod, Samuel A. 2012. Paleontological Record Search Results letter dated January 11, 2012.

Moratto, Michael. 1984. *California Archaeology*. Academic Press, New York, New York.

National Environmental Policy Act. 2011. Accessed at: http://ceq.hss.doe.gov/welcome.html

Native American Graves Protection and Repatriation Act. 1990. http://www.nps.gov/nagpra/mandates/index.htm

O'Neil, Stephen. 2002. The Acjachemen in the Franciscan Mission System: Demographic Collapse and Social Change. Master's thesis, Department of Anthropology, California State University, Fullerton.

State of California. 2012. Health and Safety Code 7050.5

State of California. 2012. Public Resources Code. 5097.98-99.

Templeton Planning Group. 2012. Historic Town Center master Plan General Plan Amendment Rezone. Draft Environmental Impact Report. November 1, 2011. http://www.sanjuancapistrano.org/Index.aspx?page=1429. Was viewed on April 11, 2012.

Underbrink, Susan. 2012. Cultural Resources Assessment Report for the South Orange County Reliability Enhancement Project, Orange and San Diego Counties, California. TRC.

Wallace, William J. 1955. A Suggested Chronology for Southern California. *Southwestern Journal of Anthropology* Vol. 11 No. 3, pp. 215-230.

Wallace, William J. 1978. Post-Pleistocene Archaeology, 9000 to 2000 B.C. In *Handbook of North American Indians*, Vol. 8, ed. R. Heizer, pp. 25-36. Smithsonian Institution, Washington.

White, R. C. 1963. Luiseño Social Organization. Berkeley: *University of California Publications in American Archaeology and Ethnography* 48: 91-194.

This page intentionally left blank.

TABLE OF CONTENTS

4.6 GEOLOGY, SOILS AND MINERAL RESOURCES 4.6-1
4.6.1 Introduction 4.6-1
4.6.2 Methodology 4.6-2
4.6.3 Existing Conditions 4.6-2
4.6.4 Potential Impacts 4.6-10
4.6.5 Applicant Proposed Measures 4.6-17
4.6.6 References 4.6-18

LIST OF TABLES

Table 4.6-1: Geologic Units Within the Proposed Project Area 4.6-4
Table 4.6-2: Known Active Faults Within the Proposed Project Area 4.6-6
Table 4.6-3: Soil Units within the Proposed Project Area 4.6-9

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.6 GEOLOGY, SOILS AND MINERAL RESOURCES

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i.	Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☑
ii.	Strong seismic ground shaking?	☐	☐	☑	☐
iii.	Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv.	Landslides?	☐	☑	☐	☐
b.	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c.	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☑	☐	☐
d.	Be located on expansive soil, as defined by article 1803.5 of the California Building Code, creating substantial risks to life or property?	☐	☐	☑	☐
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑
f.	Result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state?	☐	☐	☐	☑
g.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☑

4.6.1 Introduction

This section of the PEA describes existing geologic, soil, and mineral resources within the Proposed Project area and potential impacts to these resources that could result from construction, operation, and maintenance of the Proposed Project.

Proposed Project construction activities would comply with all applicable federal, state, and local regulatory requirements. APMs are recommended, where applicable. With implementation of APMs, construction, operation, and maintenance of the Proposed Project are expected to have less than significant impacts on geologic, soil, and mineral resources.

4.6.2 Methodology

Preparation of this section was primarily based on review of geologic literature and unpublished documents that cover the Proposed Project area. These included publications from the USGS, the U.S. Soil Conservation Service, and the Department of Conservation California Geological Survey. Reports on a geotechnical investigation prepared for the San Juan Capistrano Substation (prepared by Geosyntec in 2012) and an engineering geologic reconnaissance and geologic hazard evaluation prepared for the transmission line alignment (prepared by URS in 2008) were also reviewed. General plans from the County of Orange, city of San Juan Capistrano, and city of San Clemente were reviewed for seismic and geologic hazards data. Planning documents and Environmental Impact Reports from areas adjacent to the Proposed Project route, the city of San Juan Capistrano, and the city of San Clemente were also reviewed.

4.6.3 Existing Conditions

4.6.3.1 Regulatory Setting

The key regulatory requirements relevant to the assessment of project impacts related to geologic, soil, and mineral resources include the following:

a) The Alquist-Priolo Special Studies Act of 1972 (Alquist-Priolo Act) which, in part, required the California Division of Mines and Geology (now the California Geological Survey) to compile maps of the surface traces of all known active faults in the State;

b) The 2010 California Building Code (CBC) (based on the 2009 International Building Code), which requires extensive structural seismic provisions and acceptable design criteria for relevant structures with respect to seismic design and load-bearing capacity;

c) CPUC G.O. 95, which designates rules and regulations for overhead electric line engineering; and

d) Government Code Sections 65302(f) and 65302.1, which requires a city to take seismic and other natural hazards into account in its planning programs and to outline them in the general plan.

4.6.3.2 Topographic Setting

The Proposed Project components are primarily located in a coastal marine environment in portions of the cities of San Juan Capistrano and San Clemente as well as in unincorporated Orange and San Diego Counties. The Proposed Project route begins in the city of San Juan Capistrano, located in the foothills of southern Orange County, near the southeastern tip of the Santa Ana Mountains and south of the San Joaquin Hills. The southern portion of the Proposed Project route runs through mainly mountainous and urbanized areas of San Clemente. The hills are incised by numerous drainages that generally flow south towards the Pacific Ocean.

The San Juan Capistrano Substation would be a re-built and modified modernization of the existing Capistrano Substation, all occurring within the existing property footprint. That substation is located in an urbanized area that is relatively flat. The Talega Substation also is an already existing substation that would remain in its current location, which is a relatively flat, more undeveloped area.

4.6.3.3 Geologic Setting

Regional Setting

The Proposed Project area is located within the southern Peninsular Ranges Physiographic Province, which is characterized by northwest-trending fault-bounded mountain ranges, broad intervening valleys, and low-lying coastal plains. The province has a long and active geologic history. In general, the Peninsular Ranges province is underlain by Jurassic metavolcanic and metasedimentary rocks and by Cretaceous igneous rocks of the Southern California batholith.

Landslide-prone Tertiary (Miocene) sedimentary deposits of the Capistrano Formation and the Monterey Formation underlie a large portion of the project region. These deposits have been folded and faulted, further complicating slope stability issues. The region is bounded by the Elsinore fault to the northeast and by the offshore extension of the Newport-Inglewood fault zone to the southwest.

Proposed Project Geologic Setting

The majority of the Proposed Project route is underlain by the Miocene Capistrano Formation and/or the Miocene Monterey Formation, which primarily consist of weak, layered, fine-grained claystone and siltstone. The 2008 URS report identified that extensive ancient landslides that are no longer active occur throughout the Proposed Project region that are thought to be relics of lower sea level conditions occurring more than 10,000 to 20,000 years before present. In addition, more localized recent landslides are relatively common along the alignment corridor that are mostly avoided by Proposed Project structure locations.

The Capistrano Formation consists of poorly consolidated, fossiliferous sandy siltstone and mudstone and underlies the northern portion of the Proposed Project route. Bedding plane failures have caused extensive landsliding in the San Juan Capistrano and San Clemente areas. The Monterey Formation consists of generally thinly bedded and highly jointed and fractured shale and siltstone with minor sandstone and limestone interbeds and underlies the southern portion of the Proposed Project route. In general, the Monterey Formation is deeply weathered and relatively weak. Local folding and out-of-slope bedding also contribute to the landslide susceptibility of this unit.

The geologic materials within the transmission line corridor have been uplifted and tilted as a result of complex folding and localized faulting. The pre-Quaternary Cristianitos fault, located approximately 3,500 feet east of the Talega Substation, is crossed by the existing transmission route. This fault is not active and is not a hazard for the Proposed Project but regional deformation associated with ancient movement of this fault zone produced pervasive folding that has resulted in moderate to steeply dipping strata, which in turn contributes to the occurrence of landslides. Minor faulting and subparallel fracturing is common throughout the area adjacent to the fault zone, which also contributes to slope failure.

Previous subsurface exploration performed at the San Juan Capistrano Substation indicates this portion of the Proposed Project area is underlain by shallow fill, alluvial deposits, and strata of the Capistrano Formation.

Geologic units in the Proposed Project area are described in detail in Table 4.6-1, Geologic Units Within the Proposed Project Area.

Table 4.6-1: Geologic Units within the Proposed Project Area

Symbol	Unit Name	Age	Description
Qls	Landslide deposits	Recent (Holocene)	Unconsolidated silt and sand deposits transported by landslide movement of eroded surface rocks (mainly Tcs, Tct).
Qt/Qtm	Non-marine and marine terrace deposits	Plio-Pleistocene	During seashore recession marine terraces were formed – sandy loam to loam; fluvial terrace deposits remain along the inland hills (non-marine) – form cobbly slope wash from erosion.
Qlh, Qch	La Habra/Coyote Hills Formations	Pliocene	La Habra Formation is found in the Coyote Hills and along the southern flank of the Puente Hills – fluvial sandstone, mudstone, and conglomerate (river terrace deposits). Mudstones and sandstones of the Coyote Hills Formation indicate an intertidal/lagoonal deposition, and crop out in the Coyote Hills.
Tfl, Tfu	Fernando Formation	Pliocene	Fernando Formation is a marine deposit composed of two members: lower Repetto Sandstone and upper Pico Sandstone.
Tn	Niguel Formation	Pliocene	Shallow marine deposit that overlies Tcs in the Mission Viejo area; consists of gray unconsolidated silty sandstone with abundant fossil sea shells.
Tcs, Tct	Capistrano Formation	Late Miocene to Early Pliocene	Poorly consolidated, fossiliferous sandy siltstone and mudstone. Highly prone to landsliding in the San Juan Capistrano and San Clemente areas.
Tplv, Tps, Tpy, Tpsc	Puente Formation	Late Miocene	Puente Formation consists of four members: La Vida Member (laminated diatomaceous siltstone with thin interbedded sandstone); Soquel Member (sandstone with interbedded siltstone and local conglomerate beds); Yorba Member (thin-bedded siltstone and local beds of sandstone and conglomerate); Sycamore Canyon Member (interbedded conglomerate, sandstone, and siltstone).

Table 4.6-1 (cont.): Geologic Units within the Proposed Project Area

Symbol	Unit Name	Age	Description
Tm	Monterey Shale	Middle Miocene	Massive accumulations of diatomite consisting of one-celled, glassy, plant shells; commercially mined. Fossils include fish scales, fish bones, and microfossils.
Tso	San Onofre Breccia	Miocene	Breccia formed from landslides and crystalline rocks and uplifted by faulting. The rocks and minerals include asbestos, serpentine, actinolite, fuchsite, epidote, chlorite, glaucophane, pyrite, magnetite, and quartzite.
Tt	Topanga Formation	Miocene	Marine formation with abundant fossils ranging from shark teeth to sea shells and microfossils.
Tv/Ts	Vaqueros/ Sespe Formations	Tertiary (Late Eocene to Early Miocene)	Interbedded, non-marine, red Sespe Formation and marine, buff-colored Vaqueros Formation containing invertebrate fossils.
Tsa	Santiago Formation	Tertiary (Eocene)	Yellow marine sandstone, siltstone, and cobble conglomerate; gradational contact with underlying Tsi.
Tsi	Silverado Formation	Tertiary (Paleocene)	Coal seams and clay deposits; coal deposits are in thin seams and are low-quality lignite. Mollusk fossils indicate deposition during the Paleocene Epoch of the Tertiary Period.
Kwp and Kws	The Williams Formation	Late Cretaceous	Divided into two members: the Pleasants Silty Sandstone (Kwp) and the Schulz Ranch Sandstone (Kws). Kws contains wavy bands of sandstone and beach lag cobbles, indicating that it may have been an ancient shoreline.
Klh	Holz Shale Member	Middle Cretaceous	Fine clay mixed with carbonized wood formed a sea shale that is the upper member of the Ladd Formation, which contains ammonite fossils.
Klb	Baker Canyon Conglomerate Member	Middle Cretaceous	Marine sandstone, beach cobbles, and sea shells including shallow water clams and snails comprise this formation, a fairly resistant sandstone that is a member of the Ladd Formation.
Kt	Trabuco Formation	Early Cretaceous	Conglomerate consisting of cobbles and boulders with red clay.
Jsp	Santiago Peak Volcanics	Jurassic	Volcanic lava formation with rocks from Jbc. Lava consists of hornblende andesite. Non-fossiliferous.

Table 4.6-1 (cont.): Geologic Units within the Proposed Project Area

Symbol	Unit Name	Age	Description
Jbc	Bedford Canyon Formation	Triassic to Jurassic	Metasedimentary rocks that include argillite, quartzite, slate, and small exposures of shale and limestone with poorly preserved mollusk fossils.
Sources: Morton, 1976; California Division of Mines and Geology, 1981; Stadum, 2007.			

4.6.3.4 Faulting and Seismicity

The Alquist-Priolo Act required the California Division of Mines and Geology (now the California Geological Survey) to compile maps of the surface traces of all known active faults in the State. By definition, an active fault is one that is "sufficiently active and well-defined," with evidence of surface displacement within Holocene time (about the last 11,000 years). Active fault zones are the locations in the State with the most potential for surface fault rupture. A potentially active fault is one that has evidence of displacement within the Quaternary Period (last 1.6 million years). Potentially active faults are considered to also represent possible surface rupture hazards, although to a lesser degree than active faults. In contrast to active or potentially active faults, faults considered inactive have not moved in the last 1.6 million years.

Several active and potentially active faults occur within and adjacent to Orange County; however, there are no known active or potentially active faults or Alquist-Priolo Act earthquake fault zones within the Proposed Project area. The closest known active fault is an offshore segment of the Newport-Inglewood fault located approximately 5.9 miles to the southwest. This segment has not been mapped under the Alquist-Priolo Act because it is offshore. The closest active fault that is zoned by the Alquist-Priolo Act is the Elsinore Fault zone, located approximately 15 miles to the east/northeast. Other active regional faults that also have the potential to produce high-magnitude earthquakes in the Proposed Project region are listed in Table 4.6-2, Known Active Faults within the Proposed Project Area.

Table 4.6-2: Known Active Faults Within the Proposed Project Area

Fault Name	Type of Fault/Slip Rate (mm/yr)	Last Major Rupture	Estimated Maximum Credible Earthquake (Richter Magnitude)
Newport-Inglewood	*RLSS/0.6	1933	6.0-7.4
Palos Verdes	RR/0.1-3	Holocene	6.0-7.1
Whittier	RLSS/2.5-3	Holocene	6.0-7.2
Elsinore	RLSS/4	1910	6.5-7.5
San Jacinto	RLSS/7-17	1968	6.5-7.5
San Andreas	RLSS/20-35	1857 (Mojave Segment)	6.8-8.0
Notes: *RLSS-Right lateral strike slip			

Fault Rupture

There are no known active or potentially active faults or Alquist-Priolo Act earthquake fault zones within the Proposed Project footprint area. Therefore, there are no locations within the Proposed Project footprint area that are prone to surface fault rupture.

Strong Seismic Shaking

Strong ground motion or intensity of seismic shaking during an earthquake is dependent on the distance from the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions underlying and surrounding the area. All of southern California is considered to be a seismically active region. The Orange County area is subject to strong seismic shaking from regional earthquakes that may occur on active faults that are located distant from the Proposed Project. Active faults close enough to the Proposed Project route to cause strong seismic ground shaking are listed in Table 4.6-2.

4.6.3.5 Geologic Hazards

Subsidence

The primary causes of most subsidence are human activities, including groundwater or petroleum withdrawal from large alluvial basins with thick accumulations of unconsolidated sediments, and drainage of organic soils. Regional lowering of land elevation occurs gradually over time. Subsidence is not a significant risk for the Proposed Project because it does not occur over any large alluvial basins, and because the project does not involve the withdrawal of fluid from geologic materials.

Landslides

Landslide potential is high in steeply sloped areas underlain by surficial or bedded sedimentary deposits where the bedding planes are oriented in an out-of-slope direction (bedding planes that are dipping with a dip angle that is close to or less than the slope face angle). Human factors such as over-steepening/overloading of slopes or introduction of excessive water in soil pores or joints and fractures in rock can also lead to landslides. The principal natural factors contributing to landslides are topography, geology and precipitation.

The California Geological Survey has mapped landslide areas in the San Juan Capistrano and San Clemente areas. Extensive ancient (more than 10,000 to 20,000 years old) landslide deposits derived from the Capistrano and Monterey formations have been mapped throughout the Proposed Project area, and localized more recent landslide deposits are also relatively common in these formations where geologic conditions susceptible to slope movement still occur. The URS Corporation conducted an evaluation of landslide hazards along the Proposed Project transmission line route. The location of most of the Proposed Project transmission poles are located outside of areas identified by URS as either ancient or more recent landslide deposits. Several of the proposed transmission line pole locations are in or adjacent to areas mapped as recent landslide deposits, and a larger number are located in or adjacent to ancient landslide deposits.

In addition, several additional proposed pole locations were identified to have other factors that could cause susceptibility to slope movement including relatively steep slopes, thick clayey surficial deposits, nearby localized water seeps, and soil creep. Conditions at proposed transmission line pole locations susceptible to slope instability would require appropriate engineering measures as further described in Section 4.6.4, Potential Impacts.

Geosyntec Consultants evaluated the potential for landslides at the San Juan Capistrano Substation site and determined that landslides are not a potential hazard at that location. The Talega Substation occurs on an ancient landslide and a more recent landslide has occurred on the adjacent slope to the west, therefore landslides are a potential hazard there but that is the existing condition and does not change with the Proposed Project.

Liquefaction and Lateral Spreading

Liquefaction is a seismic phenomenon in which loose, saturated, fine-grained granular soils behave similar to a fluid when subjected to high-intensity ground shaking. An increase in pore pressure occurs as the soil attempts to compact in response to the shaking, resulting in less grain-to-grain soil contact and, therefore, loss of strength. Liquefaction occurs when three general conditions exist: shallow groundwater (40 feet below ground surface or less); low-density, fine-grained sandy soils; and high-intensity ground motion. Effects of liquefaction on level ground can include sand boils, settlement, and bearing capacity failures below structural foundations.

The California Geological Survey has mapped the liquefaction potential in the San Juan Capistrano and San Clemente areas. None of the locations of Proposed Project structures are within areas mapped as potentially susceptible to liquefaction except for the proposed locations of transmission line Pole Nos. 8, 9, and 10 (refer to Figure 3-7, Sheet 3), which are proximal to the San Juan Creek stream channel. At these locations, URS determined that there is a low liquefaction hazard potential for proposed Pole Nos. 8 and 10 and a low to moderate hazard potential for Pole No. 9. The geotechnical investigation report for the San Juan Capistrano Substation also identifies the probability of liquefaction at that location to be very low, citing the density of the underlying geologic materials and the depth to ground water of 41.5 feet.

Lateral spreads involve lateral displacement of large, intact soil blocks down gentle slopes or in the direction of a steep free face such as a stream bank. Lateral spreading can occur in fine-grained, sensitive soils such as quick clays, particularly if remolded or disturbed by construction and grading. Loose, granular soils present on gentle slopes and underlain by a shallow water table commonly produce lateral spreads through liquefaction. Conditions conducive to lateral spreading include gentle surface slope, a shallow water table, and liquefiable cohesionless soil. These conditions commonly are found along streams banks, canals, or cut slopes in recent alluvial or deltaic deposits. Structures located at the head of the slide may be pulled apart and those at the toe of the slide may buckle or compress. The potential for lateral spreading in the Proposed Project area is similar to that for liquefaction, that is, lateral spreading is not a material hazard except for a low potential at transmission line Pole Nos. 8 and 10 and a low to moderate potential at Pole No. 9.

Soil Collapse

Soil collapse occurs when added moisture causes bonds between soil particles to weaken, which allows the soil structure to collapse and the ground surface to subside. Collapsible soils are generally low-density, fine-grained combinations of clay and sand left by mudflows that have dried, resulting in the formation of small air pockets in the subsurface. The addition of moisture reduces the strength of the soil, resulting in collapse or subsidence. Mudflows typically are found downslope from steep canyons. The Proposed Project area is generally not located downslope from any steep canyons (except for the Talega Substation); therefore, the potential for the presence of mudflows and associated collapsible soils is generally considered to be low.

4.6.3.6 Soil Units and Series

Major mapped soil units present in the Proposed Project area are described in Table 4.6-3, Soil Units Within the Proposed Project Area.

Table 4.6-3: Soil Units within the Proposed Project Area

Soil Series	Description	Slope	Runoff Rate	Shrink-Swell Potential	Erosion Potential
Alo Clay	Well-drained clays in foothills	9 to 50 percent	Moderate	High	Moderate
Bonsanko Clay	Well-drained clays and clay loams	9 to 50 percent	Rapid	High	Moderate to High
Botella Clay Loam	Well-drained loams and clay loams	2 to 15 percent	Moderate	Moderate	Moderate
Callegus Clay Loam	Well-drained clay loams on uplands	50 to 75 percent	Rapid	Moderate	High
Cieneba Sandy Loam	Somewhat excessively drained sandy loams in foothills	15 to 30 percent	Moderate	Low	Moderate
Corralitos Loamy Sand	Moderately well-drained loamy sands	--	Low	Low	Moderate
Cropley Clay	Moderately well- to well-drained clays	2 to 9 percent	Moderate to Rapid	High	Moderate
Myford Sandy Loam	Moderately well-drained sandy loams	2 to 9 percent	Rapid	Low	Moderate
Sorrento Loam	Well-drained clay loams	2 to 9 percent	Low to Moderate	Low to Moderate	Low
Yorba Gravelly Sandy Loam	Deep, well-drained gravelly sandy loams	Variable	Moderate to Rapid	Low	Moderate

Source: USDA, 2012

4.6.3.7 Mineral Resources

Silver, lead, tin, and zinc mines in the Santa Ana Mountains are located in the Bedford Canyon Formation. Limited quantities of ore have been recovered since 1870. Mining in the Santa Ana Mountains has had little success because the formation has been fractured and faulted, which has offset the ore veins, making them impossible to trace. Limestone has been quarried in some parts of the mountains, but the mines are presently inactive. Some deposits of gypsum have also been mined.

Present extractive operations in Orange County are limited to construction materials (sand, gravel, borrow, riprap, and aggregate), industrial minerals (sand for glass, foundry, and ganister; clay for ceramics, pipe, tile, and cement manufacture) and petroleum. There are no known significant mineral resources along the Proposed Project route.

4.6.4 Potential Impacts

4.6.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to geology and soils if it would:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
    ii. Strong seismic ground shaking;
    iii. Seismic-related ground failure, including liquefaction; or
    iv. Landslides;
b) Result in substantial soil erosion or the loss of topsoil;
c) Be located on a geologic unit that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landsliding, lateral spreading, subsidence, liquefaction, or collapse;
d) Be located on expansive soil, as defined by article 1803.5 of the CBC, creating substantial risk to life or property; or
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Mineral Resources

Impacts to mineral resources may be considered significant if they:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state; or

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

4.6.4.2 Question 6a(i) – Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Construction– No Impact

No portion of the Proposed Project is located in an Alquist-Priolo Act earthquake fault zone. There are no active or potentially active faults in proximity to the San Juan Capistrano Substation, the Talega Substation, or along the Proposed Project transmission route. The closest known active fault is the Newport-Inglewood fault located approximately 5.9 miles to the southwest. No recognized active faults underlie the Proposed Project area; therefore, no impacts from fault rupture are expected.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated and no portion of the existing lines and facilities are located in an Alquist-Priolo Act earthquake fault zone, nor are there any active or potentially active faults in proximity to the facilities or along the transmission route. Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity, and any future potential maintenance-related construction projects would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. Therefore, the operations and maintenance of the Proposed Project would not result in any potential impacts relating to fault rupture.

4.6.4.3 Question 6a(ii) – Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Construction – Less than Significant Impact

Various faults are capable of generating strong seismic ground shaking in the Proposed Project area. However, because of the short construction period and the low likelihood of a moderate to large earthquake to occur during this time, the potential for construction personnel to experience strong seismic ground shaking is low. Due to the short construction period, the risk of exposure of people or structures to strong seismic ground shaking during construction is less than significant.

Operation & Maintenance – Less Than Significant Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated, and no portion of the existing lines and facilities are located in an Alquist-Priolo Act earthquake fault zone, nor are there any active or potentially active faults in proximity to the facilities or along the transmission route. Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity, and any future operations and maintenance activities will be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required.

All of the existing facilities at the Capistrano Substation, including the existing former utility structure constructed in 1918, would be replaced with facilities and structures that conform to current seismic standards. The new San Juan Capistrano Substation would be engineered and constructed to withstand strong ground movement and moderate ground deformation. Substation structures are designed in accordance with the recommendations of American Society of Civil Engineers (ASCE) Manual of Practice 113 (Substation Structure Design Guide) and Institute of Electrical and Electronics Engineers (IEEE) 693 (Recommended Practices for Seismic Design of Substations) along with applicable requirements of ASCE 07-10 (Minimum Design Loads for Buildings and Other Structures), substation buildings and walls such as the gas insulated substation buildings and the control houses are designed in accordance with the CBC. Design and construction of overhead transmission portions of the Proposed Project would conform to CPUC G.O. 95, industry practice, and SDG&E internal structural design requirements. These transmission design requirements of G.O. 95, industry requirements, and SDG&E internal requirements for wind loading combined with broken phase loading all exceed those for seismic accelerations. Underground facilities are generally not subject to direct effects of shaking because they are confined by surrounding soil. With the application of engineering principals and compliance with design standards outlined in G.O. 95 applied to minimize damage from seismic shaking, the risk of damage to the Proposed Project due to strong seismic shaking is less than significant.

4.6.4.4 Question 6a(iii) – Expose people or structures to potential substantial adverse effects, including seismic-related ground failure, including Liquefaction?

Construction – Less Than Significant Impact

Shaking from a moderate to large regional earthquake can potentially result in liquefaction where groundwater is shallow (i.e., within 40 feet of ground surface) and soils consist of uncompacted, granular materials. Based on its 2012 geotechnical study, Geosyntec concluded that due to the relatively dense nature of geologic material underlying the San Juan Capistrano Substation and groundwater deeper than 40 feet below ground surface, the risk of liquefaction in the San Juan Capistrano portion of the Proposed Project area is very low.

The only Proposed Project structures that would be located in an area mapped to be susceptible to liquefaction conditions are a few poles in a short segment of the Proposed Project at Pole Nos. 8, 9 and 10. Those locations, which are proximal to the San Juan Creek stream channel, were found to be potentially susceptible to liquefaction (refer to Figure 3-7, Sheet 3).

At those locations, URS in its engineering and geologic reconnaissance and landslide hazard evaluation determined that there is a low liquefaction hazard potential for proposed Pole Nos. 8 and 10 and a low to moderate hazard potential for Pole No. 9. That short segment of transmission line construction is the only portion of the Proposed Project located in geologic conditions prone to liquefaction. Because of the short construction period in this area and the low likelihood of a moderate to large earthquake to occur during this time, the risk of construction personnel being exposed to earthquake-induced liquefaction is less than significant.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity, and any future potential maintenance-related construction projects will be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required.

4.6.4.5 Question 6a(iv) – Expose people or structures to potential substantial adverse effects, including landslides?

Construction – Less than Significant Impact with Incorporation of APMs

A geologic hazard evaluation conducted by URS in 2008 evaluated the pole locations along the Proposed Project transmission line route for the presence of geologic hazards that may affect new tower and pole locations. That evaluation identified approximately 30 areas in which recent or ancient landslides have occurred along the Proposed Project transmission line route due to unstable slope conditions, the majority of which are associated with shale, siltstone, and claystone of the Capistrano and Monterey geologic formations. Those locations in which landslides have been mapped are primarily within Transmission Line Segments 1 (near Pole Nos. 12 through 14), Segment 2, Segment 3, and Segment 4. Steep slopes along the transmission line segments listed above may make other areas also susceptible to landslides. In contrast, according to the Geosyntec report, the potential for landslides or other slope instability is not a significant hazard at the San Juan Capistrano Substation and, because no new grading, drainage or footprint changes are proposed at the Talega Substation, the Proposed Project would not affect the potential for landslides or the potential for the Talega Substation to be affected by landslides.

The 2008 URS geologic hazards study indicates that none of the proposed transmission line facilities appear to be in immediate danger from landslides or associated slope instability. However, the sites for transmission line poles within Segments 2 through 4, as well as Pole Nos. 12 through 14 in Segment 1 are located where there appears to be a risk for potential slope instability.

Slope destabilization conditions could result (where existing slope stability issues are present) from Proposed Project construction activities such as grading that could alter slope stability factors. Prior to construction, an engineering-level geotechnical investigation would be performed along the transmission line route at each pole location that is in or near a mapped landslide or other unstable slope condition (as outlined in the 2008 URS report), to: (1) delineate

specific transmission line pole locations susceptible to slope instability; and (2) determine appropriate engineering design measures to ensure that the Proposed Project does not materially increase slope stability risks and to minimize the potential for damage to Proposed Project structures in the event of landslides. The investigation will identify site-specific protective measures that SDG&E will implement to minimize the potential for damage to the structures in the event of landslides. The types of measures typically used for this sort of condition include augmented grading practices, expanded erosion control measures, and deeper foundations, most of which have been used by SDG&E in other transmission line locations. The above engineering studies are outlined as APM's at the end of this section. Based on the current geotechnical reports, there are no slope stabilization issues that cannot be adequately addressed through the identified APM's. Furthermore, the APM's are considered feasible and adequate to address slope stability issues based on the current geotechnical report findings.

Implementation of the engineering-level geotechnical survey and recommended design measures as set forth in APM GEO-2 would reduce the risk of construction impacts from landslides and the risk of impacting slope stability to less than significant levels.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity, and any future potential maintenance-related construction projects would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required.

4.6.4.6 Question 6b – Result in substantial soil erosion or the loss of topsoil?

Construction – Less Than Significant Impact

Construction would occur along the existing ROW/transmission line corridor and the proposed transmission line would include steel poles, graded pads, and new access roads or spurs that would need to be graded as needed. Soil erosion or loss of topsoil could result from excavation or grading activities during construction.

Soil erosion and topsoil loss would be controlled by implementing SDG&E's *BMP Manual* during design and construction of the Proposed Project. In addition, the Proposed Project would comply with the General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (Construction General Permit) which would include the preparation of a SWPPP (refer to Section 4.8, Hydrology and Water Quality for additional information on the Construction General Permit). Surface disturbance would be minimized to the extent consistent with safe and efficient completion of the Proposed Project scope of work. Topsoil would be salvaged from areas where grading would otherwise result in loss of topsoil, and the salvaged soil would be used to reclaim areas of temporary construction disturbance. Once temporary surface disturbances are complete, areas that would not be subject to additional disturbance would be stabilized by landscaping. Considering these measures, impacts to soil erosion and loss of topsoil would be less than significant.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity, and any future potential maintenance-related construction projects would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. Therefore the Proposed Project's operation and maintenance would have no impacts relating to soil erosion or loss of topsoil.

4.6.4.7 Question 6c – Be located on a geologic unit that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landsliding, lateral spreading, subsidence, liquefaction, or collapse?

Construction – Less than Significant Impact with Incorporation of APMs

The potential for liquefaction and landslide related impacts are addressed in Sections 4.6.4.4 and 4.6.4.5, respectively.

As described in Section 4.6.3.5, Geologic Hazards, lateral spreading is not a material hazard for the Proposed Project except for a low potential at transmission line Pole Nos. 8 and 10 and a low to moderate potential at Pole No. 9. Because of the short construction period in this area the probability of a moderate to large earthquake occurring during this time is low, and the probability of consequential lateral spreading is even lower since it is not certain that it would occur even if strong ground shaking does. Therefore, the risk of lateral spreading during construction is less than significant.

Construction would have no subsidence impact because the Proposed Project does not involve the withdrawal of subsurface fluids that can cause subsidence, nor would it impact sedimentary materials that are particularly prone to subsidence.

As described in Section 3.6.3.5, collapsible soil deposits are not anticipated to be present in the Proposed Project construction areas. A possible exception is at the Talega Substation. However, the Proposed Project includes only minor alterations to the Talega Substation that do not have the potential to impact or be impacted by collapsible soils even if such soils are present.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity, and any future potential maintenance-related construction projects would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required.

There is nothing about the Proposed Project operations and maintenance that differs from the existing conditions in terms of subsidence or collapsible soils, and thus there are no potential impacts as a result of subsidence or collapsible soils associated with the Proposed Project.

4.6.4.8 Question 6d – Be located on expansive soil, as defined by article 1803.5 of the California Building Code, creating substantial risk to life or property?

Construction – Less Than Significant Impact

Expansive soils are clayey soils that have a high plasticity index. Typical shallow reinforced concrete spread footing foundations, such as those proposed for the San Juan Capistrano Substation site, can be affected by expansive soils if they are present close to the ground surface. However, the geotechnical investigation for the San Juan Capistrano Substation demonstrated that the majority of near-surface soils at the substation site have a low to moderate expansion potential and do not meet the CBC criteria for expansive soil. Grading at the San Juan Capistrano Substation would follow recommendations of the geotechnical investigation report, including separately stockpiling and performing additional expansion potential testing on clayey soils, and avoiding the use of expansive soils for backfill within the upper 36 inches below the final grade to ensure that project facilities are not adversely impacted by them. Therefore, the impact of expansive soils on structures at the San Juan Capistrano Substation would be less than significant.

The Proposed Project includes only minor alterations to the Talega Substation that do not include grading or changes to drainage and do not have the potential to impact or be impacted by expansive soils even if such soils are present. Therefore, the impact of expansive soils at this location would be less than significant.

Soil types identified along the Proposed Project transmission line route include several units with a moderate to high shrink-swell (expansion) potential. Expansive soils are taken into account during the design phase for transmission structure foundations. Transmission structure foundations (i.e., those for poles and towers) are typically deep-drilled, pier-reinforced concrete foundations that are designed for the structural properties of the various soil layers, taking into account the properties of stronger and weaker soil layers, as well as maximum allowable deflections and rotations. As such, expansive soils are not expected to have a significant adverse impact on transmission line structures.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity, and any future potential maintenance-related construction projects will be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. As with the baseline condition, operation and maintenance of the Proposed Project would not include activities that have the potential to impact or be impacted by expansive soils. Therefore, no impact is expected.

4.6.4.9 Question 6e – Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Construction and Operation & Maintenance – No Impact

The Proposed Project would not involve the installation of a septic tank or alternative wastewater disposal system; therefore, no impact would occur.

4.6.4.10 Question 6f – Result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state?

Construction and Operation & Maintenance – No Impact

No mineral resources are known to exist at the San Juan Capistrano Substation or the Talega Substation, or along the Proposed Project route, nor are any designated in the vicinity of the Proposed Project by the cities of San Juan Capistrano and San Clemente or by Orange County; therefore, the Proposed Project would not result in the loss of availability of a known mineral resource and no impact would occur.

4.6.4.11 Question 6g – Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Construction and Operation & Maintenance – No Impact

No mineral resources are known to exist at the San Juan Capistrano or Talega Substations, or along the Proposed Project route, nor are any designated in the vicinity of the Proposed Project by the cities of San Juan Capistrano and San Clemente or by Orange County; therefore, the Proposed Project would not result in the loss of availability of a locally important mineral resource recovery site and no impact would occur.

4.6.5 Applicant Proposed Measures

The potential impacts related to geology, soils, and mineral resources identified above can be adequately addressed by implementing the engineering and regulatory standard, practices and guidelines, previously described in this section, and the APMs described below.

GEO-1 Conduct an Engineering-level Geotechnical Investigation for Liquefaction Potential and Implement Recommended Design Measures. A geologic hazard evaluation was conducted by URS in 2008 to evaluate the pole locations along the Proposed Project transmission line route for the presence of geologic hazards that may affect the new towers and poles The geologic hazard evaluation indicated the presence of geologic conditions potentially susceptible to liquefaction at the locations of proposed Pole Nos. 8, 9 and 10. Prior to construction, an engineering-level geotechnical investigation would be performed at these locations under the supervision of a California Certified Engineering Geologist or California licensed Geotechnical Engineer to further evaluate the liquefaction potential at each of these pole locations and to develop design measures to minimize the potential for damage to Proposed Project structures in the event of strong ground shaking. Recommendations of the geotechnical investigation would be incorporated into the final design for these structures. These recommendations would include augmented grading practices, expanded erosion control measures and deeper foundations.

GEO-2 Conduct an Engineering-level Geotechnical Survey for Landslides and Implement Recommended Design Measures to Ensure Slope Stability is not Impacted and the Potential for Damage to Protect Structures is Minimized. A geologic hazard evaluation was conducted by URS in 2008 to evaluate the structure locations along the Proposed Project transmission line route for the presence of geologic hazards that may affect the new towers and poles. The geotechnical hazard evaluation identified areas with recent and ancient landslides along the Proposed Project transmission line route due to unstable slope conditions in portions of both the Capistrano and Monterey formations. Prior to construction, an engineering-level geotechnical investigation would be performed at each pole location along the transmission line route that is in or near a mapped landslide or other unstable slope condition. This investigation would be performed under the supervision of a California Certified Engineering Geologist or California licensed Geotechnical Engineer, and would identify protection measures to be designed and implemented to ensure that the Proposed Project does not materially increase slope stability risks and to minimize potential for damage to Proposed Project structures in the event of landslides. These recommendations would include augmented grading practices, expanded erosion control measures and deeper foundations.

4.6.6 References

Barker, K. and Amiri, S.K. 2006. *Revised Preliminary Geotechnical Report for Widening from Two-Lane Highway to Four-Lane Highway on State Route 74 (Ortega Highway) in Orange County*, State of California, Business, Transportation and Housing Agency, Division of Engineering Services, Geotechnical Services, Office of Geotechnical Design South – 1, Branch D.

Bryant, W.A. and Hart, E.W. 2007. *Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps*, California Department of Conservation (CDC),California Geological Survey, Special Publication 42 (Interim Revision).

California Geological Survey (CGS). 2002. *Seismic Hazard Zone Report for the San Clemente 7.5-Minute Quadrangle*, Orange County, California, Seismic Hazard Zone Report 062.

California Geological Survey (CGS). 2001, *Seismic Hazard Zone Report for the San Juan Capistrano* 7.5-Minute Quadrangle, Orange County, California, Seismic Hazard Zone Report 053.

City of San Clemente *General Plan*. 1993. (includes amendments through 2003). Online: http://san-clemente.org/sc/standard.aspx?pageid=24.

City of San Juan Capistrano *General Plan*. 1999. (includes amendments through 2002). Online: http://www.sanjuancapistrano.org/Index.aspx?page=644.

City of San Juan Capistrano (CSJC). 2007. *DRAFT Environmental Impact Report, Villa Montaña Apartment Homes, Whispering Hills, California, SCN: 2005121149, Volume I*. Online: http://www.sanjuancapistrano.org/Index.aspx?page=1125.

County of Orange. 2005. *General Plan*, Resolution 04-1062. Online: http://www.ocplanning.net/docs/GeneralPlan2005/.

Geosyntec Consultants. 2012. Update, *Geotechnical Investigation, Capistrano Substation, San Juan Capistrano, California, for SDG&E.*

Jennings, C.W. 1988. *Fault Map of California with Locations of Volcanoes, Thermal Springs and Thermal Wells: Division of Mines and Geology, Geologic Data Map No.1*.

Jennings, C.W. and Saucedo, G.J. 1999. *Simplified Fault Activity Map of California, California Department of Conservation, California Geological Survey, Map Sheet 54, map scale 1:2,500,000*. Revised 2002 by T. Toppozada, and D. Branum.

Morton, P.K. and Miller, R.V. 1981. *Geologic Map of Orange County California, Showing Mines and Mineral Deposits*, California Division of Mines and Geology (CDMG), Bulletin 204, Plate 1, map scale 1:48,000.

Morton, P. K., and Miller,R.V., and Et. Al. 1976. *Environmental Geology of Orange County, California, California Division of Mines and Geology, Open-File Report 79-08 LA.*

Morton, P. K., and Edgington, W.J., and Fife, D.L. 1974. *Geology and Engineering Geologic Aspects of the San Juan Capistrano Quadrangle, Orange County, California, California Department of Conservation, Division of Mines and Geology, Special Report 112, map scale 1:12,000.*

Southern California Earthquake Data Center (SCEDC), California Institute of Technology, M/C 252-21, Pasadena, California, Online: http://www.data.scec.org/fault_index/alphadex.html; site visited April 3, 2008.

Stadum, C.J. 2007. *The Geologic History of Orange County, Irvine Valley College*, modified from "Orange County Geology – Teachers Guide," Online: http://www.ivc.edu/geology/pages/ocgeo.aspx; Site visited March 7, 2008.

United States Department of Agriculture (USDA) Soil Conservation Service. 1974. *Soil Survey of Orange County and Western Part of Riverside County, California*.

URS Corporation (URS). 2008. *DRAFT Engineering Geologic Reconnaissance and Landslide Hazard Evaluations, Proposed New 230kV O.H. Line, Capistrano to Talega, Orange County, California, prepared for San Diego Gas & Electric Company*.

Web Soil Survey, Natural Resources Conservation Service, U.S. Department of Agriculture. 2012. *Soil Maps of Orange County and Part of Riverside County, California*, Online: http://websoilsurvey.nrcs.usda.gov/app/; Site visited March 1, 2012.

Woodward-Clyde Consultants (WCC). 1985. *Engineering Geologic Reconnaissance and Landslide Hazard Study, Talega-San Juan Capistrano Transmission Line Corridor, Southwest Orange County, California, prepared for San Diego Gas & Electric Company*.

This page intentionally left blank.

TABLE OF CONTENTS

4.7 HAZARDS AND HAZARDOUS MATERIALS 4.7-1
4.7.1 Introduction 4.7-1
4.7.2 Methodology 4.7-2
4.7.3 Existing Conditions 4.7-7
4.7.4 Potential Impacts 4.7-20
4.7.5 Applicant Proposed Measures 4.7-28
4.7.6 References 4.7-29

LIST OF TABLES

Table 4.7-1: Databases Searched and Potential Impact Ranking 4.7-3
Table 4.7-2: Hazardous Materials Sites Adjacent to the Capistrano Substation 4.7-15
Table 4.7-3: Asbestos Containing Materials Survey Results (2008) 4.7-15
Table 4.7-4: Lead-Based Paint Survey Results (2002) 4.7-16
Table 4.7-5: Soil Sampling Results (2009) 4.7-17
Table 4.7-6: Hazardous Materials Sites Adjacent to the Transmission Line ROW 4.7-18
Table 4.7-7: Schools within 0.25 Mile of the Proposed Project 4.7-19
Table 4.7-8: Physical and Chemical Properties of Sulfur Hexafluoride 4.7-24

LIST OF APPENDICES

Appendix 4.7-A EDR Corridor Study Report
Appendix 4.7-B Historic Aerial Photographs
Appendix 4.7-C Material Safety Data Sheet for Sulfur Hexafluoride

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.7 HAZARDS AND HAZARDOUS MATERIALS

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☑	☐	☐
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☑	☐	☐
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐
d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
f.	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑	☐
h.	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☑	☐

4.7.1 Introduction

This section of the PEA describes the existing conditions and potential Proposed Project-related impacts from hazards to the environment, public, and worker health and safety associated with the construction, operation, and maintenance of the Proposed Project.

Potential significant impacts were identified relating to worker safety associated with potential soil contamination and existing asbestos containing materials and lead-based paint at the Capistrano Substation site. These impacts would remain at a level less than significant with the

incorporation of APMs HAZ-1 and adherence to existing hazardous materials/wastes and occupational safety regulations. All other impacts were found to be less than significant without the incorporation of APMs.

4.7.2 Methodology

In order to asses potential impacts related to hazards and hazardous materials, the following accepted methods where employed:

- Environmental Data Resources, Inc. (EDR) Database Report;
- Site inspection;
- Historic information sources;
- Hazardous materials site assessment report (Phase I Environment Site Assessment);
- Soil sampling (Phase II Environmental Site Assessment);
- Asbestos inspection survey;
- Review of emergency/evacuation plans;
- Review of local municipality planning documents;
- Review of adopted wildland fire prevention and fire safety electric standard practice; and
- Review of adopted fire hazard maps.

These methods are described in detail in the following subsections.

4.7.2.1 EDR Database Search

As required by Section 5.7 of the CPUC PEA Checklist for Transmission Line and Substation Projects (PEA Checklist), a hazardous materials database search was performed for the Proposed Project area by EDR. The Corridor Study searched databases for a 1 mile buffer around the Proposed Project transmission alignment and substation sites. The EDR Corridor Study report is included as Appendix 4.7-A.

The EDR database report compiles data from local, state, and federal agencies with varying levels of enforcement related to the generation, storage and handling, transportation, and treatment of wastes as well as emergency response activities, and remediation of contaminated soil and groundwater sites. Table 4.7-1, Databases Searched and Potential Impact Ranking, lists some of these databases, and the general ranking assigned by the potential for each type of site to impact the Proposed Project. A complete list of databases searched, along with full descriptions of each database can be found in the EDR report (refer to Appendix 4.7-A).

Table 4.7-1: Databases Searched and Potential Impact Ranking

Database Name	Potential Impact Ranking
Brownfields Sites (US BROWNFIELDS)	High
Clandestine Drug Labs (CDL)	Low
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	Low
CERCLIS No Further Remedial Action Planned (CERCLIS-NFRAP)	Low
Corrective Action Report (CORRACTS)	Low
Emergency Response Notification System (ERNS)	High
Facility and Manifest Data (HAZNET)	Low
Hazardous Materials Information Reporting System (HMIRS)	Low
National Priorities List (NPL or Superfund)	High
Proposed NPL	High
Delisted NPL	Low
Records of Decision (ROD)	High
Resource Conservation and Recovery Act, Large Quantity Generators (RCRA-LQG)	Low
Resource Conservation and Recovery Act, Small Quantity Generators (RCRA-SQG)	Low
RCRA Transporters, Storage and Disposal (RCRA-TSDF)	High
Toxic Chemical Release Inventory System (TRIS)	High
Aboveground Petroleum Storage Tank Facilities (AST)	Low
Active UST Facilities (UST)	Low
California Hazardous Materials Incident Report System (CHMIRS)	High
Cortese Hazardous Waste and Substances List (CORTESE)	High
Department of Toxic Substances Control, Site Mitigation and Brownfields Reuse Program (ENVIROSTOR)	High
Hazardous Substance Storage Container Database (HIST UST)	Low
Hist Cal-Sites (ENVIROSTOR)	High
Leaking Underground Fuel Tank Report (LUST)	High
School Property Evaluation Program (SCH)	High
Solid Waste Information System (SWF/LF [SWIS])	High
Statewide Environmental Evaluation and Planning System UST (SWEEPS UST)	Low
State Response Sites (RESPONSE)	High
Statewide Spills, Leaks, and Cleanups (SLIC)	High
Toxic Pits Cleanup Act Sites (TOXIC PITS)	High
Voluntary Cleanup Program Properties (VCP)	High
Waste Discharge System (CA WDS)	Low
Waste Management Unit Database (WMUDS/SWAT)	Low
Well Investigation Program Case List (WIP)	Low

The following screening criteria (in the general order shown) were used to rank (high, medium, and low) the potential of individual sites listed within the EDR Report to impact the Proposed Project, public, or the environment:

- Data is screened out by distance from Proposed Project features, only those sites adjacent to or within the Capistrano Substation site, Talega Substation site or transmission line ROW were reviewed.

- The databases searched that typically indicate that a confirmed release of hazardous substances occurred at the site are ranked as having a high potential for impacts.
- The databases searched that typically indicate the presence of confirmed contamination at the site are ranked as having a high potential for impacts.
- Databases that reflect administrative records or permits related only to the use or presence of hazardous material at the site are ranked as having a low potential for impacts.
- Following this initial ranking, data for those sites with a possible high potential to cause impacts are individually reviewed to assess the contaminant type. Sites are then individually ranked medium or high based on information available from the database which includes the age of release, substance released, type of release, case/remediation status, and database in which the listing appeared.
- Sites with known or unknown contaminants other than petroleum hydrocarbons (i.e., VOCs, polychlorinated biphenyls [PCBs], asbestos, or metals) are ranked as having a high potential to impact the Proposed Project due to potential health risks associated with direct exposure.
- Sites with only petroleum hydrocarbon contamination are ranked as having a medium potential to impact the Proposed Project due to the less severe nature of the health risks associated with this type of exposure.
- Sites that have been closed, or for which no further remedial action has been required/deemed necessary, were ranked as low potential impact sites.

Using the above screening criteria, agency-listed hazardous waste and contamination/spill sites located adjacent to or within the Proposed Project area were ranked as high or medium, as appropriate.

4.7.2.2 Site Inspection

A hazardous materials site inspection of the San Juan Capistrano Substation, Talega Substation and Talega to Capistrano transmission line corridor was conducted on March 7, 2008 and March 21, 2008. Existing land uses and site conditions were analyzed in order to determine if evidence of the utilization, storage, or release of hazardous materials is present within Proposed Project impacted areas. Additional site inspections of the Proposed Project area were conducted in September and October of 2011. Site inspections were conducted by Mr. Joshua Taylor, who meets the definition of an Environmental Professional as outlined within the Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM Standard E 1527-05 [Section X2]).

4.7.2.3 Historic Information Sources

In further attempt to identify potential sources of hazardous materials and/or contamination in the vicinity of the Proposed Project area, certain commonly utilized historical information sources were reviewed for evidence of land uses that can indicate the presence of hazardous materials. These historic information sources are further described below.

Aerial Photographs

Historic and current aerial photographs were reviewed for the Proposed Project area in order to discern current and past land uses that may have involved the utilization of hazardous materials or wastes. Multiple sources of contemporary (2000-present) photographs were reviewed for the entire Proposed Project area, and historical aerial photographs of the Capistrano Substation site and vicinity were also reviewed. These historical aerial photographs would have dates ranging from approximately 1938 to 2002 (see Appendix 4.7-B).

Historic Site Plans and Engineering Drawings

Historical site plans and engineering drawings for the Capistrano Substation property were reviewed and analyzed in order to determine where past land uses may have involved the handling and use of hazardous materials. Historic site plans from 1917, 1933 and 1964 were reviewed.

4.7.2.4 Phase I Environmental Site Assessment and Lead Based Paint/Asbestos

In 2002, a Phase I Environmental Site Assessment was performed by Hadley and Aldrich for the Capistrano Substation site. The Phase I Environmental Site Assessment included an asbestos and lead-based paint survey, as further described in Section 4.7.2.6. The 2002 Phase I Environmental Site Assessment Report was utilized to assess the existing conditions at the Capistrano Substation site.

4.7.2.5 Soil Sampling (Phase II Environmental Site Assessment)

A Phase II Environmental Site Assessment is being conducted for the existing Capistrano Substation site. The Phase II investigation is being prepared by TRC and is being conducted in two stages. Stage 1 (already complete) consisted of advancing soil borings in the Lower Yard (western portion of the Capistrano Substation site) (refer to Figure 3-4) and around the perimeter of the upper yard (eastern portion of the Capistrano Substation site). Soil borings were advanced in the lower yard to determine the presence of soil contamination, if any, prior to redevelopment of that portion of the site. Soil borings were advanced in the lower yard in the vicinity of the locations of the former transformer pad and associated lightening arrestors, the two former cooling tower locations, the two former septic tank locations, and the two former sump/pit locations inside of the existing abandoned concrete building. Soil borings were also advanced around the perimeter of the upper yard (existing active 138/12kV substation) as a preliminary investigation of the upper yard. Stage 2 activities would be conducted adjacent to the equipment in the upper yard following completion of the proposed new 138kV gas insulated substation and 12kV air insulated substation on the lower yard portion of the substation site and deactivation and de-energization of the upper yard equipment.

4.7.2.6 Asbestos and Lead Based Paint Inspection Surveys

Two separate asbestos and lead based paint surveys have been conducted for the abandoned concrete building located in the lower yard portion of the existing Capistrano Substation site. The results of these surveys were utilized within this section of the PEA to assess potential impacts related to hazardous building materials at the Capistrano Substation site. Each of the two survey reports are briefly described below.

Advanced Environmental Group, Inc. (February 2008) Asbestos Survey

On February 26, 2008, an asbestos inspection survey was conducted by Advanced Environmental Group, Inc. for the SDG&E Capistrano Substation, with emphasis on the abandoned concrete building located in the lower yard. The purpose of the survey was to inspect areas for asbestos containing building materials and collect bulk samples for asbestos determination. The asbestos survey was performed by a Certified Asbestos Consultant working for Advanced Environmental Group, Inc. The scope of work for the asbestos inspection survey was to:

- Conduct a survey to assess the existence of friable and non-friable asbestos containing materials;
- Provide laboratory analysis utilizing Polarized Light Microscopy (PLM) for bulk samples; and
- Provide a report to include comments on disturbance of asbestos containing materials, location, cost estimates for removal of asbestos containing materials found, discussion and conclusion.

The results of this survey were used in determining potential impacts within this section of the PEA.

Sigma Engineering, Inc. (2002) Asbestos and Lead Based Paint Survey

As part of a Phase I Environmental Site Assessment performed for the Capistrano Substation site in 2002, Sigma Engineering, Inc. was retained to perform an asbestos and lead-based paint survey of the existing abandoned concrete building located in the lower yard portion of the substation site. The results of this survey were used in determining potential impacts within this section of the PEA.

4.7.2.7 Emergency/Evacuation Plans and Local Municipality Planning Documents

Emergency response and evacuation plans from the cities of San Juan Capistrano and San Clemente were reviewed and analyzed for hazardous materials response procedures, evacuation routes, and policies that may be applicable to the Proposed Project. The scope of the Proposed Project was analyzed with respect to all existing emergency response and evacuation plans within the Proposed Project vicinity in order to identify any potential conflicts that may result from construction, operation, or maintenance of the Proposed Project.

General plans for the cities of San Clemente and San Juan Capistrano as well as for the County of Orange were reviewed for specific laws, regulations, standards or ordinances pertaining to hazardous materials or waste storage, handling, utilization or disposal. Any inconsistencies identified between the Proposed Project and said goals, objectives, and policies were analyzed with respect to the significance criteria (see Section 4.7.4.1) in order to determine the presence or absence of potential significant impacts.

4.7.3 Existing Conditions

4.7.3.1 Regulatory Setting

The following section provides an overview of pertinent federal, state and local hazardous materials and safety regulations applicable to the Proposed Project.

Federal

Resource Conservation and Recovery Act

The federal Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA. Individual states may implement hazardous waste programs under RCRA with USEPA approval.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which is often commonly referred to as Superfund, is a federal statute that was enacted in 1980 to address abandoned sites with hazardous waste disposal and/or contamination (42 U.S. Code 9601, et seq.). CERCLA was amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA) and by the Small Business Liability Relief and Brownfields Revitalization Act of 2002. CERCLA establishes prohibitions and requirements concerning closed and abandoned hazardous waste sites; establishes liability of persons responsible for releases of hazardous waste at these sites; and establishes a trust fund to provide for cleanup when no responsible party could be identified. The trust fund is funded largely by a tax on the chemical and petroleum industries. CERCLA also provides federal jurisdiction to respond directly to releases or impending releases of hazardous substances that may endanger public health or the environment.

Occupational Safety and Health Administration

The Occupational Safety and Administration regulations intended to create a safe workplace are found at 29 CFR, Part 1910, Subpart H, and include procedures and standards for safe handling, storage, operation, remediation, and emergency response activities involving hazardous materials and waste. Section 1910.120 (Hazardous Waste Operations and Emergency Response) contains requirements for worker training programs, medical surveillance for workers engaging in the handling of hazardous materials or wastes and hazardous material, and waste site emergency and remediation planning, for those who are engaged in one of the following operations as specified by Sections 1910.120(a)(1)(i-v) and 1926.65(a)(1)(i-v):

- Clean-up operations required by a governmental body, whether federal, state, local, or other, involving hazardous substances, that are conducted at uncontrolled hazardous waste sites;

- Corrective actions involving clean-up operations at sites covered by RCRA, as amended (42 U.S.C. 6901, *et seq*.);
- Voluntary clean-up operations at sites recognized by a federal, state, local, or other governmental body as uncontrolled hazardous waste sites;
- Operations involving hazardous wastes that are conducted at treatment, storage, and disposal facilities regulated by Title 40 CFR Parts 264 and 265 pursuant to RCRA, or by agencies authorized under agreement with USEPA to implement RCRA regulations; or
- Emergency response operations for releases of, or substantial threats of releases of, hazardous substances regardless of the location of the hazard.

The Occupational Safety and Health Act of 1970 (OSHA) contains specific regulations that ensure worker safety in the presence of certain hazardous substances, such as lead and asbestos. Exposure of construction workers to lead is controlled by the Lead Standard (established by OSHA and implemented by the California OSHA [CalOSHA] within the state of California) and the exposure of workers to asbestos containing materials is controlled by the Construction Standard (also implemented by CalOSHA). It is important to note that while CalOSHA has adopted the OSHA standards, the CalOSHA regulations are often more stringent that the OSHA standards, and this is true for lead and asbestos.

USEPA (Region IX) Regional Screening Levels

The USEPA (Region IX) has established regional Screening Levels (RSLs) in order to assist government agencies, risk assessors, and remedial project managers in conducting initial risk assessments relating to soil contamination at Superfund sites. The RSLs provide a conservative baseline initial quantification of soil contamination concentrations that may pose a risk to human health associated with residential and industrial land use types. While the RSLs do not provide regulatory limits for remediation or waste characterization, they are a very helpful tool in determining potential impacts to workers and/or the public involving existing soil contamination. The RSLs have replaced the USEPA's Preliminary Remediation Goals, or PRGs, which served the purpose and are still sometimes utilized during preliminary risk assessment and impact assessment.

National Emissions Standard for Hazardous Air Pollutants (Asbestos Regulations)

The asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) includes requirements for demolition activities involving asbestos containing materials, include a pre-demolition notification. The asbestos NESHAP also includes requirements for removal, abatement, and emissions control.

Oil Pollution Prevention

Regulations at 40 CFR 112 require the owner or operator of a facility with an aggregate aboveground oil storage capacity of greater than or equal to 1,320 gallons to prepare and implement a Spill Prevention, Control and Countermeasure (SPCC) Plan. These regulations set forth specific requirements for prevention of, preparedness for, and response to, oil discharges at regulated facilities. Substations with oil-filled electrical equipment above the threshold quantity are subject to these requirements. Required procedures include periodic inspection of facilities

and maintenance as needed to ensure containment of petroleum products. In addition, stationary oil-filled equipment with a capacity of 55 gallons must have secondary containment as part of SPCC practices. The secondary containment ensures that even if oil is emitted from primary containment systems, it is prevented from impacting surface waters. The SPCC provisions of 40 CFR Part 112, include procedures for inspecting rainwater in secondary containment areas before it can be released to ensure that no oil is discharged.

State

CCR, Title 22, Chapter 11, Article 2, Section 66261

The CCR, Title 22, Chapter 11, Article 2, Section 66261 provides the following definition:

> *A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.*

According to CCR Title 22 (Chapter 11 Article 3), substances having a characteristic of toxicity, ignitability, corrosivity or reactivity are considered hazardous. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, contaminated or is being stored prior to proper disposal.

Soil that is excavated from a site containing hazardous materials would be a hazardous waste if it exceeded specific CCR Title 22 criteria. Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site is required if excavation of these materials is performed; it may also be required if certain other activities are proposed. If soil or groundwater at a contaminated site does not meet the regulated characteristics required to be defined as hazardous waste, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

CCR, Title 22, Chapter 11, Article 3, Section 66261.24-1

CCR Title 22, Section 66261.24-1 (Table II) outlines the Soluble and Total Threshold Limit Concentration Values for key soil contaminants. The Soluble and Total Threshold Limit Concentration Values indicate the concentrations where contaminated soils must be considered a hazardous waste. Where solid concentrations exceed the Soluble or Total Threshold Limit Concentration Values, all excavated soils must be handled, transported, and disposed of pursuant to applicable state and federal hazardous waste laws.

California Land Environmental Restoration and Reuse Act of 2001

The California Land Environmental Restoration and Reuse Act of 2001 required the preparation of California Human Health Screening Levels (CHHSLs) for certain hazardous chemicals or elements that are commonly found within soil contamination. CHHSLs are utilized as an initial screening tool to identify where soil contamination may present a human health risk in relation to

the proposed use of the property in question. Specifically, CHHSLs were established to identify levels of contaminants that could have human health risks associated with direct physical contact with contaminated soil. Similar to the PRGs and RSLs established by the USEPA, the CHHSLs have contaminant concentrations for residential (and other sensitive land uses), and commercial/industrial soils. In general, where contaminant concentrations are below the CHHSL for residential soils, there is not a significant human health risk associated with the contamination if the property is used for residential or other sensitive land uses (such as schools, hospitals, etc.). Where contamination concentrations exceed the CHHSLs, additional evaluation is needed to assess the potential for risk to human beings. Exceedance of CHHSLs does not necessarily indicate that a human health risk is in fact present, only that there a potential risk is present.

California Hazardous Waste Control Law

The California Hazardous Waste Control Law (HWCL) is administered by the CalEPA to regulate hazardous wastes within the State of California. While the HWCL is generally more stringent than RCRA (for example, asbestos containing materials are considered to be hazardous under HWCL, but are not regulated un RCRA), both the state and federal laws apply in California. The Department of Toxic Substances Control (DTSC) is the primary agency in charge of enforcing both the federal and state hazardous materials laws. The DTSC regulates hazardous waste, oversees the cleanup of existing contamination, and pursues avenues of reducing the hazardous waste produced in California. The DTSC regulates hazardous waste in California under the authority of RCRA, the HWCL and the California Health and Safety Code.

The HWCL, under CCR Title 22, Chapter 11, Appendix X, lists 791 chemicals and about 300 common materials which may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

California Occupational Safety and Health Administration

Cal/OSHA is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations, although CalOSHA has adopted and implements all of the OSHA standards within the state of California. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. Similar to the federal OSHA, CalOSHA contains requirements to prevent worker exposure to certain types of hazardous substances in the work place, such as asbestos and lead. Specifically, exposure of construction workers to lead is controlled by the Lead Standard (established by OSHA and implemented by CalOSHA) and the exposure of workers to asbestos containing materials is controlled by the asbestos Construction Standard (also implemented by CalOSHA). It is important to note that while CalOSHA has adopted the OSHA standards, the CalOSHA regulations are often more stringent that the OSHA standards, and this is true for lead and asbestos.

Hazardous Materials Disclosure Programs

The Unified Program administered by the State of California consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for the state's environmental and emergency management programs, which include Hazardous Materials Release Response Plans and Inventories (business plans), the California Accidental Release Prevention Program, and the Underground Storage Tank Program. The Unified Program is implemented at the local government level by Certified Unified Program Agencies (CUPAs).

California Public Utilities Commission

CPUC originally adopted G.O. 95 in 1941 (http://162.15.7.24/PUBLISHED/Graphics/112890.PDF). G.O. 95 governs the design, construction, and maintenance of overhead electrical lines. Rule 31.1 of G.O. 95 generally requires that overhead electrical lines be designed, constructed, and maintained in accordance with accepted good practices for the given conditions known at the time. Rule 35 of G.O. 95 establishes requirements for tree trimming.

On January 18, 2012, after a three year rulemaking to review measures to reduce fire hazards associated with overhead powerlines and communication facilities, the CPUC issued D.12-01-032 which adopted significant revisions to G.O. 95, G.O. 165, and G.O. 166, Inspection Requirements for Electric Distribution and Transmission Facilities. Phase I and Phase 2 revisions to the G.O.'s addressed vegetation management practices, inspection cycles, corrective maintenance timeframes and other fire reduction measures in fire threat zones.

Local

Orange County Hazardous Materials and Waste Regulations

The County of Orange Health Care Agency: Environmental Health Division (EHD) is the CUPA for the Proposed Project area. The CUPA further regulates hazardous materials and wastes, under the authority of CalEPA. The CUPA coordinates the following within Orange County:

- Hazardous waste;
- Underground storage tanks (USTs);
- Aboveground storage tanks (ASTs);
- Hazardous materials disclosure;
- Hazardous materials business plan; and
- California Accidental Release Program (CalARP).

The City of San Clemente Hazardous Materials and Waste Regulations

The city of San Clemente addresses hazardous materials and waste within the San Clemente General Plan - Hazardous Materials and Uses Element. The Hazardous Materials and Uses Element outlines the city's goals, objectives and policies concerning hazardous materials uses, hazardous waste transportation and disposal, public outreach and education, and emergency

response. The city of San Clemente has set forth specific goals, objectives, policies, and programs that aim to ensure the public health, safety, welfare and the environment are protected with respect to hazardous materials usage. Listed below are the relevant goals, objectives, and policies that are relevant to the Proposed Project.

- *Objective 15.2: Protect the public from the risk of hazardous uses/materials in transport, handling, storage and disposal.*
- *Policy 15.2.3: Continue all existing hazardous material and uses programs that are consistent with the goals, objectives, and policies of the Orange County Hazardous Waste Management Plan.*
- *Objective 15.3: Prevent loss of life, serious* injuries and major economic disruption caused by hazardous uses/materials and relate accidents.

The City of San Juan Capistrano Hazardous Materials and Waste Regulations

The city of San Juan Capistrano addresses hazardous materials and waste within the San Juan Capistrano General Plan – Safety Element. The city of San Juan Capistrano, as outlined in the Safety Element, works to minimize the accident and health risk from hazardous materials and wastes through utilization of the following approaches:

- Cooperation with federal, state and local agencies to effectively regulate the management of hazardous materials and hazardous waste;
- Cooperation with the County of Orange to implement applicable portions of the County Hazardous Waste Management Plan;
- Identification of roadway transportation routes for conveyance of hazardous materials; and
- Implementation of an emergency response plan for accidents involving hazardous materials.

SDG&E Standards

SDG&E's Electric Standard Practice (ESP) 113.1 constitutes SDG&E's wildland fire prevention and fire safety standard for construction. The purpose of ESP 113.1 is to formalize procedures and routine construction practices that will, among other things: improve SDG&E's ability to prevent the start of any fire; set standards for tools and equipment to assist with rapid response to small fires; incorporate federal, state and local requirements into standard business practices; establish "Red Flag Warning" restrictions; set criteria for when a formal fire plan is required; and establish a template and requirements for formal fire plans.

4.7.3.2 Emergency Response and Evacuation Regulations and Adopted Plans

Within the Proposed Project area, emergency response is handled first and primarily by the individual municipal agency with jurisdictional authority. Mutual aid, response, and emergency management are available from the County and State Governments where appropriate or by direct request of the local agency. The standard emergency response procedures and for each of the relevant jurisdictions are outline within the following subsections.

The State of California

The State Emergency Plan outlines the emergency management system for use during all emergencies within the State of California. The State Emergency Plan is developed, maintained, and implemented by the California Office of Emergency Services (OES). The State Emergency Plan defines the "policies, concepts, and general protocols" for the proper implementation of the California Standardized Emergency Management System (SEMS). The SEMS is an emergency management protocol that agencies within the State of California must follow during multi-agency response efforts whenever state agencies are involved.

County of Orange

The Orange County Sheriff's Department Emergency Management Bureau has the responsibility for emergency management and response within the Orange County Operational Area. The Orange County Operational Area is comprised of 114 members including County agencies and other jurisdictional agencies (Cities) and special districts. The Emergency Management Bureau maintains a permanent Emergency Operations Center and conducts emergency management pursuant to the SEMS.

The City of San Clemente

The *City of San Clemente Emergency Plan* (Emergency Plan) is a SEMS compliant plan that was published in 2003 and was developed specifically to prepare for, respond to, and recover from any emergency or disaster that may affect the city of San Clemente. The Emergency Plan outlines specific steps for the city's response to a number of different emergencies. The Emergency Plan's main focus is a potential event at the San Onofre Nuclear Generating Station. The Emergency Plan also has a specific section for hazardous materials emergencies (City of San Clemente Multi-Hazard Plan Part Two – Annex C). The hazardous materials emergencies section states that in the case of an emergency where evacuation is required, evacuation routes would be determined based upon the location and nature of the emergency.

The city of San Clemente contracts with the County for Law and Fire Protection services. Therefore, the Orange County Fire Authority and Sheriff's Department would represent first responders within the city of San Clemente and would provide mutual aid response within the Orange County Operational Area.

The City of San Juan Capistrano

The *City of San Juan Capistrano Emergency Operations Plan* (Emergency Operations Plan) is a SEMS compliant plan that establishes emergency response protocols for preparation for, response to, assessment of, and recovery from major disaster/emergency events that may affect the city of San Juan Capistrano. The Emergency Operations Plan's main focus is a potential San Onofre Nuclear Generating Station emergency event. The Emergency Operations Plan outlines specific threats to the city as well as detailed response sequences tailored to each threat. Threat Assessment -4 details the City's response to a hazardous materials incident. The Orange County Fire Authority represents the primary response agency within the city of San Juan Capistrano in the case of a hazardous materials incident. The City Manager acts as the Director of Emergency Services and Emergency Operations Center Director during declared emergencies within the city of San Juan Capistrano. All SEMS staffing needs for the City (Local) Emergency Operations

Center are provided by City and other contracted staff (Orange County Fire authority and Sheriffs' Department). The city of San Juan Capistrano contracts with the County for Law and Fire Protection services. Therefore, the Orange County Fire Authority and Sheriffs' Department would represent first responders within the city of San Juan Capistrano and could provide mutual aid response within the Orange County Operational Area.

Emergency evacuation routes are determined based upon the location and nature of the emergency. Various threat assessments outlined with the Emergency Operations Plan dictate desperate evacuation protocols, identifying specific evacuation pathways where appropriate. Using a potential San Onofre Nuclear Generating Station event as an example, primary evacuation routes are any direct arterials that connect to I-5, followed by I-5 north away from the San Onofre Nuclear Generating Station facility. During a flood event within the city of San Juan Capistrano, evacuees may utilize any major roadway in the vicinity to access I-5 as most major roadways within the City are constructed above the 100-year flood elevation.

4.7.3.3 Hazardous Materials Setting

Hazardous materials would be used and stored during construction, operation, and maintenance of the Proposed Project. In addition, past and existing electrical equipment located at the Capistrano Substation contain hazardous materials that have led to potential soil contamination onsite. The following subsections describe the types and amounts of hazardous materials present, or potentially present, at the Capistrano Substation, Talega Substation or within or directly adjacent to the transmission line ROW. In addition; schools and hospitals within 0.25 mile of the Proposed Project are identified and analyzed as potential sensitive receptors.

San Juan Capistrano Substation Overview

Table 4.7-2, Hazardous Materials Sites Adjacent to the Capistrano Substation, lists all hazardous materials sites on the Capistrano Substation that have a low, medium or high potential to impact the Proposed Project, public, or the environment. Sites adjacent to the substation site are listed only if they have a medium or high potential for impact.

The remainder of this page is intentionally kept blank.

Table 4.7-2: Hazardous Materials Sites Adjacent to the Capistrano Substation

Site Name and Address	List[1]	Potential to Impact Proposed Project	Contamination Profile
SDG&E, Capistrano Substation Site 31050 Camino Capistrano San Juan Capistrano, CA	None	High – documented hazardous materials and soil contamination onsite	• Low levels of lead and chromium in onsite soils. • Existing asbestos and Lead-based paint contamination within specific material components of old substation structure. • Low levels of petroleum hydrocarbons in onsite soils.
Lawson's Landscaping 31050 Camino Capistrano San Juan Capistrano, CA	HAZNET	Low – no documented contamination and low likelihood for contamination	No known spills, leaks or contamination. Storage and offsite disposal of waste oils and inorganic solid waste.

Notes:
[1] Regulatory Agency Listing: see Table 4.7-1 for a definition of each database.
Source: EDR, 2012

Asbestos Containing Materials

The 2002 asbestos survey conducted by Sigma Engineering, Inc. did not locate any asbestos containing materials. The 2008 Advanced Environmental Group, Inc. asbestos survey did identify asbestos containing materials within certain building materials found within the abandoned concrete building located on the lower yard portion of the Existing Capistrano Substation site. Table 4.7-3, Asbestos Containing Materials Survey Results (2008), details the findings of the Advanced Environmental Group, Inc. asbestos survey.

Table 4.7-3: Asbestos Containing Materials Survey Results (2008)

Location and Type of Material	Type and Concentration of Asbestos	Approximate Amount of Asbestos Containing Material	Condition of Asbestos Containing Material[1]
Roof (gray mastic)	Chrystoline (7%)	10 square feet	Fair
Roof (felts)	Chrystoline (65%)	5,680 square feet	Fair
2nd Floor (Electric Conduit/ Transite)	Presumed (not samples taken)	2 linear feet	Good

Notes:
[1]The relative hazard potential from asbestos containing materials is a function of the condition of the material containing the asbestos. The worse the condition of the material, the higher the hazard potential.
Source: AEG, 2008

In addition to the above outlined asbestos containing materials, the 2008 Advanced Environmental Group, Inc. report also identified mold present within the abandoned concrete building which would present a health risk to persons inhabiting the building.

Lead Based Paint

The 2002 lead-based paint survey conducted by Sigma Environmental, Inc. identified lead-based paint within certain building materials found within the abandoned concrete building located on the lower yard portion of the existing Capistrano Substation site. Table 4.7-4, Lead-Based Paint Survey Results (2002), details the finding of the Sigma Environmental, Inc. survey.

Table 4.7-4: Lead-Based Paint Survey Results (2002)

Location and Type of Material	Concentration of Lead (milligrams per kilogram [mg/kg])	Condition of Asbestos Containing Material[1]
Interior Windows (window putty)	5,323 – 11,280	Poor
Exterior door and window frames (green paint)	13,920 – 59,600	Poor
Exterior stucco (beige paint)	8,468 – 43,050	Fair to good

Notes:
[1]The relative hazard potential from lead-based paint is a function of the condition of the material containing the lead. The worse the condition of the material, the higher the hazard potential.
Source: Sigma Environmental, Inc., 2002.

Soil Contamination

The 2009 Phase II Environmental Assessment soil sampling identified one sample with elevated levels of petroleum hydrocarbons, one sample with a moderately elevated level of lead, and one sample with an elevated level of chromium. Table 4.7-5, Soil Sampling Results (2009), details the results of the soil sampling at the existing Capistrano Substation site.

The remainder of this page is intentionally kept blank.

Table 4.7-5: Soil Sampling Results (2009)

Sample Location and Depth	Contaminant	Concentration	Waste Classification and Other Restrictions
Former transformer area (lower yard) at 0.5 feet below surface (fbs)	Total recoverable petroleum hydrocarbons	3,700 milligrams per kilogram (mg/kg)	Contamination most likely from heavy oil (no additives) and therefore a low threat to human health.
Former transformer area (lower yard) at 0.5 fbs	Total lead / soluble lead (Soluble Threshold Limit Concentration [STLC])	200 mg/kg total lead / 33 mg per liter (mg/l) soluble lead (STLC)	Potential CA Hazardous Waste (Lead STLC above limit (5 mg/l). Low threat to human health, concentrations are below the USEPA Region IX RSLs, PRGs and the CHHLs for lead content within commercial and industrial soils.
Existing substation perimeter (upper yard) at 8 fbs	Total Chromium / Chromium IV	450 mg/kg total chromium / Chromium IV was below detection limit (1 mg/kg)	Concentrations are below the RSLs and the CHHLs for Chromium III[1] in commercial and industrial soils.

Notes:
[1]Total Chromium detection (450 mg/kg) is assumed to be Chromium III because follow-up tests for the more toxic Chromium IV were below the detection limit of 1 mg/kg. Therefore, the screening levels for Chromium were used to assess potential risk.
Source: TRC, 2009.

Talega Substation

No hazardous materials sites within or adjacent to the Talega Substation were identified within the EDR Corridor Study report. Furthermore, no other known or potential sources of hazardous materials, waste, contamination, or building materials were identified that could potentially affect the Proposed Project.

Transmission Line Right-of-Way

Table 4.7-6, Hazardous Materials Sites Adjacent to the Transmission Line ROW, lists all hazardous materials sites on, or within the immediate vicinity of, the transmission line ROW that have a medium or high potential to impact the Proposed Project, public, or the environment.

Table 4.7-6: Hazardous Materials Sites Adjacent to the Transmission Line ROW

Site Name, Address, and Closest Proposed Project Structure	List[1]	Potential to Impact Proposed Project	Contamination Profile
Plant Depot School Site 31251 Avenida Los Cerritos San Juan Capistrano, CA Pole No. 6	UST, SCH, ENVIROSTOR	Low – no documented contamination and the site is now developed	Potential arsenic and nitrate contamination from past agricultural operations.
Intown Properties (HUD) 31098 Call San Diego San Juan Capistrano, CA Pole Nos. 1a and 2a	HAZNET	Low – no documented contamination and low likelihood of contamination	Household waste
Marbella Golf Course 30650 Golf Club Drive San Juan Capistrano, CA Pole No. 5	LUST, SWEEPS UST, CA FID UST, HAZNET	Low – low likelihood of project interaction with existing contamination	Gasoline
Pollo Cleaners 31105 Rancho Viejo Road San Juan Capistrano, CA Pole No. 6	RCRA-SQG, FINDS, HAZNET	Low – not immediately adjacent to ROW, no documented contamination and low likelihood of contamination	Small quantity generator of hazardous waste, no violations
Impact Bearing 1291 Puerto Del Sol San Clemente, CA Pole Nos. 38 and 39	RCRA-SQG, HAZNET	Low - not immediately adjacent to ROW, no documented contamination	Small quantity generator of hazardous waste, no violations
Flavor Infusion, LLC 1324 Calle Avanzado San Clemente, CA Pole Nos. 39 and 40	RCRA-LQG, HAZNET	Low - not immediately adjacent to ROW, no documented contamination	Large quantity generator of hazardous waste, no violations

Notes:
[1] Regulatory Agency Listing: see Table 4.7-1 for a description of each database.
Source: EDR, 2012.

4.7.3.4 Hazards Setting

Existing Electric Substations and Transmission Facilities

The Proposed Project includes the replacement and upgrading of existing electric transmission, distribution and substation facilities. It is located entirely within or adjacent to existing electric transmission facilities and substations and does not include the installation of new electric transmission facilities in areas where similar facilities do not already exist. These existing facilities constitute the baseline from which potential hazard and hazardous materials impacts were evaluated.

Fire Hazards

Due to the arid environment of Southern California, wildland fires are constant threat during the dry season. Wildland fires can be ignited by natural or anthropogenic sources and can become very difficult to control once started. Recent history has shown Southern California counties suffer losses to the environment, property, and life due to wild land fires. Much of the Proposed Project alignment is located within and is surrounded by undeveloped land that is subject to the potential of wildland fires. SDG&E has designated areas within their service territory as a Fire Threat Zone (FTZ) based on Cal Fires Wildland Fire Threat mapping assessment (FRAP). These areas are designated as such due to the wildland fire threat relative to the fuel, weather, and topography of the area with ratings of moderate, high, very high and extreme. Within the Proposed Project area, SDG&E has designated all areas east of the I-5 as being in the Fire Threat Zone with ratings of moderate to very high. SDG&E has developed operating protocols and safety standards that minimize the risk of wildland fires during SDG&E construction activities. Specifically, wildland fire prevention during construction is governed internally within SDG&E through implementation of ESP No. 113.1 (Wildland Fire Prevention and Fire Safety).

4.7.3.5 Schools

Table 4.7-7, Schools within 0.25 Mile of the Proposed Project, lists all schools located within 0.25 mile of the Proposed Project. These schools are depicted on Figure 4.9-1 within Section 4.9, Land Use and Planning.

Table 4.7-7: Schools within 0.25 Mile of the Proposed Project

School Name	School Location in Relation to the Proposed Project
Saddleback Valley Christian	Approximately 0.2 mile northwest of the Capistrano Substation Site
JSerra Catholic High School	Approximately 0.2 mile north of the Capistrano Substation site
Marbella Montessori School	Approximately 0.2 mile southwest of Pole No. 4
St. Margaret's Episcopal School	Approximately 0.25 mile southwest of Pole No. 6
Harold Ambuehl Elementary School	Approximately 0.17 mile west of Pole No. 7
San Juan Hills High School	Adjacent to Rancho San Juan section of transmission line ROW and Pole Nos. 15-18 and 8a
Vista Del Mar Middle School	Approximately 0.20 mile east of Pole No. 28
Talega Preparatory Academy	Approximately 0.15 mile northeast of Pole No. 38
Capistrano Connections Academy (Charter School)	Approximately 0.16 mile north of Pole No. 35

4.7.3.6 Hospitals

There are no hospitals within 0.25 mile of the Proposed Project.

4.7.3.7 Airports

There are no airports, public or private, located within two miles of the Proposed Project. The closest airport to the Proposed Project is John Wayne Airport, which is located approximately 15 miles north of the existing Capistrano Substation site.

4.7.4 Potential Impacts

4.7.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact regarding hazards and hazardous materials if it would:

a) Create a significant hazard to public health or the environment through the routine transport, use, or disposal of hazardous materials;

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.7.4.2 Question 7a - Create a significant hazard to public health or the environment through the routine transport, use, or disposal of hazardous materials?

Construction – Less than Significant Impacts with Incorporation of APMs

Impacts from Existing Contamination or Hazardous Waste/ Building Materials

Existing Capistrano Substation Site

The principal exposure pathways related to existing contamination for the Proposed Project would involve the excavation and handling of contaminated soil and hazardous building

materials resulting in exposure of workers and/or the general public. For example, construction workers may come into contact with contaminated soil if excavation activities occur within an area of existing soil contaminated. With respect to the Proposed Project, a number of existing contaminants have been identified at the Capistrano Substation site, including soil contaminated with petroleum hydrocarbons, lead, and chromium and asbestos containing materials and lead-based paint containing materials within one existing structure. In addition, further additional soil contamination is possible within the active portion of the existing 12/138kV substation located on the upper yard portion of the existing Capistrano Substation site. Soil sampling would be conducted within this portion of the substation site once the new 12/138kV substations have been constructed on the lower yard (refer to Section 3.5.3).

Hazardous materials in the construction area would require special handling as hazardous waste and could create a potential exposure risk to workers and the general public during excavation and transport if proper handling procedures are not followed. Contaminated soil exceeding regulatory limits for trench backfilling would require transportation to off-site processing facilities. Contaminated soil removed from the construction area must be transported according to state and federal regulations and any required backfill material must be imported. Protection for workers who handle hazardous substances is regulated by multiple state and federal regulations and agencies, including OSHA, CalOSHA, DTSC, USEPA, the asbestos NESHAP, RCRA, and the HWCL.

Exposure of contaminated soil to construction workers occurs when workers come into direct contact or are located within the immediate vicinity of contaminated soils. Contaminated soil, when handled, transported, and disposed of properly (pursuant to existing laws and regulations) does not represent a significant health risk to workers or the public. Standard construction crews would not be present during removal of any contaminated soil and hazardous building materials present at the Capistrano Substation site (refer to Section 4.7.3.3). Specialized crews would be utilized to conduct any remediation (safe removal of contaminants) at the Capistrano Substation site prior to actual construction of the Proposed Project commencing. Proper personal protection equipment (PPE) would be utilized by all remediation workers that may come into contact with known contaminated soil or hazardous building materials. PPE would be determined based upon the nature of the contamination present at any given portion of the substation site and would comply with all applicable CalOSHA standards.

Exposure of the general public to contaminated soils and hazardous building materials can be almost entirely eliminated by proper construction site security (the remainder of the risk to the public is controlled through proper transportation of the waste to a licensed facility). During normal construction activities, the general public should not, under any circumstances, be allowed access to a construction site. Without direct access to contaminated soil, the risk of harmful exposure is very low; assuming proper excavation, handling, and disposal of the contaminated soil and hazardous building materials. Any contaminated soil that is removed from the Capistrano Substation site would be excavated, handled, and disposed following all applicable laws, ordinances and safety standards.

Of the eight identified potential existing contamination/hazardous materials sites (refer to Tables 4.7-2 and 4.7-6), only the Capistrano Substation site poses a high risk of impacting the Proposed Project, as outlined above. The remaining seven sites identified (refer to Tables 4.7-2 and 4.7-6)

would not pose a potential risk to Proposed Project workers, or to the public or environment as a result of the construction of the Proposed Project for the following reasons:

1. Only one site (Marbella Golf Course) has documented contamination and it is not likely to extend to where construction of the Proposed Project would occur (Pole No. 6),
2. None of the sites are located immediately adjacent to the Proposed Project, where Proposed Project workers could come into contact with hazardous materials or wastes.

In order to ensure that potential impacts relating to the handling and disposal of contaminated soil and hazardous building materials during construction of the proposed San Juan Capistrano Substation are less than significant, SDG&E is proposing APM HAZ-1. Worker and public safety is also regulated by adherence to existing requirements under the following agencies and regulations:

- OSHA (specifically Section 1910.120 [Hazardous Waste Operations and Emergency Response]),
- CalOSHA (OSHA regulations, Lead Standard, asbestos Construction Standard),
- USEPA (Asbestos NESHAP), and
- DTSC (RCRA and HWCL).

In addition, the following SDG&E Environmental Standards would be employed to further ensure that no adverse effects to worker and public safety result from construction of the Proposed Project:

- Asbestos Management,
- Hazardous Materials Transportation Security Plans,
- Hazardous Materials and Waste Management,
- Hazardous Material and Waste Shipping,
- Hazardous Waste Minimization Plans, and
- Field Guidelines for Emergency Incidents.

The construction contractor would also implement (in addition to regulatory and SDG&E requirements) their own compliance management programs to ensure that regulatory requirements are adhered to and that worker and public safety are secured.

Implementation of APM HAZ-1 (which requires additional soil testing in the active substation area [upper yard]), along with adherence to requirements and SDG&E Environmental Standards outlined above, would ensure that all hazardous building materials are abated, removed, and transported by licensed professionals and that the active substation area is tested for potential soil contamination. Impacts would therefore be less than significant.

Hazardous Materials Utilized During Construction Activities

Vehicles and equipment used for construction could contain or require the temporary, short-term use of potentially hazardous substances, such as fuels, lubricating oils, and hydraulic fluid. The potential exists for an accidental release of hazardous materials during construction and refueling activities. The release of these materials has the potential to impact construction workers, the public and the environment if they are not properly contained and removed. Potential impacts from the release of these materials would be mitigated by the implementation of construction BMPs. These BMPs could include, but would not be limited to, construction practices such as the use of absorbent pads for spill containment, specified locations for construction vehicle refueling, and a daily vehicle inspection schedule designed to identify leaking fuels and/or oils as early as possible.

Operation & Maintenance – No Impact

The Proposed Project includes the replacement and upgrading of existing electric transmission, distribution and substation facilities. It is located entirely within or adjacent to existing electric transmission facilities and substations and does not include the installation of new electric facilities in areas where similar facilities do not already exist. These existing facilities constitute the baseline from which potential hazard and hazardous materials impacts were evaluated.

The only potentially material difference between the existing facilities and the Proposed Project is the introduction of gas insulated design at the proposed new San Juan Capistrano Substation. As discussed below, the gas insulated design would not result in any hazard or hazardous materials impact.

Gas Insulated Substations

Operation of the new 230kV and 138kV gas insulated substations at the San Juan Capistrano Substation site would involve the utilization of sulfur hexafluoride gas. The chemical equation for sulfur hexafluoride is SF_6. Table 4.7-8, Physical and Chemical Properties of Sulfur Hexafluoride, summarizes the physical and chemical properties of sulfur hexafluoride.

The remainder of this page is intentionally left blank.

Table 4.7-8: Physical and Chemical Properties of Sulfur Hexafluoride

Physical/Chemical Property	Sulfur Hexafluoride Value
Physical State at standard temperature and pressure	Gas
Reactive	No
Flammable	No
Explosive	No
Corrosive	No
Toxic	No
Carcinogenic	No[1]
Odor	None
Boiling point (sublimation)	-64 ^{o}C
Potential Health Threats	Simple asphyxiate
Source: Sulfur Hexafluoride MSDS	

Sulfur hexafluoride is an inert gas at standard temperature and pressure and is not listed as a hazardous material within the Chapter 11, Appendix X of the HWCL (CCR Title 22). A sample material safety data sheet (MSDS) for sulfur hexafluoride is provided as Appendix 4.7-C. With respect to the Proposed Project, the utilization of sulfur hexafluoride does not represent any reasonably foreseeable threat to human health or the environment. Therefore, no impacts are anticipated from the utilization of sulfur hexafluoride.

Transformer Oil and other Materials

Mineral insulating oil would be present in sealed electrical equipment (such as transformers) at the Proposed Project substations. Transformer oil is present at both existing substations and this would be the same after the substations are rebuilt and/or modified. The amount of transformer oil at the San Juan Capistrano Substation would be substantially more than is present at the existing Capistrano Substation. However, as with current conditions, due to the fact that insulating oils are contained in equipment with secondary containment surrounding them at the substation sites, and that the substation sites are secured from public access, there is very little risk to the public from exposure to such materials and the increased volumes would not cause any substantial change as compared to current conditions. The workers who handle the oil and maintain the substation are trained to handle such materials and respond to accident conditions. Additionally, the containment of transformer oil at the substation site, as is currently the case, would be controlled through the preparation and adherence to an SPCC plan and SDG&E Environmental Standards. Therefore, there would be no impacts from the routine use of hazardous materials during operation and maintenance of the Proposed Project.

All herbicides utilized during maintenance around transmission line poles would follow SDG&E's Approved Herbicides and Application Procedure and would not be substantially different from current herbicide utilization within the Proposed Project area. Therefore, there would be no impacts.

[1] Sulfur hexafluoride is not listed as a potential carcinogen by the National Toxicology Program, OSHA, or International Agency for Research on Cancer.

4.7.4.3 Question 7b - Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction – Less than Significant Impact with Incorporation of APMs

As discussed under Section 4.7.4.2, construction at the Capistrano Substation site would involve the handling of contaminated soils and hazardous building materials. These hazardous substances would be remediated (safely removed from their current place) and transported to a licensed facility pursuant to applicable state and federal regulations. While the potential for upset conditions to cause a release of these materials during transport does exist, the chances of this occurring are considered to be low, and therefore the risk of upset or accident conditions leading to a significant hazard from the transport of hazardous waste is also considered to be low. In addition, implementation of APM HAZ-1 and SDG&E Environmental Standards (refer to Section 4.7.4.2) would further reduce the potential risk of upset and/or accidental release of hazardous substances creating a significant adverse environmental effect. Therefore, impacts are anticipated to be less than significant.

Operation & Maintenance – No Impact

As discussed under Section 4.7.4.2, operation and maintenance of the Proposed Project at substation facilities would be substantially similar to operation and maintenance at the existing Capistrano Substation, with the exception of the gas insulated design. The gas insulated design involves the use of sulfur hexafluoride. There is a low risk of accidental release and the substation site would be secured from public access and the risk to public is therefore very low. No impacts are anticipated to occur.

4.7.4.4 Question 7c - Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Construction – Less than Significant Impact

As discussed in Section 4.7.4.2, construction at the existing Capistrano Substation site would involve the handling of contaminated soils and hazardous building materials. There are two schools located within 0.25 mile of the Capistrano Substation site: JSerra Catholic High School and the Saddleback Valley Christian School. However, the Proposed Project would not emit any hazardous substances during construction. Adherence with existing state and federal regulations pertaining to the transportation of hazardous materials would ensure that the existing hazardous substances at the existing Capistrano Substation site are removed and properly disposed within significant risk to nearby schools.

Operation & Maintenance – No Impact

Within 0.25 miles of any schools, operation and maintenance of the Proposed Project would not differ substantially from that of operation and maintenance activities associated with existing facilities. Therefore, no impact would occur.

4.7.4.5 Question 7d - Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Construction – No Impact

Construction of the Proposed Project would not occur on a site listed under Government Code Section 65962.8 (Cortese list). There are two sites that are on the Cortese list adjacent to the transmission line ROW; however, the presence of these sites in the vicinity of the transmission line ROW would not create a significant hazard to the public or the environment. While the existing Capistrano Substation site is not on the Cortese list or any similar listing of known or suspected hazardous materials sites, there are known hazardous substances at the substation site. Potential impacts relating to the known hazardous substances are discussed under Section 4.7.4.2.

Operation & Maintenance – No Impact

Operation and maintenance of the Proposed Project would not differ substantially from that of the existing facilities and would not occur on any sites listed under Government Code Section 65962.5. Therefore, operation and maintenance activities would not result in any significant hazard to the public or the environment relating to Government Code Section 65962.5.

4.7.4.6 Question 7e - For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

Construction and Operation & Maintenance – No Impact

The Proposed Project is not located within an airport land use plan, nor is the Proposed Project located within two miles of an airport. Therefore, no impacts would occur.

4.7.4.7 Question 7f - For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Construction and Operation & Maintenance – No Impact

The Proposed Project is not located within the vicinity of a private airstrip. Therefore, there would be no impacts.

4.7.4.8 Question 7g - Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction – Less than Significant Impact

Proposed Project construction would not restrict would not interfere with the *City of San Clemente Emergency Plan*, the *City of San Juan Capistrano Emergency Operations Plan*, or

emergency response at the State and Operational Area levels under the State Emergency Plan and the SEMS.

Construction of the Proposed Project would involve partial closure of certain streets during construction of underground transmission lines. However, through access would be maintained during construction (as discussed in Section 4.14, Traffic and Transportation) and therefore impacts would be less than significant.

Operation & Maintenance – No Impact

Operation and maintenance of the Proposed Project would not differ substantially from that of the existing facilities, therefore the Proposed Project would not restrict traffic flow at any locations or otherwise interfere with the *City of San Clemente Emergency Plan*, the *City of San Juan Capistrano Emergency Operations Plan*, or emergency response at the State and Operational Area levels under the State Emergency Plan and the SEMS. No impacts to any existing emergency or evacuation plans are anticipated.

4.7.4.9 Question 7h - Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Construction – Less than Significant Impact

As previously described in Section 4.7.3, portions of the transmission lines associated with the Proposed Project are located within a SDG&E designated FTZ. While construction of the Proposed Project would place construction workers temporarily within the designated FTZ, construction work would be temporary and workers would only be within each distinct construction area for a relatively short amount of time. In addition, the majority of this area has already developed with the city of San Juan Capistrano and the Talega community (city of San Clemente) and the amount of open, vegetated area has been reduced over the past 10 to 15 years as Talega development has matured, thereby reducing the risk of wildfire within this area.

Construction activities do have the potential to start a fire due to the increased presence of vehicles, equipment, and human activity in areas of elevated fire hazard severity. In particular, heat or sparks from construction vehicles or equipment have the potential to ignite dry vegetation. Consistent with current SDG&E standard practices, SDG&E would implement its existing Wildland Fire Prevention and Fire Safety (ESP No. 113.1), which includes requirements for carrying emergency fire suppression equipment, conducting "tailgate meetings" that cover fire safety discussions, restrictions on smoking and idling vehicles, and construction restrictions during red flag warnings. As part of the Proposed Project and consistent with ESP 113.1, SDG&E would also implement a project-specific fire plan to assist in safe practices to prevent fires with the Proposed Project area. This plan would include equipping diesel and gasoline-operated engines with spark arrestors, carrying emergency fire suppression equipment, furnishing a water truck on or immediately adjacent to the Proposed Project work area, and ceasing construction during a red flag warning, as specified in the project-specific fire plan.

Consistent with ESP 113.1 and the project-specific fire plan, prior to starting construction activities, SDG&E would clear dead and decaying vegetation from Proposed Project work areas where personnel are active or where equipment is in use or being stored within ROWs, staging

areas, stringing sites, and access roads. Cleared dead and decaying vegetation would either be removed or chipped and spread on site.

During construction activities within the FTZ, workers would follow ESP 113.1 and the project-specific fire plan, which will incorporate existing SDG&E fire standards and safety practices while adding in project-specific conditions and practices to further ensure that the risk of a fire event during construction of the Proposed Project is minimized. This project-specific fire plan is incorporated into the Proposed Project, and will be used to ensure that potential impacts relating to wildland fires remain less than significant. Therefore, any potential impacts from wildland fires would be less than significant.

Operation & Maintenance – No Impact

Operation and maintenance of the Proposed Project would not differ substantially from that of the existing facilities, except that potential fire hazards would be reduced following construction of the Proposed Project due to the fact that many of the transmission line poles that are being replaced are made of wood and the new transmission poles would be made of steel and have greater clearance above the ground and existing vegetation as outlined below.

In general, the replacement of wood poles with steel poles is often undertaken specifically to minimize the risk of wildfires that exists when certain atmospheric conditions occur within geographic areas designated as fire threat areas. The Proposed Project, while not being conducted for the purpose of reducing fire risk, would involve the removal of many wood poles and is therefore consistent with SDG&E's long-term plan to improve service reliability in fire-prone areas through system hardening or other enhancements. The Proposed Project would replace existing wood pole structures with new steel pole structures, string new wire (thereby removing weak spliced locations), install only steel poles that would withstand 85 mph winds, and install longer polymer insulators to minimize contamination which would improve system reliability during extreme weather conditions. With these design features, there would be reduced exposure of people or structures to loss, injury, or death involving wildland fires as compared to existing conditions. Thus, the Proposed Project would result in an overall beneficial long-term effect in this regard.

In addition, operation and maintenance of the Proposed Project would not require any additional workers than are currently required for operation and maintenance of the Talega to Capistrano transmission corridor, and the Proposed Project would therefore not increase the number of people exposed to potential wildland fires within the Proposed Project vicinity.

4.7.5 Applicant Proposed Measures

To avoid and minimize potential significant impacts associated with hazards or hazardous materials for the Proposed Project, SDG&E proposes to incorporate the following APM during the construction of the Proposed Project (it is important to note that impacts relating to the handling, abatement, and transportation of hazardous materials are controlled through adherence to existing state and federal regulations):

HAZ-1 Prior to the start of earth disturbance activities at the upper yard portion of the existing Capistrano Substation site, a Phase II Environmental Site Assessment (soil sampling) would be performed and, if any contaminated soil is found to be present,

contaminated soils would be managed, removed, transported, and disposed of in accordance with all applicable laws, ordinances and safety standards.

4.7.6 References

Advanced Environmental Group, Inc. February 2008. *Asbestos Inspection Report San Diego Gas & Electric Capistrano Substation*.

California Code of Regulations. 12-29-2006. Title 22, Chapter 11, Appendix X, List of Chemical Names and Common Names for Hazardous Wastes and Hazardous Materials.

California Code of Regulations. 12-29-2006. Title 22, Chapter 11, Article 3, Section 66261.24-1. Table II – List of Inorganic Persistent and Bioaccumultive Toxic Substances and Their Soluble Threshold Limit Concentration.

California Environmental Protection Agency. 2005. *Use of California Human Health Screening Levels in Evaluation of Contaminated Properties.*

California Integrated Waste Management Board. Solid Waste Information System Database. Site Summary Details for the Prima Deshecha Land Fill. Online: http://www.ciwmb.ca.gov/SWIS/30-AB-0019/Detail/. Site accessed on February 23, 2012.

California Public Utilities Commission. January 2006. *Rules for Overhead Electric Line Construction - General Order No. 95*.

City of San Clemente. 2003. *City of San Clemente Emergency Plan*.

City of San Clemente. 1993. *General Plan*.

City of San Juan Capistrano. January 2007. *City of San Juan Capistrano Emergency Operations Plan*.

City of San Juan Capistrano. 2002. *General Plan*.

City of San Juan Capistrano. 2012. *Ordinance 991 (Designation of Very High Fire Hazard Severity Zones).*

County of Orange. 2005. *General Plan.*

County of Orange. Certified Unified Program Agency. Online: http://www.occupainfo.com/. Site accessed on August 14, 2008.

County of Orange Sheriff's Department. Emergency Management Bureau. Online: http://www.ocgov.com/ocgov/Info%20OC/Departments%20&%20Agencies/Emergency%20Operations%20Center%20-%20Orange%20County%20Disaster%20Preparedness/Emergency%20Management/Emergency%20Management%20Bureau. Site Visited February 23, 2012.

Department of Toxic Substances Control. March 12, 2003. *Environmental Oversight Agreement for Docket # HAS-A 02/03-131*.

Department of Toxic Substances Control. ENVIROSTOR Database. Online: http://www.envirostor.dtsc.ca.gov/public/. Accessed August 14, 2008 and February 23, 2012.

Environmental Data Resources (EDR). February 28, 2008. *Corridor Study for Inquiry Number 2152734.1s*.

Environmental Data Resources (EDR). February 29, 2008. *Aerial Photo Decade Package for Inquiry Number 2154760.1*.

Environmental Data Resources (EDR). January 6, 2012. *Corridor Study for Inquiry Number 3233412.1s.*

Haley & Aldrich, Inc. 2002. *Report on ASTM Phase I Environmental Site Assessment and Lead/Asbestos Survey – SDG&E San Juan Capistrano Substation*.

Occupational Safety and Health Act, Part 1910 – Occupational Health and Safety Standards. Accessed at: http://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=STANDARDS&p_toc_level=1&p_keyvalue=1910

Occupational Safety and Health Act, Part 1904.29 – Recording and Reporting Occupational Injuries and Illness. Accessed at: http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=12805

Praxair, Inc. October 1997. *Material Safety Data Sheet for Sulfur Hexafluoride*.

San Diego Gas & Electric Company. 1964. *Drawing # BG-565 - Revised Southern California Edison Company Plot Plan for Substation Station Operator's Quarters*. Originally dated September 21, 1917.

San Diego Gas & Electric Company. March 23, 1933. *Drawing # SK 839 – Capistrano Substation Property Plan.*

San Diego Gas & Electric Company. July, 2009. *Electric Standard Practice No. 113.1 – Wildland Fire Prevention and Fire Safety*.

State of California Office of Emergency Services. September 2009. *State of California Emergency Plan.*

TRC Companies, Inc. 2009. *Phase 2 Environmental Site Investigation – Stage 1 Capistrano Substation Rebuild*.

TRC Companies, Inc. July 14, 2008. *Proposal for Phase 2 Environmental Site Investigation – Stage 2 Capistrano Substation Rebuild*.

US Environmental Protection Agency. November 2011. Regional Screening Levels Summary Table.

US Environmental Protection Agency. October 2004. Region 9 PRG Table.

US Environmental Protection Agency. *Users Guide and Background Technical Document for USEPA Region 9's Preliminary Remediation Goals (PRG) Table.*

US Environmental Protection Agency. 2011. Comprehensive Environmental Response, Compensation and Liability Act. Accessed at: http://www.epa.gov/superfund/policy/cercla.htm

This page intentionally left blank.

TABLE OF CONTENTS

4.8 HYDROLOGY AND WATER QUALITY 4.8-1
4.8.1 Introduction 4.8-2
4.8.2 Methodology 4.8-2
4.8.3 Existing Conditions 4.8-2
4.8.4 Potential Impacts 4.8-11
4.8.5 Applicant Proposed Measures 4.8-21
4.8.6 References 4.8-21

LIST OF FIGURES

Figure 4.8-1: Hydrologic Area, Watersheds, and Drainages 4.8-7

LIST OF TABLES

Table 4.8-1: Watersheds and Waterbodies Spanned by the Proposed Project 4.8-10

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.8 HYDROLOGY AND WATER QUALITY

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Violate any other water quality standards or waste discharge requirements?	☐	☐	☑	☐
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☑
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on-or off-site?	☐	☐	☑	☐
d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site?	☐	☐	☑	☐
e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☑	☐
f.	Otherwise substantially degrade water quality?	☐	☐	☑	☐
g.	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☑
h.	Place within a 100-year flood hazard area, structures that would impede or redirect flood flows?	☐	☐	☑	☐
i.	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☑	☐
j.	Expose people or structures to inundation by seiche, tsunami or mud flow?	☐	☐	☑	☐

4.8.1 Introduction

This section of the PEA provides information about surface water and groundwater and an analysis of potential impacts to hydrology and water quality from construction, operation, and maintenance of the Proposed Project.

Segments 1 and 2 of the Proposed Project traverse primarily urbanized areas where local hydrology and drainage patterns have been altered. Segments 3 and 4 of the Proposed Project traverse primarily undeveloped foothill terrain with ridges, valleys, and ravines. The vegetation in this primarily undeveloped foothill terrain consists mainly of coastal and riparian scrub, with residential and commercial developments at some locations that have altered the local hydrology and drainage patterns directly adjacent to the SDG&E ROW. Waterbodies crossed by the Proposed Project include perennial and intermittent flowing creeks and drainages of varying widths.

Construction, operation, and maintenance of the Proposed Project would have less than significant impacts to hydrology and water quality. First, the Proposed Project is almost entirely on already existing substation sites and along existing ROW. Second, SDG&E would comply with the legal requirements to prepare and implement an SWPPP and an SPCC Plan.

4.8.2 Methodology

The hydrology and water quality in the Proposed Project area were evaluated by reviewing water quality studies and EIRs from other projects in the area, city and county general plans, USGS 7.5-min series quadrangle maps, the Department of Water Resources *California's Groundwater Bulletin 118*, and online geographical information system sources. Aerial photographs of the Proposed Project area were also reviewed. The San Diego RWQCB's *Water Quality Control Plan for the San Diego Basin* was reviewed to ensure compliance with state and local regulations. The Federal Emergency Management Agency maps were referenced for flood zones. Wetland resources were identified during reconnaissance and habitat assessment surveys conducted in February 2008 and wetlands delineation field studies conducted in 2011 and 2012 (refer to Biological Resources Assessment included as Appendix 4.4-A).

4.8.3 Existing Conditions

4.8.3.1 Regulatory Setting

The Proposed Project site is located in the San Diego RWQCB's jurisdiction. The Proposed Project is located primarily in Orange County, with the southeastern most portion extending into Camp Pendleton in San Diego County. The San Diego RWQCB has required Orange County, San Diego County, and other local municipalities to regulate discharges to their storm drains. The municipalities regulate these discharges through their municipal stormwater ordinances.

The following authorities regulate water quality in the Proposed Project area:

- USEPA;
- ACOE - Los Angeles District;
- CDFG;

- California State Water Resources Control Board (SWRCB);
- San Diego RWQCB;
- Orange County;
- San Diego County; and
- City of San Juan Capistrano; and
- City of San Clemente.

The following sections describe applicable federal, state, and local water quality requirements.

Federal

Section 404 of the Clean Water Act

CWA Section 404 requires an ACOE permit for the discharge of dredged or fill material into jurisdictional WUS. Waters of the United States are defined under 33 CFR Part 329 as "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce." ACOE administers and USEPA enforces the Section 404 permit program. All Section 404 permit actions require a CWA Section 401 Water Quality Certification or Waiver from the San Diego RWQCB.

Nationwide Permits

Nationwide Permits are general CWA Section 404 permits for categories of activities that have minimal impacts on aquatic resources and meet certain conditions. Nationwide Permit 12 (Utility Line Activities) authorizes activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in WUS, provided the activities do not result in the loss of greater than one-half acre of WUS. Nationwide Permit 12 requires a pre-construction notification to the ACOE district engineer before beginning the activity if the Proposed Project results in discharges that result in the loss of greater than one-tenth acre of WUS. Section 4.4, Biological Resources, discusses specific impacts to jurisdictional WUS. In addition, a Jurisdictional Waters and Wetlands Delineation Report was prepared for the Proposed Project and has been included in Appendix 4.4-A.

Oil Pollution Prevention

Regulations at 40 CFR 112 require the owner or operator of a facility with an aggregate aboveground oil storage capacity of greater than or equal to 1,320 gallons to prepare and implement an SPCC Plan. Substations with oil-filled electrical equipment above the threshold quantity are subject to these requirements. These regulations require regulated facilities to develop and implement SPCC Plans and establish related procedures, methods, and equipment standards to prevent oil from reaching navigable waters and adjoining shorelines and to contain discharges of oil. SPCC Plans include periodic inspection of facilities and maintenance as needed to ensure containment of petroleum products. Stationary oil-filled equipment with a capacity of 55 gallons must have secondary containment as part of SPCC practices. The secondary containment ensures that even if oil is emitted from primary containment systems, it is

prevented from impacting surface waters. The SPCC provisions of 40 CFR Part 112 includes procedures for inspecting rainwater in secondary containment areas before it can be released to ensure that no oil is discharged.

State

Streambed Alteration Agreements

CFG Code Sections 1600–1616 require a Streambed Alteration Agreement for any project that may obstruct the natural flow of a river, stream or lake; substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or deposit debris where it may pass into a river, stream, or lake. A project applicant must submit a complete notification package to the CDFG describing the portions of a project that would:

- Substantially obstruct or divert the natural flow of a river, stream, or lake;
- Substantially change the bed, channel, or bank of a river, stream, or lake;
- Use any material from the bed, channel, or bank of a river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Section 4.4, Biological Resources, discusses specific impacts to jurisdictional waters of the State of California. In addition, a Jurisdictional Waters and Wetlands Delineation Report was prepared for the Proposed Project and has been included in Appendix 4.4-A.

Section 401 of the Clean Water Act

Section 401 of the CWA requires that any person applying for a federal permit for an activity that may result in a discharge of pollutants into WUS must obtain a certification that the activity complies with all applicable water quality standards, limitations, and restrictions. A federal agency cannot issue a license or permit for this activity without a Section 401 certification. For the Proposed Project area, the San Diego RWQCB issues Section 401 certifications. Section 4.4, Biological Resources, discusses specific impacts to jurisdictional WUS. In addition, a Jurisdictional Waters and Wetlands Delineation Report was prepared for the Proposed Project and has been included in Appendix 4.4-A.

National Pollutant Discharge Elimination System – Construction Stormwater Permits

The NPDES was authorized by the CWA and is administered in California by the SWRCB through the nine RWQCBs. The purpose of NPDES is to control the discharge of pollutants from point sources into WUS. The SWRCB has issued a Construction General Permit under NPDES that applies to most construction activities in California. Coverage under the Construction General Permit is necessary for projects that disturb one acre or greater of soil. The project applicant must submit a Notice of Intent and a SWPPP that complies with the Construction General Permit requirements to the SWRCB before starting construction activities. The project applicant must implement the SWPPP during construction, including requirements for inspections and monitoring, and must revise the SWPPP and implement revisions as needed to protect storm water quality.

The SWPPP describes:

- The project location, site features, and the identification of materials and activities that may result in pollutant discharges;
- BMPs to be implemented during construction. The BMPs are selected to control erosion, discharge of sediments, and other potential impacts associated with construction activities;
- An inspection and maintenance program for BMPs; and
- A sampling and analysis plan for monitoring pollutant discharges to waterbodies.

The project applicant must submit a Notice of Termination to the SWRCB after completing a project subject to the Construction General Permit.

Local ordinances also apply to construction discharges. For example, groundwater seeping into construction excavations can be discharged under the Construction General Permit if it is uncontaminated and meets all the Construction General Permit's requirements. Sewer authority permission is necessary, however, if the groundwater is discharged to the sanitary sewer. Local jurisdictions also implement requirements of their Municipal Separate Storm Sewer System (MS4) permit through local storm water quality protection regulations and grading permit issuance. San Diego RWQCB Water Quality Order R9-2009-0002, NPDES No. CAS0108740, is the MS4 permit for storm water discharges from municipal storm water systems in Orange County, and Water Quality Order R9-2007-0001, NPDES No. CAS0108758, is the MS4 permit for storm water discharges from municipal storm water systems in San Diego County. Requirements from these local permits that apply to the Proposed Project are discussed under the Local Regulations subheading, below.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) establishes a regulatory program to protect water quality and to protect beneficial uses of the state waters. It provides that:

- The quality of all waters of the state shall be protected for the use and enjoyment by the people of the state; and
- Activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality that is reasonable, considering all demands being made or to be made and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.

The Porter-Cologne Act establishes the SWRCB and the nine RWQCBs as the principle agencies responsible for control of water quality. The SWRCB is responsible for, among other things, preventing waste and unreasonable use of water, adopting state-wide water quality control policy, and implementing the CWA.

The RWQCBs are responsible for issuing waste discharge requirements to regulate the discharge of waste to surface and ground waters and enforcing waste discharge requirement through cease and desist orders. The Porter-Cologne Act also empowers the RWQCBs to adopt a Water Quality Control Plan that designates beneficial uses and establishes water quality objectives that would ensure reasonable protection of beneficial uses.

Local

Orange County, San Diego County, City of San Juan Capistrano, and City of San Clemente

The Proposed Project is located primarily in Orange County, the city of San Juan Capistrano, and the city of San Clemente. These local jurisdictions use their municipal ordinance authority to regulate grading, erosion, water discharge, and flood control issues that may affect hydrology and water quality. San Diego RWQCB Water Quality Order R9-2009-0002, NPDES No. CAS0108740, is the MS4 permit for storm water discharges from municipal storm water systems in Orange County, and Water Quality Order R9-2007-0001, NPDES No. CAS0108758 is the MS4 permit for storm water discharges from municipal storm water systems in San Diego County. NPDES requires the municipalities to regulate construction project discharges to their stormwater conveyance systems using their municipal ordinance authority.

The municipalities primarily enforce construction project discharges to their stormwater conveyance systems through grading and other permits. The specific requirements of various municipal departments and outside authorities, such as the Orange County Flood Control District, would be incorporated as permit conditions for the Proposed Project. Requirements include BMPs for erosion control, design features or equipment to control the volume of stormwater runoff generated at the site, and requirements to promote infiltration of stormwater. For construction, these requirements are typically incorporated as BMPs into the SWPPP.

United States Marine Corps Base Camp Pendleton

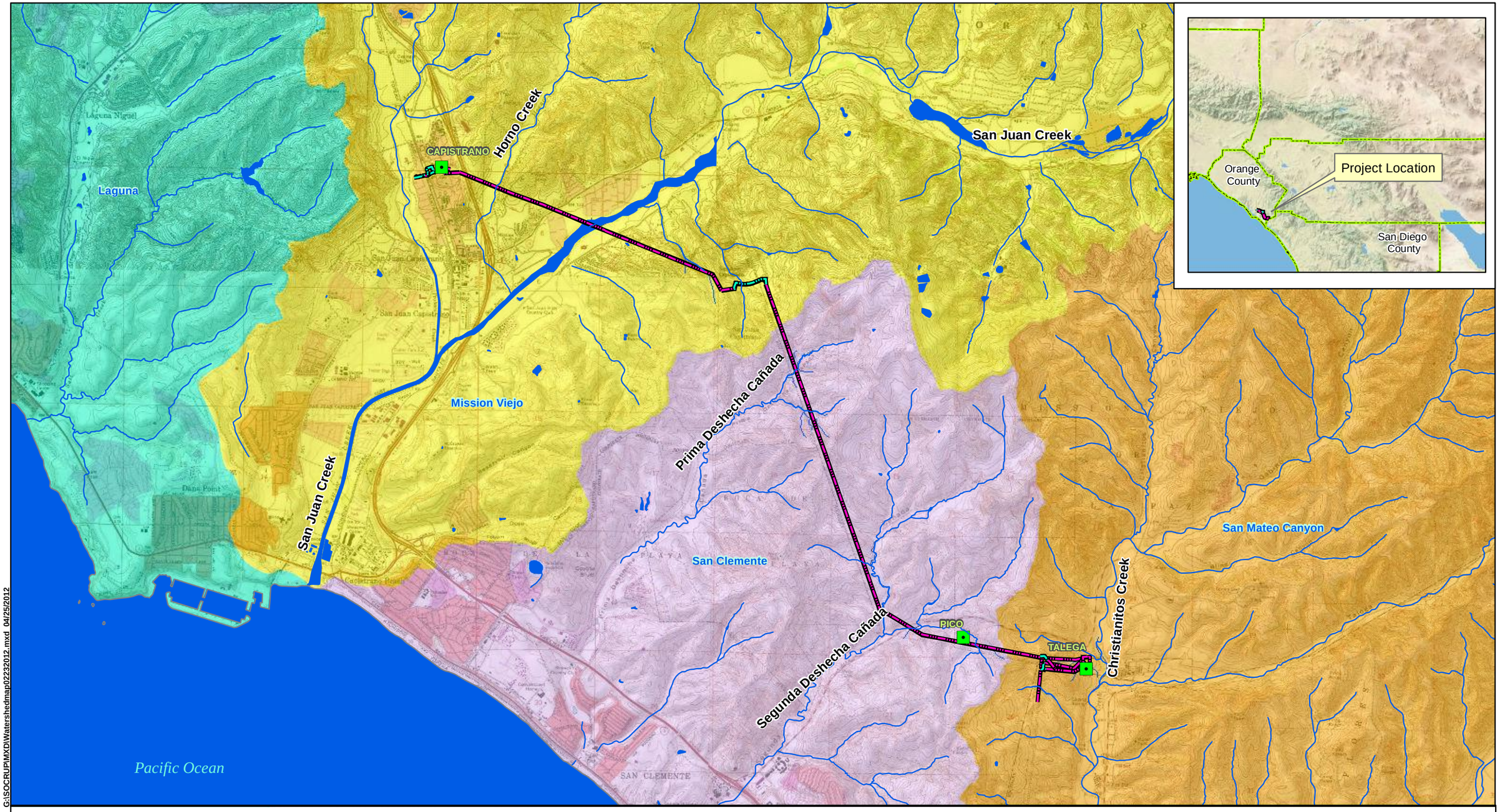
Portions of the Proposed Project would cross land owned by Camp Pendleton. The Proposed Project may therefore be subject to additional water quality protection requirements as a condition for access by Camp Pendleton.

4.8.3.2 Hydrology and Water Quality Setting

Surface Water and Groundwater Resources

Watersheds

The Proposed Project is in the San Juan Hydrologic Unit as defined by the RWQCB's Water Quality Control Plan for the San Diego Basin (Basin Plan). The San Juan Hydrologic Unit covers approximately 500 square miles and spans heavily populated areas, including the city of San Clemente, the city of San Juan Capistrano, and undeveloped and unincorporated areas of Orange County and San Diego County. The Proposed Project crosses three Hydrologic Areas in the Hydrologic Unit: Mission Viejo, San Clemente, and San Mateo. These Hydrologic Areas are shown in Figure 4.8-1, Hydrologic Area, Watersheds, and Drainages.



G:\SOCRUP\MXD\Watershedmap02232012.mxd 04/25/2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Capistrano, Pico and Talega Substations
- Proposed New Transmission Line - Overhead
- Proposed New Transmission Line - Underground
- Water and Drainages

Hydrologic Area and Watersheds

- Mission Viejo
- San Mateo Canyon
- San Clemente
- Laguna

Source: USGS Watershed Boundary HUC 12, USGS Hydrography

N

0 0.5 1 2 Miles

South Orange County Reliability Enhancement Project

Hydrologic Area, Watersheds, and Drainages

Figure 4.8-1

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.8-1

Precipitation

Orange County's and San Diego County's climates are generally mild with average temperatures of 65 degrees Fahrenheit in coastal areas and 57 degrees Fahrenheit in inland areas. Most of the precipitation falls from November to February. Average annual precipitation for the Proposed Project area is between 11 to 15 inches per year in Orange County and 10 to 13 inches in San Diego County, and primarily occurs as rainfall.

Groundwater

Most of the Proposed Project area is located in upland terrain with bedrock close to the surface, or in narrow canyons with no substantial alluvial ground water basins. Ground water basins in the Proposed Project area are limited to alluvial fill below drainages. The largest is the San Juan Creek groundwater basin beneath San Juan Creek and its tributaries, in the Mission Viejo Hydrologic Area watershed. Groundwater recharge of the San Juan Creek ground water basin occurs from flow in San Juan Creek and its tributaries and from precipitation. The San Mateo Creek ground water basin in the San Mateo Hydrologic Area watershed is recharged primarily from precipitation and from wastewater treatment plant effluent. The infiltration is through natural reaches and five spreading basins in the stream channel of San Mateo Creek. The San Clemente Hydrologic Area is the smallest of the three watersheds crossed by the Proposed Project and is recharged from local precipitation. Limited alluvial basins occur in the Prima Deshecha and Segunda Deshecha drainages.

In general, the groundwater in these basins is used for municipal and agricultural purposes. Groundwater levels vary with wet and dry weather cycles but are typically shallow and therefore susceptible to pollution. The groundwater is on average range between five and 40 feet below ground surface. The primary water-bearing unit in both basins is Quaternary alluvium, which averages 60 to 65 feet in thickness but may reach more than 125 feet in thickness.

The Basin Plan identifies beneficial uses for ground water in the Proposed Project area to include municipal, agricultural, and industrial use. The Basin Plan defines more limited uses for ground water in the San Clemente Hydrologic Area.

Surface Water

Channels and Creeks

Drainages in the Proposed Project area flow intermittently at most locations due to the seasonal nature of rainfall, the relatively low yearly rainfall totals, and relatively small size of watersheds. Imported water supplies also add flow to each watershed in the form of runoff from urban and agricultural activities. Many watercourses have been altered through straightening and fortification with sand levees or concrete channels for flood control purposes, although large portions of the creeks crossed by the Proposed Project area have been left in their natural condition.

Creeks and drainages that would be spanned by the Proposed Project are shown in Figure 4.8-1 and include:

- San Juan Creek and its Horno Creek tributary, and one unnamed tributary to San Juan Creek;
- Unnamed tributary to Prima Deshecha Canada;
- Segunda Deshecha Canada and unnamed tributaries; and
- Unnamed tributaries to Christianitos Creek.

Water from these creeks and drainages ultimately flows to the Pacific Ocean when enough flow is present. Table 4.8-1, Watersheds and Waterbodies Spanned by the Proposed Project, lists the waterbodies and watersheds that would be spanned by each of the Proposed Project segments.

Table 4.8-1: Watersheds and Waterbodies Spanned by the Proposed Project

Watershed	Project Segment	Creeks and Drainages Crossed
Mission Viejo	Segment 1 (San Juan Capistrano to Rancho San Juan)	San Juan Creek
		Horno Creek (tributary to San Juan Creek)
		Unnamed Tributary to San Juan Creek
San Clemente	Segment 2 (Rancho San Juan)	Rancho San Juan Drainage
	Segment 3 (Rancho San Juan to Talega Hub)	Unnamed Tributary to Prima Deshecha Canada
		Segunda Deshecha Canada
		Unnamed Tributaries (3) to Segunda Deshecha Canada
San Mateo Canyon	Segment 4 (Talega hub to Talega Substation)	Tributaries (3) to Christianitos Creek

Wetlands

The Proposed Project crosses creeks, drainages, and topographic depressions that may have water on the surface during parts of the year. Section 4.4, Biological Resources, provides additional detail regarding the wetland resources crossed by the Proposed Project. In addition, a Jurisdictional Waters and Wetlands Delineation Report was prepared for the Proposed Project and has been included in Appendix 4.4-A.

Reservoirs, Ponds, Lakes

The Proposed Project would not cross any existing open water storage areas.

Surface Water Quality

The Water Quality Control Plan for the San Diego Basin describes water quality objectives for surface water in the Proposed Project area. Wildlife habitat, municipal, industrial, and agricultural supplies, and recreation are among the beneficial uses that the objectives seek to protect. The quality of surface water is affected by stormwater runoff and discharges from industrial, commercial, agricultural, and residential activities in the region. The San Diego RWQCB uses permits and other programs to regulate and reduce pollution of surface waters.

CWA Section 303(d) requires states to develop a list of waterbodies with impaired water quality. The waters on the list are those that do not meet water quality standards even after known point sources of pollution have installed the minimum required levels of pollution control technology. None of the creek segments crossed by the Proposed Project are on the State's Section 303(d) list of impaired waters. Three creeks crossed by the Proposed Project have impaired segments downstream of the Proposed Project: San Juan Creek, Prima Deshecha Creek, and Segunda Deshecha Creek. The State's Section 303(d) list identifies the lower mile of San Juan Creek as impaired for: Dichlorodiphenyldichlorethylene (DDE) (attributed to unknown source); indicator bacteria (attributed to point and nonpoint sources); and phosphorous, selenium, total nitrogen, and toxicity (attributed to unknown point, unknown nonpoint, and urban runoff/storm sewer sources). The lower mile of Prima Deshecha Creek is on the State's Section 303(d) list for cadmium, nickel, phosphorus, and turbidity (attributed to unknown point, unknown nonpoint, and urban runoff/storm sewer sources). The lower mile of Segunda Deshecha Creek is on the State's Section 303(d) list for phosphorus, toxicity, and turbidity (attributed to unknown point, unknown nonpoint, and urban runoff/storm sewer sources).

Stormwater Management and Flooding

Urban areas along the Proposed Project area control stormwater runoff in storm drains and flood channels. Runoff is directed to larger creeks and drainages. In undeveloped areas of the Proposed Project, storm runoff flows along natural drainage patterns.

The Proposed Project crosses the 100-year flood zones of Horno Creek, San Juan Creek, Prima Deshecha Creek, and Segunda Deshecha Creek. The watercourses in Orange County are subject to periodic overflowing, particularly in urban areas where the ground is covered by pavement and other impermeable surfaces, and during periods of sustained or intense precipitation. Due to topography, however, the flood potentials of the creeks crossed by the Proposed Project are localized in nature and do not pose an extensive hazard.

Dam Failure Inundation Areas

The Proposed Project crosses one dam inundation area on San Juan Creek.

4.8.4 Potential Impacts

This section describes potential impacts to hydrology and water resources as a result of the Proposed Project. Potential impacts would be less than significant through implementation of APMs, compliance with regulatory requirements for protection of surface water quality, and implementation of the SWPPP and BMPs.

4.8.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to hydrology and water quality if it would:

a) Violate any water quality standards or waste discharge requirements;

b) Substantially deplete groundwater supplies or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;

e) Create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

f) Otherwise substantially degrade water quality;

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;

h) Place structures within a 100-year flood hazard area which would impede or redirect flood flows;

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or

j) Cause inundation by seiche, tsunami, or mudflow.

4.8.4.2 Question 8a - Violate any water quality standards or waste discharge requirements?

Construction – Less than Significant Impact

Construction of the Proposed Project has the potential to affect surface water quality, and BMPs for water quality protection would apply. Construction would use mechanized equipment requiring fuels and lubricants and involve fabrication of facilities that require hazardous materials such as coatings, adhesives, and solvents. Construction also generates trash and debris. Construction materials such as concrete and drilling mud could impact water quality if released. In addition, construction would disturb soil surfaces and would locally modify soil grades creating a potential for erosion and sediment transport.

Demolition preparations at the existing Capistrano Substation site would include the removal of hazardous materials such as asbestos, lead-based paint, contaminated soil, and insulating oil

(refer to Section 4.7, Hazards and Hazardous Materials), and would disturb soil and generated debris. These materials could impact water quality if released to the environment.

The Proposed Project would disturb more than one acre and therefore requires coverage under an NPDES permit for storm water discharges during construction. SDG&E would obtain coverage under the Construction General Permit and comply with its relevant requirements, including implementation of a SWPPP with BMPs for water quality protection. The Proposed Project would fall under the Linear Underground/Overhead Project (LUP) requirements of the Construction General Permit. LUP activities covered under the Construction General Permit include, but are not limited to, those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, towers, poles, cables, wires, connectors, switching equipment, regulating equipment, transforming equipment, and associated ancillary facilities). This includes, but is not limited to: underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access road construction, pole/tower pad and cable/wire pull stations, substation construction, substructure installation, construction of tower and footings and/or foundations, pole and tower installations, welding, concrete and/or pavement repair or replacement, and stockpile/borrow locations.

The Construction General Permit requires prevention of unauthorized discharges and implementation of a SWPPP with BMPs needed to prevent discharges from construction activities that would otherwise violate water quality standards. The Construction General Permit further requires inspections, monitoring, and reporting to ensure that BMPs are implemented and effective and modified if needed to ensure protection of water quality. SDG&E would implement BMPs consistent with the Construction General Permit requirements and its *BMP Manual*. The *SDG&E Subregional NCCP* (refer to Section 4.4, Biological Resources) also contains protocols for avoiding and minimizing potential erosion and water quality issues. Specific Construction General Permit requirements for LUPs are provided in the Order and Attachment A. Other than the Construction General Permit, no waste discharge requirements apply to construction of the Proposed Project because no discharges other than stormwater are anticipated.

The Proposed Project would not violate any water quality standard or waste discharge requirement because SDG&E will comply with the regulatory requirements for protection of water quality, including implementation of the SWPPP and BMPs, and adopt BMPs through the *BMP Manual* and the *SDG&E Subregional NCCP*. Therefore, potential impacts would be less than significant.

Operation & Maintenance – Less than Significant Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution, and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities are the baseline against which the impacts of the Proposed Project are evaluated. The Proposed Project's new 230kV transmission lines would merely replace an existing 138kV transmission line along the same route, so regular operations and maintenance activities already occur.

Other aboveground facilities associated with the Proposed Project would also be within existing substation properties or in the immediate vicinity of existing transmission facilities, so operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Any future potential maintenance-related construction projects would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required.

Throughout the operation and maintenance of the Proposed Project, SDG&E would continue to implement BMPs consistent with its *BMP Manual* and the *SDG&E Subregional NCCP* and any future revisions to those documents. SDG&E already does this under the existing conditions.

Insulating mineral oil would be present in sealed electrical equipment such as transformers at the Proposed Project's substations. Transformer oil is already present at both existing substations, and its presence would be the same after the substations are rebuilt and/or modified. The amount of transformer oil at the San Juan Capistrano Substation would be substantially more than is present at the existing Capistrano Substation. SDG&E, however, would maintain the current conditions of containing the insulating oil in equipment with secondary containment sized to contain the entire volume of mineral oil. This would prevent any discharge in the event of transformer leakage. SDG&E would also prepare and implement an SPCC Plan and follow the SDG&E Environmental Standards to control containment of transformer oil at the substation site, as is currently the case. There would therefore be no impacts from the routine use of hazardous materials during operation and maintenance of the Proposed Project.

No waste discharge requirements apply to operation and maintenance of the Proposed Project because no discharges are anticipated to occur. The Proposed Project would not violate any water quality standard or waste discharge requirements during operation and maintenance because SDG&E will comply with the regulatory requirements for protection of water quality, including implementation of the SWPPP and BMPs, and adopt BMPs through the *BMP Manual* and the *SDG&E Subregional NCCP*. Therefore, potential impacts would be less than significant.

4.8.4.3 Question 8b - Substantially deplete groundwater supplies or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Construction – No Impact

The water demand from construction of the Proposed Project would be minor and short-term, would be met through existing municipal sources, and would not result in new ground water pumping. Surface disturbance would be limited and negligible compared to the affected watershed areas, so there would be no impact on ground water recharge.

Dewatering may be required during construction where localized shallow groundwater is encountered in structure footing excavations or other project excavations. Dewatering may have localized effects on groundwater levels, but the effects would be isolated to a small area due to the short duration of pumping. Dewatering is not expected to affect area wells, which rely on deeper water-bearing zones. Pumped water that is not potentially contaminated with sediments

or other materials would be discharged in accordance with requirements of the Construction General Permit. Construction of the Proposed Project is not anticipated to encounter. The water would be discharged near the extraction location and thereby returned to the local groundwater. Potentially contaminated water would be handled and disposed off site in accordance with applicable state and federal laws. For these reasons, there would be no net deficit in aquifer volume or lowering of the groundwater table and no impact on ground water supplies or recharge.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution, and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities are the baseline against which the impacts of the Proposed Project are evaluated. The Proposed Project's new 230kV transmission lines would merely replace an existing 138kV transmission line along the same route, so regular operations and maintenance activities already occur. Other aboveground facilities associated with the Proposed Project would also be within existing substation properties or in the immediate vicinity of existing transmission facilities. Operations and maintenance activities for the Proposed Project would therefore not materially increase in frequency or intensity. Any future potential maintenance-related construction projects would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. There would be no net deficit in aquifer volume or lowering of the groundwater table and no impact on ground water supplies or recharge.

4.8.4.4 Question 8c - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?

Construction – Less than Significant Impact

Construction of the transmission line portion of the Proposed Project would result in limited grading that would not substantially alter any existing drainage pattern or alter the course of any stream or river. Most work locations would be accessible using existing access roads. The Proposed Project would require some new small spur roads (i.e., roads from access roads to structure sites), and approximately 23 structure locations would require grading to accommodate construction work. Grading at pole locations would typically be in the range of less than 300 cubic yards of net cut to less than 200 cubic yards of net fill. The largest net cut for pole location grading is less than 1,200 cubic yards, and the largest net fill is less than 800 cubic yards. Grading of new access spur roads and grading at pole locations where needed would require the removing vegetation and disturbing the soil surface, resulting in a possible reduction in the infiltration and absorption capacity of the affected areas. However, new permanent access roads and structure graded pads would not be paved and would be stabilized to allow infiltration and reduce runoff potential.

Alterations to the Talega Substation would not change existing ground surface grades or runoff conditions. Reconstruction of the existing Capistrano Substation would include changes to onsite grading and drainage, but those changes would not substantially alter drainage patterns on- or off-site. The new San Juan Capistrano Substation would be constructed within the existing SDG&E property boundary. The new San Juan Capistrano Substation grading plan includes new on-site storm water control facilities, including an above-ground retention pond. The Proposed Project would implement water quality standards and hydromodification controls consistent with the requirements of the RWQCB and the South Orange County MS4 Permit requirements. Doing so would include construction of hydromodification control BMPs and facilities such as bioswales paralleling the access roads and installation of bioretention facilities, such as open water quality basins and/or subsurface vaults to provide flow duration control of the site runoff to a level consistent with the city of San Juan Capistrano's requirements. The City of San Juan Capistrano would have ministerial review over the grading plan to ensure compliance through the required issuance of a grading permit.

SDG&E designed the Proposed Project's preliminary grading plans to return runoff to existing drainage patterns, and this design would carry through to subsequent final grading plans. SDG&E does not propose any grading in creeks or drainages that could alter the flow. The Construction General Permit would require BMPs to prevent excessive erosion and sediment transport and would also require that disturbed areas be stabilized. The RWQCB would accept the Notice of Termination of the Construction General Permit only after demonstration of stabilization.

Construction of the Proposed Project would not substantially alter existing drainage patterns of the site or area because: (1) the Proposed Project does not include grading in creeks or drainages that would affect flow of water; (2) grading is designed to return runoff to existing drainage patterns without increasing runoff; and (3) erosion protection and sediment control BMPs would be implemented in compliance with the Construction General Permit and SDG&E's *BMP Manual*. Therefore, the impact on existing drainage patterns would be less than significant.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities are the baseline against which the impacts of the Proposed Project are evaluated. The Proposed Project's new 230kV transmission lines would merely replace an existing 138kV transmission line along the same route, so regular operations and maintenance activities already occur. Other aboveground facilities associated with the Proposed Project would also be within existing substation properties or in the immediate vicinity of existing transmission facilities, so operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Any future maintenance-related construction projects would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required

The changes to onsite grading and drainage associated with reconstruction of the San Juan Capistrano Substation would not substantially alter drainage patterns on- or off-site. SDG&E would continue to implement BMPs during grading work and restore and stabilize surface drainage patterns. This would prevent any substantial alteration of the existing drainage pattern of the site in a manner that would result in substantial erosion or siltation on or off-site. For these reasons, there would be no impacts relating to substantial alteration of existing drainage patterns of the site or area in a way that would result in substantial erosion or siltation off- or on-site.

4.8.4.5 Question 8d - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

Construction – Less than Significant Impact

See response to Question 8c, above.

Operation & Maintenance – No Impact

See response to Question 8c, above.

4.8.4.6 Question 8e - Create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Construction – Less than Significant Impact

The Proposed Project's grading plans are designed to minimize grading to the extent consistent with safe and efficient work practices and to return runoff to existing drainages. The Proposed Project would not result in substantial areas of new impermeable surfaces and no material increase in runoff from the Proposed Project's footprint is anticipated. New permanent access roads and structure graded pads would not be paved and would be stabilized to allow infiltration and reduce runoff potential. Alterations to the Talega Substation would not modify existing surface grades or runoff conditions. Reconstruction of the existing Capistrano Substation would include changes to onsite grading and drainage but would not increase runoff from the substation or alter drainage patterns on- or off-site (see response to Question 8c, above). The Proposed Project would not adversely impact the capacity of existing or planned storm water drainage systems because no substantive increase in runoff is expected and grading is designed to return runoff to existing drainages.

SDG&E would comply with the Construction General Permit and would implement a SWPPP with BMPs for water quality protection. The Construction General Permit requires prevention of unauthorized discharges and implementation of BMPs needed to prevent discharges of polluted runoff. The Construction General Permit also requires inspections, monitoring, and reporting to ensure that polluted runoff is not occurring from the construction site.

SDG&E would implement BMPs in accordance with the Construction General Permit and its *BMP Manual*. Construction of the Proposed Project would not be a substantial source of polluted runoff considering the regulatory requirements for protection of water quality, including implementation of the SWPPP and BMPs. Therefore, potential impacts would be less than significant.

Operation & Maintenance – Less than Significant Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution, and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities are the baseline against which the impacts of the Proposed Project are evaluated. The Proposed Project's new 230kV transmission lines would merely replace an existing 138kV transmission line along the same route, so regular operations and maintenance activities already occur. Other aboveground facilities associated with the Proposed Project would also be within existing substation properties or in the immediate vicinity of existing transmission facilities, so operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Any future potential maintenance-related construction projects would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required

SDG&E would continue to implement its *BMP Manual* to ensure water quality protection and restore and stabilize surface drainage patterns. Therefore, operations and maintenance of the Proposed Project would not affect drainage capacity of existing or planned stormwater drainage systems or cause a substantial additional source of polluted runoff.

4.8.4.7 Question 8f - Otherwise substantially degrades water quality?

Construction – Less Than Significant Impact

Construction of the Proposed Project would comply with the Construction General Permit, which includes BMPs to prevent degradation of water quality from storm water runoff and other permitted discharges. No other discharges to surface or ground water are anticipated during construction. Construction impacts to water quality would be less than significant based on compliance with the Construction General Permit.

Operation & Maintenance – Less than Significant Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution, and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities are the baseline against which the impacts of the Proposed Project are evaluated. The Proposed Project's new 230kV transmission lines would merely replace an existing 138kV transmission line along the same route, so regular operations and maintenance activities already occur. Other aboveground facilities associated with the Proposed Project would also be within existing substation properties or in the immediate vicinity of existing transmission facilities, so operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity.

4.8.4.8 Question 8g - Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Map or other flood hazard delineation map?

Construction and Operation & Maintenance – No Impact

Because the Proposed Project does not involve the development of housing or other inhabitable structures, there would be no impacts associated with the placement of housing within a 100-year flood hazard area.

4.8.4.9 Question 8h – Place structures within a 100-year flood hazard area which would impede or redirect flood flows?

Construction and Operation & Maintenance – Less Than Significant Impact

The Proposed Project does not include placement of any fill or structures within the 100-year flood hazard area except for Pole Nos. 9 and 10, which are located within the 100-year flood hazard zone adjacent to San Juan Creek. Pole No. 9 is located at the upper edge of the flood zone, and Pole No. 10 is located in a developed area on the flood plain. No grading is proposed at these locations. The poles would not impede or redirect flood flows if inundated due to their small cross-sectional area. Impact on flood flows would be less than significant.

4.8.4.10 Question 8i - Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Construction – No Impact

The Proposed Project does not involve housing development or development of facilities that would normally be attended, so there would be a less than significant risk of exposing people in those structures to loss, injury, or death involving flooding. Construction workers would only be within the flood risk areas for very short amounts of time and relocation out of flood risk areas is easily attained at Proposed Project pole locations. Structures and facilities for the Proposed Project would be located outside of the 100-year flood risk areas and the potential dam inundation areas except for Pole Nos. 9 and 10, which are adjacent to San Juan Creek. Pole No. 9 is located at the upper edge of the flood zone and dam inundation zone, and Pole No. 10 is located in a developed area on the flood plain within the dam inundation zone. The poles would not impede or redirect flood flows due to their small cross-sectional area. The impact on flood flows would thus be less than significant.

Structures located within the 100-year flood hazard zone and the potential dam inundation zone would be designed to withstand potential flood inundation without damage to structures. Considering these factors, the Proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving flooding. Therefore, no impacts would occur.

Operation & Maintenance – Less than Significant Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution, and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities are the baseline against which the impacts of the Proposed Project are evaluated.
The Proposed Project's new 230kV transmission lines would merely replace an existing 138kV transmission line along the same route, so regular operations and maintenance activities already occur. Other aboveground facilities associated with the Proposed Project would also be within existing substation properties or in the immediate vicinity of existing transmission facilities, so operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Any future potential maintenance-related construction projects would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required.

The only relevant change from existing conditions is the new locations of Pole Nos. 9 and 10, which would be located within the 100-year flood hazard zone. SDG&E would design the poles and foundations to withstand potential flood inundation without damage. The new locations for Pole Nos. 9 and 10 would be well outside the normal creek channel, and flood inundation would only occur only on occasion and for short intervals. The Proposed Project would therefore not expose people or structures to a significant risk of loss, injury, or death involving flooding. Impacts would be less than significant.

4.8.4.11 Question 8j – Cause inundation by seiche, tsunami, or mudflow?

Construction and Operation & Maintenance – Less Than Significant Impact

There are no bodies of water in the Proposed Project area that are large enough to result in a risk of seiche or tsunami. The closest large body of water is the Pacific Ocean, which is located nearly four miles away and well beyond any potentially foreseeable tsunami run-up. Therefore, no impacts are anticipated related to seiche or tsunami.

Aerial photo analysis indicates that the Proposed Project facilities, which would be almost entirely within existing SDG&E sites and ROW, are not located in areas prone to mudflows. Construction stormwater BMPs would include measures to minimize disturbance to soils and drainage, which would minimize the likelihood of construction contributing to the potential for mudflows. With stormwater BMPs, the risk that the Proposed Project would contribute to the occurrence of mudflows or be affected by a mudflow is less than significant.

SDG&E currently maintains and operates extensive existing electric transmission, distribution, and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities are the baseline against which the impacts of the Proposed Project are evaluated. The Proposed Project's new 230kV transmission lines would merely replace an existing 138kV transmission line along the same route, so regular operations and maintenance activities already occur. Other aboveground facilities associated with the Proposed Project would also be within existing substation properties or in the immediate vicinity of existing transmission facilities, so operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Any future potential maintenance-related construction projects would be evaluated under G.O. 131-D and CEQA for purposes of assessing

whether further CPUC approval is required. As a result, the risk that the Proposed Project would contribute to the occurrence of mudflows or be affected by a mudflow is less than significant.

4.8.5 Applicant Proposed Measures

Impacts to hydrology and water quality would be less than significant based on compliance with existing regulations, permits, and standards, including SDG&E's *BMP Manual* and *Subregional NCCP*. No applicant proposed measures are therefore proposed.

4.8.6 References

California Department of Fish and Game. Lake and Streambed Alteration Program (1600). Online: http://www.dfg.ca.gov/habcon/1600/index.html. Visited March 14, 2008.

California State Water Resources Control Board. 2008. *Clean Water Act Section 303(d) List of Water Quality Limited Segments*.

California State Water Resources Control Board. Clean Water Act Section 401 Certification and Wetlands Program. Online: http://www.swrcb.ca.gov/cwa401/index.html. Site Visited March 12, 2008.

California Stormwater Quality Association. California Stormwater BMP Handbook. Online: http://www.cabmphandbooks.org/Construction.asp. Site Visited April 7, 2008.

City of San Clemente. 1995-2003. San *Clemente Coastal Element*.

City of San Clemente. Construction. Online: http://ci.san-clemente.ca.us/sc/standard.aspx?pageid=455. Site Visited March 3, 2008.

City of San Clemente. Water Quality. Online: http://ci.san-clemente.ca.us/sc/standard.aspx?pageid=458. Site Visited March 3, 2008.

City of San Clemente. Municipal Code. Online: http://www.bpcnet.com/codes/sanclemente/. Site Visited March 3, 2008.

City of San Juan Capistrano. 1999. *San Juan Capistrano General Plan*.

City of San Juan Capistrano. *Construction Stormwater Requirements*. Online: http://www.sanjuancapistrano.org/Index.aspx?page=215. Site Visited March 3, 2008.

City of San Juan Capistrano. *Stormwater Regulations*. Online: http://municipalcodes.lexisnexis.com/cgi-bin/hilite.pl/codes/sanjuancap/. Site Visited March 3, 2008.

City of San Juan Capistrano. *Municipal Code*. Online: http://municipalcodes.lexisnexis.com/cgi-bin/hilite.pl/codes/sanjuancap/. Site Visited March 3, 2008.

Department of Water Resources. 2003. *California's Groundwater Bulletin 118, South Coast Hydrologic Region, San Juan Valley Groundwater Basin, San Mateo Valley Groundwater Basin*.

Federal Emergency Management Agency. 2012. *Flood Map Panel 06059C0444J* at www.fema.gov, site visited February 21, 2012.

Orange County. 2003. *Orange County Stormwater Program Construction Runoff Guidance Manual*.

Orange County. 2003. *Drainage Area Management Plan*.

Orange County. 2004. *County of Orange General Plan*.

Orange County. Watershed and Coastal Resources Division. Online: http://www.ocwatersheds.com/. Site Visited March 11, 2008.

San Diego Regional Water Quality Control Board. 1994-2007. *Water Quality Control Plan for the San Diego Basin*.

San Diego Regional Water Quality Control Board. 2002. *Watershed Management Approach for the San Diego Region*.

SDG&E (San Diego Gas & Electric). 1995. *Subregional Natural Community Conservation Plan*. December 15, 1995.

URS Corporation. 2002. *Water Quality Construction Best Management Practices Manual*. Prepared for Sempra Utilities.

U.S. Fish and Wildlife Service. Wetlands Online Mapper. Online: http://wetlandsfws.er.usgs.gov/wtlnds/launch.html. Site Visited March 13, 2008.

U.S. Geological Survey. *Groundwater Atlas of the United States: California, Nevada*. Online: http://capp.water.usgs.gov/gwa/ch_b/index.html. Site Visited March 6, 2008

U.S. Geological Survey. *San Juan Capistrano, Canada Gobernadora, San Clemente, and Dana Point Quadrangle Maps, California*. 7.5-minute series.

U.S. Army Corps of Engineers. 2012. *Decision Document: Nationwide Permit 12*.

U.S. Army Corps of Engineers. *Regulatory Program Overview*. Online: http://www.usace.army.mil/cw/cecwo/reg/oceover.htm. Website Visited March 14, 2008.

TABLE OF CONTENTS

4.9 LAND USE AND PLANNING 4.9-1
4.9.1 Introduction 4.9-1
4.9.2 Methodology 4.9-1
4.9.3 Existing Conditions 4.9-2
4.9.4 Potential Impacts 4.9-24
4.9.5 Applicant Proposed Measures 4.9-27
4.9.6 References 4.9-27

LIST OF FIGURES

Figure 4.9-1: Existing Land Uses in the Proposed Project Vicinity 4.9-5

LIST OF TABLES

Table 4.9-1: Designated and Existing Land Uses in the Proposed Project Area 4.9-17

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.9 LAND USE AND PLANNING

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Physically divide an established community?	☐	☐	☐	☑
b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☑

4.9.1 Introduction

This section of the PEA describes the existing land use and land use and zoning designations within the Proposed Project vicinity and the potential impacts to land use from construction, operation, and maintenance of the Proposed Project.

While the Proposed Project is not subject to local zoning regulations or discretionary land use approval, the Proposed Project is consistent with existing land uses (which include electric transmission and distribution facilities and substations), designated land uses, general plan and zoning designations. The Proposed Project would be constructed almost entirely within existing SDG&E ROW and existing substation property boundaries. The Proposed Project would not physically alter or divide an established community. No impacts to land use and planning were identified.

4.9.2 Methodology

The land use analysis within this section involved a review of various documents including aerial photographs of the Proposed Project area, the general plans for the cities of San Juan Capistrano and San Clemente and the County of Orange, other relevant land use planning documents such as applicable specific plans and zoning ordinances, and other available online information sources. Key agency documents that were reviewed include the *City of San Juan Capistrano General Plan*, the *City of San Clemente General Plan*, the *Talega Specific Plan*, the city of San Juan Capistrano Municipal Ordinance, the *Orange County General Plan*, the *SDG&E Subregional NCCP*, the *Southern Orange County Subregional NCCP*, and the Camp Pendleton INRMP. The review also included the use of GPS data and interactive mapping software including Google Earth. Site visits to the Proposed Project area were utilized to confirm existing land uses within and adjacent to the Proposed Project area and agency documents and maps were utilized to verify jurisdictional boundaries and designated land uses.

4.9.3 Existing Conditions

4.9.3.1 Regulatory Setting

State

California Public Utilities Commission

Pursuant to Article XII, Section 8, of the California Constitution, the CPUC has exclusive jurisdiction, in relation to local government, to regulate the design, siting, installation, operation, maintenance, and repair of electric transmission facilities. SDG&E must receive a CPCN from the CPUC in order to gain regulatory approval for the Proposed Project.

Other state agencies have concurrent jurisdiction with the CPUC. Although local governments do not have the power to regulate construction of electric transmission facilities and substations, the CPUC encourages, and SDG&E participates in, cooperative discussions with affected local governments to address their concerns, where feasible. As part of the environmental review process, SDG&E has considered relevant city and county land use plans and policies, specific plans, community plans, and HCPs adopted by local jurisdictions crossed by the Proposed Project, and prepared this evaluation of the Proposed Project's potential impacts to land use and planning. Further, SDG&E should obtain ministerial permits from local agencies as applicable to the Proposed Project.

Local

City of San Juan Capistrano

The *City of San Juan Capistrano General Plan* provides a broad framework of policies, objectives, and land use designations to guide the future development of the city of San Juan Capistrano. Title 9, Chapter 3, Zoning Districts and Standards, of the city of San Juan Capistrano's Municipal Code further refines the *City of San Juan Capistrano General Plan* and provides additional detail pertaining to allowed and conditional uses and specific development standards for the various zoning districts.

The *City San Juan Capistrano General Plan* contains the following potentially applicable policy:

> *Land Use Element - Policy 7.3: Utilize programs for the rehabilitation of physical development, infrastructure, and undergrounding of utilities within the city to improve community neighborhoods.*

General plan goals and policies relating specifically to utilities (including electrical transmission utilities) are discussed within Section 4.15, Utilities and Service Systems.

City of San Clemente

The *City of San Clemente General Plan* serves as the foundational planning document for the city of San Clemente, providing policies regarding the management of new development, economic development, and conservation of natural resources, as well as many other issues affecting the city of San Clemente. It defines the framework by which the city of San Clemente

would change and grow, detailing how physical and economic resources are to be managed and utilized over time.

The city of San Clemente's Municipal Code includes Title 17, Zoning. Title 17 was established in order to provide a uniform basis for regulating the use of land, buildings and structures, to promote the orderly growth and development of the various unique areas of the city of San Clemente, to establish minimum site development regulations and performance standards applicable to sites within the city of San Clemente, and to preserve the public health, safety and welfare.

The Proposed Project falls within the city of San Clemente's *Talega Specific Plan* area, which encompasses a total of 3,510 acres in the northeastern portion of the city of San Clemente. The *Talega Specific Plan* consists of the city of San Clemente's long-term plan for development of the entire Talega Substation property and is a planning and regulatory document written for the purpose of implementing the *City of San Clemente General Plan*. The *City of San Clemente General Plan* contains the following potentially applicable objectives and policies:

> *Policy 1.8.2: Designate and acquire, through dedication or other legal means, lands for the continuation of utility corridors, easements, and facilities (sewer, water, energy, storm drainage, telecommunications, etc.) on the Land Use Plan Map, which support existing and future land use development.*

General plan objectives and policies relating specifically to utilities (including electrical transmission utilities) are discussed within Section 4.15, Utilities and Service Systems

Orange County

The *County of Orange General Plan* is a blueprint for growth and development within unincorporated portions of Orange County, yet it also affects the entire county. The *County of Orange General Plan* includes the following mandatory seven elements: 1) Land Use; 2) Circulation; 3) Housing; 4) Conservation; 5) Open Space; 6) Noise; and 7) Safety. In addition, the *County of Orange General Plan* also includes two optional elements: Public Services and Facilities and Growth Management.

The *County of Orange General Plan* is largely implemented through zoning and subdivision decisions. All subdivision, capital improvements, development agreements, projects subject to the zoning code, specific plans, and other land use actions must be consistent with the adopted *County of Orange General Plan*.

Section 7-9, The Comprehensive Zoning Code, of the County of Orange's Municipal Code formally implements the *County of Orange General Plan*. The Comprehensive Zoning Code was adopted for the purpose of promoting the health, safety and general welfare. The *County of Orange General Plan* contains the following potentially applicable policies:

> *Policy 6 – New Development Compatibility: To require new development to be compatible with adjacent areas.*
>
> *Policy 2: To encourage to the extent feasible the preservation and utilization of agricultural resources as a natural resource and economic asset.*

Habitat Conservation Plans

Southern Orange County Subregional NCCP

The Proposed Project is located within the *Southern Orange County Subregional NCCP*. The *Southern Orange County Subregional NCCP* covers 32 special status animal species and 10 vegetation communities, including seven federally listed species. Refer to Section 4.4, Biological Resources for more information about the *Southern Orange County Subregional NCCP*.

SDG&E Subregional NCCP

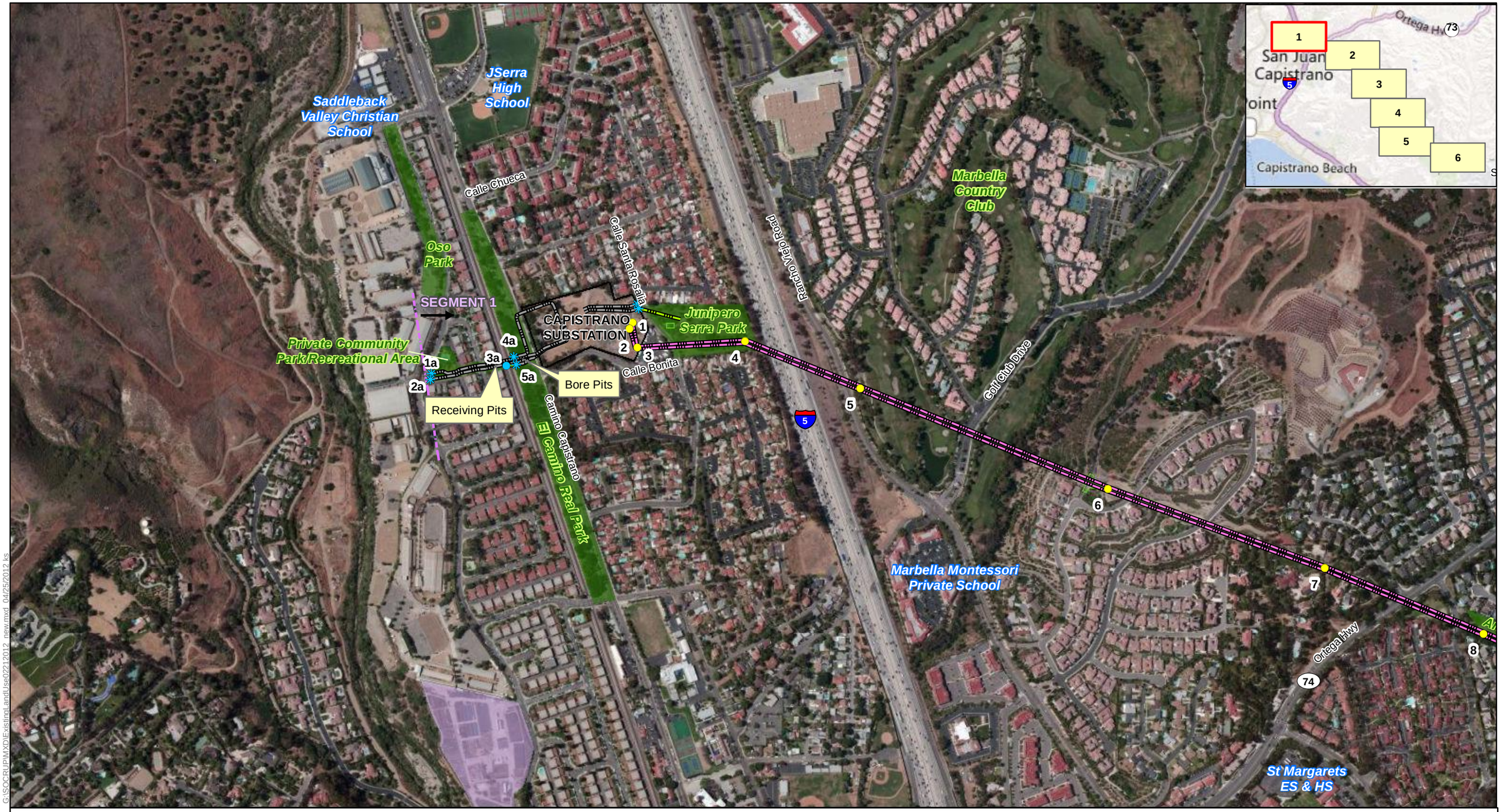
The Proposed Project falls within the area in which SDG&E's utility operations are governed by *SDG&E's Subregional NCCP*. As a part of the *SDG&E Subregional NCCP*, SDG&E has been issued incidental take permits (Permit PRT-809637) by the USFWS and the CDFG for 110 Covered Species. Even with the *SDG&E Subregional NCCP*, SDG&E's goal is to avoid "take" of Covered Species whenever possible and to implement measures to minimize and mitigate any take to the maximum extent possible. The *SDG&E Subregional NCCP* includes mitigation measures and operational protocols designed to avoid potential impacts and to provide appropriate mitigation where such impacts are unavoidable, to ensure the protection and conservation of federal and state listed species and Covered Species. Refer to Section 4.4, Biological Resources for more information about the *SDG&E Subregional NCCP*.

Camp Pendleton Integrated Natural Resources Management Plan

The *Camp Pendleton INRMP* is a planning document that guides the management and conservation of natural resources on the Camp Pendleton property, including 18 federally listed threatened or endangered species. The primary land uses on Camp Pendleton are military training and training support facilities, infrastructure (e.g., roads, recreational facilities), and mission support activities. Other land uses in the form of leases, easements, and real estate agreements include row crop production and seed collection, San Onofre State Beach (leased to California State Parks from the Department of Navy), electric utilities and transit corridors. SDG&E's Talega Substation is located on the Camp Pendleton property by easement. The easement is from the Department of Navy as the underlying land owner, which, as stated above, is the lessor to the California State Parks for the San Onofre State Beach which overlies the existing Talega Substation and Talega area transmission line easements within Camp Pendleton.

4.9.3.2 Land Use Setting

The Proposed Project lies almost entirely within Orange County, and runs through the cities of San Juan Capistrano and San Clemente, as well as unincorporated areas (see Figure 4.9-1, Existing Land Uses in the Proposed Project Vicinity). As previously described (refer to Section 3.2, Proposed Project Location and Regional Context), the Talega Substation is located on land owned by Camp Pendleton. The majority of the Proposed Project would be installed within existing SDG&E ROW and existing substation property boundaries. Small portions of new ROW would be acquired: approximately 0.04 acre near the Rancho San Juan development (Transmission Line Segment 2) and approximately 9.64 acres near the Talega Substation (Transmission Line Segment 4) outside of Camp Pendleton. Table 4.9-1, Designated and Existing Land Uses in the Proposed Project Area, and the following sections summarize the existing land uses and land use designations crossed and/or adjacent to the Proposed Project.



G:\SOCRUP\MXD\E-xisting\LandUse\02212012_new.mxd 04/25/2012 ks

Created For: Mary Turley

Created By: TRC

Date: 5/10/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Stringing Sites
- Lay Down Areas
- Project Segment Boundary
- Local Park or Recreational Area
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- County Boundary

N

0 300 600 1,200 Feet

South Orange County Reliability Enhancement Project

Existing Land Uses in the Project Vicinity

Figure 4.9-1

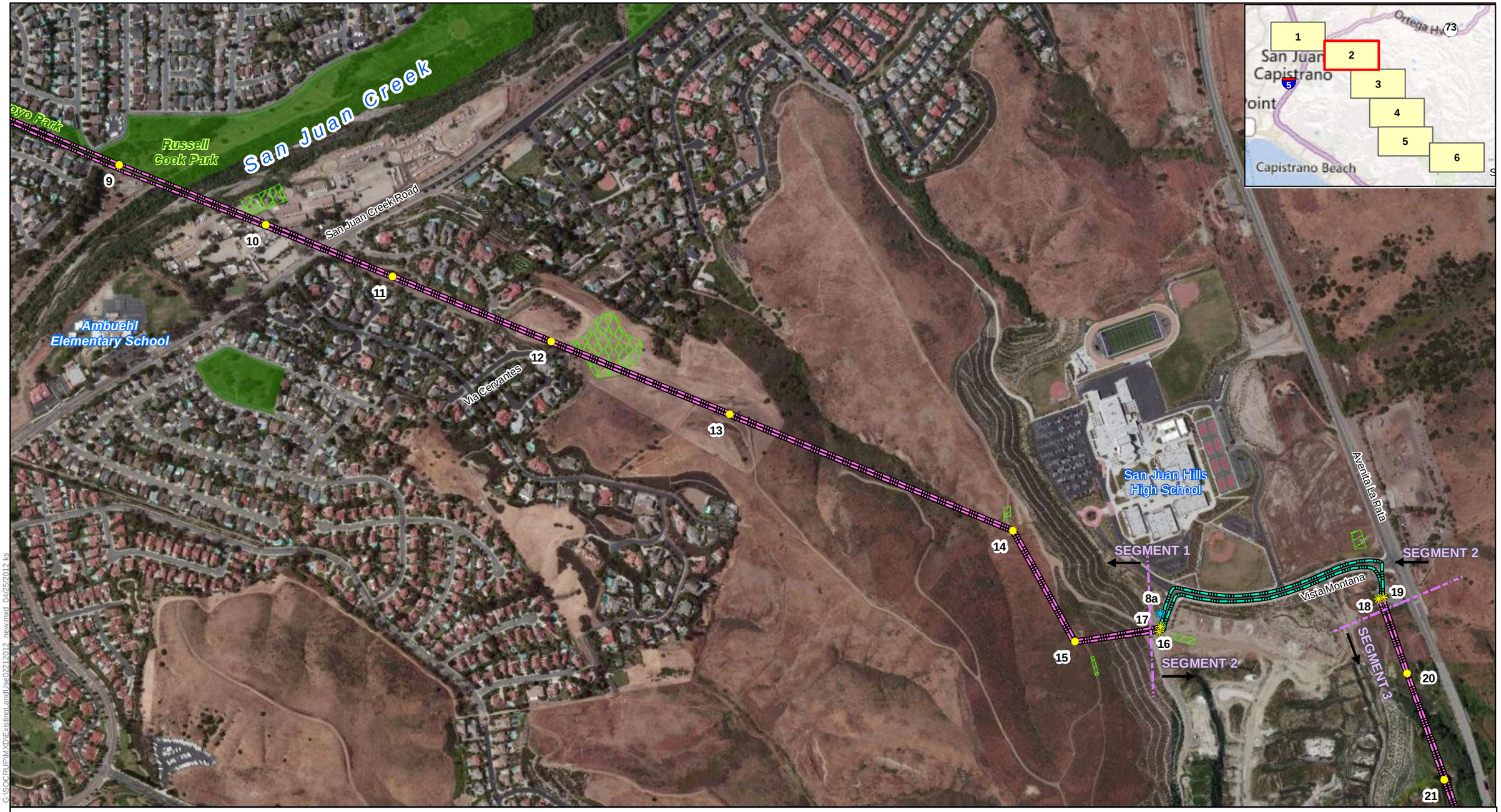
Sheet 1 of 6

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.9-1 (SHEET 1)



G:\SOCR\PMXD\Existing\LandUse\02212012_new.mxd 04/25/2012 ks

Created For: Mary Turley

Created By: TRC

Date: 5/10/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Stringing Sites
- Lay Down Areas
- Project Segment Boundary
- Local Park or Recreational Area
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- County Boundary

N

0 300 600 1,200 Feet

South Orange County Reliability Enhancement Project

Existing Land Uses in the Project Vicinity

Figure 4.9-1

Sheet 2 of 6

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.9-1 (SHEET 2)



G:\SOCRUP\MXD\Existing\LandUse02212012_new.mxd 04/25/2012 ks

Created For: Mary Turley

Created By: TRC

Date: 5/10/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Stringing Sites
- Lay Down Areas
- Project Segment Boundary
- Local Park or Recreational Area
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- County Boundary

N

0 300 600 1,200 Feet

South Orange County Reliability Enhancement Project

Existing Land Uses in the Project Vicinity

Figure 4.9-1

Sheet 3 of 6

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.9-1 (SHEET 3)



G:\SOCRUP\MXD\ExistingLandUse02212012_new.mxd 04/25/2012 ks

Created For: Mary Turley

Created By: TRC

Date: 5/10/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Stringing Sites
- Lay Down Areas
- Project Segment Boundary
- Local Park or Recreational Area
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- County Boundary

N

0 300 600 1,200 Feet

South Orange County Reliability Enhancement Project

Existing Land Uses in the Project Vicinity

Figure 4.9-1

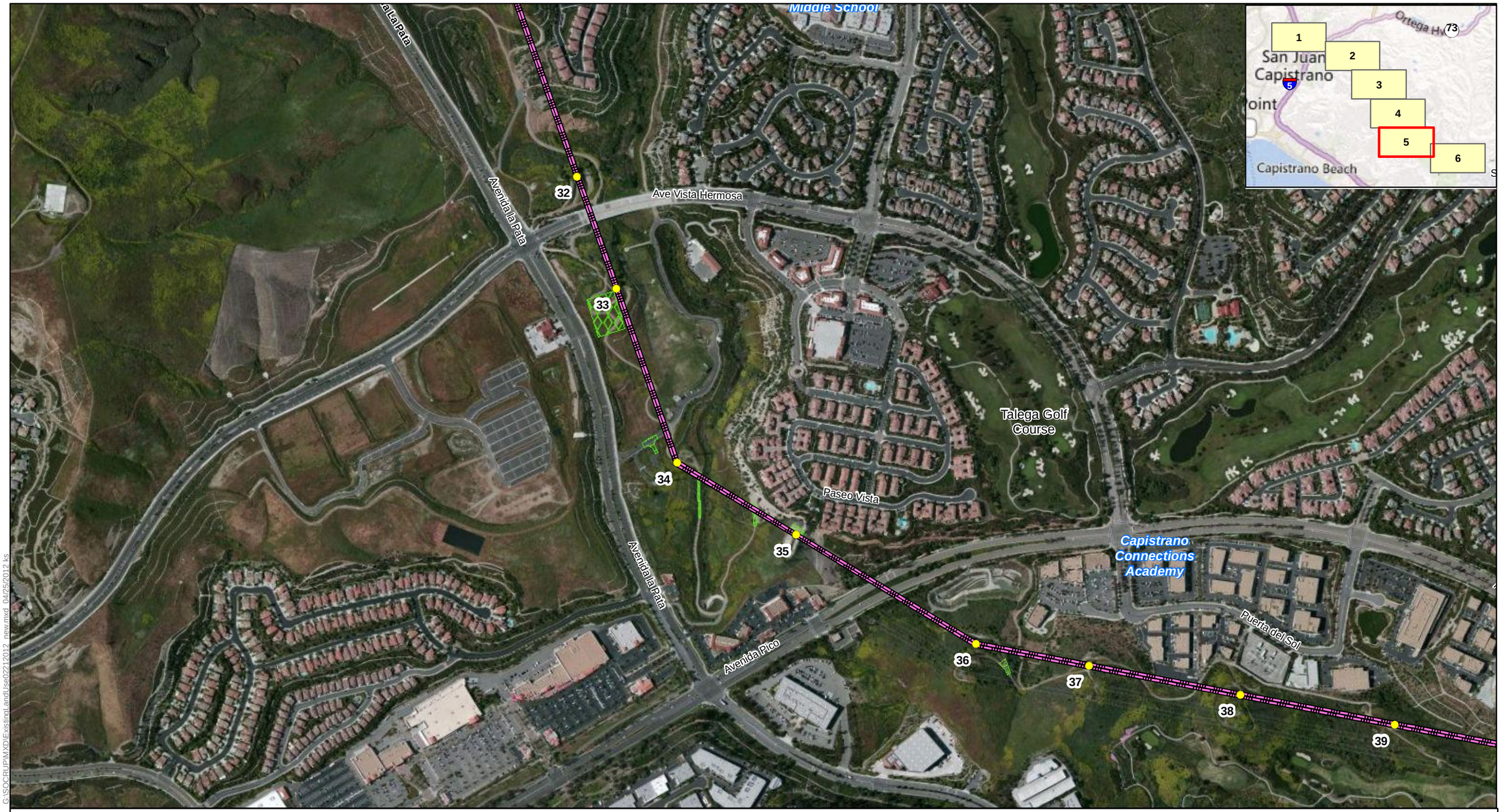
Sheet 4 of 6

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.9-1 (SHEET 4)



G:\SOCRUP\MXD\Existing\LandUse02212012_new.mxd 04/26/2012 ks

Created For: Mary Turley

Created By: TRC

Date: 5/10/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Stringing Sites
- Lay Down Areas
- Project Segment Boundary
- Local Park or Recreational Area
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- County Boundary

N

0 300 600 1,200 Feet

South Orange County Reliability Enhancement Project

Existing Land Uses in the Project Vicinity

Figure 4.9-1

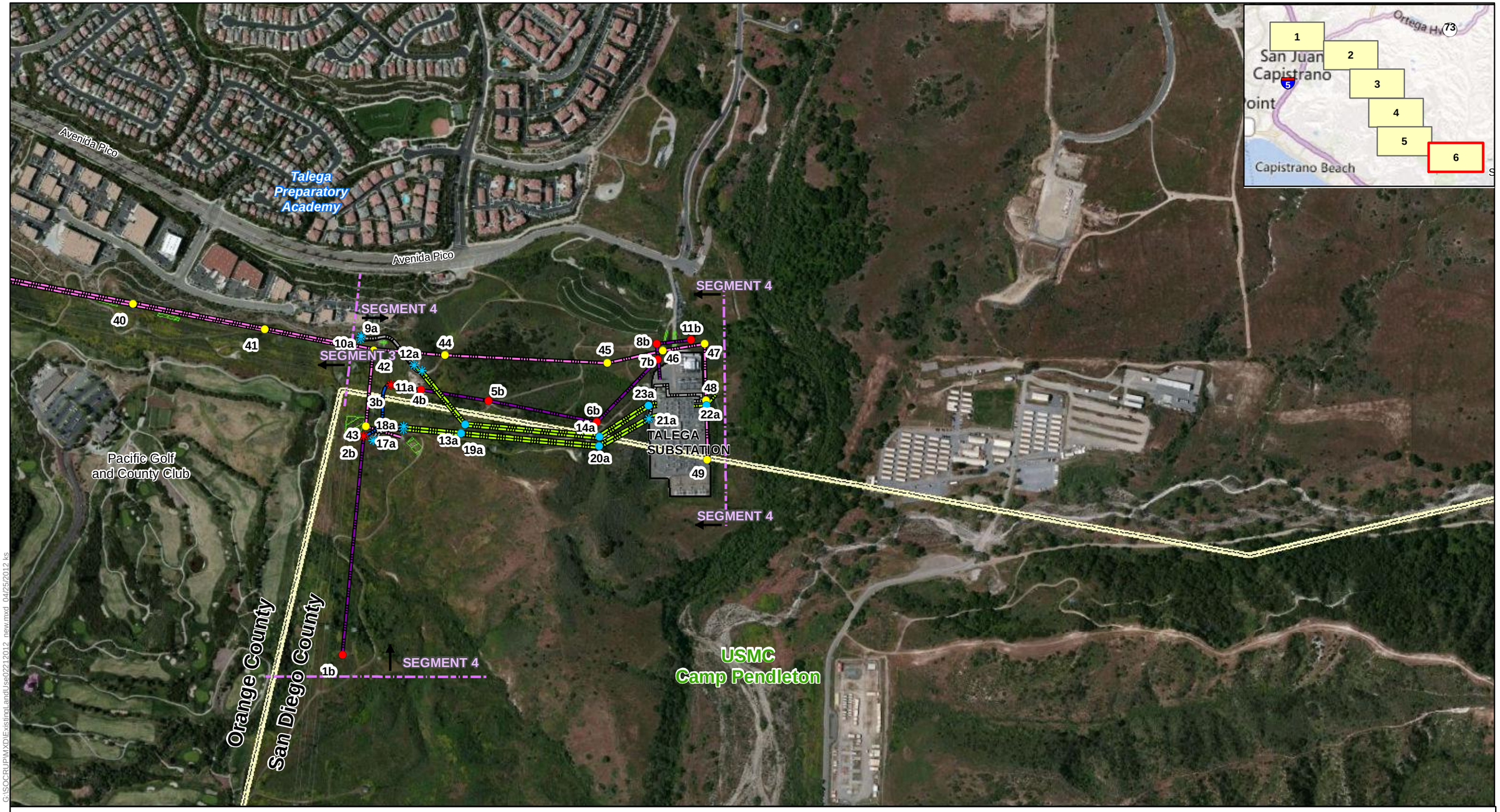
Sheet 5 of 6

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.9-1 (SHEET 5)



G:\SOCCRUP\MXD\Existing\LandUse\02212012_new.mxd 04/25/2012 ks

Created For: Mary Turley

Created By: TRC

Date: 5/10/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

- Stringing Sites
- Lay Down Areas
- Project Segment Boundary
- Local Park or Recreational Area
- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- County Boundary

N

0 300 600 1,200 Feet

South Orange County Reliability Enhancement Project

Existing Land Uses in the Project Vicinity

Figure 4.9-1

Sheet 6 of 6

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.9-1 (SHEET 6)

Table 4.9-1: Designated and Existing Land Uses in the Proposed Project Area

Pole(s) and other Components	Jurisdiction/ Community	General Plan Land Use Designation[1]	Zoning Designation[2]	Existing Land Use[3]
West of Capistrano Substation (Transmission line Segment 1)				
Pole Nos. 1a to 3a and underground trench packages	San Juan Capistrano	High Density	Multi-Family Residential	Existing electric transmission and distribution lines, open space including community park and recreational facilities, apartment homes
Pole Nos. 4a and 5a and underground trench packages	San Juan Capistrano	Undesignated Space[4] and Open Space Recreation	Open Space Recreation	Existing electric transmission and distribution lines, railway line and ROW, El Camino Real Park, Camino Capistrano
Capistrano Substation to Rancho San Juan (Transmission Line Segment 1)				
Substation and Pole Nos. 1 to 3, 6a and 7a	San Juan Capistrano	Quasi Industrial	Commercial Manufacturing	Capistrano Substation

[1] Designated land use is taken from the general plan land use map and generally reflects designated land uses within and adjacent to the ROW.
[2] Zoning designations were taken from official zoning maps for the cities of San Juan Capistrano and San Clemente as well as for Orange County. Zoning signifies the general nature of pre-approved land uses within a given area.
[3] Existing land use generally reflects the current land uses within and adjacent to the ROW.
[4] Roadways and highways are not designed on the city of San Juan Capistrano Official Land Use Map or the Zoning Map.

Table 4.9-1 (cont.): Designated and Existing Land Uses in the Proposed Project Area

Pole(s) and other Components	Jurisdiction/ Community	General Plan Land Use Designation[1]	Zoning Designation[2]	Existing Land Use[3]
Pole No. 4	San Juan Capistrano	Neighborhood Park	Neighborhood Park	Existing electric transmission and distribution lines, Junipero Serra Park
Pole Nos. 4 to 5	San Juan Capistrano	Undesignated Space[4]	Undesignated[4]	Existing electric transmission and distribution lines, I-5
Pole No. 5	San Juan Capistrano	Open Space Recreation	Planned Community	Existing electric transmission and distribution lines, Marbella Country Club & Golf Course
Pole Nos. 6 to 8	San Juan Capistrano	Very Low Density Residential, Low Density Residential	Planned Community, Single Family Residential	Existing electric transmission and distribution lines, Undeveloped (within ROW) and residential development (within and adjacent to ROW)
Pole No. 8	San Juan Capistrano	General Open Space	Open Space Recreation	Existing electric transmission and distribution lines, Arroyo Park

Table 4.9-1 (cont.): Designated and Existing Land Uses in the Proposed Project Area

Pole(s) and other Components	Jurisdiction/ Community	General Plan Land Use Designation[1]	Zoning Designation[2]	Existing Land Use[3]
Pole No. 9	San Juan Capistrano	Community Park	Community Park	Existing electric transmission and distribution lines, Russell Cook Park
Pole No. 10	San Juan Capistrano	General Open Space	General Open Space	Existing electric transmission and distribution lines, equestrian stables
Pole Nos. 11 to 13	San Juan Capistrano	Very Low Density Residential, Low Density Residential	Single Family Residential, General Open Space, Planned Community, Residential/Agriculture District	Existing electric transmission and distribution lines, low-density residential and undeveloped
Pole Nos. 14 and 15	San Juan Capistrano	General Open Space, Planned Community	Planned Community	Existing electric transmission and distribution lines, undeveloped

Table 4.9-1 (cont.): Designated and Existing Land Uses in the Proposed Project Area

Pole(s) and other Components	Jurisdiction/ Community	General Plan Land Use Designation[1]	Zoning Designation[2]	Existing Land Use[3]
Rancho San Juan (Transmission Line Segment 2)				
Pole Nos. 16 to 19 and new underground trench packages	San Juan Capistrano, Rancho San Juan, unincorporated Orange County	Planned Community, General Open Space, Open Space	Planned Community, General Agriculture	Existing electric transmission and distribution lines, undeveloped, San Juan Hills High School, Rancho San Juan Development (under construction)
Rancho San Juan to Talega Hub (Transmission Line Segment 3)				
Pole Nos. 20 and 21	Rancho San Juan, unincorporated Orange County	Planned Community, Open Space, Landfill Site (Public Facilities)	General Agriculture, Planned Community	Existing electric transmission and distribution lines, undeveloped, La Pata Avenue, Prima Deshecha Landfill
Pole Nos. 22 to 25	Unincorporated Orange County	Landfill Site (Public Facilities)	General Agriculture	Existing electric transmission and distribution lines, undeveloped

Table 4.9-1 (cont.): Designated and Existing Land Uses in the Proposed Project Area

Pole(s) and other Components	Jurisdiction/ Community	General Plan Land Use Designation[1]	Zoning Designation[2]	Existing Land Use[3]
Pole Nos. 26 to 41	San Clemente, Talega	Talega Specific Plan: Open Space, Residential, Local Parks and Recreation, Mixed Use, Golf Courses, Low-Medium Density Residential, Medium Density Residential, Commercial, Business Park, Village Center	Talega Specific Plan: Open Space	Existing electric transmission and distribution lines, open space, undeveloped land, medium density residential development, commercial development, golf courses
Talega Hub to the Talega Substation (Transmission Line Segment 4)				
Substation, Pole Nos. 42 to 49, 9a to 23a, 1b to 9b	Camp Pendleton, San Clemente, Talega	Talega Specific Plan: Open Space, Commercial State Parks Land (Camp Pendleton)	Talega Specific Plan: Open Space and Commercial	Existing electric transmission and distribution lines, undeveloped land, Talega Substation

West of Capistrano Substation (Transmission Line Segment 1)

West of Capistrano Substation (Transmission Line Segment 1) currently includes existing electric transmission and distribution facilities. The Proposed Project would include improvements to these facilities (transmission lines) west of the Capistrano Substation, extending to Avenida De La Vista. The lines would extend from the southern portion of the San Juan Capistrano Substation property, under Camino Capistrano through a landscaped median, under railroad tracks and then through the existing SDG&E ROW located within a residential development. SDG&E currently has two existing 138kV transmission lines and an existing distribution line within this segment of ROW.

The SDG&E ROW through the residential neighborhood is bordered by single-family residential uses on both sides and then extends under the community's recreational area that includes a sand court and pool. This area is designated for High Density Residential uses and zoned as a Multi-Family Residential district.

San Juan Capistrano Substation to Interstate 5 (Transmission Line Segment 1)

San Juan Capistrano Substation to I-5 (Transmission Line Segment 1) currently includes existing electric transmission, distribution and substation facilities. The Capistrano Substation to I-5 segment of the Proposed Project consists of 900 feet of overhead transmission line between the new San Juan Capistrano Substation and the I-5 freeway, within the city of San Juan Capistrano (refer to Figure 4.9-1, Sheet 1). Beginning at the Capistrano Substation, the transmission line runs west across Calle Santa Rosalia and through Junipero Serra Park to I-5.

The Capistrano Substation property is designated Quasi Industrial (light manufacturing and industrial uses) and zoned as Commercial Manufacturing. Junipero Serra Park is designated and zoned as Neighborhood Park. The JSerra Catholic High School, Saddleback Valley Christian School, El Camino Real Park, and Rio Oso Park are located within 0.25 mile of the Proposed Project area within this Proposed Project segment.

Interstate 5 to Rancho San Juan (Transmission Line Segment 1)

The I-5 to Rancho San Juan Segment (Transmission Line Segment 1) currently includes existing electric transmission and distribution facilities. The I-5 to Rancho San Juan segment of the Proposed Project runs approximately 2.5 miles through the city of San Juan Capistrano (refer to Figure 4.9-1, Sheets 1 through 3). Beginning at I-5, the line runs southeast across the Marbella Country Club, Arroyo Park, and partially or fully developed residential areas. The transmission line crosses approximately 0.6 mile of open space before ending at the Rancho San Juan planned development.

This segment of the Proposed Project crosses land designated and zoned as Residential, Community Park, Open Space Recreation, General Open Space, Residential/Agriculture, and Planned Community. There are three schools including the Marbella Montessori School, St. Margaret's Episcopal School, and Harold Ambuehl Elementary School within 0.25 mile of this portion of the Proposed Project transmission lines. In addition, the Marbella County Club, Russell Cook Park, San Juan Hills Golf Club, and Four Oaks Park, are all located within 0.25 mile of the transmission line within this Proposed Project segment.

Rancho San Juan (Transmission Line Segment 2)

The Rancho San Juan Segment (Transmission Line Segment 2) currently includes existing electric transmission and distribution facilities. At the Rancho San Juan planned development, the line transitions to underground for approximately 1,700 feet. Approximately 1,300 feet are within the city of San Juan Capistrano and 400 feet are within unincorporated Orange County. The entire segment is inside the limits of the Rancho San Juan planned development, which is designated and zoned as a Planned Community and is currently partially developed. Some of the land surrounding this segment of the Proposed Project is also designated for Open Space. The San Juan Hills High School is located immediately north east of the transmission line route (refer to Figure 4.9-1, Sheet 2).

Rancho San Juan to Talega Hub (Transmission Line Segment 3)

The Rancho San Juan to Talega Hub Segment (Transmission Line Segment 3) currently includes existing electric transmission and distribution facilities. The Rancho San Juan to Talega Hub segment runs south for approximately four miles through unincorporated Orange County and the city of San Clemente (refer to Figure 4.9-1, Sheets 3 through 6).

The area surrounding the portion of the transmission line that is located within unincorporated Orange County (Pole Nos. 18 to 25) is designated Planned Community, Open Space, and Landfill Site (Public Facilities). This area is zoned as Planned Community within the city of San Juan Capistrano (adjacent to the ROW) and General Agriculture within the unincorporated Orange County (within the ROW). The portion of San Clemente that the Proposed Project crosses is zoned under the *Talega Specific Plan*. The land use designation of the area containing the ROW is Open Space. The ROW directly borders on lands designated as low, medium-low, and medium density residential, commercial, business park, and village center. However, the area where the ROW is located remains undeveloped with residential and commercial developments directly abutting the ROW in some places. In addition to the San Juan Hills High School, located immediately north (within Segment 2) of the transmission line, Vista Del Mar Middle School, Capistrano Connections Academy, and the Talega Preparatory Academy are all educational centers within 0.25 mile of the Proposed Project lines. Recreational facilities within 0.25 mile of the Proposed Project area lines include Liberty Park, La Pata/Vista Hermosa Sports Park, and the Pacific Gold and Country Club golf course.

Talega Hub to Talega Substation (Transmission Line Segment 4)

The Talega Hub to Talega Substation Segment (Transmission Line Segment 4) currently includes existing electric substation, transmission and distribution facilities. The Talega Hub to Talega Substation segment is approximately 2,000 feet long. A portion of the segment is within the city of San Clemente and the other portion is on land owned by Camp Pendleton (refer to Figure 4.9-1, Sheet 6). SDG&E, through its parent company, Sempra Energy, holds more than 1,300 acres of leases/ROW agreements with Camp Pendleton for transmission lines and various associated support facilities. Talega Substation and the transmission line corridors are easements granted from the Department of Navy to SDG&E as they are located on Camp Pendleton. There is also an overlying lease of this area to California State Parks from the Department of Navy. Regardless of leasehold or easement, the underlying ownership of this area is Camp Pendleton and the Department of Navy.

The area in the immediate vicinity of the Talega Hub and Talega Substation is completely undeveloped. The surrounding area includes the Talega development to the north and east, which is developed with residential and commercial uses and. The portion of the ROW within the *Talega Specific Plan* is designated/zoned for open space with a small section of commercial. The *Talega Specific Plan* states that this small section of commercially zoned land is for a potential commercial development to be located at the intersection of the 241 Toll Road extension (Foothill Transportation Corridor) and Avenida Pico. Camp Pendleton and the Pacific Golf and Country Club are located immediately to the south and undeveloped hills to the east.

4.9.4 Potential Impacts

4.9.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to land use and planning if it would:

a) Physically divide an established community;

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or

c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

4.9.4.2 Question 9a – Physically divide an established community?

Construction – No Impact

The Proposed Project would replace existing electric transmission, distribution and substation facilities and would be constructed almost entirely within existing SDG&E ROW and substation property boundaries. Storage and staging areas would also be located within SDG&E's existing ROW system and/or other previously disturbed areas and would not divide any established communities. All areas of temporary disturbance, including staging areas, would be restored to pre-construction conditions following the completion of the Proposed Project. No above-ground permanent changes to the physical environment would occur outside of current SDG&E property or ROW, except along one new section of ROW (approximately 1,200 linear feet long) between the Talega Hub and the Talega Substation (Transmission Line Segment 4), which is currently undeveloped. The San Juan Capistrano and Talega Substations would be modified within their existing property boundaries. Therefore, Proposed Project construction would not result in the division of any established community and there would be no impacts.

Impacts relating to access to parks, golf courses, and other recreational facilities are discussed in Section 4.12, Public Services. Impacts associated with construction within public roadways (and associated lane closures) are discussed in 4.14, Transportation and Traffic.

Operation & Maintenance - No Impact

The overhead portion of the new 230kV transmission lines would be replacing an existing 138kV transmission line and would be parallel to another existing 138kV transmission line in SDG&E's existing ROW. The underground portion of the new 230kV transmission lines would be located entirely within existing roadways. The Proposed Project would not physically divide an established community to any greater extent than the existing condition. New facilities at the San Juan Capistrano and Talega Substation sites would be installed within the existing property boundaries. Therefore, neither the new San Juan Capistrano Substation nor the upgraded Talega Substation would divide any existing community. Therefore, no impact would result from operation and maintenance of the Proposed Project.

4.9.4.3 Question 9b – Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Construction - No Impact

As noted above, local land use plans, policies and regulations do not apply to the Proposed Project as a matter of law. As such, the underlying general plans and zoning ordinances are not "applicable" and the Proposed Project does not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Proposed Project.

Even assuming that the local land use plans, policies and regulations applied to the Proposed Project, due to the temporary nature of construction activities; the Proposed Project's compliance and consistency with existing land use plans, policies and regulations; and the existing electrical transmission infrastructure located within and adjacent to the Proposed Project area; there would be no significant impacts to existing land use plans, policies, or regulations as a result of construction of the Proposed Project. Construction of the Proposed Project would occur almost entirely from within existing SDG&E ROW and existing substation properties. The Proposed Project represents an upgrade of existing land uses within existing site boundaries and ROW. The two areas where new ROW is required (approximately 0.04 acre within Segment 2 – Rancho San Juan and approximately 1,200 linear feet within Segment 4 – Talega Hub to Talega Substation) are not incompatible with existing land uses or designations. The new ROW in Segment 2 would accommodate new underground facilities (trench packages) and would not adversely affect the function of the roadways or surrounding uses during operation and maintenance of the Proposed Project. The new ROW within Segment 4 is all within an existing utility corridor (refer to Figure 3-7) with multiple existing transmission and distribution lines and a large amount of existing ROW. The only functional use of this area is open space and recreation (hiking and horse trails) which would not be adversely affected by the addition of ROW in this area.

Refer to Section 4.12, Public Services for impacts to recreational facilities during construction of the Proposed Project and Section 4.14, Transportation and Traffic, for impacts to traffic as a result of construction related traffic and construction activities within roadways.

Operation & Maintenance - No Impact

Camp Pendleton

All of the facilities proposed to be constructed and in operation for the Proposed Project associated with Camp Pendleton would be located within existing SDG&E easements. The only additional land rights required to implement and operate the Proposed Project are the addition of underground rights to relocate and reconnect existing overhead 69kV and 138kV transmission lines to accommodate the overhead 230kV line replacing the 138kV line, which would be obtained from the Department of Navy. There would be no change in the land use of the existing SDG&E easement area. Furthermore, there would be no land use change that would affect the San Onofre State Beach lease area since all Proposed Project facilities are contained within existing utility easement areas.

Local Plans and Policies

As noted previously, local land use plans, policies and regulations do not apply to the Proposed Project as a matter of law. As such, the underlying general plans and zoning ordinances are not "applicable" and the Proposed Project does not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project.

Even assuming that the local land use plans, policies and regulations applied, the Proposed Project would not pose any potential significant impacts. The Proposed Project includes the replacement and upgrading of existing electric transmission, distribution and substation facilities, and does not include the installation of new electric transmission facilities in areas where similar facilities do not already exist. These existing facilities constitute the baseline from which potential land use impacts were evaluated. The existing Capistrano Substation and other existing transmission and distribution facilities were constructed before almost all of the surrounding development throughout the Proposed Project area.

With the exception of approximately 1,200 linear feet of new transmission line facilities at Segment 4, none of the new above-ground facilities would be located outside of existing SDG&E ROW, easement, or fee property. All aspects of the Proposed Project are consistent with the applicable plans, policies, and goals of the *City of San Juan Capistrano General Plan*, *City of San Clemente General Plan*, and the *Orange County General Plan*, as well as the local zoning designations. With respect to the San Juan Capistrano Substation, the site is currently zoned for Commercial Manufacturing, which is considered an industrial land use district under the San Juan Capistrano Municipal Code. Pursuant to the San Juan Capistrano Municipal Code, public utilities are a principal permitted use within the Commercial Manufacturing zone. For these reasons, there are no impacts.

4.9.4.4 Question 9c – Conflict with any applicable habitat conservation plan or natural community conservation plan?

Construction - No Impact

Proposed Project construction activities would fully comply with the *SDG&E Subregional NCCP*, which supersedes *the Southern Orange County Subregional NCCP*, and the *Camp Pendleton INRMP*. As concluded in Section 4.4, Biological Resources, construction of the

Proposed Project would result in less than significant impacts in regards to consistency with the *SDG&E Subregional NCCP*. Therefore, there would be no impact.

Operation & Maintenance - No Impact

As discussed above and concluded in Section 4.4, Biological Resources, the Proposed Project would be consistent with the *SDG&E Subregional NCCP*. Therefore, there would be no impact.

4.9.5 Applicant Proposed Measures

The Proposed Project would not result in significant impacts regarding land use and planning and therefore no APMs are proposed.

4.9.6 References

Capistrano Unified School District. October 18, 2004. *Approval of Resolution No. 0405-37 Requesting a Setback Exemption for San Diego Gas and Electric Company Power Lines at San Juan Hills High School.*

City of San Clemente. 1993. *General Plan*.

City of San Clemente. 2003. *Talega Specific Plan.*

City of San Clemente. 2007. *San Clemente Community View by Digital Maps Products*. Online: http://maps.digitalmapcentral.com/CommView/SanClemente_cv/index.html. Site visited September 2, 2011.

City of San Juan Capistrano. 2002. *General Plan*.

City of San Juan Capistrano. Updated June 2011. Municipal Code. City of San Juan Capistrano. *San Juan Capistrano Community View by Digital Maps Products*. Online: http://maps.digitalmapcentral.com/CommView/sjc_cv5/index.html. Site visited September 2, 2011.

City of San Juan Capistrano. 2002. *Zoning Map*. Online: http://www.sanjuancapistrano.org/Modules/ShowDocument.aspx?documentid=8412. Site visited September 2, 2011.

County of Orange. 2005. *General Plan.*

County of Orange. 2005. Zoning Code.

County of Orange, Resources and Development Management Department. 2004. *Master Plan of Regional Riding and Hiking Trails*. Online: http://www.ocparks.com/strategicplan/RegionalRiding.pdf. Site visited May 2, 2008.

Marine Corps Base Camp Pendleton. 2007. *Integrated Natural Resources Management Plan*. Online: http://www.pendleton.usmc.mil/base/environmental/inrmp/summary.pdf. Site visited August 31, 2011.

San Diego Gas & Electric. 1995. *Subregional Natural Community Conservation Plan*. December 15, 1995.

TABLE OF CONTENTS

4.10 NOISE 4.10-1
4.10.1 Introduction 4.10-1
4.10.2 Methodology 4.10-1
4.10.3 Existing Conditions 4.10-2
4.10.4 Potential Impacts 4.10-20
4.10.5 Applicant Proposed Measures 4.10-41
4.10.6 References 4.10-41

LIST OF FIGURES

Figure 4.10-1: Ambient Noise Measurement Locations at the Capistrano Substation 4.10-15
Figure 4.10-2: Predicted Noise Level Contours for the San Juan Capistrano Substation 4.10-23
Figure 4.10-3: Construction Vibration Levels with Distance from Several Source Types .. 4.10-31

LIST OF TABLES

Table 4.10-1: Human Response to Transient Vibration 4.10-5
Table 4.10-2: County of Orange Noise Ordinance Limits (Exterior Noise Standards) 4.10-7
Table 4.10-3: County of Orange Noise Ordinance Limits (Interior Noise Standards) 4.10-7
Table 4.10-4: City of San Clemente Exterior Noise Ordinance Limits 4.10-8
Table 4.10-5: City of San Clemente Interior Noise Ordinance Limits 4.10-9
Table 4.10-6: City of San Juan Capistrano Maximum Noise Levels 4.10-11
Table 4.10-7: Summary of Ambient Noise Short-term Measurements 4.10-17
Table 4.10-8: Summary of Corona Noise Measurement Data 4.10-19
Table 4.10-9: Allowable Times for Construction Activities 4.10-21
Table 4.10-10: Calculated Substation Operational Sound Levels 4.10-25
Table 4.10-11: Construction-Related Architectural Damage Potential 4.10-28
Table 4.10-12: Typical Noise Levels Generated by Construction Equipment 4.10-34
Table 4.10-13: Predicted Aggregate Average (L_{eq}) Construction Noise Along the Transmission Corridor at Nearest Receptors to each Proposed Project Pole[a] 4.10-36
Table 4.10-14: Predicted Aggregate Average (L_{eq}) Construction Noise around the San Juan Capistrano Substation Site[a] 4.10-39

LIST OF APPENDICES

Appendix 4.10-A Basics of Noise and Vibration
Appendix 4.10-B Ambient Noise Survey Report

THIS PAGE IS INTENTIONALLY LEFT BLANK

4.10 NOISE

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑	☐
b.	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c.	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐
d.	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☑	☐	☐
e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑
f.	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

4.10.1 Introduction

This section of the PEA describes existing conditions and the potential effects of the Proposed Project in relation to noise and vibration. Included in this section is background information on noise and vibration (see Appendix 4.10-A, Basics of Noise and Vibration), a brief summary of the regulatory framework that pertains to the Proposed Project, an evaluation of the significance of Proposed Project impacts including noise and land use compatibility, long-term noise level increases resulting from Proposed Project-generated sources, and temporary noise and vibration impacts during construction. This chapter incorporates the findings of noise studies prepared for the Proposed Project by Alliance Acoustical Consulting, Inc. (see Appendix 4.10-B, Ambient Noise Survey Report) as well as with calculations for noise and vibration impacts. APM NOISE-1 is being proposed to ensure that potential impacts associated with nighttime construction activities would be less than significant. All other impacts are less than significant.

4.10.2 Methodology

A review of local, regional, state, and federal literature was conducted to establish the noise standards for the Proposed Project locations. Measurements were made to establish the baseline environment at key segments of the Proposed Project area, including in the vicinity of the transmission line corridor. An evaluation of potential noise impacts from the Proposed

Project included examining typical noise and vibration levels that are expected from demolition and construction activities, primarily at the Capistrano Substation and at discrete pole locations along the transmission corridor. Future noise environments in and around the future, reconfigured San Juan Capistrano Substation were calculated for the on-going activities at this part of the Proposed Project. Additional technical methodologies (including noise measurement information) are included within Appendix 4.10-B, Ambient Noise Survey.

4.10.3 Existing Conditions

4.10.3.1 Regulatory Setting

Federal

There are no federal noise standards that directly regulate noise from the operation of electrical transmission lines and substation facilities. However, in 1974 the USEPA established guidelines for noise levels, defined to protect public health and welfare with an adequate margin of safety. That is, there would be no reason to suspect that the general population would be at risk from any of the identified detrimental effects of noise if environmental noise levels were below the indicated guidelines. The secondary impetus for the USEPA's noise guidelines was to provide guidance for the local implementation of noise standards as the USEPA document does not have established federally-mandated standards, criteria, regulations, or goals.

The USEPA established various noise guidelines, based on the intended use at the receiving property. These thresholds are in terms of either a 24-hour energy-equivalent sound value (L_{eq-24}) or a second 24-hour noise metric, the day-night sound level (L_{dn}). These and other acoustical terms are defined and discussed in more detail in Attachment 4.10-A. The USEPA guidelines are summarized as follows:

- A 24-hour equivalent sound level (L_{eq-24}) of less than or equal to 70 A-weighted decibels (dBA)[1] to protect against hearing loss;
- A day-night sound level (L_{dn}) of less than or equal to 55 dBA to protect against activity interference and annoyance in residential areas, farms, and other outdoor areas where quiet is a basis for use;
- A 24-hour energy-equivalent sound level (L_{eq-24}) of less than or equal to 55 dBA to protect against outdoor activity interference where limited time is spent, such as school yards and playgrounds;
- A day-night sound level (L_{dn}) of less than or equal to 45 dBA to protect against indoor activity interference and annoyance in residences; and
- A 24-hour energy-equivalent sound level (L_{eq-24})of less than or equal to 45 dBA to protect against indoor activity interference in school yards.

[1] The human ear is not uniformly sensitive to all sound frequencies; therefore, the A-weighting scale has been devised to correspond with the human ear's sensitivity. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless noted otherwise.

Beyond these USEPA guidance levels, the federal government has passed various general laws to regulate and limit noise levels, as discussed in the following sub-sections.

Noise Pollution and Abatement Act of 1970

The Noise Pollution and Abatement Act of 1970 established the Office of Noise Abatement and Control (ONAC) within the USEPA, authorized to conduct a full and complete investigation of noise and its effect on public health and welfare. The office was charged with the identification of noise sources, projected noise levels, and effects of noise on persons, animals, and property.

In 1981, the Administration concluded that noise issues were best handled at the state or local government level. As a result, the USEPA phased out funding for ONAC in 1982 to start the transfer of responsibility from the federal level to state and local governments and agencies for the regulation of noise. Nonetheless, the Noise Control Act of 1972 and the Quiet Communities Act of 1978 (described below) were not rescinded by Congress and they remain in effect today.

Noise Control Act of 1972

The Noise Control Act of 1972 was the first comprehensive statement of national noise policy. It declares, "It is the policy of the U.S. to promote an environment for all Americans free from noise that jeopardizes their health or welfare."

Quiet Communities Act of 1978

The Noise Control Act was amended by the Quiet Communities Act of 1978 to promote the development of effective state and local noise control programs, to provide funds for noise research, and to produce and disseminate educational materials to the public on the harmful effects of noise and ways to effectively control it.

By 2002, agencies including the DOT, Department of Labor, Federal Railroad Administration, and FAA, developed their own noise control programs and each agency has established their own noise-related criteria.

Occupational Health and Safety Act of 1970

The U.S. Occupational Health and Safety Administration is assigned the responsibility of setting standards and conducting inspections in the workplace to ensure that employers are providing safe and healthful workplaces. OSHA covers all employers and their employees in the 50 states, the District of Columbia, Puerto Rico, and other United States territories. The OSHA standards may require that employers adopt certain practices, means, methods, or processes reasonably necessary and appropriate to protect workers on the job. Thus, employers must become familiar with the standards applicable to their establishments and are required to eliminate hazards. For worker noise exposure, the regulation establishes a time-weighted average noise limit of 90 dBA over an eight-hour work shift (this is the Permissible Exposure Level or PEL). Areas where the time-weighted average exposure exceeds 85 dBA (this is the Action Level or AL) triggers the need for a hearing protection program, including the labeling of

high-noise-level areas, feasible limitation of exposure times, periodic audiometric testing for all at-risk employee, and the providing and promotion of individual hearing protection equipment.

Federal Aviation Administration

The FAA establishes 65 decibels (dB) Community Noise Equivalent Level (CNEL)[2] as the noise standard associated with aircraft noise measured at exterior locations at noise-sensitive land uses (NSLU)[3]. This standard is also generally applied to railroad noise.

Federal Transit Administration

The Federal Transit Administration (FTA), under the DOT, has created a noise and vibration impact assessment manual that provides guidance for evaluating roadway, railway, and construction sources. The manual presents practical techniques for screening, predicting, and assessing potential noise and vibration impacts, primarily based on receptor land use.

State

California Noise Control Act

The California Noise Control Act recognizes that a continuous and increasing bombardment of noise exists in urban, suburban, and rural areas. The act states that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The measure establishes that the State of California has the responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise.

California Noise Insulation Standards

The California Noise Insulation Standards were adopted in 1974 by the California Commission on Housing and Community Development. These standards were meant to establish noise insulation benchmarks for multi-family residential buildings. This document, commonly referred to as Title 24, establishes limits for interior room environments that are attributable to outside noise sources. The regulations also specify that acoustical studies must be prepared whenever a residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source or sources create an exterior CNEL (or Ldn) 4 of 60 dBA or greater. Such acoustical analyses must demonstrate that the residence has been designed to limit exterior-to-interior intruding noise to no more than 45 dBA CNEL (or Ldn) inside.

[2] The CNEL is a 24-hour, A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 PM to 10:00 PM and after the addition of 10 decibels to sound levels occurring in the nighttime between 10:00 PM and the following 7:00 AM

[3] Noise-sensitive land uses routinely include, but are not necessarily limited to; schools, hospitals, rest homes, long term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas.

[4] For typical community noise environments, the L_{dn} and CNEL levels are nearly always within 1 dB of each other and, therefore, are commonly used interchangeably (as would be the case in this document).

California Department of Transportation- and Construction-Induced Vibration Guidance

Like the FTA, the Caltrans provides practical guidance to engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans-related projects. Caltrans has established that continuous or frequent intermittent vibration sources, such as impact pile drivers, are significant when their peak particle velocity (PPV) exceeds 0.1 inch per second. Table 4.10-1, Human Response to Transient Vibration, summarizes the Caltrans thresholds regarding vibration perception.

Table 4.10-1: Human Response to Transient Vibration

Human Response	PPV (inches/second)
Severe	2.0
Strongly Perceptible	0.9
Distinctly Perceptible	0.24
Barely Perceptible	0.035
Source: Caltrans, 2004	

Local

Generally, every local government outlines requirements for noise abatement and control in their General Plan and municipal code. A General Plan typically sets overall goals and objectives, while the municipal codes set specific sound limits.

Since the Proposed Project is several miles long, it traverses two cities, as well as unincorporated portions of Orange County and Camp Pendleton. The various noise-related requirements for each jurisdiction are presented below.

County of Orange

The County of Orange Noise Ordinance and General Plan Noise Element contain the County's policies on noise. The County Noise Ordinance establishes maximum noise levels that may be experienced on a neighboring property as a result of noise generated on/from another property. The County's Noise Ordinance is found in the Civil Code, Title 4 "Health, Sanitation, and Animal Regulation", Division 6 "Noise Control", Article 1. "General Provisions" and is enforceable throughout all incorporated and unincorporated territory of the County. Section 4-6-5 establishes the exterior noise standards, Section 4-6-6 establishes the interior noise standards, and Section 4-6-7 delineates special provisions (including limitations for construction activities and their associated noise).

The County Noise Ordinance prescribes exterior and interior noise standards for the protection of residential zoned areas. The Noise Ordinance is designed to control unnecessary, excessive, and annoying sounds from sources on private property by setting limits that cannot be exceeded at adjacent properties. The Noise Ordinance requirements are not applicable to

mobile noise sources such as cars, motorcycles, and heavy trucks which are traveling on public roadways, as these mobile noise sources are preempted by Federal and State laws[5].

These noise level standards apply to all residential property and are given in terms of A-weighted sound pressure level limits during the daytime and nighttime periods[6] for both exterior and interior spaces. There is also a further delineation of limits for varying noise levels within a given hour in that shorter accumulations of noise are allowed to have higher levels. Lastly, there are reductions in the limits for noise levels that are particularly intrusive, such as sources that have impact or tonal characteristics.

The County Noise Ordinance states that the daytime noise level for a noise source measured at an outdoor area of a residential property cannot ever exceed 75 dBA; 70 dBA for more than one minute of any hour; 65 dBA for more than five minutes of any hour; 60 dBA for more than 15 minutes of any hour; or 55 dBA for more than 30 minutes of any hour. All these noise level limits are reduced by five dB during the nighttime hours to reflect the increased sensitivity to noise occurring during this time period.

The County Noise Ordinance also states that the noise level for a source measured at an indoor area of a residential property cannot ever exceed 65 dBA; 60 dBA for more than one minute of any hour; and 55 dBA for more than five minutes of any hour. The nighttime interior noise level limits are reduced by ten dB, relative to the daytime interior limits. The County noise regulations are summarized in Table 4.10-2, County of Orange Noise Ordinance Limits (Exterior Noise Standards) and Table 4.10-3, County of Orange Noise Ordinance Limits (Interior Noise Standards).

The remainder of this page is intentionally blank.

[5] However, the County's Noise Ordinance can be applied to vehicles traveling on private roads and on which are operated on private property (e.g. parking lots or loading docks).

[6] In the noise ordinance, 'daytime' is defined as 7:00 AM to 10:00 PM and 'nighttime' is defined as 10:00 PM to the following 7:00 AM

Table 4.10-2: County of Orange Noise Ordinance Limits (Exterior Noise Standards)

Timeframe	Equivalent statistical sound level*	Daytime Limit (7:00 AM to 10:00 PM)	Nighttime Limit (10:00 PM to the following 7:00 AM)
For a cumulative period of more than thirty (30) minutes in any hour	L_{50}	55 dBA	50 dBA
For a cumulative period of more than fifteen (15) minutes in any hour	L_{25}	60 dBA	55 dBA
For a cumulative period of more than five (5) minutes in any hour	$L_{8.3}$	65 dBA	60 dBA
For a cumulative period of more than one (1) minute in any hour	$L_{1.6}$	70 dBA	65 dBA
For any period of time	L_0	75 dBA	70 dBA

Notes:

Provision 1: In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise level limits shall be reduced by five (5) dB.
Provision 2: In the event the ambient noise level exceeds the above limits, the applicable levels shall be increased to reflect said ambient noise level.
* L_x is the sound pressure level that is the statistical indicator of the time-varying noise signal that is equaled or exceeded x % of the stated sampling time. As examples, the L_{10} symbol represents the sound level which is exceeded 10 percent of the sampled time period and the L_0 is the sound pressure level that is never equaled or exceeded during the stated sampling time, thus making this value equivalent to the maximum noise level or L_{max}. In the case of the Orange County Regulation, the $L_{1.6}$, $L_{8.3}$, L_{25}, and L_{50} noise metrics are the sound pressure levels that are the statistical indicators of the time-varying noise signal that is equaled or exceeded 1 minute, 5 minutes, 15 minutes, and 30 minutes, respectively, out of any given hour. Note that these are typical criterion levels in many community noise ordinances.
Source: County of Orange

Table 4.10-3: County of Orange Noise Ordinance Limits (Interior Noise Standards)

Timeframe	Equivalent statistical sound level*	Daytime Limit (7:00 AM to 10:00 PM)	Nighttime Limit (10:00 PM to the following 7:00 AM)
For a cumulative period of more than five (5) minutes in any hour	$L_{8.3}$	55 dBA	45 dBA
For a cumulative period of more than one (1) minute in any hour	$L_{1.6}$	60 dBA	50 dBA

Notes:

Provision 1: In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise level limits shall be reduced by five (5) dB.
Provision 2: In the event the ambient noise level exceeds the above limits, the applicable levels shall be increased to reflect said ambient noise level.
* L_x is the sound pressure level that is the statistical indicator of the time-varying noise signal that is equaled or exceeded x % of the stated sampling time. As examples, the L_{10} symbol represents the sound level which is exceeded 10 percent of the sampled time period and the L_0 is the sound pressure level that is never equaled or exceeded during the stated sampling time, thus making this value equivalent to the maximum noise level or L_{max}. In the case of the Orange County Regulation, the $L_{1.6}$, $L_{8.3}$, L_{25}, and L_{50} noise metrics are the sound pressure levels that are the statistical indicators of the time-varying noise signal that is equaled or exceeded 1 minute, 5 minutes, 15 minutes, and 30 minutes, respectively, out of any given hour. Note that these are typical criterion levels in many community noise ordinances.
Source: County of Orange

Also of particular relevance to the Proposed Project, the County Noise Ordinance exempts noise generated from construction activities, based on the day and time of such work. Specifically, as long as construction, repairs, remodeling, or grading of any real property does not take place between 8:00 PM and 7:00 AM on weekdays (including Saturdays), or at any time on Sunday or Federal holidays, noise from construction activities is exempt from the ordinance limits.

For the Proposed Project, the County of Orange noise standards pertain to areas around Proposed Project Pole Nos. 18 through 25, wherein the proposed new 230kV transmission line is near the border of unincorporated county areas and territory inside the city of San Juan Capistrano.

City of San Clemente

The City of San Clemente Municipal Code, Chapter 8.48, "Noise Control", contains several sections that deal with noise policy, definitions, exterior and interior standards, measurement procedures, and exceptions. Much like the County of Orange Ordinance, the city of San Clemente Municipal Code establishes allowable exterior and interior noise levels, based on receiving property land use, time of day, and the portion of any hour that the noise source of concern is observed. Table 4.10-4, City of San Clemente Exterior Noise Ordinance Limits outlines the established exterior noise standards for all property within the city of San Clemente, as prescribed by Section 8.48.050 of the San Clemente Municipal Code.

Table 4.10-4: City of San Clemente Exterior Noise Ordinance Limits

Land Use (at affected receiver property)	Allowable Exterior Noise Level	
	7:00 AM to 10:00 PM	10:00 PM to 7:00 AM
Residential	55 dBA	50 dBA
Residential portions of mixed-use, or residences located on property zoned for commercial, industrial or manufacturing land use	60 dBA	50 dBA
Commercial	65 dBA	60 dBA*
Industrial or manufacturing	70 dBA	70 dBA*
Notes: * Standard only applies if commercial, industrial or manufacturing buildings are occupied during these hours. Source: city of San Clemente		

As with the County's ordinance, the above nominal limits are modified by the time the potentially offending noise source is operating by:

1. The noise standard for a cumulative period of more than 30 minutes in any hour [that is, the L_{50} level]; or
2. The noise standard plus five dBA for a cumulative period of more than 15 minutes in any hour [that is, the L_{25} level]; or
3. The noise standard plus ten dBA for a cumulative period of more than five minutes in any hour [that is, the $L_{8.3}$ level]; or

4. The noise standard plus 15 dBA for a cumulative period of more than one minute in any hour [that is, the $L_{1.6}$ level]; or
5. The noise standard plus 20 dBA for any period of time [that is, the L_0 or L_{max} level].

Note that in the event the ambient noise level exceeds any of the five noise limit categories above, the allowable noise level under said category shall be increased to reflect the ambient noise level.

Similarly, there are interior standards with similar time-of-day, operating period, and existing ambient allowances/adjustments as outlined in Table 4.10-5, City of San Clemente Interior Noise Ordinance Limits.

Table 4.10-5: City of San Clemente Interior Noise Ordinance Limits

Land Use (at affected receiver property)	Allowable Interior Noise Level	
	7:00 AM to 10:00 PM	10:00 PM to 7:00 AM
Residential, including residential portions of mixed-use	50 dBA	40 dBA
Source: city of San Clemente		

The above nominal limits are modified by the time the potentially offending noise source is operating by:

1. The noise standard plus five dBA for a cumulative period of more than five minutes in any hour [that is, the $L_{8.3}$ level]; or
2. The noise standard plus ten dBA for a cumulative period of more than one minute in any hour [that is, the $L_{1.6}$ level]; or
3. The noise standard plus 15 dBA for any period of time [that is, the L_0 or L_{max} level].

In addition, the allowable noise level under each category shall be increased to reflect the ambient noise level in the event the ambient noise level exceeds any of the three noise limit categories above.

For the Proposed Project, the following San Clemente Municipal Code sections also apply:

> *8.48.090 Exemptions from Chapter.*
>
> *The following activities shall be exempted from the provisions of this chapter:*
>
> ***E.*** *Noise sources associated with construction activity, provided said activities take place only between the hours of seven (7:00) AM and six (6:00) PM on Monday through Friday, between the hours of eight (8:00) AM and six (6:00) PM on Saturday, and at no time on a Sunday or a City-recognized holiday, and provided all grading*

activities also comply with Section 15.36.190[7] of the City's Municipal Code regarding time of grading operations.

F. *Noise sources associated with construction activity for which a permit has been granted by the City based upon:*

1. *A case of urgent necessity in the interest of public health and safety. Such permit may be granted for a period not to exceed three (3) days while the emergency continues; or,*
2. *A determination by the City that the public health and safety will not be impaired and that no loss or inconvenience would result to any party in interest.*

G. *Noise sources associated with the maintenance of real property provided said activities take place only between the hours of seven (7:00) AM and six (6:00) PM on Monday through Friday, except on a City-recognized holiday, or between the hours of eight (8:00) AM and six (6:00) PM on Saturday, Sunday or a City-recognized holiday.*

J. *Activities of the federal, state or local government and its duly franchised utilities.*

M. *Activities necessary to continue to provide utility services to the general public, whether this service is installing additional facilities, restoring worn or damaged facilities and/or maintaining existing services.*

For the Proposed Project, the San Clemente noise standards pertain to areas around Pole Nos. 26 through 49, 9a through 12a, and 3b through 9b. Note that the transmission line is near the border of San Clemente and San Juan Capistrano near Pole No. 26.

City of San Juan Capistrano

The City of San Juan Capistrano Noise Ordinance identifies exterior and interior noise standards for residential and non-residential land uses. Table 4.10-6, City of San Juan Capistrano Maximum Noise Levels, provides the exterior noise standards that are applicable for residential and institutional districts.

[7] *15.36.190 Time of grading operations. Grading and equipment operations within one-half ($^1/_2$) mile of a structure for human occupancy shall not be conducted between the hours of five-thirty (5:30) PM and seven-thirty (7:30) AM nor on Saturdays, Sundays and City-recognized holidays. The City Engineer may, however, permit grading or equipment operations during specific hours after five-thirty (5:30) PM or before seven-thirty (7:30) AM or on Saturdays, Sundays and City-recognized holidays if he or she determines that such operations are not detrimental to the health, safety or welfare of the inhabitants of such a structure. Permitted hours of operation may be shortened by the City Engineer's finding of a previously unforeseen effect on the health, safety or welfare of the surrounding community. (Ord. 1278 § 1, 2003)*

Table 4.10-6: City of San Juan Capistrano Maximum Noise Levels

Period of Time	Maximum Noise Level, Not to be Exceeded
Residential & institutional districts, between 7 AM and 7 PM	65 dBA
Residential & institutional districts, between 7 PM and 10 PM	55 dBA
Residential & institutional districts, between 10 PM and 7 AM	45 dBA
Commercial districts, any time during the day	65 dBA
Source: City of San Juan Capistrano Municipal Code Sec. 9-3.531.	

Each of the above limits shall be reduced by 5 dB for sound sources containing simple tone noises or for noise consisting of speech or music.

The City's Noise Ordinance further notes that no person at any location within the city, including the industrial and open space districts, shall create any noise, or permit the creation of any noise, which causes the noise level within a residential, public and institutional or commercial district to exceed the noise standards noted above for the period-of-time adjustments identified as follows:

1. *The noise standard for a cumulative period of more than thirty (30) minutes in any hour [that is, the L_{50} level]; or*
2. *The noise standard plus five (5) dBA for a cumulative period of more than fifteen (15) minutes in any hour [that is, the L_{25} level]; or*
3. *The noise standard plus ten (10) dBA for a cumulative period of more than five (5) minutes in any hour [that is, the $L_{8.3}$ level]; or*
4. *The noise standard plus fifteen (15) dBA for a cumulative period of more than one (1) minute in any hour [that is, the $L_{1.6}$ level]; or*
5. *The noise standard plus twenty (20) dBA for any period of time [that is, the L_0 or L_{max} level]*[8].

[8] It is important to note that for a steady-state noise source, such as a power distribution / transmission substation wherein the noise emissions would not appreciably change, the most restrictive parameter of the San Juan Capistrano Municipal Code is the L_{50} noise level metric. For conservatism, this would be the metric used for compliance assessments.

For interior noise, the city of San Juan Capistrano standards restrict the creation of any noise, on property owned, leased, occupied, or otherwise controlled by a person, when measured within a dwelling unit on any residential property during the period from 10:00 PM to 7:00 AM, to exceed:

(A) The noise standard plus 10 dBA for any period of time; or

(B) The noise standard plus 5 dBA for a cumulative period of more than one minute in any hour; or

(C) The noise standard for a cumulative period of more than 5 minutes in any hour.

The method of noise level measurement for interior noise shall be made with the windows and doors closed with the measurements made at a point at least four feet from the wall, ceiling, or floor nearest the noise source in the affected residential unit.

The following activities shall be exempted from the above restrictions:

Noise sources associated with construction, repairs, remodeling, or the grading of any real property, provided that such activities are conducted from 7:00 AM to 6:00 PM on Monday through Friday or from 8:30 to 4:30 PM on Saturday. Construction noise is not allowed at any time on Sunday or on a national holiday.

For the Proposed Project, the San Juan Capistrano noise standards pertain to areas in and around the SDG&E Capistrano Substation site and for areas around Pole Nos. 1 through 17 and 1a through 8a. As noted above, there may be some overlap with Pole Nos. 19 through 25 (County of Orange) and with Pole No. 26 (city of San Clemente).

Proposed Project Pole Nos. 43 through 49, 15a through 23a, 1b, and 2b are in the County of San Diego and are on Camp Pendleton.

4.10.3.2 Noise Setting

Overall Project Setting

The Proposed Project components are primarily located in portions of the cities of San Juan Capistrano and San Clemente as well as unincorporated area within Orange and San Diego Counties[9]. The Proposed Project and its associated components would be located primarily within existing SDG&E transmission line ROW. This area of southwestern Orange County is composed of residential, commercial, recreational, and open-space land uses. The transmission line crosses the I-5 east of the San Juan Substation, then spans San Juan Creek. At the approximate mid-section of the transmission line, the ROW is located to the east of the Prima Deshecha Landfill. Near San Juan Hills High School, the transmission line would be placed underground adjacent to existing underground circuits near Vista Montana Street. Please

[9] *The southernmost portions of the transmission line, as well as the Talega Substation are in the County of San Diego and are on Camp Pendleton (federal lands), which are leased to the State of California as part of the San Onofre State Beach.*

refer to Section 3, Project Description, for additional information and graphics regarding the overall Proposed Project setting.

Capistrano Substation Setting

The Capistrano Substation is located within an urbanized area in the city of San Juan Capistrano in South Orange County. The 138/12kV substation was built almost 60 years ago and contains three 138kV transmission lines, six 12kV circuits, one 138kV capacitor, two 12kV capacitors, two 138/12kV transformers, and a control shelter. The 6.4 acre site is composed of an upper yard and a lower yard (refer to Figure 3-4). The upper (eastern) yard portion consists of an open rack design for the active 138/12kV substation with structures approximately 30-40 feet above grade, plus the accompanying transmission and distribution poles. The lower (western) yard contains a building and remnant facilities from an out-of-service switching station. This lower yard is currently being used as a storage area for nursery products and SDG&E equipment such as distribution and transmission poles. The Capistrano Substation is bounded by a parking/storage lot to the southeast, residential developments to the south and north, and a major street, Camino Capistrano to the west. Further west, across Camino Capistrano, is a rail line for both Amtrak and Metrolink rail services. To the west is Junipero Serra Park which includes the first portion of the initial 230kV transmission line going to Talega Substation. Beyond Junipero Serra Park, farther to the east is the I-5

Transmission Line Setting

The Proposed Project transmission lines traverse through several residential, recreational, and open-space areas within San Juan Capistrano, San Clemente, and unincorporated Orange and San Diego Counties. The recreational uses include Junipero Serra Park (near the Capistrano Substation), Marbella Country Club, Arroyo Park (off of SR-74), Russell Cook Park, El Camino Real Park, and an equestrian center (on San Juan Creek Road), as well as three private parks.

The Proposed Project would involve the installation of new 69kV, 138kV, and 230kV structures, overhead conductors, and underground cable. All transmission line work would be completed within SDG&E's existing ROW between the Capistrano and Talega Substations as well as within a small portion of acquired additional ROW near the Talega Substation.

Summary of Noise-Sensitive Receptors

Sensitive receptors around the Proposed Project area (Capistrano Substation and the Transmission line route or corridor) are primarily residential land uses. There is a modicum of other types of sensitive receptors, including houses of worship, schools, day-care facilities, and parks.

In the vicinity of the Capistrano Substation, the surrounding residential receptors are on the order of 215 to 300 feet from the center of the upper yard area. However, several adjacent homes are as close at 70 to 125 feet from some of the substation equipment, breakers, and transformers.

The transmission line corridor runs through Junipero Serra Park (adjacent to the Capistrano Substation), as well as through Arroyo Park, El Camino Real Park, the Marbella Country

Club, Russell Cook Park, and a horse boarding/training facility (Tar Farms), as well as several hiking and equestrian trails. A bore pit would be located within El Camino Real Park, and Pole Nos. 1a through 5a would be located in the immediate vicinity of a condominium complex. Construction of new underground transmission line would also take place in the immediate vicinity of the condominium complex, between Pole Nos. 1a and 3a. Pole No. 4 (at the northeast end of Junipero Serra Park) is as close as 70 feet from a residential structure and Pole No. 8 (in the middle of Arroyo Park) is within approximately 50 feet from a residential structure. The Harold Ambuehl Elementary School is approximately 1,100 feet to the southwest of the corridor and Pole No. 10 and St Margaret's Episcopal School is approximately 1,550 feet to the southwest of the corridor and Pole No. 8. Several new Proposed Project facilities are adjacent to or near the San Juan Hills High School (as close as 540 feet). Houses of worship include Living Hope Christian Fellowship, Heritage Christian Fellowship, and South County Church of Christ; all near Pole Nos. 39 through 42. Also in that same line of Proposed Project corridor facilities is a South County Urgent Care medical office and the Talega KinderCare day care center (within approximately 375 to 400 feet of new Proposed Project poles).

4.10.3.3 Noise Surveys

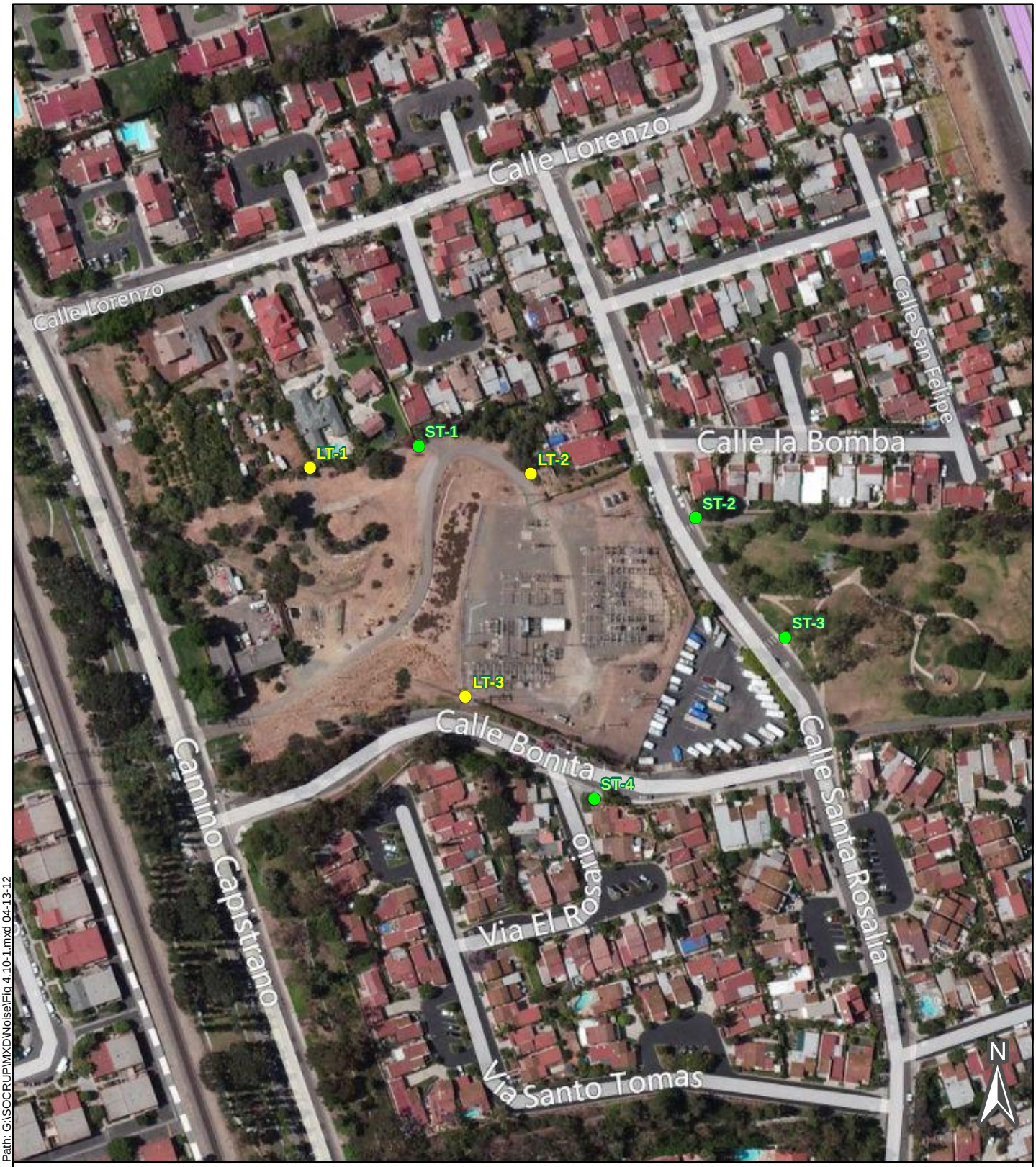
Capistrano Substation Survey Overview

The Capistrano Substation site and surroundings were visited beginning on the morning of Wednesday, June 9 and ending in the late afternoon of Thursday, June 10, 2010. A combination of long-term monitoring and short-term sampling was employed to capture overall sound levels, statistical sound levels, and frequency-band data at the various measurement locations.

During the survey, three long-term (i.e. 24+ hours) sampling locations were chosen along key boundary positions around the substation's upper yard area. These locations were near (or in the direction of) the closest noise-sensitive receptors around the substation property. At each long-term measurement location, various statistical sound levels[10], the minima/maxima, and the energy-average sound levels[11] were acquired over a complete day-night cycle. In addition, several short-term (i.e. 15-minute duration) samples were made during various times of the day and night to acquire supplemental information about the spectral content of the ambient noise environment and to document the observed noise sources contributing to that environment. These noise data were acquired at four short-term locations, most of which are outside the substation fenceline. The long-term and short-term ambient measurement locations at the Capistrano Substation are shown in Figure 4.10-1, Ambient Noise Measurement Locations at the Capistrano Substation. Refer to Appendix 4.10-B for specific details concerning the ambient noise measurement methodology.

[10] The sound pressure level, denoted L_x, that is the statistical indicator of the time-varying noise signal that is equaled or exceeded x % of the stated sampling time. For example, the L_{10} metric represents the sound level which is exceeded 10 percent of the sampled time period (commonly called the "intrusive noise level" or the 'effective maximum noise level'). Likewise, the L_{100} metric is the level equaled or exceeded 100% of the stated sampling time – i.e. it is always exceeded, thus making this value equivalent to the minimum noise level or L_{min}.

[11] The single-number noise descriptor that represents the energy-average sound levels over a given time period, where the actual sound level varies with time. That is, if the varying sound level were constant for the specified time, that level would be the L_{eq}.



Path: G:\SOCRUP\MXD\NoiseFig 4.10-1.mxd 04-13-12

0 100 200 400 Feet

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Source: Alliance Acoustical Consulting, Inc.

South Orange County Reliability Enhancement Project

Ambient Noise Measurement Locations at the Capistrano Substation

Figure 4.10-1

Legend

- Long-Term Ambient Measure Location
- Short-term Ambient Measure Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.10-1

Transmission Line Corona Survey Overview

A survey to collect corona-influenced noise data was made on the evening of Saturday, January 14, 2012 between the hours of 9:00 PM and 11:00 PM Short-term sampling, typically 15 minutes in duration, was employed to capture overall sound levels, statistical sound levels, and frequency-band data at the various measurement locations.

During the corona survey, locations along the transmission line were selected to (a) focus on residential areas that are close to the corridor towers and power lines or (b) away from extraneous sources, in an effort to isolate line-dominated noise. For the former, the locations near transmission line Pole Nos. 8, 11, and 29 were very close to residential areas. For the latter, the location near Pole No. 28 was removed from nearby houses, roadways, or other major non-line noise sources. This part of the transmission line, near Pole No. 28, was also chosen to attempt making noise attenuation-with-distance measurements as the corridor access/maintenance roadway runs perpendicular to the transmission line corridor for several hundred feet. Additional information concerning the ambient noise survey locations and measurement methods is contained in Appendix 4.10-B.

4.10.3.4 Measured Noise Environments

Capistrano Substation General Noise Environment

The short-term noise samples, made during several times of the day and night, are summarized in Table 4.10-7, Summary of Ambient Noise Short-term Measurements, which provides the minimum, maximum, and energy-average sound levels over each 15-minute sample.

Table 4.10-7: Summary of Ambient Noise Short-term Measurements

Location	Date	Time	Period	A-weighted Sound Pressure Level in decibels, dBA			
				L_{min}	L_{eq}	L_{50}	L_{max}
ST-1	6/9/2010	10:06:48	Morning	43.9	52.0	46.8	70.8
	6/9/2010	16:40:14	Day	43.0	65.5	46.2	82.7
	6/9/2010	22:04:46	Evening	42.9	47.3	47.2	50.9
	6/10/2010	3:31:27	Nighttime	40.5	43.8	43.6	48.0
ST-2	6/9/2010	11:10:40	Morning	42.4	55.8	48.9	76.8
	6/9/2010	15:57:00	Day	47.2	54.5	49.7	72.8
	6/10/2010	20:12:44	Evening	49.5	54.0	52.1	67.1
	6/10/2010	3:07:22	Nighttime	38.0	44.4	43.8	54.4
ST-3	6/9/2010	11:28:01	Morning	48.1	52.2	50.9	62.5
	6/9/2010	15:34:38	Day	49.3	52.3	50.7	63.0
	6/9/2010	21:15:54	Evening	46.5	51.9	50.7	66.0
	6/10/2010	2:49:15	Nighttime	40.7	46.5	46.2	53.6
ST-4	6/9/2010	11:48:00	Morning	44.3	54.8	48.9	72.4
	6/9/2010	16:17:40	Day	45.5	56.2	48.0	71.3
	6/10/2010	19:50:18	Evening	45.1	53.4	47.6	71.1
	6/9/2010	22:31:19	Late Evening	44.4	50.5	46.8	66.7
	6/10/2010	2:26:21	Nighttime	39.1	44.7	43.3	62.9

Source: Alliance Acoustical Consulting, Inc., 2010

The short-term results and field notes indicate that the existing noise environments were controlled by various sources, depending on the time of day and the measurement location. The nighttime conditions were dominated by traffic noise from the freeway with some influences from transformer 'hum' at the substation. Plots of the short-term measurements' spectral (frequency) results are also provided in Attachment 4.10-B.

In addition to the short-term data, three long-term monitoring stations were set to acquire data over a 24-hour period to investigate the day-to-night changes in the area's ambient noise conditions. These monitors were set to obtain and process noise data in continuous 15-minute samples at positions along the northwest, northeast, and southwest boundaries of the substation site.

The Capistrano Substation survey results – including 24-hour monitoring, spectral sampling, and field observations – indicate that the substation site is typical for a suburban residential neighborhood near transportation corridors (Camino Capistrano, the Amtrak rail line, and the I-5). Ambient noise levels are primarily controlled throughout the daytime and nighttime by either the I-5 traffic flows or noise from the existing transformers (or a combination of both). Noise from general urban activities in the adjoining residential neighborhoods also contributed to the overall sound environment. The amount of influence of these sources is dependent on the receptor location, proximity to substation equipment, and local shielding effects. During the ambient survey, the following local noise sources were noted by the field engineer:

- Car and truck vehicle movements on the adjacent Camino Capistrano roadway, local side streets, and the I-5 to the east;
- General urban noises in the neighborhoods (music, talking, tools, church bells, etc.);
- Birds (during the daytime) and crickets (during the evening and late-night hours);
- Dogs barking;
- Substation transformer hum (depending on location, conditions, and other sources);
- Occasional rustling of vegetation during periods of light winds;
- Occasional train pass-bys on the Amtrak line across Camino Capistrano; and
- Occasional aircraft overflights in the distance.

In general, the long-term noise level records show a significant amount of moment-to-moment variability, in terms of the fluctuations in the maximum sound levels from period to period. This is due to the intermittent vehicle and train movements along the Camino Capistrano corridor and at local streets adjacent to the substation site. Single-event sound levels, such as from individual vehicle or train pass-bys, were measured in the low-70's to low-80's dBA maximum sound level (L_{max}). However, the amplitudes of the energy-equivalent sound levels (L_{eq}) around the existing Capistrano Substation site were generally confined to fairly narrow ranges, indicating that the average noise environment is fairly steady. Location LT-1 registered in the 40's to 50's dBA, location LT-2 sound levels were generally between 45 and 55 dBA, and location LT-3 levels had the highest recorded noise levels of between 50 and 60 dBA L_{eq}. It should be noted that at several times during the day, evening, and nighttime periods, locations around the Capistrano Substation have existing, ambient noise levels that exceed the Municipal Code standards; primarily due to traffic flow noise on the nearby freeway (and, to a lesser extent, from local

vehicle movements). The full data record from the ambient survey is found in Appendix 4.10-B, including charts of the 24-hour data results (Appendix B, Figures 5a through 5c).

Transmission Corridor Corona Noise Environment

The short-term noise samples, made during several times of the day and night, are summarized in Table 4.10-8, Summary of Corona Noise Measurement Data, which provides the minimum, maximum, and energy-average sound levels over each 15-minute sample.

Table 4.10-8: Summary of Corona Noise Measurement Data

Location	Time	Period	A-weighted Sound Pressure Level in decibels, dBA		
			L_{min}	L_{eq}	L_{max}
Structure 8	20:59	Evening	47.5	50.7	54.8
Structure 11	21:29	Late Evening	45.0	49.7	54.2
Structure 28	22:56	Early Night	25.6	30.5	40.3
Structure 29	22:39	Early Night	30.1	36.4	50.3

Notes:
All data acquired on January 14, 2012 (Saturday)
Source: Alliance Acoustical Consulting, Inc., 2012

The transmission line survey results – primarily focusing on establishing the ambient noise from corona effects – indicate that most of the corridor area is fairly quiet for an urbanized area. As with the situation at the Capistrano Substation, the dominant evening and early nighttime noise sources were typically roadway and freeway traffic flows from adjacent or distant transportation routes. Although the data were acquired on a humid night that would be conducive for corona noise effects[12], there was no observed corona noise from the existing transmission lines.

As the Proposed Project area is located among developed, suburban areas, the major noise source was predominantly traffic-related; mostly from major arterials or freeways in the distance. It is important to note that corona noise was not experienced at any location during the survey. During the corona survey, the following local noise sources were noted by the field engineer:

- Vehicle movements on distant roadways (e.g., I-5, Ortega Highway, San Juan Creek Road, and Calle Saluda);
- Occasional dogs barking or other wildlife (i.e., coyotes) in the distance;
- Occasional rustling of vegetation during periods of very light winds (at Pole No.11 only);
- Infrequent train movements in the distance; and
- Residential equipment (e.g., pool pumps or water features) in the distance.

The amplitudes of the energy-average (L_{eq}) levels near the transmission line corridor were centered around 50 dBA for locations primarily dominated by local and distant traffic flows,

[12] The survey evening was chosen during a cool time of the year and on an evening shortly following a mild winter storm which left the humidity level relatively high….all conditions that are conducive for corona noise emissions.

while more secluded and remote areas of the corridor had average noise levels in the low- to mid-30's dBA L_{eq}.

4.10.4 Potential Impacts

4.10.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact regarding noise if it would result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

e) Exposure of people residing or working in the project area to excessive noise levels for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public-use airport; or

f) Exposure of people residing or working in the project area to excessive noise levels for a project within the vicinity of a private airstrip.

4.10.4.2 Question 10a – Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Construction – Less than Significant Impact

Construction of all of the Proposed Project components would require the temporary use of various types of noise-generating equipment, including graders, backhoes, augers, flatbed boom trucks, rigging and mechanic trucks, air compressors and generators, mobile cranes, concrete trucks, and man lifts. Wire stringing operations would require pullers, tensioners, and cable reel trailers. Helicopters would be used to assist with the conductor stringing process. Heavy equipment would be used to remove and install substation components.

As discussed in Section 4.10.3 above, construction-related noise sources are exempt from the pertinent local noise ordinances, provided that the respective allowable hours of construction activity are followed. These allowable hours are summarized in Table 4.10-9, Allowable Times for Construction Activities. Given the exemption of construction activities during these hours, there would be no impact from the preponderance of construction activities.

Table 4.10-9: Allowable Times for Construction Activities

Jurisdiction	Day	Allowable Time Window
Orange County (unincorporated)	Mon – Fri: Saturday: Sunday:	7 AM to 8 PM 7 AM to 8 PM None
City of San Clemente	Mon – Fri: Saturday: Sunday:	7 AM to 6 PM 8 AM to 6 PM None
City of San Juan Capistrano	Mon – Fri: Saturday: Sunday:	7 AM to 6 PM 8:30 AM to 4:30 PM None
Source: Various noise regulations, cited in Section 4.10.3 above.		

As discussed more fully in Section 4.10.4.5, below, a few very short-term construction activities would have to occur at night or on the weekend. First, overnight work to fill the 230/138kV transformer tanks could take as long as 96 hours to complete, but would generate noise levels of less than 45 dBA, which would be below the pertinent nighttime L_{50} limit. Second, the opening and closing of breakers may have to be conducted during evening/nighttime hours, depending on the cut-over schedule. Even if it does occur at night, however, the sound generated would be very short lived[13] and would take place inside of buildings, bringing the noise levels down to 60 dBA L_{max} at the nearest residential receptors. This is below the L_{max} limit of 65 dBA during the nighttime hours (i.e., the basic exterior nighttime standard of 45 dBA L_{50} plus 20 dB for an L_{max} limit of 65 dBA per Tables 3-29 and 3-31 of the San Juan Capistrano Municipal Code, Section 93.531.). Finally, night and weekend work would also be required to accommodate delivery of one or two large pieces of equipment, but the limited number of trucks and the limited number of days on which these delivery-focused trips would be required would not result in significant impacts. Further, the short duration of these delivery events[14] is not expected to create any exceedances of the noise standards; either in terms of the hourly L_{50} or the L_{max} limits (45 dBA and 65 dBA, respectively, during the nighttime hours). Given the short duration, the few expected occurrences, and/or the anticipated adherence to the pertinent municipal code limits, even during nighttime hours, these special circumstances during the construction phase are expected to produce nighttime noise impacts that are less than significant.

Operation & Maintenance – Less Than Significant Impact

Capistrano Substation

The primary noise source associated with the operation of the Capistrano Substation would be from the transformers and their associated cooling fans. For the transformers themselves, the magnetic interaction between the alternating current field and the transformer core generates

[13] Breaker activation is a transient, 'popping' event and would be regulated by the city's L_{max} noise level standard.

[14] It is expected that deliveries of the large transformers during the nighttime hours, made necessary by restrictions on hauling this type of large, heavy equipment the daytime, will simply entail pulling the delivery vehicle onto the project site, parking it overnight, and unloading the item(s) during normal, daytime construction hours. To minimize nighttime noise disturbance during these delivery operations, APM Noise-1 is proposed.

noise predominantly at 120, 240, 360, and 480 Hertz (Hz)[15]. The transformer cooling fans typically operate in stages and at different load settings, depending on the temperature of the windings located in the main tank.

To evaluate the future sound emissions from the Capistrano Substation and its proposed complement of transformers, a proprietary computerized noise prediction program[16] was used to simulate the future sound environment from the reconfigured substation. The modeling program uses industry-accepted propagation algorithms based on American National Standards Institute (ANSI) and International Standards Organization (ISO) standards[17] to account for classical sound wave divergence (spherical spreading loss with adjustments for source directivity from point sources) plus attenuation factors due to air absorption, ground effects, and barrier/shielding (from either intervening structures or topographical features)[18]. The computer outputs are in terms of octave band and overall A-weighted noise levels at discrete receptor positions.

Proposed Project layout and architectural drawings, supplied by the SDG&E, were used to establish the relevant physical and positional characteristics of the substation equipment and buildings. With this information, the source locations and physical characteristics were translated into input *x, y, z* coordinates for the noise modeling program. For conservatism, and as is standard practice in the description of environmental noise, the modeling assumed stable atmospheric conditions suitable for reproducible measurements (under "standard-day" conditions of 59° F and 70% Relative Humidity (RH), that are favorable for outdoor sound propagation. Also, the model used the future substation's buildings/structures as barriers, as well as the topographical differences discussed above to account for propagation losses due to shielding between a given noise source and a receptor location.

For this modeling simulation, the transformers were assumed to emit the maximum noise allowed under SDG&E's specifications. That is, a National Electrical Manufacturer's Association (NEMA) noise rating of 71 dBA for the larger, 230kV transformers and a noise rating of 61 dBA for the smaller, 138kV transformers. As the substation equipment items are effectively steady-state sound sources, their noise emissions would not vary substantially over time. As such, the statistical sound levels associated with the substation noise sources would, ideally, be equal for any given measurement period. That is, the L_{50}, L_{25}, $L_{8.3}$, $L_{1.6}$, and L_0 sound levels (pertinent to the San Juan Capistrano Municipal Code) should be equal; both in terms of the modeling input parameters and the predictive output results. The predictive modeling outputs, in the form of contour lines of constant noise levels, are depicted in Figure 4.10-2, Predicted Noise Level Contours for the San Juan Capistrano Substation, sound pressure level (SPL) in dBA for the Future, Full Build-Out Case[19].

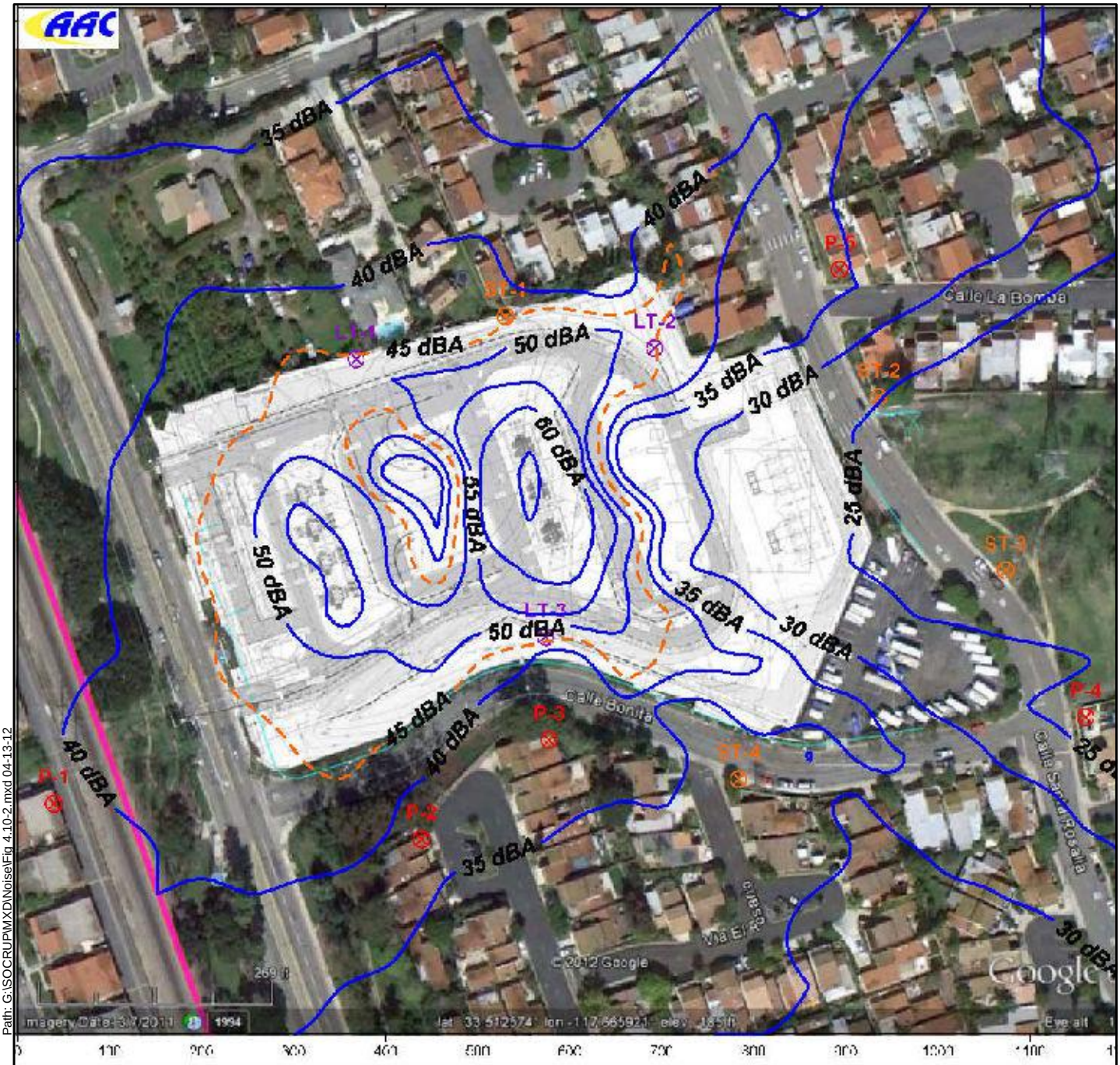
[15] This effect is called magnetostriction and generates a fundamental at twice the line frequency, along with the associated harmonics.

[16] The modeling program is an in-house computer application developed by Alliance Acoustical Consulting, Inc. staff for predicting outdoor noise propagation from large commercial and/or industrial facilities.

[17] ANSI is the American National Standards Institute, while ISO is the International Standards Organization. Algorithms and methods for this program are included in the ISO 9613, ISO 1996, or ANSI 126 standards.

[18] This model has been validated over the years via noise measurements at several operating facilities that had been previously modeled during the engineering design phases. The comparison of modeled predictions versus actual measurements has consistently shown close agreement.

[19] The predicted contour map shows the modeled contributions from the future substation configuration, in the absence of background noise levels. The model included the effects of barrier attenuation from the on-site screening walls & retaining walls, the on-site buildings & 230kV fire walls, and key topographical features at the site.



Path: G:\SOCRUPMXD\Noise\Fig 4.10-2.mxd 04-13-12

Created For:	Created By:
Mary Turley	TRC
Date: 4/25/2012	

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- 45 dBA contours
- Noise contours

Does not include existing ambient (background) noise levels
Equivalent noise emissions for Transformers found using SDG&E standard specification levels
Includes the following as Sound Barriers:
- On-site Screening Walls and Retaining Walls
- On-site Substation Buildings
- On-site 230 kV fire walls
- Topographical features

Source: Alliance Acoustical Consulting, Inc., Google Earth

N

Map not to Scale

South Orange County Reliability Enhancement Project

Predicted Noise Level Contours for the San Juan Capistrano Substation

Figure 4.10-2

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.10-2

Figure 4.10-2 shows that the maximum noise level from the operation of the Capistrano Substation would be approximately 45 dBA or less when measured outside of the substation's property line at adjoining land uses when all transformers are operating under secondary auxiliary cooling conditions (e.g., full load). The results are summarized in Table 4.10-10, Calculated Substation Operational Sound Levels and are given in terms of the L_{50} statistical sound level (i.e., the most restrictive San Juan Capistrano noise metric).

Table 4.10-10: Calculated Substation Operational Sound Levels

Receptor Location	Noise Level Limits for Day/Evening/Night, SPL L_{50} dBA	Existing Ambient Day/Evening/Night SPL L_{50} Sound Levels, dBA[a]	Predicted, Future L_{50} Project-related Sound Levels, dBA
LT-1	65 / 55 / 45	41.8 / 40.4 / 39.1	44
LT-2	65 / 55 / 45	47.6 / 45.3 / 44.8	45
LT-3	65 / 55 / 45	50.5 / 49.3 / 47.8	53[b]
ST-1	65 / 55 / 45	46.5 / 47.2 / 43.6	44
ST-2	65 / 55 / 45	49.3 / 52.1 / 43.8	26
ST-3	65 / 55 / 45	50.8 / 50.7 / 46.2	24
ST-4	65 / 55 / 45	48.4 / 47.2 / 43.3	39
P-1*	65 / 55 / 45	42 / 40 / 39	38
P-2*	65 / 55 / 45	42 / 40 / 39	38
P-3*	65 / 55 / 45	48 / 47 / 43	41
P-4*	65 / 55 / 45	51 / 51 / 46	25
P-5*	65 / 55 / 45	49 / 52 / 44	36

Notes:
a. Sound levels for the LT-x locations are arithmetic averages of the measured fifteen-minute L_{50} values across each portion of the day. Sound levels for the ST-x locations are the measured L_{50} values for each short-term session. Sound levels for the P-x analysis locations are estimated from similar/nearby data points.
b. This location is inside the proposed substation screening walls due to the choice of a secured location for the ambient survey…all other locations are outside of the substation perimeter.
* These supplemental locations are for analysis only.
Source: Alliance Acoustical Consulting, Inc., 2012

Table 4.10-10 shows that all off-site analysis locations are predicted to have Proposed Project-generated sound levels below the applicable city of San Juan Capistrano noise limits for all portions of the day and night[20]. In several cases, the screening walls, elevation-change retaining walls, substation buildings, and/or topographical characteristics would substantially attenuate substation noise levels by 20 or more dB below the existing ambient conditions for the neighborhood (see Locations ST-2, ST-3, and P-4). All locations are predicted to be at or below

[20] Since it is on the substation property and inside the proposed 10 foot high screening wall (due to the choice made during the ambient survey for a secured location), Location LT-3 is not relevant to an off-site compliance assessment. It is included in the presentation for completeness and to compare the pre-Project conditions with the post-installation environments.

45 dBA L_{50} which is the overnight (and most restrictive) noise level limit. Only one off-site location, LT-1, is expected to have material increases with the Proposed Project equipment, as compared to the existing conditions, although substation noise levels would be below the most restrictive city of San Juan Capistrano noise ordinance limit. These increases are predicted to be between 2 and 5 dB, depending on the time of day. Note that is common in environmental impact assessments to consider changes in community noise between 0 and 3 dB as being generally not discernible, changes between 3 and 5 dB as being noticeable, but not substantial, and changes above 5 dB as being substantial and significant. As such, the elevated noise environment for the new transformer operations may be noticeable to a small set of nearby residences (near Location LT-1), but the nature and character of the future noise environment would not be modified from the existing conditions, as the primary on-site sources (both existing and future) are distribution power transformers.

Because the noise generated would be less than the allowable noise limits of the receiving land uses that surround the substation, the operation of the proposed San Juan Capistrano Substation would be consistent with the applicable noise regulations. Future sound levels are also projected to be at or below existing nighttime noise levels or, at worst, experiencing less than a (substantial) 5 dB increase at all noise sensitive locations. As a result, noise impacts would be less than significant.

The substation would be unmanned and electric equipment within the substation would be controlled from SDG&E's central operations facilities. Entry to an operational substation is restricted to authorized personnel only. Maintenance activities at the substation are planned to be limited to occasional inspection and repair activities by a crew consisting of as many as four people and may require a tool truck, an assist truck, and a large bucket lift truck. Maintenance activities would include equipment testing, equipment monitoring, and repair, as well as emergency and routine procedures for service continuity and preventive maintenance. Noise generated as the result of the previously described activities would be masked by the substation's operation and the existing traffic in the area along Camino Capistrano and I-5. In addition, the proposed maintenance activities would be similar to those being performed at the existing Capistrano Substation. As a result, there would be no exceedances of established noise standards and there would be no noise impacts associated with substation maintenance.

Transmission Lines

Modern transmission lines are designed, constructed, and maintained so that during dry conditions they operate below the corona-inception voltage and generate a minimum of corona-related noise. The corona hum from a 230kV line typically would produce noise levels up to 36 dBA when measured at the edge of the transmission line ROW during dry conditions. A noise level of 36 dBA would be practically unnoticeable, as it is easily masked by other ambient noise sources in the area.

Corona levels (and audible noise levels) are the highest during heavy rain, when the conductors are wet, but the noise generated by the rain would likely be greater than the noise generated by corona; thus, the increased corona-related noise would not be noticeable. In foul weather conditions, water droplets and fog can produce corona discharges from high voltage lines that are typically 5 dB higher than with fair weather conditions, but can be 20 dB higher than usual.

Because noise levels generally decrease in intensity by 6 dB for each doubling of distance from the source, the future corona noise from the proposed design during poor/foul weather conditions is expected to be at or below 36 dBA at the edge of the SDG&E ROW. These predicted corona noise levels for the Proposed Project are comparable to the existing noise levels at the quietest portions of the corridor; near Pole Nos. 28 and 29. Further, the predicted levels are well below all pertinent daytime and nighttime noise level limits for all jurisdictions along the transmission corridor. As a result, the applicable significance levels at night would not be exceeded during future operations of the proposed transmission lines and no impact would occur.

The transmission circuits in to and out of the substation would be inspected annually. Routine maintenance for non-emergency situations could potentially include the cleaning or replacement of insulators. Cleaning activities may require washing up to three times a year to remove contaminants. These non-emergency maintenance procedures would occur during normal, daytime hours. Maintenance crews may be comprised of a crew of as many as four workers and may require a tool truck, an assist truck, and a large bucket lift truck. These maintenance activities would be short-term, typically lasting less than one day at each location. Due to the short duration of these activities, the limited amount of heavy equipment used, and the fact that these activities are already being performed on the existing facilities in the area, noise generated during maintenance would not change substantially from existing conditions and, as a result, impacts would be less than significant.

4.10.4.3 Question 10b – Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Construction – Less than Significant Impact

During construction of the Proposed Project, operation of heavy construction equipment has the potential to generate high ground vibration levels which have the potential to cause structural damage and/or annoyance to nearby sensitive receptors. Vibration levels generated by construction activities would vary depending on distance from the source, soil conditions, construction methods, and the equipment used. This analysis evaluates the potential for architectural damage or annoyance due to vibration caused by construction equipment.

The threshold at which there is a risk of "architectural" damage (visible cracks) to normal dwellings, such as plastered walls or ceilings, is 0.2 inches per second PPV. Heavy construction equipment such as bulldozers, backhoe/hoe rams, and jackhammers generally generate vibration levels of less than 0.1 in/sec PPV[21] at a reference distance of 25 feet. Boring or drilling operations, represented by caisson drilling, would generally generate vibration levels of 0.089 in/sec PPV at a reference distance of 25 feet.

The nearest existing structures to proposed construction activities are a set of condominium buildings adjacent to the ROW west of the Capistrano Substation. These condominium buildings are located near the bore pits and the receiving pits areas which would be used to tunnel under the railroad tracks that run parallel to Camino Capistrano. These buildings are also represented by noise analysis location P-1. The condominium buildings are approximately 150 feet from the

[21] Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment. U. S. Department of Transportation. FTA-VA-90-1003-06.

bore pits and 25 feet from the receiving pits. Even with the relatively close proximity of the condominiums to the receiving pit, vibration from the boring operations would be expected to be below 0.1 in/sec PPV, which is half of the threshold for risk of "architectural" damage to normal dwellings.

The nearest existing structures to the Proposed Project site are the condominiums near the bore pit and receiving pit, west of the Capistrano Substation site. These condominiums could be as near as 25 feet to some of the boring operations. The next nearest homes are those at the northeast corner of Junipero Serra Park and those that are immediately outside the substation fence to the north; both of which are from 75 to 100 feet from the closest potential construction activities (near the site boundary). Even with residential structures within 25 to 100 feet of site construction activities, the potential construction-related vibration would be well below the FTA's 0.2 PPV inches/second criteria for vibration-induced architectural damage at the surrounding structures, even with the use of large and/or vibration-intensive equipment such as bulldozers, hoerams, and jackhammers. For other existing structures that are more distant from the site, the groundborne vibration from Proposed Project sources would be greatly reduced by the relatively long propagation pathways – to the point of negligibility – and would result in construction-related vibration that would be considerably below the FTA's 0.2 PPV inches/second criteria for vibration-induced architectural damage. The vibration damage evaluation results are summarized in Table 4.10-11, Construction-Related Architectural Damage Potential.

Table 4.10-11: Construction-Related Architectural Damage Potential

Nearest Structure	Distance	Projected Construction Vibration, PPV (in/sec)[a]	Project Construction Activity	Vibration Damage Threshold, PPV (in/sec)[b]	Exceeds Threshold?
Condominium (west)	25 feet	<0.1	Bore pits	0.20	No
Residences (north and northeast)	75 feet	<0.02	Bulldozer, hoeram, and/or jackhammer	0.20	No

Notes:
[a] Vibration levels from the listed off-road construction equipment are equivalent to vibration levels generated by a large bulldozer based at a distance of 25 feet.
[b] Per methodology from FTA Chapter 12, with the threshold based on engineered concrete and masonry buildings, per Table 12-3.
Source: Alliance Acoustical Consulting, Inc., 2012

From these results, therefore, no architectural damage from vibration impacts would occur, and there would be no impact.

In addition to architectural damage, the Proposed Project construction activities have the potential to create vibration-related annoyance responses at the nearest sensitive receptors. Peak vibration levels occur when construction equipment operates directly adjacent to the property line. Although the maximum vibration could be perceptible in certain instances, peak vibration events occur infrequently. In addition, construction activities occur during weekdays which are least sensitive portions of the day. Therefore, construction vibration impacts are based on the

average vibration levels that would be experienced by sensitive receptors the majority of the time. Note that commercial and industrial land uses are not considered to be noise- or vibration-sensitive land uses.

Perceptibility of vibrations from construction equipment can be estimated by comparing the vibration thresholds provided in Table 4.10-11 to expected levels for construction equipment at different distances shown in Figure 4.10-3, Construction Vibration Levels with Distance from Several Source Types. Vibration amplitudes with a PPV above 0.032 inch/second (approximately equivalent to 78 Vibration Velocity level decibels) would be detectible and could be annoying. Thus, construction activities that might generate more 0.032 inch/second PPV would be considered potentially significant. This amplitude corresponds with a distance of approximately 50 feet from most construction activities.

Because of the close proximity of the receiving pits (for the under-railroad boring process) to residential receptors, these drilling/boring activities could potentially produce vibration levels near 0.1 in/sec PPV and could be considered as potentially significant. However, these jack-and-bore activities are scheduled for a one-month duration. Further, they would take place during daytime hours, when construction activities are exempt and when most people would be away from their homes, i.e. the least-sensitive portions of the day. Because of the short-term vibration exposure to these activities and due to the fact that this drilling/boring construction would take place during the least-sensitive time of the day, the vibration annoyance from the jack-and-bore process is considered less than significant.

For the main portion of the Proposed Project in and around the Capistrano Substation and along the transmission line corridor, the closest vibration-sensitive receptors would be no closer than 50 to 75 feet[22]. Given these distances, Proposed Project-generated construction vibration levels are expected to be at or below the 0.032 inches/second threshold as a worst case condition. All other potential vibration-sensitive receptors would be farther away from the Proposed Project construction activities and would experience lower vibration levels due to increased distance attenuation. As no off-site sensitive land uses associated with the substation site or the transmission line corridor would exceed the criterion for vibration annoyance, impacts from construction vibration annoyance are less than significant.

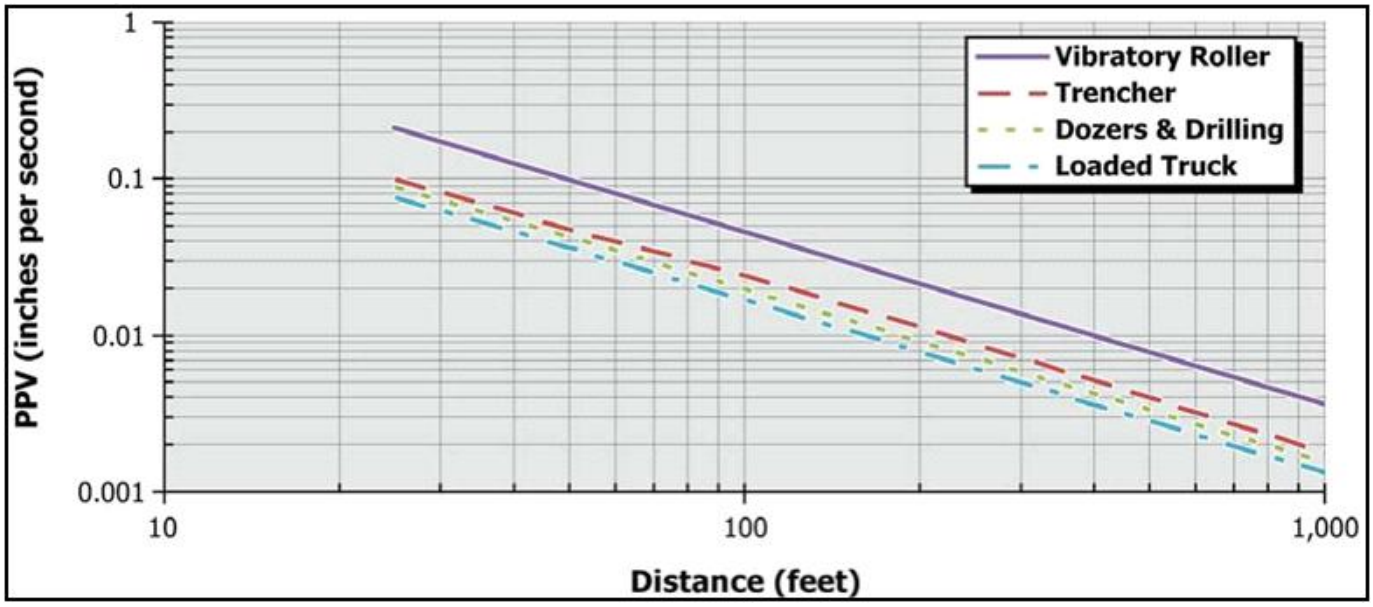
Operation & Maintenance – No Impact

Increases in vibration from normal operation and maintenance, beyond those described for the construction activities, are not anticipated. The operation and maintenance activities associated with the Proposed Project would involve minimal earthwork as most of the activities would involve the maintenance and up-keep of existing equipment.

In addition, these maintenance activities are already being conducted by SDG&E within the Proposed Project area. As none of the Proposed Project facilities generate vibration in the course of their normal operations, no impacts due to vibration from operation and maintenance would occur. Thus, there would be no vibration impacts during operations and maintenance.

[22] The closest residential properties are along the Arroyo Park strip at approximately 50 feet from the Proposed Project structure and at the residences at the far northeast corner of Junipero Serra Park which are approximately 75 from the Proposed Project structure. Residences to the north of the substation site are from 75 to 100 feet from potential substation construction activities that might generate groundborne vibration.

THIS PAGE IS INTENDED TO BE LEFT BLANK



Path: G:\SOCRUP\MXD\Noise\noisegraphCAP.mxd 03-12-2012

Legend

- Vibratory Roller
- Trencher
- Dozers & Drilling
- Loaded Truck

Source: FTA, 2006

South Orange County Reliability Enhancement Project

Construction Vibration Levels with Distance from Several Source Types

Figure 4.10-3

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.10-3

4.10.4.4 Question 10c – A substantial permanent increase in ambient noise levels in the project vicinity above levels without the project.

Construction – No Impact

As Proposed Project construction activities would conclude after a scheduled and defined period, these activities would not be permanent. Since no permanent increase in noise would occur during construction activities, there would be no impact.

Operation & Maintenance – Less Than Significant Impact

Capistrano Substation

As described in the response to Question 4.10a, the primary source of operational noise at the Capistrano Substation would be its transformers and their associated cooling fans. Figure 4.10-2 presented the predicted noise contours for the substation operations.

The city of San Juan Capistrano limits noise generation that would cause the adjacent residential land uses to exceed 65/55/45 dBA for the daytime/evening/nighttime periods, respectively, for the L_{50} noise metric. Typical ambient noise levels in the area were measured to be range of the mid-40's to mid-50's dBA L_{eq}. Predicted noise levels from the Proposed Project are below a 5 dB increase and are below the most restrictive nighttime noise level limit per the city code. Given these predictive results, no substantial permanent noise increases would occur and long-term operations of the San Juan Capistrano Substation would result in less than significant impacts.

Transmission Lines

As described in the response to Question 4.10a, modern transmission lines are designed, constructed, and maintained so that they produce a minimum level of corona noise during dry conditions. Even during wet/foul weather when there is a heightened probability of corona noise effects, the corona hum or crackle is expected to produce noise levels of less than or equal to 36 dBA, when measured at the edge of the transmission line ROW. A noise level of 36 dBA would be effectively unnoticeable and would most likely be masked by the existing noise environment and other ambient sound sources. No noise-sensitive receptors would experience a substantial permanent increase in noise from the Proposed Project's transmission line reconfiguration. Therefore, noise impacts would be less than significant.

4.10.4.5 Question 10d – A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Construction – Less than Significant Impact with Incorporation of APMs

Typical noise levels from construction equipment are provided in Table 4.10-12, Typical Noise Levels Generated by Construction Equipment. This table shows that energy-average (L_{eq}) noise from typical construction equipment ranges from 75 to 89 dBA, measured at 50 feet. The noise level generated from an operating helicopter would be approximately 95 dBA at a distance of 200 feet.

Table 4.10-12: Typical Noise Levels Generated by Construction Equipment

Equipment Item	Range of L_{eq} Noise Levels at approximately 50 Feet (dBA)
Earth-Moving	
Front loader	79 – 80
Backhoe	78 – 80
Tractor, dozer	82 – 85
Scraper, grader	84 – 85
Paver	77 – 85
Truck	74 – 84
Materials-Handling	
Concrete mixer truck	79 – 85
Concrete pump	81 – 82
Crane (movable)	81– 85
Stationary	
Pump	77 – 81
Generator	70 – 82
Compressor	78 – 80
Impact	
Jackhammers and rock drills	81 – 89
Compactors	80 – 83
Source: The Federal Highway Administration (FHWA), 2006	

Construction noise would be temporary and would primarily be conducted during prescribed hours pertinent to each jurisdiction (see Table 4.10-12 above). As such, these activities are exempt from local noise ordinances. Nonetheless, noise-sensitive receptors would experience a temporary increase in ambient noise levels during the construction activities.

For the Capistrano Substation construction, the expected activity schedule is approximately 48 months in duration. However, noise emissions from substation construction activities would vary appreciably during the overall construction schedule, depending on the activity phasing and the types and numbers of equipment items that are used in any given week or month. Further, the equipment loading and power requirements to accomplish particular tasks would vary and would be sporadic; resulting in different noise levels at each individual receptor location. Given the number and types of heavy equipment items that are typically employed during the site demolition and grading phase, this early portion of the overall construction schedule may be expected to generate higher intermittent noise levels than subsequent phases.

There are some special circumstances associated with the completion of the San Juan Capistrano Substation that would deviate from the exempt time periods for construction. The first is the filling of the transformers with oil, just prior to being energized. This process involves establishing a vacuum on the top of the 230/138kV transformer tanks, while pumping oil into bottom. The continuous filling process can take between 48 and 96 hours (per bank), depending on the dew point of the transformer and manufacturer's specifications. This would be done either with a pump connected directly to the existing 480 Volt (V) power in the substation or the installation crew would use an oil pump connected to a generator. The generator would be a "Whisper Watt" (or equivalent) generator which keeps the total noise level for the pump and generator to below 60 dBA at three feet[23]. Since this process would take from two to four days of continuous pumping, overnight work would be needed. This overnight portion of the effort, since it is outside the exempt daytime hours for construction, would be subject to the standard requirements of the City of San Juan Capistrano noise ordinance. As discussed in the Operations and Maintenance portion of Section 4.10.4.2 above, the expected noise emissions of the new transformers was established at 71 dBA at three feet. With the already-installed buildings and perimeter screening walls, this transformer noise emissions rating was shown to comply with the City's municipal code, even during the most restrictive nighttime hours. Since the transformer filling operation is predicted to be on the order of 10 dB quieter than the to-be energized transformer operations, this overnight filling process would also comply with the City's noise code.

A second potential special circumstance at the substation is the opening and closing of breakers and the testing of relays which would be done just before the substation is put into service. This testing process may or may not be conducted during evening/nighttime hours, depending on the cut-over schedule at the time. The noise level for a breaker closing is approximately 105 dBA L_{max} at three feet from the equipment, but it is a very short-lived impulsive sound (and could be described as a 'pop' noise). Since the breaker and relays are inside of the project buildings, these breaker/relay testing noises would be substantially encapsulated within the building shells. At least 25 dB of interior-to-exterior sound reduction can be expected from these buildings. Additional barrier attenuation from the perimeter screening walls and distance attenuation to the nearest community receptors would provide another 20 dB of sound reduction for these sources. Thus, breaker/relay testing noise would be expected to be on the order of 60 dBA L_{max} at the nearest receptors (i.e., 105 dBA – 25 dB – 20 dB = 60 dBA). From Table 4.10-6 and the associated item 5 above, the late-night, maximum allowable sound level for residential areas is 65 dBA. Since the breaker/relay testing noise would be expected to be below this L_{max} limit, such testing activities would be in compliance with the applicable local noise code. Therefore, both special circumstances (transformer oil filling and breaker/relay testing) would comply with overnight noise code requirements and noise impacts would be less than significant.

Any other endeavors during the construction phase where nighttime and weekend activities are necessary, including, but not limited to, delivery of substation transformers, system transfers, and/or pulling of the conductor, which require continuous operation or must be conducted during off-peak hours per agency requirements would be limited to the extent feasible so that noise would not exceed the hourly L_{50} of 45 dBA when measured at the nearest residential property. If activities cannot be limited to meet this noise threshold, SDG&E will communicate the exception

[23] From information provided by SDG&E Substation Engineering staff (2012).

to the city of San Juan Capistrano in advance of conducting the work that may exceed the threshold. This is addressed via APM NOISE-1.

For the transmission line portion of the Proposed Project, construction activities are expected to last approximately six to eight weeks at each pole site, but they are expected to occur intermittently over that duration. As work is completed at one portion of the transmission line, work crews would move on to other portions and the construction noise levels would subside for any given receptor location. For information purposes, projected noise levels associated with the construction area around each Proposed Project pole were calculated. Using the proposed construction schedule and envisioned equipment mix, a typical activity scenario was used to synthesize an aggregate construction noise emissions profile[24] along the transmission line corridor. This aggregate noise emissions profile, including the noise emissions from Table 4.10-12 above, standard usage factors for each equipment type, and the forecasted daily activity durations, was calculated to be an average noise level of 87 dBA at 50 feet from the center of activities. For distance attenuation due to spreading loss, a conservative value of 6 dB per doubling of distance was used, even though the majority of areas around the transmission line corridor would reasonably qualify as 'soft site' areas that could be expected to experience a higher 7.5 dB per distance doubling. Beyond the basic spreading loss attenuation, additional reduction(s) were applied on a location-by-location basis to account for shielding from topographical features, shielding from intervening structures, and/or ground absorption effects over particularly long propagation pathways. The results of these transmission corridor noise projections for construction activities are summarized in Table 4.10-13, Predicted Aggregate Average (L_{eq}) Construction Noise Along the Transmission Corridor at Nearest Receptors to each Proposed Project Pole.

Table 4.10-13: Predicted Aggregate Average (L_{eq}) Construction Noise Along the Transmission Corridor at Nearest Receptors to each Proposed Project Pole[a]

Pole #	Distance (feet)	Spreading Atten[b]	Other Atten[c]	Total Atten	Expected SPL(A)[d]	Closest Sensitive Receptor Type
1a	79	4.0	–	4.0	83	Residential
2a	39	-2.2	–	-2.2	89	Residential
3a	39	-2.2	–	-2.2	59	Residential
4a	98	5.8	–	5.8	81	Residential
5a	90	5.1	–	5.1	82	Residential
6a*	90	5.1	–	5.1	82	Residential
7a*	90	5.1	–	5.1	82	Residential
1*	145	9.2	–	9.2	78	Residential
2*	175	10.9	–	10.9	76	Residential
3*	170	10.6	–	10.6	76	Residential

[24] This profile included a 1-ton pick-up truck (at 2 hours usage per day), a maintenance truck, two air compressors (used ½-time each), a water truck (used ½-time), an excavator (used ½-time), a backhoe/front-loader, a dump/haul truck, and a compactor (used ½-time).

Table 4.10-13 (cont.): Predicted Aggregate Average (L_{eq}) Construction Noise Along the Transmission Corridor at Nearest Receptors to each Proposed Project Pole[a]

Pole #	Distance (feet)	Spreading Atten[b]	Other Atten[c]	Total Atten	Expected SPL(A)[d]	Closest Sensitive Receptor Type
4	70	2.9	–	2.9	84	Residential
5	415	18.4	–	18.4	69	Residential
6	200	12.0	–	12.0	75	Residential
7	110	6.8	–	6.8	80	Residential
8	50	0.0	–	0.0	87	Residential
9	210	12.5	–	12.5	74	Residential
10	350	16.9	–	16.9	70	Residential
11	140	8.9	–	8.9	78	Residential
12	200	12.0	–	12.0	75	Residential
13	650	22.3	20	42.3	45	Residential
14	725	23.2	–	23.2	64	San Juan Hills High School
15	790	24.0	–	24.0	63	San Juan Hills High School
16	540	20.7	–	20.7	66	San Juan Hills High School
17	580	21.3	–	21.3	66	San Juan Hills High School
18	1050	26.4	–	26.4	61	San Juan Hills High School
19	1100	26.8	–	26.8	60	San Juan Hills High School
20	1670	30.5	5	35.5	51	San Juan Hills High School
21	2260	33.1	5	38.1	49	San Juan Hills High School
22	3100	35.8	5	40.8	46	San Juan Hills High School
23	3850	37.7	5	42.7	44	San Juan Hills High School
24	3300	36.4	20	56.4	31	Residential
25	2600	34.3	20	54.3	33	Residential
26	890	25.0	5	30.0	57	Residential
27	760	23.6	20	43.6	43	Residential
28	910	25.2	10	35.2	52	Residential
29	210	12.5	–	12.5	74	Residential
30	160	10.1	–	10.1	77	Residential
31	350	16.9	–	16.9	70	Residential
32	540	20.7	5	25.7	61	Residential
33	1260	28.0	5	33.0	54	Residential
34	500	20.0	5	25.0	62	Residential
35	165	10.4	5	15.4	72	Residential
36	390	17.8	–	17.8	69	Day Care Center
37	375	17.5	–	17.5	69	Day Care Center
38	1200	27.6	–	27.6	59	Church
39	1050	26.4	–	26.4	61	Church
40	915	25.2	20	45.2	42	Resid'l (across Avenida Pico)
41	650	22.3	20	42.3	45	Resid'l (across Avenida Pico)

Table 4.10-13 (cont.): Predicted Aggregate Average (L_{eq}) Construction Noise Along the Transmission Corridor at Nearest Receptors to each Proposed Project Pole[a]

Pole #	Distance (feet)	Spreading Atten[b]	Other Atten[c]	Total Atten	Expected SPL(A)[d]	Closest Sensitive Receptor Type
42	660	22.4	20	42.4	45	Resid'l (across Avenida Pico)
43	1150	27.2	20	47.2	40	Resid'l (across Avenida Pico)
44	720	23.2	5	28.2	59	Resid'l (across Avenida Pico)
45	1000	26.0	20	46.0	41	Resid'l (across Avenida Pico)
46	1175	27.4	5	32.4	55	Resid'l (across Avenida Pico)
47	1350	28.6	5	33.6	53	Resid'l (across Avenida Pico)
48**	1580	30.0	5	35.0	52	Resid'l (across Avenida Pico)
49**	1850	31.4	5	36.4	51	Resid'l (across Avenida Pico)
Set TS1	Poles 9a & 10a are similar to Pole 42				~45	See note ***
Set TS2	Poles 11a & 12a are similar to Pole 44				~59	See note ***
Set TS3	Poles 11a & 12a are similar to Pole 44				~59	See note ***
Set TS4	Poles 3b, 4b, & 5b are less than Pole 44				<59	See note ***
Set TS5	Poles 6b, 14a, & 20a are less than Pole 45				<41	See note ***
Set TS6	Poles 7b, 8b, a& 9b are similar to Pole 46				~55	See note ***
Set TS7	Poles 21a, 22a, & 23a are similar to Pole 48				~52	See note ***
Set TS8	Poles 2b, 15a, 16a, 17a, 18a, 13a, & 19a, are similar to or less than Pole 43				~40	See note ***
1b	2,600	34.3	20	54.3	33	Resid'l (across Avenida Pico)

Notes:
a. Using an aggregate sound emissions profile for the collection of equipment at 87 dBA at 50 feet
b. Assuming 6 dB per doubling of distance for spreading loss attenuation
c. Accounting for topographical shielding, intervening structure shielding, and/or excess ground attenuation over particularly long propagation distances.
d. Energy average (Leq) sound level at the closest noise-sensitive receptor.
* Poles 6a, 7a, 1, 2, and 3 are inside the San Juan Capistrano Substation site
** Poles 48, 49, and 22a are inside the Talega Substation site
*** Groupings of poles near the Talega Substation (TS) are compared to nearby single-pole results
Source: Alliance Acoustical Consulting, Inc., 2012

For the transmission line portion of the Proposed Project, a special circumstance may occur that could possibly involve nighttime activities. Depending on the outage schedule at the time of the switch-over, power transfer could occur outside of daytime working hours. The power transfer normally takes from two to four hours, depending on the proximity of the overhead to the cable pole. The noise during this portion of the final construction would consist of a bucket truck moving into different positions and, possibly, the use of a small generator or compressor for completing compression connections. This cut-over work would be done outside of normal hours only if outage constraints restrict SDG&E to taking outages at off-peak hours[25]. Given the nature and magnitude of ambient noise sources along the transmission corridor (i.e., primarily traffic-related sources, as discussed above in Section 4.10.3.3), this

[25] From information provided by SDG&E Substation Engineering staff (2012).

relatively small complement of equipment would not be expected to substantially increase the ambient noise environment; even if evening/nighttime power transfer activities were needed.

For the Capistrano Substation, a similar methodology to the one summarized in Table 4.10-13 was used to arrive at an aggregate construction noise emissions profile[26] for the re-configuration efforts at the substation site. This aggregate noise emissions profile, including the noise emissions from Table 4.10-12 above, standard usage factors for each equipment type, and the forecasted daily activity durations, was calculated to be an average noise level of 85 dBA at 50 feet from the center of activities. As above, a conservative value of 6 dB for spreading loss attenuation was used. Also, for conservatism, no shielding due to topographical features or intervening structures was employed, even though such effects would be pertinent for several locations around the site. The barrier attenuation from the screening walls (nominally proposed to be 10 feet tall) around the majority of the substation site were also neglected. The results of these substation noise projections for construction activities are summarized in Table 4.10-14, Predicted Aggregate Average (L_{eq}) Construction Noise around the San Juan Capistrano Substation Site.

Table 4.10-14: Predicted Aggregate Average (L_{eq}) Construction Noise around the San Juan Capistrano Substation Site[a]

Receptor #	Distance (feet)	Spreading Atten[b]	Other Atten[c]	Total Atten	Expected SPL(A)[d]	Closest Sensitive Receptor Type
ST-1	300	15.6		15.6	70	Residential
ST-2	215	12.7		12.7	73	Residential
ST-3	300	15.6		15.6	70	Residential
ST-4	275	14.8		14.8	70	Residential
LT-1	415	18.4		18.4	67	Residential
LT-2	175	10.9		10.9	74	Residential
LT-3	230	13.3		13.3	72	Residential

Notes:
a. Using an aggregate sound emissions profile for the collection of equipment at 85 dBA at 50 feet
b. Assuming 6 dB per doubling of distance for spreading loss attenuation
c. Accounting for topographical shielding and/or intervening structure shielding.
d. Energy average (Leq) sound level at the closest noise-sensitive receptor.
Source: Alliance Acoustical Consulting, Inc., 2012

In summary, due to the short-term nature of the earth-moving, erection, and finishing activities at both the substation site and along the transmission line corridor, along with conducting construction primarily during the exempt time periods in each jurisdiction, construction noise impacts would be less than significant. For the special circumstances wherein (non-exempt) evening/nighttime construction might possibly take place, these activities are expected to generate noise levels that would comply with the municipal code noise limit requirements of the pertinent jurisdictions and they, too, would be less than significant.

[26] This profile included six 1-ton pick-up trucks (at 2 hours usage per day), a maintenance truck, two air compressors (used ½-time each), a water truck (used ½-time), a bulldozer (used ¾-time), a compactor (used ½-time), a backhoe/front-loader (used ½-time), a loader (used ½-time), and a dump/haul truck (used 3/8-time).

Operation & Maintenance – Less than Significant Impact

As discussed previously in the response to Question 4.10a, the maintenance activities conducted for the Proposed Project would result in temporary and periodic increases in ambient noise levels due to the operation of crew trucks and heavy equipment. As described previously, though, noise generated as the result of these on-going operations and maintenance activities would be masked by the substation's operation and by the existing traffic in the area along Camino Capistrano and I-5. In addition, the proposed maintenance activities would be similar to those being performed at the existing Capistrano Substation. As a result, there would be no exceedances of established noise standards due to the maintenance of the substation and there would be no impact.

In addition, SDG&E already performs similar maintenance activities in the Proposed Project area that would not change as part of the Proposed Project. As a result, the periodic increases in ambient noise from on-going Proposed Project maintenance activities would be similar to current operational conditions. Therefore, noise impacts from temporary or periodic operations activities would be less than significant

4.10.4.6 Question 10e – For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

Construction – No Impact

The closest public airport to the Proposed Project is John Wayne/Orange County Airport, which is located approximately 15 miles to the northwest of Capistrano Substation. SDG&E would not use this airport for helicopter operations during construction. As a result, helicopter operations from the John Wayne Airport would not change as a result of the Proposed Project; therefore, there would be no impact.

Operation & Maintenance – No Impact

SDG&E already conducts aerial inspections of its existing facilities in the area by helicopter several times a year. Aircraft activity associated with this aerial inspection is not anticipated to increase beyond current activity; therefore, noise levels would not increase. Furthermore, as previously described in Question 4.10a, all operational noise from the Proposed Project components would not add to the existing public airport noise in a way that adversely affects residents in the area. Thus, no impact from the Proposed Project would occur.

4.10.4.7 Question 10f – For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

Construction – No Impact

The closest public private airstrips or airports to the Proposed Project are helicopter facilities at San Onofre Nuclear Generating Station (SONGS) (approximately six miles to the southeast) and at Saddleback Memorial Medical Center (approximately seven miles to the northwest). SDG&E would not use these private facilities for helicopter operations during construction. As a result,

operations from these private airports would not change as a result of the Proposed Project and there would be no impact.

Operation & Maintenance –No Impact

As discussed in Question 10e, aircraft activity associated with aerial inspection of the transmission line facilities is not anticipated to increase beyond current activity and operational noise from the Proposed Project components would not add to the existing private airport noise in a way that adversely affects residents in the area. Thus, no impact from the Proposed Project would occur.

4.10.5 Applicant Proposed Measures

In order to minimize potential impacts relating to potential work during nighttime hours, the following APM is being proposed:

NOISE-1: Any endeavors during the construction phase wherein nighttime and weekend activities are necessary (such as due to Caltrans transportation constraints for oversized/ overweight loads), will be limited to the extent feasible so that noise will not exceed the pertinent maximum noise level limits or the hourly L_{50} limits when measured at the nearest residential property. For example, to minimize potential noise disturbances during nighttime deliveries of transformers, the Applicant will make every reasonable effort to minimize the duration of trucking activities at the project site. This will entail pulling the delivery vehicle onto the project site, parking it overnight, and unloading/installing the item(s) during normal, daytime construction hours. If nighttime or weekend activities cannot be conducted to meet the city's noise standards, SDG&E will communicate the exception to the City of San Juan Capistrano in advance of conducting the work that may exceed the threshold(s)[27].

4.10.6 References

29 Code of Federal Regulations 1910.95. 1970. *Occupational Health and Safety Act of 1970*.

Alliance Acoustical Consulting, Inc. March 2012. *South Orange County Reliability Enhancement Project Ambient Noise Surveys Report.*

Bonneville Power Administration. BPA – Transmission Business Line | SnoKing Project. Accessed at: http://www.transmission.bpa.gov/planproj/Transmission_Projects/snoking/default.cfm.

Beranek, L.L., and Ver, I.L. 1992. Noise and Vibration Control Engineering: Principals and Applications.

Bolt, Beranek, and Newman. 1987. *Noise Control for Buildings and Manufacturing Plants. California Health and Safety Code*. California Noise Control Act of 1973 46000-46080.

[27] This APM is consistent with the conditions deemed acceptable by the CPUC for the similar situation at the Silvergate Transmission Substation Project.

California Resources Agency. 2007. Title 14 California Code of Regulations, Chapter 3 *Guidelines for Implementation of the California Environmental Quality Act.* CEQA Guidelines.

Caltrans, Noise, Vibration, and Hazardous Waste Management Office. 2006. *Transportation- and Construction-Induced Vibration Guidance Manual*.

Cyril Harris. 1998. *Handbook of Noise Control.* Third Edition.

FHWA. January, 2006. *FHWA Roadway Construction Noise Model User's Guide*.

Power Engineers, February 7, 2012. *South Orange County Reliability Enhancement Transmission Line Project, Audible Noise Analysis Report, Revision A.*

SDG&E. March 2009. *Noise Study South Bay 230/69/12kV Substation.*

SDG&E. Sunrise Powerlink Environmental Impact Report (EIR). Accessed at: http://www.cpuc.ca.gov/environment/info/aspen/sunrise/toc-feir.htm

U.S. Department of Transportation, Federal Transit Administration. May, 2006. *Transit Noise and Vibration Impact Assessment.*

U.S. Department of Transportation, Federal Aviation Administration. November 10, 2001. *AC No. 36-1H Noise Levels for U.S. Certificated and Foreign Aircraft, Appendix 10.*

TABLE OF CONTENTS

4.11 POPULATION AND HOUSING 4.11-1
4.11.1 Introduction 4.11-1
4.11.2 Methodology 4.11-1
4.11.3 Existing Conditions 4.11-1
4.11.4 Potential Impacts 4.11-3
4.11.5 Applicant Proposed Measures 4.11-5
4.11.6 References 4.11-5

LIST OF TABLES

Table 4.11-1: Total Population 4.11-2
Table 4.11-2: Total Housing Units and Vacancy Rates (2010) 4.11-2
Table 4.11-3: Housing Needs Assessment 4.11-2
Table 4.11-4: Total Employment and Unemployment (2011) 4.11-3
Table 4.11-5: Median Household Income (2010) 4.11-3

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.11 POPULATION AND HOUSING

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☑	☐
b.	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑
c.	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

4.11.1 Introduction

This section of the PEA describes the existing conditions and potential project-related impacts to population and housing. The Proposed Project would neither significantly impact the regional or local population nor result in displacement of existing housing or people resulting in the construction of replacement housing.

4.11.2 Methodology

Demographic data was obtained from statistical reports from the United States Census Bureau, city and county websites, and the SCAG. Data used to conduct demographic and economic analyses was obtained primarily from statistical reports published by the United States Census Bureau and the California Employment Development Department.

4.11.3 Existing Conditions

4.11.3.1 Population

The vast majority of the Proposed Project is located in Orange County, California, which is part of the Los Angeles-Long Beach-Santa Ana Metropolitan Area. According to the 2010 United States Census, Orange County has the third largest population among counties in the state. Orange County's population increased by 5.8 percent from 2,846,289 people in 2000 to 3,010,232 people in 2010. The County is projected to grow to a total of 3,266,000 by the year 2020, an increase of approximately 255,768 people or 8.5 percent. The cities of San Juan Capistrano and San Clemente are suburban communities that had approximately 34,000 and 50,000 people in 2000, respectively. A breakdown of the population in the year 2000 and the projected population for 2020 is provided in Table 4.11-1, Total Population.

Table 4.11-1: Total Population

City/County/Region	Population in 2010	Population Projections for 2020[1]
City of San Juan Capistrano	34,593[2]	38,100
City of San Clemente	63,522[2]	68,100
Orange County	3,010,232[2]	3,266,000
Unincorporated Orange County	120,088[3]	214,384

Sources:

1. *SCAG, Proposed Final Regional Transportation Plan, April 2012.*
2. *United States Census Bureau, Quick Facts, 2010, http://quickfacts.census.gov/qfd/states/06/06059.html, accessed September 2011.*
3. *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010.*

4.11.3.2 Housing

Table 4.11-2, Total Housing Units and Vacancy Rates (2010), summarizes the total housing units and vacancy rates in the year 2010. The vacancy rate for Orange County and San Juan Capistrano was 3.4 percent. The vacancy rate in San Clemente was 6.1 percent during the same year. Table 4.11-3, Housing Needs Assessment, identifies the amount of housing required to meet demand for all income levels.

Table 4.11-2: Total Housing Units and Vacancy Rates (2010)

City/County/Region	Housing Units	Vacancy Rate (percent)[1]
City of San Juan Capistrano	11,944	3.4
City of San Clemente	27,297	6.1
Orange County	1,040,544	3.4
Unincorporated Orange County	38,496	3.0

Sources:

1. *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010.*
2. *United States Census Bureau, Quick Facts, 2010, http://quickfacts.census.gov/qfd/states/06/06059.html, accessed September 2011.*

Table 4.11-3: Housing Needs Assessment

City	Very Low Income	Low Income	Moderate Income	Above Moderate Income	Total
City of San Juan Capistrano	229	188	210	436	1,062
City of San Clemente	126	103	116	239	584
Orange County	17,733	14,566	16,380	33,653	82,332
Unincorporated Orange County	1,777	1,445	1,597	3,159	7,978

Source:

1. *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010.*

4.11.3.3 Employment and Income

Table 4.11-4, Total Employment and Unemployment (2011), summarizes employment statistics in the Proposed Project area for the year 2011. Orange County had an unemployment rate of 7.8 percent in 2011, and the cities of San Juan Capistrano and San Clemente are both small communities that had an unemployment rate slightly below that for Orange County as a whole.

Table 4.11-4: Total Employment and Unemployment (2011)

City/County/Region	Number of Laborers	Unemployment Rate (percent)
City of San Juan Capistrano	17,600	6.9
City of San Clemente	29,100	6.3
Orange County	1,597,200	7.8
Unincorporated Orange County	Not Available	Not Available

Source:

1. *California Employment Development Department. 2011, Monthly Labor Force Data for Cities and Census Designated Places (CDP). http://www.labormarketinfo.edd.ca.gov/Content.asp?pageid=13. Accessed January 26, 2012.*

As illustrated in Table 4.11-5, Median Household Income (2010), the median income in the cities of San Juan Capistrano and San Clemente was $76,686 and $84,436, respectively, which were both above Orange County's median household income of $74,344.

Table 4.11-5: Median Household Income (2010)

City/County/Region	Median Household Income ($)
City of San Juan Capistrano	76,686
City of San Clemente	84,436
Orange County	74,344
Unincorporated Orange County	Not Available

Sources:

1. *United States Census Bureau, Quick Facts, 2010, http://quickfacts.census.gov/qfd/states/06/0668028lk.html, accessed January 26, 2012.*

4.11.4 Potential Impacts

4.11.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to population and housing if it would:

a) Induce substantial population growth in the project area either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

4.11.4.2 Question 11a - Induce substantial population growth in the project area either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Construction – Less Than Significant Impact

Construction activities are expected to take approximately 48 months. During peak construction times, SDG&E would employ up to approximately 60 workers per day (including construction monitors and support staff), with up to 20 people working at the proposed San Juan Capistrano Substation at one time (single largest construction crew requirement). SDG&E would supplement its workforce as required during construction from a contractor's pool of experienced personnel. Construction work force is discussed in the subsections below in relation to each phase of construction. It is not anticipated that substantial numbers of workers would need to reside temporarily at local lodging establishments. While the population of South Orange County may increase (at most) by the number of construction personnel required for construction (up to 60 at peak of construction), this increase would be temporary and insignificant with respect to the total population of South Orange County, San Juan Capistrano, or San Clemente. As outlined in Table 4.11-2, housing vacancy rates for San Juan Capistrano and San Clemente are 3.4 and 6.1 percent, respectively. Considering a total of approximately 30,000 housing units between the two cities, the maximum number of workers would represent an insignificant increase in demand for housing. Furthermore, construction of the Proposed Project would not cause any permanent increase in population. Therefore, direct impacts to population would be less than significant.

Construction of the Proposed Project would not result in any indirect increases in population as the Proposed Project would not provide access to previously inaccessible areas, extend public services to previously un-served areas, or cause new development elsewhere (outside of the South Orange County area). Therefore, there would be no impacts in this regard.

Operation & Maintenance – No Impact

Since operation and maintenance activities are virtually the same as existing conditions, there would be no effect on population since there would be no need for additional workers as compared to current conditions.

Furthermore, the San Juan Capistrano Substation would be an unmanned substation requiring a single pickup truck visiting several times a week for switching, routine maintenance trips approximately six trips per year for a two- to four-person crew, and annual major maintenance with 10 people for approximately one week. No full-time SDG&E staff would be required for operation or maintenance purposes, and no new jobs would be required. Operations and maintenance at the Talega Substation would be the same as those currently required, and no additional full-time SDG&E staff would be required as a result of the Proposed Project. Similarly, no new personnel would be required to maintain the new and relocated transmission lines. As a result, the Proposed Project would not induce population growth directly or

indirectly. The Proposed Project would not extend service into new areas. Therefore, no impacts would occur.

4.11.4.3 Question 11b – Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Construction and Operation & Maintenance – No Impact

The Proposed Project involves rebuilding or enhancement of existing SDG&E facilities, located almost entirely within existing ROW and on existing SDG&E property, and one new substation, also on already existing SDG&E property. The Proposed Project would not displace any existing housing. Therefore, the Proposed Project would not require the construction of replacement housing elsewhere and there would be no impacts in this regard.

4.11.4.4 Question 11c – Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere

Construction and Operation & Maintenance – No Impact

As described in response to Question 4.11b, construction and operation of the Proposed Project would occur almost entirely within existing SDG&E ROW and on SDG&E property. Therefore, the Proposed Project would not displace a substantial amount of people that would require the construction of new housing elsewhere and there would be no impacts in this regard.

4.11.5 Applicant Proposed Measures

The Proposed Project would not result in significant impacts relating to population and housing. Therefore, no APMs are being proposed.

4.11.6 References

California Employment Development Department. 2011. *Orange County Profile*. Online: http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/localAreaProfileQSResults.asp?selectedarea=Orange+County&selectedindex=1&menuChoice=localAreaPro&state=true&geogArea=0604000059&countyName=. Site visited January 26, 2012.

SCAG. 2012. *Proposed Final 2012-2035 Regional Transportation Plan*.

State of California, Department of Finance. May, 2010. *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark*. Sacramento, California.

United States Census Bureau. 2011. *Orange County Quick Facts From the United States Census Bureau*. Online: http://quickfacts.census.gov/qfd/states/06/06059.html. Site visited January 26, 2012.

United States Census Bureau, Quick Facts, 2010, http://quickfacts.census.gov/qfd/states/06/06059.html. Site visited September 2011.

This page intentionally left blank.

TABLE OF CONTENTS

4.12 PUBLIC SERVICES 4.12-1
4.12.1 Introduction 4.12-1
4.12.2 Methodology 4.12-1
4.12.3 Existing Conditions 4.12-2
4.12.4 Potential Impacts 4.12-5
4.12.5 Applicant Proposed Measures 4.12-11
4.12.6 References 4.12-11

LIST OF TABLES

Table 4.12-1: Schools within 0.25 Mile of the Proposed Project Area 4.12-3

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.12 PUBLIC SERVICES

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i.	Fire protection?	☐	☐	☑	☐
ii.	Police protection?	☐	☐	☑	☐
iii.	Schools?	☐	☐	☐	☑
iv.	Parks?	☐	☑	☐	☐
v.	Other public facilities?	☐	☐	☐	☑

4.12.1 Introduction

This section of the PEA describes local public services in the vicinity of the Proposed Project. Fire and police protection, public parks, schools, and other public facilities such as hospitals are addressed, and the potential effects resulting from the Proposed Project construction, operation, and maintenance are evaluated. It is anticipated that some existing parks and recreational facilities would be temporarily impacted as a result of construction of the Proposed Project, but that impacts would be less than significant with incorporation of APMs PS-1 and PS-2. With respect to potential permanent impacts as a result of operations and maintenance, the Proposed Project would be located in the same location as existing transmission, distribution, and substation facilities. These existing facilities constitute the baseline from which potential impacts are analyzed. As discussed below, potential permanent impacts to public services would be less than significant.

4.12.2 Methodology

Public service, utilities, and service systems data were obtained from searches of local government websites and other local service informational resources. The review also included Google Earth maps, aerial photographs of the Proposed Project area, GIS data, and online maps. Anticipated construction schedules and permanent (operation and maintenance) and temporary (construction) impact areas were reviewed where these project-related activities would occur within existing public parks. Impacts to parks discussed in this section also include potential direct impacts from construction, operation, and maintenance of the Proposed Project.

4.12.3 Existing Conditions

4.12.3.1 Public Services Setting

Fire Protection

Fire protection services for the cities of San Juan Capistrano and San Clemente and the unincorporated areas of Orange County are provided by the Orange County Fire Authority, a regional fire service agency with 21 stations throughout the County. The Proposed Project area is in the Orange County Fire Authority Division III – Battalions 6 and 7.

There is one fire station located within the city of San Juan Capistrano (Station 7), located at 31865 Del Obispo and approximately one mile from the existing Capistrano Substation site. Station 7 has three captains, three engineers, nine firefighters, and reserve firefighters. Station 7 includes Engine 7, Engine 307, Medic 7, Water Tender 7 and Patrol 7. Stations 50, 59 and 60 are located in the city of San Clemente, and the closest to the Proposed Project is Station 59, which is located at 48 Avenida La Pata (approximately 0.05 mile from the proposed transmission line in the Rancho San Juan to Talega Hub segment). Station 59 has three captains, three engineers, and six firefighters and includes Truck 59. Also, Camp Pendleton has fire stations that cover the base including the Talega Substation.

Law Enforcement

The cities of San Juan Capistrano and San Clemente contract with the Orange County Sheriff's Department to provide local police services. There are 44 sworn officers and 13 professional staff members that operate from the San Clemente station, located at 100 Avenida Presidio in San Clemente and approximately 1.8 miles from the Proposed Project area. The San Juan Capistrano Sheriff's Department is located at 25925 Camino Del Avion in San Juan Capistrano, less than two miles from the Proposed Project area. There are no police stations within 0.25 mile of the Proposed Project area.

Schools

Orange County has 28 school districts and four community college districts. The Capistrano Unified School District administers all public schools in San Juan Capistrano and San Clemente, totaling 56 public schools. There are eight public schools in San Juan Capistrano and eight private schools. A total of 4,178 students attend the public schools. A total of approximately 10,085 students are enrolled in the 11 public schools in San Clemente, and there are three private schools. There are a total of nine schools within 0.25 mile of the Proposed Project.

The closest school to the Proposed Project is the San Juan Hills High School located at 29211 Vista Montana in the Rancho San Juan development in San Juan Capistrano, which officially opened in the 2007-2008 school year. The school is across the street (Vista Montana) from the proposed underground transmission line that constitutes the Rancho San Juan segment of the Proposed Project. A breakdown of the all of the schools located within 0.25 mile of each Proposed Project segment is provided in Table 4.12-1, Schools within 0.25 Mile of the Proposed Project Area.

Table 4.12-1: Schools within 0.25 Mile of the Proposed Project Area

School Name	Location	Distance from Proposed Project
Capistrano Substation to Rancho San Juan (including west of the substation) (Segment 1)		
JSerra Catholic High School	26351 Junipero Serra Road San Juan Capistrano, CA 92675	Approximately 0.2 mile from Capistrano Substation
Saddleback Valley Christian School	26333 Oso Road, San Juan Capistrano, CA 92675	Approximately 0.2 mile from Capistrano Substation
Marbella Montessori Pathway School	31113 Rancho Viejo Road, San Juan Capistrano	Approximately 0.2 mile from Pole No. 6
St. Margaret's Episcopal School	31641 La Novia Avenue, San Juan Capistrano	Approximately 0.25 mile from Pole No. 8
Harold Ambuehl Elementary School	28001 San Juan Creek Road, San Juan Capistrano	Approximately 0.17 mile from Pole No. 10
Rancho San Juan (Segment 2)		
San Juan Hills High School	29211 Vista Montana, San Juan Capistrano	Adjacent to Rancho San Juan section of transmission line ROW
Rancho San Juan to Talega Hub (Segment 3)		
Vista Del Mar Middle School	1130 Avenida Talega , San Clemente , California 92673	Approximately 0.20 mile east of Pole No. 31
Capistrano Connections Academy (Charter School)	1211 Puerta Del Sol #220, San Clemente, CA 92673	Approximately 0.16 mile north of Pole No. 38
Talega Preparatory Academy	3 Calle Boveda San Clemente, CA 92673	Approximately 0.15 mile northeast of Pole No. 41
Talega Hub to Talega Substation (Segment 4)		
No schools are located within 0.25 mile.		

Other Public Facilities

There is one hospital located in the city of San Juan Capistrano and two hospitals located in the city of San Clemente. There are no hospitals or public libraries within 0.25 mile of the Proposed Project area. There are four public parks along the Proposed Project route: El Camino Real Park, Junipero Serra Park, Arroyo Park, and Russell Cook Park. The parks and recreational facilities within the Proposed Project area are further discussed below.

Public Parks and Recreation Areas

The proposed replacement of the existing transmission line, like the existing line itself, directly crosses four public parks. The Capistrano Substation to Rancho San Juan segment of the Proposed Project (Segment 1) crosses Junipero Serra Park, a 3.75-acre park with automatic irrigation, bike paths, a children's play area, drinking fountains, and a grassy area (refer to Figure 4.9-1, Sheet 1). Segment 1 also crosses El Camino Real Park, Arroyo Park and Russell Cook Park. El Camino Real Park is a long linear park with trees, tables, and a meandering foot path located adjacent to Camino Capistrano. Arroyo Park is a 1.5-acre area with an equestrian trail

and a grassy area with automatic irrigation. Russell Cook Park is an approximately 19-acre park with soccer fields, paved bike paths, natural vegetation, and grassy areas with automatic irrigation. The Proposed Project passes within 0.25 mile of three other private parks: Four Oaks Park, Liberty Park, and La Pata/Vista Hermosa Sports Park (refer to Figure 4.9-1).

Private Recreation Areas

The Proposed Project would involve replacing two existing overhead 138kV transmission lines with new underground 138kV transmission lines extending west from the proposed San Juan Capistrano Substation site, through a residential neighborhood where a community pool, recreational facilities, and open space are located. This area is currently occupied by an existing SDG&E easement with two 138kV transmission lines as well as SDG&E distribution lines.

Golf Courses

There are several golf courses located in the vicinity of the Proposed Project area. The Proposed Project passes directly over Marbella Country Club and within 0.25 mile of the San Juan Hills Golf Club in Segment 2 of the Proposed Project (San Juan Capistrano Substation to Rancho San Juan) and within 0.25 mile of the Talega Golf Club and the Pacific Golf and Country Club in Segment 3 of the Proposed Project (Rancho San Juan to Talega Hub). Only the Marbella Country Club has transmission structures currently located within the limits of the golf course. One of the two current 138kV transmission structures located within the Marbella Country Club golf course would be replace with a new 230kV steel pole. The new 230kV pole would be placed within 30 feet of the existing structure location.

Equestrian, Bicycle, and Hiking Trails

The Proposed Project crosses several local proposed and existing local equestrian and hiking trails in the city of San Juan Capistrano. Specifically, along the San Juan Capistrano Substation to Rancho San Juan segment, the transmission lines cross the Caballo Trail, Belfore-Marbella Trail, the San Juan Creek Trail, Las Vaqueres Trail, Juliana Farms Trail, and the Whispering Hills West Trail. Continuing from Rancho San Juan to the Talega Substation, the transmission lines cross the Whispering Hills East Trail, the Pico and La Pata trails. In the city of San Clemente, the Proposed Project crosses the Prima Deshecha and Cristianitos regional trails. The Cristianitos Regional Trail crosses the Proposed Project south of the Prima Deshecha Landfill and just west of the Talega Substation. The Prima Deshecha Regional Trail generally follows the existing transmission line ROW from approximately south of the Prima Deshecha Landfill to the Talega Substation.

In addition, the transmission lines cross the following Orange County bicycle trails, which range from Class I to Class II trails, as indicated below.

- Rancho Viejo Road – Class I
- Ortega – Proposed Class II
- San Juan Creek – Class I
- Avenida La Pata – Class II

- Pico – Class II

4.12.4 Potential Impacts

4.12.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to public services if it would:

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

   i. Fire protection;
   ii. Police protection;
   iii. Schools;
   iv. Parks;
   v. Other public facilities.

4.12.4.2 Question 12a (i & ii) – Impacts to fire and police protection?

Construction– Less Than Significant Impact

No emergency service providers are located immediately along the Proposed Project ROW or adjacent to the affected substations. While no police stations are located within 0.25-mile of the Proposed Project, Fire Station 59 is located on Avenida La Pata, approximately 0.05-mile from where the line spans Avenida Vista Hermosa. The Proposed Project would not result in significant temporary or permanent increases in local population, would be short-term, and would not include any new facilities that would require new or expanded police or fire protection services.

Construction activities associated with the Proposed Project would not unduly burden local police or fire services. At the completion of each work day, construction crews would lock up and secure each worksite to prevent theft or vandalism associated with work equipment or supplies. SDG&E would also implement its project specific fire plan which will include private fire patrol monitoring as appropriate. Furthermore, SDG&E will have private security personnel monitoring construction sites where materials are stored, which may include the substations, staging yards and ROW.

As discussed in Section 4.14, Traffic and Transportation, traffic control measures associated with underground construction would be implemented pursuant to all applicable industry standards and applicable local jurisdictional agency review. Along the underground segments of the Proposed Project (west of the proposed San Juan Capistrano Substation site and at Rancho San Juan), SDG&E would coordinate with the appropriate emergency (fire and police) personnel

prior to construction to ensure that construction activities and associated lane closures would not substantially affect emergency response vehicles (refer to Section 4.14, Traffic and Transportation). Additionally, all streets would remain open to vehicular circulation during construction of the underground segments of the Proposed Project.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated.

Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity and would not require hiring any new workers or any increase in local population. Any future potential maintenance-related construction projects will be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. As a result, there would be no impact as a result of operation and maintenance.

4.12.4.3 Question 12a (iii) – Impacts to schools?

Construction– No Impact

There are five schools within 0.25 mile of the Proposed Project area. San Juan Hills High School is the closest school, located approximately 380 feet from the trench location to the closest building.

The Proposed Project would not significantly affect school enrollment since construction of the Proposed Project is short-term. The volume of construction workers would be minimal relative to the local population and thus would not be expected to generate new students for the area's schools.

School traffic at the San Juan Hills High School would be impacted during construction because the new 230kV transmission lines would be placed in an underground position within Vista Montana, which provides access to the San Juan Hills High School campus. Specific traffic-related impacts are discussed within Section 4.14, Traffic and Transportation.

No new or physically altered schools would be necessary as a result of the Proposed Project and no impacts to schools would result from construction of the Proposed Project.

Operation & Maintenance – No Impact

Operation and maintenance for the Proposed Project would be handled just as it is today, at the existing substations. The Proposed Project involves replacement and upgrade of existing facilities which already have assigned operations and maintenance staff. Therefore, no new schools would be necessary as a result of the Proposed Project and no impacts to schools would result from operation and maintenance of the Proposed Project.

4.12.4.4 Question 12a (iv) – Impacts to parks?

Construction – Less Than Significant Impact with Incorporation of APMs

Access to the following parks would be temporarily restricted during construction of the Proposed Project:

- El Camino Real Park;
- Junipero Serra Park;
- Arroyo Park; and
- Russell Cook Park.

While some access to the above-listed parks would be restricted during some of the construction activities, the construction of the Proposed Project would not directly increase the demand for the local public park system as construction activities would be short-term and would not substantially increase the local populations (refer to Section 4.11, Population and Housing). Restricted access to some existing parks may indirectly cause increased demand for other local, non-restricted public parks. Due to the quantity of parks in the Proposed Project area and relatively short duration of the Proposed Project's construction within local parks, however, these impacts would be less than significant.

Direct impacts associated with the restricted access to parks and other recreational facilities during construction of the Proposed Project are discussed below.

Public Parks

Construction activities would occur in four public parks: El Camino Real Park, Junipero Serra Park, Russell Cook Park, and Arroyo Park. Impacts at each of these parks are discussed below.

El Camino Real Park

Construction activities within El Camino Real Park would be more extensive than work in any other park, due to the jack-and-bore and trenching construction for proposed underground transmission lines (refer to Figure 3-7, Sheet 1). The noise and presence of heavy equipment associated with construction may temporarily reduce visitation to the park, however, the park is currently subject to noise from Camino Capistrano and the adjacent railway line. El Camino Real Park is a long, narrow park that is located between Camino Capistrano and an existing railway line (refer to Figure 4.9-1, Sheet 1). The park includes a bike trail and foot path that extends through the entire length of the park. The Proposed Project would replace Pole Nos. 4a and 5a within this park, which would require extensive grading and the excavation of bore pits. Bore pits would be segregated from public access (as would all construction areas) and secured each night to avoid injury to workers or the public. It is anticipated that construction at this location would take approximately four to five months, spread out over an approximately non-consecutive 20 month period, with continuous construction occurring for up to a one month (refer to detailed construction schedule in Appendix 3-D). SDG&E would implement APM PS-1 to ensure that pedestrian and bicycle access is not continuously restricted during construction activities at this site. Short-term restrictions would occur during certain activities, for example,

when equipment is brought in from Camino Capistrano. With implementation of APM PS-1, impacts at El Camino Real Park would be less than significant.

Junipero Serra Park

Construction activities within Junipero Serra Park would be limited mainly to the southeast corner of the park, where there are existing transmission poles and paved operation and maintenance pads (refer to Figure 3-7, Sheet 1 and Figure 4.9-1, Sheet 1). There are no recreational facilities at this portion of the park other than open space. Construction within Junipero Serra Park is expected to last four to six months spread out over a non-consecutive 20 month period and would not result in the need to close the entire park and would not create significant restricted access to key park facilities such as the playground and large grassy open spaces. The noise and presence of heavy equipment associated with construction may temporarily reduce visitation to the park, however, the park is currently subject to noise from the I-5 freeway. Therefore, impacts to Junipero Serra Park would be less than significant.

Arroyo Park

Construction activities within Arroyo Park would include removal of one existing pole, installation of one new pole, and potentially stringing activities. Stringing activities can take two to four weeks, with stringing equipment present within the park for that entire period. Due to the size and shape of Arroyo Park, construction activities would not require the closure of the entire park, only the southern portion of the park, which is mainly occupied by grass-covered open space. APM PS-1 would ensure that access through existing public parks, such as Arroyo Park, would not be completely restricted during construction activities (i.e., normally allowable traffic through the park would be directed around the construction area). In this case of Arroyo Park, the foot path/ bike trail/ equestrian trail traffic would be directed around construction activities, on the northern side of the park. Therefore, impacts to Arroyo Park would be less than significant with implementation of APM PS-1.

Russell Cook Park

Construction activities within Russell Cook Park would be limited to one small area of the park (within the southern portion of the park), which already contains two existing transmission poles adjacent to vegetated areas and paved bike/foot paths (refer to Figure 3-7, Sheet 2 and Figure 4.9-1, Sheet 1). The only park facilities affected would be the paved foot/bike path. Construction activities would not result in the need to close the entire park. Construction activities would only occur continuously for up to three days at a time, and only for approximately one week total. Pedestrian and bike access would be directed around construction activities while construction is occurring within the park (APM PS-1). Therefore, impacts to Russell Cook Park would be less than significant.

In addition to the impacts discussed above for public parks, there would be similar impacts to private recreational areas as described below.

Private Recreational Areas

Construction activities through the private recreational area (including a sand volleyball court, open space, and a playground) west of the San Juan Capistrano Substation (refer to Figure 4.9-1,

Sheet 1) would include trenching and installation of underground transmission line, completing a jack-and-bore under an existing railway line, and installation of two new 138kV poles (Pole Nos. 1a and 2a). This area is currently occupied by overhead transmission lines, and all new underground transmission line would be constructed within existing SDG&E ROW. Construction activities within this area are anticipated to last approximately three to four months, spread over an approximate non-consecutive 20 month period, with continuous construction occurring for approximately one month (jack-and-bore construction). Refer to the detailed construction schedule in Appendix 3-D for more information. Construction through this area would result in restricted access to various private recreational areas, including a playground, a volley ball court, and grassy open space. At certain times during construction through this area, these facilities would be removed to install the new trench packages and splice vaults. Is should be noted that these private recreational facilities are located within the existing SDG&E ROW. Construction activities are not anticipated to occur in a manner that would result in all of the above facilities being closed or removed simultaneously. Therefore, impacts are anticipated to be less than significant.

Golf Courses

Construction activities would occur on the western edge of the Marbella County Club golf course, in order to install Pole No. 5 (refer to Figure 4.9-1, Sheet 1). Construction activities would require grading a new pad as well as the removal of an existing 138kV steel lattice structure and the installation of the new 230kV Pole No. 5. Grading required for the installation of Pole No. 5 would require approximately 130 cubic yards of cut and 157 cubic yards of fill and would temporarily disturb approximately 3,584 square feet, including grading activities that extend over an existing golf cart path that extends just east of the Pole No. 5 location. Construction at this location is anticipated to take a total of approximately five weeks spread over an approximately two-year period (refer to the detailed construction schedule in Appendix 3-D). Construction activities at this site would only occur continuously at any one time for approximately one week. The greatest impact would occur during grading activities, where one existing golf cart path and a small portion of the golf course (the "rough" along the western edge of one hole) would be closed. At no time during construction activities at Pole No. 5 would the golf course be required to be closed. Therefore, impacts are considered to be less than significant.

Hiking, Bicycle, and Equestrian Trails

The Proposed Project would also result in construction activities that would cross hiking paths, bicycle paths, and equestrian trails. In some areas (such as between Pole Nos. 11 and 14) equestrian trails have been established on existing SDG&E access roads. During construction activities at Pole Nos. 11 through 14, access may be restricted. It is important to note that access is restricted currently during certain operation and maintenance activities at existing transmission structures located in this area. Construction activities for Pole Nos. 11 through 14 is anticipated to take approximately six months, spread over an approximately two-year period. Typically, continuous construction activities at any one location would not last longer than two weeks. In addition, not all construction activities would restrict access. For example, grading and site development may restrict access while conductor stringing and removal of existing poles may not. In addition, if helicopters are utilized within this stretch of the transmission line route, trails within the flight path would be closed for approximately 30 minutes at a time while the

helicopter is in use. In general, impacts are considered to be less than significant due to the temporary nature of potentially restrictions to access and the fact that these trails are located on existing SDG&E access roads that are currently utilized for the operation and maintenance of existing poles.

Operation & Maintenance – Less Than Significant Impact with Incorporation of APMs

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated.

Operations and maintenance activities for the Proposed Project would not materially increase in frequency or intensity. Any future maintenance-related construction activities will be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. Because no new workers are being added for operation and maintenance, the Proposed Project would not create any increased demand on the local public park system. No permanent damage to any existing parks would result from operation and maintenance of the Proposed Project that does not already exist as part of on-going operation and maintenance activities associated with existing transmission lines or substations. For example, Russell Cook Park currently has transmission line poles located within its boundaries and the Proposed Project would involve the replacement of some of these existing poles with new poles. Therefore, even though the new pole in Russell Cook Park may not be in the same exact location as the pole being replaced, there would be no significant alteration to the park area being utilized for transmission line poles. Therefore, no new or expanded parks would be required in order to meet existing demand. Therefore, no impacts to parks would result from operation and maintenance of the Proposed Project.

With respect to El Camino Real Park, two new 138kV steel cable structures (Pole Nos. 4a and 5a – refer to Figure 3-7, Sheet 1) would be installed and one 138kV wood pole would be removed. The new steel cable structures would require additional space for operation and maintenance when compared to the existing wood poles. The new steel cable structures would require approximately 70 feet by 80 feet of space to allow for operation and maintenance of the poles, whereas the current 138kV wood transmission poles located in this area require approximately half that amount of space (35 feet by 40 feet). While this means there would be slightly less grass area at El Camino Real Park, the existing park functions (open space, footpath, and bike bath) would not be restricted following construction of the Proposed Project. Therefore, new facilities would not be required in order to replace any lost function at El Camino Real Park.

The Proposed Project does not require the construction of any new public parks, and therefore would not create any adverse impacts associated with the construction of new parks.

Private Recreational Areas West of the San Juan Capistrano Substation Site

During construction of 138kV underground transmission lines (which are replacing existing overhead lines within the same ROW) through the existing private recreational areas west of the San Juan Capistrano Substation site, a volley ball court and a playground area would preferably need to be removed or relocated outside SDG&E ROW. SDG&E may reconfigure the recreation facilities so as to not interfere with SDG&E operation and maintenance. In addition, SDG&E

will replace any necessary vegetation removals with appropriate vegetation. The replacement vegetation and recreational facilities is proposed as APM PS-2. APM PS-2 will ensure that there are no permanent impacts to recreational facilities affected during construction of the Proposed Project.

4.12.4.5 Question 12a(v) – Impacts to other public facilities (hospitals)?

Construction and Operation & Maintenance – No Impact

No additional need for libraries or other government or public services would be required as a result of the Proposed Project. The Proposed Project neither increases the demand for, nor alters the level of, local public services required because it would not measurably increase local population or housing opportunities and/or requirements. Therefore, the Proposed Project would not create a need for new hospitals or other public services and there would be no impacts in this regard.

4.12.5 Applicant Proposed Measures

In order to minimize potential impacts to recreational facilities located within the transmission line ROW, the following APMs are being proposed:

PS-1 Construction within existing public parks would not completely restrict access through the parks. Where necessary, SDG&E will create temporary foot and bicycle paths along with appropriate advanced notice and signage to direct and allow for the pedestrian and bicycle access through each affected park.

PS-2 All recreational facilities that are physically impacted during construction activities will be returned to an approximate pre-construction state, allowing for SDG&E operation and maintenance activities, following the completion of the Proposed Project. SDG&E will make replacements of any public damaged or removed equipment, facilities, and infrastructure, in a timely manner.

4.12.6 References

Capistrano Unified School District. 2012. General School Information. Online: http://www.capousd.org/schinfo.htm. Site visited January 4, 2012.

Local School Directory. 2012. San Clemente Schools. Online: http://ca.localschooldirectory.com/schools.php/cPath/1915. Site visited January 4, 2012.

Orange County Fire Authority. 2012. Online: http://www.ocfa.org/. Site visited January 26, 2012.

Orange County Sheriff's Department. 2008. Online: http://www.ocsd.org/. Site visited January 26, 2012.

"San Juan Capistrano." 33°30'13.84"N and 117°38'59.07"W. Google Earth. May 7, 2011. January 4, 2012.

"San Juan Capistrano." 33°30'13.11"N and 117°38'41.91"W. Google Earth. May 7, 2011. January 4, 2012.

"San Juan Capistrano." 33°30'33.31"N and 117°39'32.35"W. Google Earth. May 7, 2011. January 4, 2012.

"San Juan Capistrano." 33°30'03.39"N and 117°37'20.59"W. Google Earth. May 7, 2011. January 4, 2012.

"San Juan Capistrano." 33°27'21.15"N and 117°35'37.55"W. Google Earth. May 7, 2011. January 4, 2012.

TABLE OF CONTENTS

4.13 RECREATION 4.13-1
4.13.1 Introduction 4.13-1
4.13.2 Methodology 4.13-1
4.13.3 Existing Conditions 4.13-1
4.13.4 Potential Impacts 4.13-3
4.13.5 Applicant Proposed Measures 4.13-4
4.13.6 References 4.13-4

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.13 RECREATION

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b.	Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑

4.13.1 Introduction

This section of the PEA describes the existing conditions and potential project-related impacts to recreational areas as a result of short- or long-term conditions associated with the implementation of the Proposed Project. In addition, this section would analyze consistency with any recreational plans or policies. A recreation area is defined herein as any site or facility that is used for recreational activities, including national, State, county, city or private parks or trails; open space; cultural center or museum; campground; or private recreational site such as a golf course, amusement park, or amphitheater. No impacts are anticipated to occur during construction, operation, or maintenance of the Proposed Project. Direct impacts to parks and recreational facilities from construction of the Proposed Project are included within Section 4.12, Public Services.

4.13.2 Methodology

The recreation analysis within this section involved a review of various documents including aerial photographs of the Proposed Project area, the general plans for the cities of San Juan Capistrano and San Clemente and for the County of Orange, and other relevant government planning documents reviewed to identify potential recreational resources within the Proposed Project area as well as online information sources. The review also included the use of GIS data. Site visits confirmed existing recreational resources within the Proposed Project area.

4.13.3 Existing Conditions

4.13.2.1 Public Parks and Recreation Areas

The proposed replacement of the existing transmission line, like the existing line itself, directly crosses four public parks. The Capistrano Substation to Rancho San Juan segment of the Proposed Project (Segment 1) crosses Junipero Serra Park, a 3.75-acre park with automatic irrigation, bike paths, a children's play area, drinking fountains, and a grassy area (refer to Figure 4.9-1, Sheet 1). Segment 1 also crosses El Camino Real Park, Arroyo Park and Russell Cook Park. El Camino Real Park is a long linear park with trees, tables, and a meandering foot path

located adjacent to Camino Capistrano. Arroyo Park is a 1.5-acre area with an equestrian trail and a grassy area with automatic irrigation. Russell Cook Park is an approximately 19-acre park with soccer fields, paved bike paths, natural vegetation, and grassy areas with automatic irrigation. The Proposed Project passes within 0.25 mile of three other private recreational areas: Four Oaks Park, Liberty Park, and La Pata/Vista Hermosa Sports Park (refer to Figure 4.9-1).

4.13.2.2 Private Recreation Area

The Proposed Project would involve replacing two existing overhead 138kV transmission lines with new underground 138kV transmission lines extending west from the proposed San Juan Capistrano Substation site, through a residential neighborhood where a private pool, recreational facilities, and open space are located. This area is currently occupied by an existing SDG&E easement with two 138kV transmission lines as well as SDG&E distribution lines.

4.13.2.3 Golf Courses

There are several golf courses located in the vicinity of the Proposed Project area. The Proposed Project passes directly over Marbella Country Club and within 0.25 mile of the San Juan Hills Golf Club in Segment 2 of the Proposed Project (San Juan Capistrano Substation to Rancho San Juan) and within 0.25 mile of the Talega Golf Club and the Pacific Golf and Country Club in Segment 3 of the Proposed Project (Rancho San Juan to Talega Hub). Only the Marbella Country Club has transmission structures currently located within the limits of the golf course. One of the two current 138kV transmission structures located within the Marbella Country Club golf course would be replace with a new 230kV steel pole. The new 230kV pole would be placed within 30 feet of the existing structure location.

4.13.2.4 Equestrian, Bicycle, and Hiking Trails

The Proposed Project crosses several local proposed and existing local equestrian and hiking trails in the city of San Juan Capistrano. Specifically, along the San Juan Capistrano Substation to Rancho San Juan segment, the transmission lines cross the Caballo Trail, Belfore-Marbella Trail, the San Juan Creek Trail, Las Vaqueres Trail, Juliana Farms Trail, and the Whispering Hills West Trail. Continuing from Rancho San Juan to the Talega Substation, the transmission lines cross the Whispering Hills East Trail, the Pico and La Pata trails. In the city of San Clemente, the Proposed Project crosses the Prima Deshecha and Cristianitos regional trails. The Cristianitos Regional Trail crosses the Proposed Project south of the Prima Deschecha Landfill and just west of the Talega Substation. The Prima Deschecha Regional Trail generally follows the existing transmission line ROW from approximately south of the Prima Deschecha Landfill to the Talega Substation. In addition, the transmission lines cross the following Orange County bicycle trails, which range from Class I to Class II trails, as indicated below.

- Rancho Viejo Road – Class I
- Ortega – Proposed Class II
- San Juan Creek – Class I
- Avenida La Pata – Class II
- Pico – Class II

4.13.4 Potential Impacts

4.13.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. These guidelines note when a proposed project could have a potentially significant impact to recreation, as follows:

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.13.4.2 Question 4.13a – Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Construction – No Impact

The population of South Orange County may increase very slightly during the construction phase as a result of the approximately 60 workers per day (maximum number of workers during peak of construction, refer to Section 4.11, Population and Housing) required during the various phases of construction. The potential minor increase in population would not create substantial additional demand on existing recreation facilities due to the small, temporary nature of the potential increase in local population. Any small increase in the use of existing recreational facilities as a result of the Proposed Project would not create or accelerate the physical deterioration of any existing recreational facilities. Thus, no impact would occur.

Operation & Maintenance – No Impact

As described in Section 4.11, Population and Housing, the Proposed Project would not create a need for additional housing or long-term population immigration that could result in increased utilization of existing recreational facilities in the vicinity of the Proposed Project. No new employees would be hired to operate or maintain the Proposed Project facilities. The facilities would be operated and maintained by existing SDG&E personnel in the same manner that the existing facilities are operated and maintained. Thus, no impact would occur.

4.13.4.3 Question 4.13b – Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Construction and Operation & Maintenance – No Impact

The Proposed Project involves upgrading existing SDG&E electrical facilities, almost all of which is within existing SDG&E property and ROW. The Proposed Project does not include construction or expansion of any recreational facilities. Thus, no impacts would occur.

4.13.5 Applicant Proposed Measures

The Proposed Project would not result in significant impacts relating to recreation. Therefore, no APMs are being proposed. APMs for direct impacts to parks and recreational facilities from construction of the Proposed Project are included within Section 4.12, Public Services.

4.13.6 References

City of San Clemente. 1993. *General Plan.*

City of San Clemente. *Regional Trails Map*. Online: http://san-clemente.org/sc/Rec/Trails/Questions/AllTrails.pdf. Site visited September 2, 2011.

City of San Juan Capistrano. 2002. *General Plan*.

City of San Clemente. 2007. *San Clemente Community View by Digital Maps Products*. Online: http://maps.digitalmapcentral.com/CommView/SanClemente_cv/index.html. Site visited September 2, 2011.

City of San Juan Capistrano. *San Juan Capistrano Community View by Digital Maps Products*. Online: http://maps.digitalmapcentral.com/CommView/sjc_cv5/index.html. Site visited September 2, 2011.

City of San Juan Capistrano. 2002. *Zoning Map*. Online: http://www.sanjuancapistrano.org/Modules/ShowDocument.aspx?documentid=8412. Site visited September 2, 2011.

County of Orange. 2005. *General Plan.*

County of Orange, Resources and Development Management Department. 2004. *Master Plan of Regional Riding and Hiking Trails.* Online: http://www.ocparks.com/strategicplan/RegionalRiding.pdf. Site visited September 2, 2011.

TABLE OF CONTENTS

4.14 TRANSPORTATION AND TRAFFIC 4.14-1
4.14.1 Introduction 4.14-1
4.14.2 Methodology 4.14-2
4.14.3 Existing Conditions 4.14-2
4.14.4 Potential Impacts 4.14-18
4.14.5 Applicant Proposed Measures 4.14-30
4.14.6 References 4.14-30

LIST OF FIGURES

Figure 4.14-1: Affected Roadways Map 4.14-7

LIST OF TABLES

Table 4.14-1: Level of Service Calculation Values 4.14-2
Table 4.14-2: Existing Average Daily Trips for Affected Roadways 4.14-6
Table 4.14-3: OCTA Bus Routes within the Proposed Project Area 4.14-17
Table 4.14-4: OCTA Bus Stops Potentially Affected by the Proposed Project 4.14-18
Table 4.14-5: Metrolink Rail Train Routes within the Proposed Project Area 4.14-18
Table 4.14-6: Construction Access Routes 4.14-20
Table 4.14-7: Construction Generated Average Daily Trips 4.14-21
Table 4.14-8: Designated Traffic Congestion Problem Areas and Special Land Use Areas 4.14-24
Table 4.14-9: Lane Closures and Duration of Construction 4.14-26

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.14 TRANSPORTATION AND TRAFFIC

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☑	☐	☐	☐
b.	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☑	☐	☐
c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d.	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☑	☐
e.	Result in inadequate emergency access?	☐	☑	☐	☐
f.	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☐	☑

4.14.1 Introduction

This section of the PEA describes the existing conditions and potential project-related impacts to transportation and traffic as a result of short- and long-term conditions associated with the implementation of the Proposed Project.

Construction generated traffic would be minimal and in most cases limited in duration. Operation and maintenance traffic generation would be the same as that of the existing facilities the Proposed Project would be altering or replacing, so the only material traffic impacts would be during construction.

A significant short-term impact that cannot be fully mitigated has been identified where construction of underground transmission lines within Transmission Line Segment 2 (Rancho San Juan) would cause disruption of traffic and reduction in Level of Service (LOS). However,

APMs TR-1, TR-2, and TR-3 will be implemented in order to reduce other potentially significant impacts associated with construction traffic and emergency vehicle access to a level less than significant. Thus, all impacts except those caused by underground transmission line construction of Segment 2 would be reduced to a level less than significant.

4.14.2 Methodology

Traffic and roadway data for this analysis was collected from online searches, aerial photos, and the circulation element of the general plans for the cities of San Juan Capistrano and San Clemente. The study area includes roadways where construction activities would take place and where roadways would be used by project-related traffic, such as for access, for the Proposed Project. The existing roadway conditions, including traffic volume counts and peak hour LOS in Orange County, were obtained through Caltrans and the Orange County Transportation Authority (OCTA). Additional information was gathered during site visits and communications with engineering and planning staff of SDG&E. Existing approximate roadway LOS was calculated using traffic count data and stated road capacities. Road capacity values were obtained from general plan documents for the County of Orange and the cities of San Juan Capistrano and San Clemente.

Calculated LOS values were obtained by dividing the existing average daily traffic (ADT) by the roadway capacity to achieve the volume-to-capacity (v/c) value. LOS was then defined as outlined in Table 4.14-1, Level of Service Calculation Values. Roadway capacity values used in the LOS calculations were derived from the respective general plan circulation/transportation elements for each jurisdictional agency.

Table 4.14-1: Level of Service Calculation Values

Level of Service	Volume-to-Capacity
A	0.0 to 0.60
B	0.61 to 0.70
C	0.71 to 0.80
D	0.81 to 0.90
E	0.91-01.00
F	Above 1.0
Source: Highway Capacity Manual (1985)	

4.14.3 Existing Conditions

4.14.3.1 Regulatory Setting

Construction projects that cross public transportation corridors are subject to requirements for local, state, and federal encroachment permits. Use or obstruction of navigable air space also requires permits. The following summarizes transportation and traffic regulations that are applicable to the construction of electric facilities, such as the Proposed Project.

Federal

All airports and navigable airspace not administered by the Department of Defense are under the jurisdiction of the FAA. Federal Regulation Title 14 Section 77 establishes the standards and

required notification for objects affecting navigable airspace. In general, construction projects exceeding 200 feet in height above ground level or extending at a ratio greater than 50 to one (horizontal to vertical) from a public or military airport runway less than 3,200 feet long out to a horizontal distance of 20,000 feet are considered potential obstructions, and require notification to the FAA. In addition, the FAA requires a Helicopter Lift Plan for operating a helicopter within 1,500 feet of residential dwellings.

State

The use of California state highways for other than normal transportation purposes may require written authorization or an encroachment permit from the Caltrans. Caltrans has jurisdiction over the state's highway system and is responsible for protecting the public and infrastructure. Caltrans reviews all requests from utility companies that plan to conduct activities within its ROW. Encroachment permits may include conditions or restrictions that limit when construction activities can occur within or above roadways under the jurisdiction of Caltrans.

Local

Southern California Association of Governments (SCAG)

SCAG recently approved its 2012-2013 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), with the goal of increasing mobility for the region's residents and visitors. The RTP/SCS commits to reducing emissions from transportation sources, and includes a host of improvements to the region's multimodel transportation system including interchange improvements to close critical gaps in the highway network and various improvements in arterial roadways.

City of San Juan Capistrano

The stated overall purpose of the *City of San Juan Capistrano General Plan* Circulation Element is to "provide a safe, efficient and adequate circulation system for the City." The following are potentially relevant policies from the Circulation Element.

> *Policy 1.1: Provide and maintain a City circulation system that is in balance with the land uses in San Juan Capistrano.*
>
> *Policy 1.5: Improve existing arterial system that serves regional circulation patterns in order to reduce local congestion (Ortega Highway at I-5).*
>
> *Policy 2.1: Encourage the increased use and expansion of public transportation opportunities.*
>
> *Policy 3.1: Provide and maintain an extensive trails network that supports bicycles, pedestrians, and horses and is coordinated with those networks of adjacent jurisdictions.*
>
> *Policy 4.4: Apply creative traffic management approaches to address congestion in areas with unique problems, such as schools, businesses with drive-through access, and other special situations.*

Title 5, Chapter 29, Section 2 of the city San Juan Capistrano Municipal Code prohibits the landing of helicopters within the corporate boundaries of the City and requires a permit from the City Manager for any use of helicopters to load, unload, or haul materials within the city limits.

City of San Clemente

The stated general goal of the *City of San Clemente General Plan* Circulation Element is to provide a transportation system that supports the city of San Clemente's land use goals and plans and provides for safe, efficient travel throughout the city of San Clemente. The following are relevant objectives from the Circulation Element.

> *Objective 4.3: Comply with adopted performance standards for acceptable levels of service.*
>
> *Policy 4.3.2: Maintain city-wide level of service for links not to exceed LOS "C" for primary arterials, secondary arterials, and local streets; not to exceed LOS "D" for major arterials; and not to exceed LOS "E" for commercial facilities.*
>
> *Objective 4.8: Pursue transportation management strategies that can maximize vehicle occupancy, minimize average trip length, and reduce the number of vehicle trips.*
>
> *Objective 4.10: Promote new development that is designed in a manner which facilitates provision or expansion of transit service, provides on-site commercial/recreational facilities to discourage midday travel, and provides on-site circulation.*
>
> *Objective 4.12: Promote the safety of bicycles and pedestrians by adhering to city-wide standards and practices.*

Chapter 12.20, Encroachment Permits, of the city of San Clemente Municipal Code governs the use of or encroachment into public ROWs for private uses. The city of San Clemente requires an encroachment permit for a project that is either wholly within or partially within public easements, ROW, etc.

Orange County Transportation Authority

The OCTA is the main public transportation and transit provider for the county of Orange, operating approximately 80 bus lines throughout the county as well as some nearby communities in the surrounding counties of Los Angeles, San Bernardino, and Riverside. It also is Orange County's designated Congestion Management Agency (CMA), responsible for conformance monitoring and biennial updating of the Congestion Management Program, which was most recently updated in 2011.

Orange County

The stated primary goal of the *Orange County General Plan* Transportation Element is to,

> *…develop an integrated transportation system consisting of a blend of transportation modes capable of meeting the need to move people and goods by private and public means with maximum efficiency, convenience, economy, safety, and comfort and a system that is consistent with other goals and values of the County and the region.*

The following are potentially relevant goals and objectives from the Transportation Element.

> *Circulation Plan - Goal 1: provide a circulation plan that supports land use policies of the County.*
>
> *Circulation Plan - Objective 1.2: Establish a circulation plan designed to serve as part of a balanced transportation system (auto, rail, transit, bus, truck, bicycle, pedestrian, etc.).*
>
> *Bikeway Plan - Goal 1: Develop and implement a bikeway plan that maximizes the opportunities for non-motorized vehicle transportation, and meets the recreation and local transportation needs of the residents of Orange County's unincorporated areas.*

4.14.3.2 Local Transportation System Overview

The major regional vehicular access to the Proposed Project area is provided via I-5 and SR-74. Other arterial and collector roadways affected by the Proposed Project include: Calle San Diego, Avenida De La Vista, Camino Capistrano, Junipero Serra Road, Rancho Viejo Road, Golf Club Drive, San Juan Creek Road, Calle Saluda Avenida La Pata, Oso Road, Calle Santa Rosalia, Call Bonita, Via Priorato, Carril de Maderas, Calle de la Rosa, Sundance Drive, Calle Arroyo, Juliana Farms Road, La Pata Avenue, Vista Montana, Via Pomplona, Avenida Vista Hermosa, and Avenida Pico.

The traffic conditions of roads within the vicinity of the Proposed Project differ, therefore LOS varies according to congestion and volume at any given time. Roadway congestion ranges from LOS A (least congested) to LOS F (most congested) and measures roadway traffic flow efficiency. In general, both the *City of San Juan Capistrano General Plan* and the *City of San Clemente General Plan* specify that intersection LOS A through D are acceptable, but LOS E and F are not adequate unless exempted. For example, the city of San Clemente has exempted the intersection of the I-5 and Avenida Pico from this general citywide traffic circulation goal. LOS E and F represent situations where the roadway capacity has been equaled by the traffic volume (LOS = 1.0). For roadway segments, the city of San Clemente has the goal of LOS C for smaller capacity roadways and LOS D for larger capacity roadways (such as Avenida Pico within the Proposed Project area).

Vehicle transportation is presently the primary mode of travel and the roadway system is established using a classification system that establishes hierarchical roadway designations. Table 4.14-2, Existing Average Daily Trips for Affected Roadways, outlines traffic counts for

arterial roadways affected by the Proposed Project and outlines calculated approximate average daily LOS values for each of these roadways. Affected roadways are defined as any roadway where construction activities would take place (e.g. trenching, stringing) and where roadways would be utilized by project-related traffic such as construction access. Existing traffic count data was used from the cities of San Clemente and San Juan Capistrano as well as from Caltrans. Generally, traffic data was only available for arterial roads, and not for collector roads. Collector roads are not generally used for through traffic (i.e. they transport vehicles from arterial roads to end point destinations [such as residences]). Traffic on collector roads is generally low due to limited scope of utilization.

Table 4.14-2: Existing Average Daily Trips for Affected Roadways

Roadway	Jurisdiction/ Location	Average Daily Traffic (ADT)	Calculated Existing LOS
Junipero Serra Road	San Juan Capistrano	13,300	C
Camino Capistrano	San Juan Capistrano	11,300-14,300	A-C[1]
Rancho Viejo Road	San Juan Capistrano	9,400-13,300	A
Calle Arroyo	San Juan Capistrano	6,800	B
San Juan Creek Road	San Juan Capistrano	3,500-10,800	A
La Pata Avenue	San Juan Capistrano and Unincorporated Orange County	3,000-5,000	A
Avenida la Pata	San Clemente	4,000-9,000	A
Avenida Pico	San Clemente and Unincorporated Orange County	8,000-43,000	A-C
Calle Saluda	San Clemente	3,000-4,000	A
SR-74	Caltrans and City of San Juan Capistrano	24,000-46,000	A-F
I-5	Caltrans	231,000-271,000 (each direction)	F

Notes:
[1]Where a range of ADT values is given, the LOS is calculated for both the high and low ADT values given. The LOS is then represented as a range where the LOS changes from the high to low ADT value. Where ADT values were available for multiple segments for a given roadway, ADT values are given for those segments closest to the Proposed Project area.
Source: Caltrans, County of Orange, cities of San Juan Capistrano and San Clemente Engineering Divisions

4.14.3.3 Freeways and State Routes

The only freeway in the Proposed Project vicinity in I-5 and the only State Route is the Ortega Highway (SR-74). Locations are shown in Figure 4.14-1, Affected Roadways Map.

CAPISTRANO SUBSTATION

Junipero Serra Road

Rancho Viejo Road

Golf Club Drive

Calle Bonita

Oso Road

Via Priorato

Calle Arroyo

Avenida De La Vista

Calle de la Rosa

San Juan Creek Road

La Pata Avenue

Calle San Diego

Sundance Drive

Calle Santa Rosalia

Juliana Farms Road

Carril de Maderas

Camino Capistrano

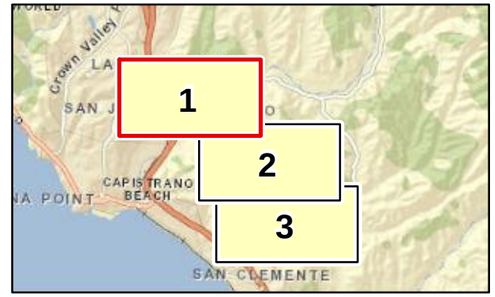
La Novia Avenue

San Juan Creek Road

Vista Montana

Via Pomplana

1 2 3 4 4a 5 5a 6 7 8a 9 10 11 12 13 14 15 16 17 18 19 20 21



G:\SOCRUP\MXD\AffectedRoadwaysMapbook.mxd 04/25/2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Affected Arterial Roadways *
- Affected Collector Roadways
- SDG&E Access Roads
- Proposed New Transmission Line - Overhead
- Proposed New Transmission Line - Underground
- Capistrano and Talega Substations
- Proposed Pole Locations
- County Boundary
- City Boundary

***The Proposed Project will also affect I-5 and SR-74**

N

0 500 1,000 2,000 Feet

South Orange County Reliability Enhancement Project

Affected Roadways Map

Figure 4.14-1

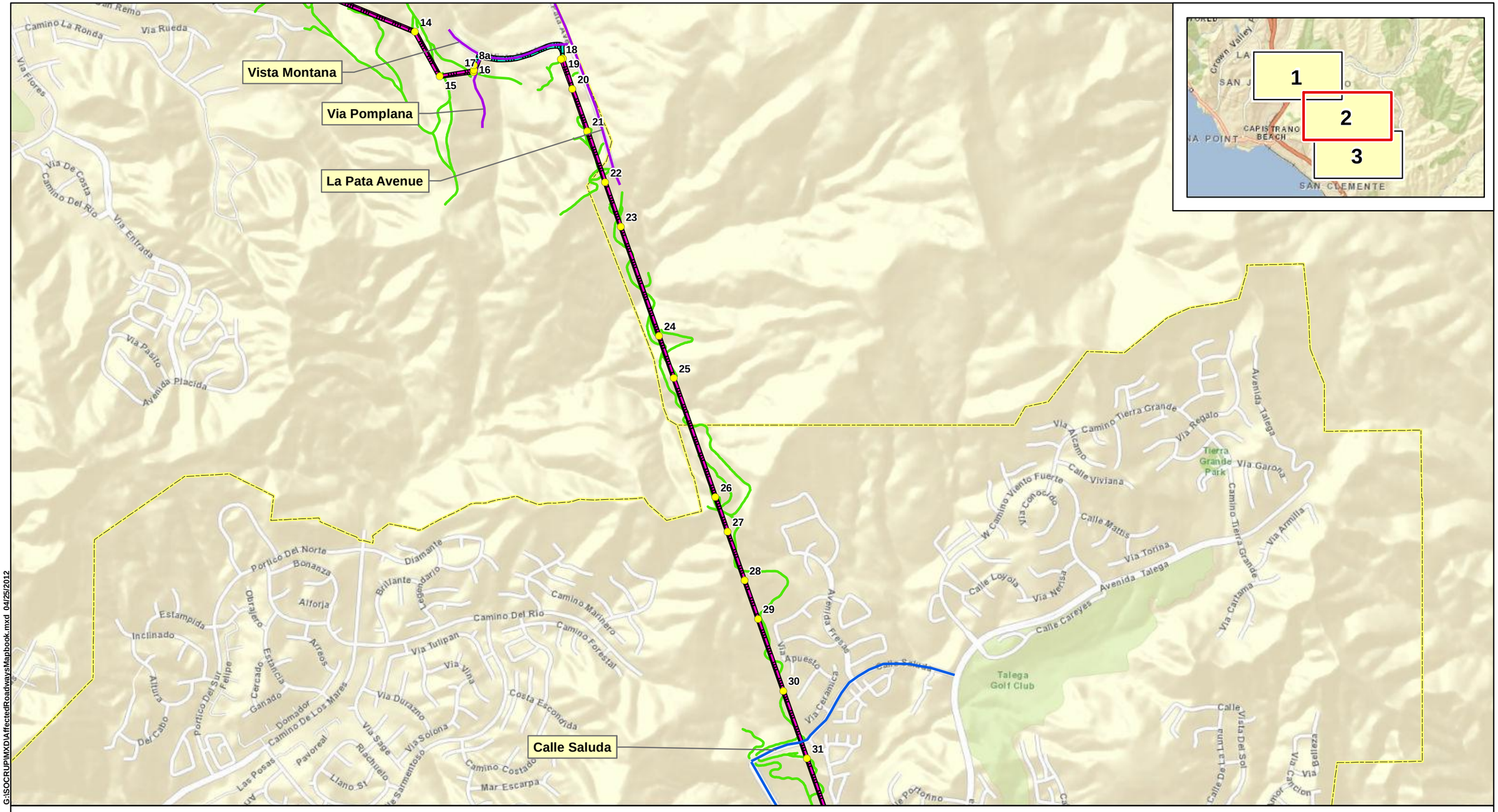
Sheet 1 of 3

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.14-1 (SHEET 1)



G:\SOCRUP\MXD\AffectedRoadwaysMapbook.mxd 04/25/2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Affected Arterial Roadways *
- Affected Collector Roadways
- SDG&E Access Roads
- Proposed New Transmission Line - Overhead
- Proposed New Transmission Line - Underground
- Capistrano and Talega Substations
- Proposed Pole Locations
- County Boundary
- City Boundary

***The Proposed Project will also affect I-5 and SR-74**

N

0 500 1,000 2,000 Feet

South Orange County Reliability Enhancement Project

Affected Roadways Map

Figure 4.14-1

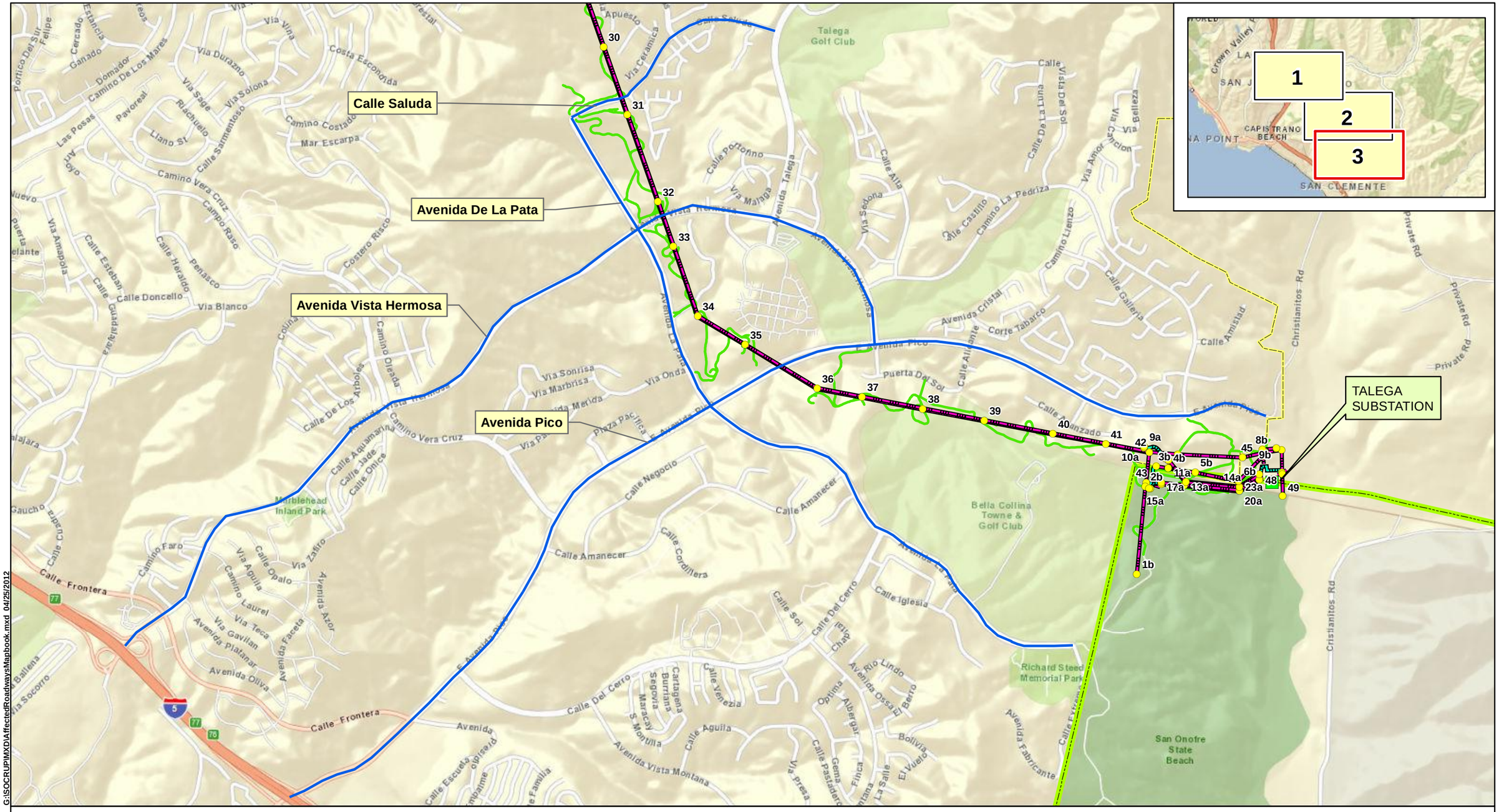
Sheet 2 of 3

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.14-1 (SHEET 2)



G:\SOCRUP\MXD\Affected\RoadwaysMapbook.mxd 04/25/2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Affected Arterial Roadways *
- Affected Collector Roadways
- SDG&E Access Roads
- Proposed New Transmission Line - Overhead
- Proposed New Transmission Line - Underground
- Capistrano and Talega Substations
- Proposed Pole Locations
- County Boundary
- City Boundary

***The Proposed Project will also affect I-5 and SR-74**

N

0 500 1,000 2,000 Feet

South Orange County Reliability Enhancement Project

Affected Roadways Map

Figure 4.14-1

Sheet 3 of 3

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.14-1 (SHEET 3)

I-5 (San Diego Freeway)

I-5 is a major north-south route that crosses through Orange County and continues beyond state boundaries in both directions, operating on eight- to ten-lanes in the Proposed Project area. The existing 138kV transmission line traverses over I-5 directly between Junipero Serra Road and Ortega Highway. Caltrans reported a 2010 average traffic flow of 231,000 to 265,000 vehicles per day (southbound traffic) and 246,000 to 271,000 vehicles per day (northbound traffic) where the transmission lines would cross I-5 (between Pole Nos. 4 and 5).

SR-74 (Ortega Highway)

SR-74, also called Ortega Highway, spans from Palm Dessert in Riverside County westward to San Juan Capistrano in Orange County. It is a two- to six-lane east-west highway that ends at Camino Capistrano, west of I-5. The line spans over the highway at the intersection of Ortega Highway and Belford Drive in San Juan Capistrano, 0.65 mile east of I-5. Caltrans reported an average of 39,200 vehicles per day on the freeway at recording points from the entrance of Ortega Highway into Orange County and to its terminus in San Juan Capistrano. The city of San Juan Capistrano reported up to 46,000 vehicles per day between Rancho Viejo Road and Del Obispo. The city of San Juan Capistrano has designated this area a "Traffic Operation Hot Spot" denoting that traffic within this area is consistently not compliant with the city of San Juan Capistrano's LOS goals. The intersection of I-5 and SR-74 is the only CMP designated roadway in the study area.

4.14.3.4 Arterial Roads

An arterial road is a major or main route with traffic capacity just below that of highways. Arterial roads are designed to transfer traffic between neighborhoods and communities, and have intersections with collector and other arterial streets. Arterial roads that intersect the Proposed Project area as well as arterial roads that would be utilized by the Proposed Project related traffic are described below (starting with at the roads at the northwest end of the Proposed Project area) and the locations are shown in Figure 4.14.1.

Junipero Serra Road

Junipero Serra Road is a two- to four-lane, east-west arterial west of I-5 in the city of San Juan Capistrano. It is the connector street between Camino Capistrano and Rancho Viejo Road to I-5. The road dead-ends shortly after crossing these two roads. The proposed transmission lines would not intersect Junipero Serra Road directly, however, construction access to the Capistrano Substation would be granted from Junipero Serra Road.

Camino Capistrano

Camino Capistrano is a major two- to six-lane arterial that runs parallel to I-5 in San Juan Capistrano, veering towards the west coastline and eventually ending at the intersection of Coast Highway/El Camino Road. The proposed transmission line would intersect Camino Capistrano where it extends westward to Avenida De La Vista. In addition, all access to the Capistrano Substation, Pole Nos. 1 through 4, and Pole Nos. 1a through 7a would be granted from Camino Capistrano. Camino Capistrano has approximately 11,000 to 14,000 vehicles per day in the vicinity of the Capistrano Substation site.

Rancho Viejo Road

Rancho Viejo Road is a four-lane arterial in San Juan Capistrano that runs adjacent to the I-5. It connects to several minor arterials in the Proposed Project area and also provides access to Golf Club Drive. The proposed transmission line would cross over Rancho Viejo Road adjacent to an existing golf course, at Pole No. 5.

Golf Club Drive

Golf Club Drive is a two- to four-lane arterial in San Juan Capistrano that connects the Marbella Country Club area and residential neighborhoods to Rancho Viejo Road. The proposed transmission line would cross over Golf Club Drive just south of the Marbella Vista Street intersection, between Pole Nos. 5 and 6.

San Juan Creek Road

San Juan Creek Road is a two- to three-lane arterial in San Juan Capistrano east of San Juan Hills Golf Club. It connects to Camino Capistrano shortly after passing I-5 from the east. The proposed transmission line would cross over San Juan Creek Road just west of the Juliana Farms Road intersection, between Pole Nos. 10 and 11.

Calle Saluda

Calle Saluda is a two-lane east-west arterial in San Clemente that connects to Avenida La Pata where it terminates. The proposed transmission line would cross over Calle Saluda near its intersection with Corte Almansa.

Avenida La Pata

Avenida La Pata is a four- to six-lane paved arterial that begins at Calle Saluda in the city of San Clemente. The road is parallel to the proposed transmission line (Segment 3) and never crosses it. However, Avenida La Pata would provide construction access to multiple new 230kV structure sites.

Avenida Vista Hermosa

Avenida Vista Hermosa is a four-lane east-west arterial in San Clemente that steers south as it approaches I-5. It is considered a major street within the Talega master planned community. The proposed transmission line would cross over Avenida Vista Hermosa just east of the Avenida La Pata intersection.

Avenida Pico

Avenida Pico is a major six-lane arterial within the Talega and Rancho San Clemente Specific Plans in San Clemente. Avenida Pico intersects the Avenida La Pata and Avenida Vista Hermosa arterials. The orientation of the road is east-west and shifts south as it heads towards I-5. The proposed transmission line would cross over Avenida Pico approximately 0.25 miles east of Avenida la Pata. Avenida Pico would be utilized for the Proposed Project related construction, operation and maintenance access. Existing ADT for Avenida Pico ranges from

high (46,000 trips at the intersection with I-5) to low (only 8,000 trips near the Talega Substation). ADT on Avenida Pico shows a steady decline from the I-5 interchange east to its terminus immediately adjacent to the Talega Substation.

4.14.3.5 Collector Roads

A collector road has a lower traffic capacity than any other type. Collector roads function as connecting road links between arterial roads and local roads to lead traffic throughout communities and occasionally to freeways. Figure 4.14-1 depicts the collector roads that intersect the Proposed Project area as well as those collector roads that would be utilized by the Proposed Project related traffic. Descriptions of each affected collector are included below, starting with at the collector roads at the northwest end of the Proposed Project area.

Oso Road

Oso Road is a two lane, undivided collector street within the city of San Juan Capistrano. Oso Road connects Camino Capistrano (to the east) and Avenida De La Vista, before dead-ending to the west approximately 700 feet from the intersection with Camino Capistrano. The Proposed Project would not result in any new facilities within or adjacent to Oso Road, but construction traffic may utilize Oso Road in order to access to 138kV underground transmission lines within Segment 1 of the Proposed Project.

Avenida De La Vista

Avenida De La Vista is a two-lane, undivided collector street within the city of San Juan Capistrano. The roadway extends from Oso Road to the north, to where it dead ends approximately one mile south, after it intersects with Calle La Purisima. The proposed transmission lines would not intersect Avenida De La Vista but new circuit structures would be placed along the eastern roads edge.

Calle San Diego

Calle San Diego is a two-lane, undivided collector street that extends from Avenida De La Vista, approximately 680 feet south, to where it intersects Calle San Antonio, in the city of San Juan Capistrano. The proposed transmission lines would extend through Calle San Diego (in an underground position), passing through existing SDG&E ROW through a residential community.

Calle Santa Rosalia

Calle Santa Rosalia is a two-lane north-south collector street that lies between Camino Capistrano and I-5 in a residential neighborhood. It is perpendicular to the underground portion of the transmission line.

Calle Bonita

Calle Bonita is an approximately 0.16 mile, two-lane east-west collector that connects Calle Santa Rosalia to Camino Capistrano in San Juan Capistrano. The road is parallel to the proposed transmission line, a short distance from the Capistrano Substation. Calle Bonita would be utilized to access Pole No. 4.

Via Priorato

Via Priorato is an approximately 0.2-mile, two-lane road that runs north-south. It runs adjacent to Pole No. 4 and is contained entirely within a residential community development adjacent to Rancho Viejo Road in the city of San Juan Capistrano. Via Priorato would be utilized to access Pole No. 6.

Carril de Maderas

Carril de Maderas is an approximately 0.2-mile, two-lane road that runs north-south. It connects Via Priorato to Calle de la Rosa and is contained entirely within a residential community development adjacent to Rancho Viejo Road in the city of San Juan Capistrano. Carril de Maderas would be utilized to access Pole No. 6.

Calle de la Rosa

Calle de la Rosa is an approximately 0.45-mile, two-lane road that runs in a general east-west direction. It connects Carril de Maderas to Rancho Viejo Road in the city of San Juan Capistrano. Calle de la Rosa would be utilized to access Pole No. 6.

Sundance Drive

Sundance Drive is an approximately 0.3-mile long, two-lane road that runs north-south. This street branches off of Ortega Highway into a residential community. The proposed transmission line spans over the road halfway between Ortega Highway and the first turn at Summerfield Lane.

Calle Arroyo

Calle Arroyo is a two-to-four lane road that connects to Sundance Drive near Pole Nos. 8 and 9 in the city of San Juan Capistrano. Calle Arroyo would be utilized to access Pole No. 9.

Juliana Farms Road

Juliana Farms Road is a private street located along San Juan Creek Road, in the city of San Juan Capistrano. Juliana Farms Road would be utilized by certain construction equipment to access Pole Nos. 11 through 13.

La Pata Avenue

La Pata Avenue is a two- to three-lane north-south collector serving as the continuation of Antonio Parkway. The name change occurs as the road intersects Ortega Highway in unincorporated Orange County. La Pata is the access route to the Rancho San Juan development, the San Juan Hills High School, and later becomes a private dirt road as it reaches the Prima Deshecha Landfill. The road then runs parallel to the transmission line (Segment 3) as it approaches San Clemente where the name Avenida La Pata is adopted.

Vista Montana

Vista Montana is an approximately 0.3-mile, two-lane road that connects La Pata Avenue to San Juan Hills High School and Via Pomplona near Pole Nos. 14 through 17, in the city of San Juan Capistrano. Vista Montana would also be utilized to access Pole Nos. 18, 19, and 8a.

Via Pomplona

Via Pomplona is a 0.2-mile private road that connects to Vista Montana in the city of San Juan Capistrano. Via Pomplona would have small sections of new 230kV undergrounds transmission line installed within the roadway and would also be utilized for access to Pole Nos. 8a, 16, and 17.

4.14.3.6 Airports

No airports, either public or private, are located within two miles of the Proposed Project. The closest Airport is John Wayne Airport, which is located approximately 15 miles north of the existing Capistrano Substation site.

4.14.3.7 Public Transportation

Orange County Transportation Authority

As mentioned above, the OCTA is the main public transportation and transit provider for the county of Orange. OCTA operates approximately 80 bus lines throughout the county, as well as some nearby communities in the surrounding counties of Los Angeles, San Bernardino, and Riverside. Metrolink is the rail system in Southern California used to connect residential neighborhoods to employment and recreational areas. The Proposed Project spans and runs along multiple bus routes and a Metrolink route in Orange County. Tables 4.14-3, OCTA Bus Routes with the Proposed Project Area, 4.14-4, OCTA Bus Stops Potentially Affected by the Proposed Project, and 4.14-5, Metrolink Rail Train Routes within the Proposed Project Area provide detailed information about bus and rail facilities within the Proposed Project area. It should also be noted that there is a bus stop in front of the Capistrano Substation, as part of Route 91, along Camino Capistrano just north of Calle Bonita.

Table 4.14-3: OCTA Bus Routes within the Proposed Project Area

City	Roadway	Route(s)
San Juan Capistrano	Camino Capistrano	1, 91
San Juan Capistrano	Rancho Viejo Road	191, 212, 216
San Juan Capistrano	Junipero Serra Road	91, 212, 216
San Clemente	Avenida Vista Hermosa	693
San Clemente	Avenida Pico	191, 193, 693
Source: OCTA Bus System Maps & Schedules, 2011		

Table 4.14-4: OCTA Bus Stops Potentially Affected by the Proposed Project

City	Roadway	Route and Location
San Juan Capistrano	Camino Capistrano	91 (east side of Camino Capistrano)
San Juan Capistrano	Camino Capistrano	91 (west side of Camino Capistrano)
Source: OCTA Bus System Maps & Schedules, 2011, Google Earth, 2012		

Table 4.14-5: Metrolink Rail Train Routes within the Proposed Project Area

City	Roadway
San Juan Capistrano	Camino Capistrano
Source: OCTA Metrolink Rail OC Station Maps, 2011.	

City of San Juan Capistrano Bike Paths

The city of San Juan Capistrano has numerous designated hiking/ equestrian /mountain biking trails within the Proposed Project area as well as some planned trails. Existing trails within the Proposed Project area include the Juliana Farms Trail, the San Juan Creek Trail, the Tar Farms Trail, and the La Mancha Trail. The proposed trails within the Proposed Project area include the Whispering Hills Trail East and West, the Prima Deshecha Trail, the Caballo Trail, and the Belford Marbella Trail. However, there are no designated paved bike paths within the Proposed Project area. There is one paved path that is utilized for bike traffic that runs through El Camino Real Park, west of the existing Capistrano Substation site.

City of San Clemente Bike Paths

The city of San Clemente has three levels of paved bike paths within the city, as follows:

- Class I – off-road paved bike paths.
- Class II – on-road striped bike lanes.
- Class III – On-road shared-lane signed bike routes.

There are Class I and Class II bike routes located on both Avenida Pico and Avenida La Pata within the Proposed Project area.

In addition to the paved bike routes listed above, the city of San Clemente also has many combined use, unpaved trails. Specifically, the Prima Deshecha North, Prima Deshecha South, and the Foster Ridgeline Trails are within the immediate vicinity of the Proposed Project.

4.14.4 Potential Impacts

The Proposed Project involves the construction of new poles and facilities that represent replacement or upgrades of existing poles and facilities. The Proposed Project would involve construction activities that would temporarily increase existing traffic and affect a limited number of existing roadways due to installation of underground transmission line. Due to the fact that the transmission lines and substations included as part of the Proposed Project are replacements/upgrades, operation and maintenance activities (especially those involving traffic generation) would mirror the current operation and maintenance conditions. Therefore, the

traffic analysis herein is focused on potential construction-related impacts to traffic and transportation.

4.14.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the Proposed Project could have a potentially significant impact to transportation and traffic if it would:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks;

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

e) Result in inadequate emergency access; or

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

4.14.4.2 Question 14a - Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Construction – Significant and Potentially Significant Short Term Impacts

Impacts to LOS from Construction-Related Traffic (Less than Significant Impact)

The most common method of measuring conflicts with the circulation system is by means of determining if a project would impact the roadway's Level of Service, or LOS. Impacts to other modes of transportation are discussed more fully in response to Question 14f, below.

Construction activities related to the Proposed Project would result in a negligible increase in daily vehicle trips on roadways that would be utilized for construction access. Access routes to each construction location are shown in Table 4.14-6, Construction Access Routes, and Table 4.14-7, Construction Generated Average Daily Trips, outlines the average daily trips associated with the construction of each distinct Proposed Project component.

Table 4.14-6: Construction Access Routes

Proposed Project Construction Site	Access Route
Capistrano Substation and Poles Nos. 1-3, 6a and 7a	I-5 to Junipero Serra Road to Camino Capistrano
Pole No. 4	I-5 to Junipero Serra Road to Camino Capistrano to Calle Bonita Road
Pole No. 5	I-5 to SR 74 to Rancho Viejo Road
Pole No. 6	I-5 to SR 74 to Rancho Viejo Road to Calle de la Rosa to Carril de Maderas to Via Priorato
Pole No. 7	I-5 to SR 74 to unpaved SDG&E access road
Pole No. 8	I-5 to SR 74 to Sundance Drive to unpaved SDG&E access road
Pole No. 9	I-5 to SR 74 to Sundance Drive to Calle Arroyo to SDG&E access road
Pole Nos. 10 through 15	I-5 to San Juan Creek Road to unpaved SDG&E access road
Segment 2 underground and Pole Nos. 16 though 19	I-5 to SR 74 to La Pata Avenue to Vista Montana
Pole Nos. 20 through 25	I-5 to SR 74 to La Pata Avenue to unpaved SDG&E access road
Pole Nos. 25 through 31	I-5 to Avenida Pico to Avenida La Pata to Calle Saluda to unpaved SDG&E access road
Pole Nos. 32 through 35	I-5 to Avenida Pico to Avenida La Pata to unpaved SDG&E access road
Pole Nos. 36 through 49, 9a through 23a, and 1b through 9b	I-5 to Avenida Pico to unpaved SDG&E access road
Talega Substation	I-5 to Avenida Pico to substation
Source: SDG&E	

The remainder of this page is intentionally left blank.

Table 4.14-7: Construction Generated Average Daily Trips

Proposed Project Component	Duration of Construction Activities (months)	Affected Roadways	Construction Generated ADT[1]
San Juan Capistrano Substation Construction			
Lower yard demolition and site development (grading)	5	I-5, Junipero Serra Road, and Camino Capistrano	34
Substation construction (lower yard – 138/12kV)	20		32
Relay testing, energization, and cutover (138/12kV substation)	8		8
Upper yard demolition and site development (grading)	5		36
Substation construction (upper yard – 230kV)	15		32
Relay testing, energization, and cutover (230kV substation)	7		6
Talega Substation Construction			
Substation construction	9	I-5 and Avenida Pico	20
Relay testing, energization, and cutover	2		10
Transmission Line Construction			
138kV San Juan Capistrano getaways (Pole Nos. 1a – 7a and new underground) and 230kV Pole Nos. 1 through 3	14	I-5, Junipero Serra Road, Camino Capistrano, Oso Road, Avenida de la Vista, and Calle San Diego	16
230kV Segment 1 construction (230kV Pole Nos. 4 – 15)	17	I-5, Junipero Serra Road, Camino Capistrano, Calle Bonita, Rancho Viejo Road, SR-74, Carril de Maderas, Via Priorato, Sundance Drive, San Juan Creek Road, Calle Arroyo, Juliana Farms Road, La Pata Avenue, and Vista Montana	28

Table 4.14-7 (cont.): Construction Generated Average Daily Trips

Proposed Project Component	Duration of Construction Activities (months)	Affected Roadways	Construction Generated ADT[1]
Segment 2 (underground construction and Pole Nos. 16 – 19 and 8a)	11	I-5, Junipero Serra Road, Rancho Viejo Road, SR-74, La Pata Avenue, and Vista Montana	20
Segment 3 (Pole Nos. 20 – 41)	11	I-5, Junipero Serra Road, Rancho Viejo Road, SR-74, La Pata Avenue, Avenida Pico, and Avenida La Pata	26
69/138kV Segment 4 (Pole Nos. 9a – 23a, and 1b – 9b) and 69 and 138kV underground	13	I-5 and Avenida Pico	36
230kV Segment 4 (Pole Nos. 42 – 49)	8	I-5 and Avenida Pico	24
Cumulative ADT Values[2]			
San Juan Capistrano Substation: 1. 138/12kV (Lower Yard) Substation Construction 2. San Juan Capistrano Substation Relay Testing	6 month overlap	I-5, Junipero Serra Road, and Camino Capistrano	40
San Juan Capistrano Substation: 1. 230kV (Upper Yard) Substation construction 2. Relay Testing	3 month overlap	I-5, Junipero Serra Road, and Camino Capistrano	38
1. Talega Substation construction & relay testing 2. 69/138kV Segment 4 construction	2 month overlap	I-5 and Avenida Pico	66
1. Talega Substation construction 2. 69/138kV Segment 4 construction	6 month overlap	I-5 and Avenida Pico	56

Table 4.14-7 (cont.): Construction Generated Average Daily Trips

Proposed Project Component	Duration of Construction Activities (months)	Affected Roadways	Construction Generated ADT[1]
1. Talega Substation relay testing 2. 230kV Segment 3 construction 3. 230kV Segment 4 construction	2 month overlap	I-5 and Avenida Pico	60
1. 230kV Segment 1 construction (Pole Nos. 14 and 15 only) 2. Segment 2 construction 3. Segment 3 construction (Pole Nos. 20 – 25 only)	6 month overlap	I-5, Junipero Serra Road, Rancho Viejo Road, SR-74, and La Pata Avenue	72
1. San Juan Capistrano Substation grading and site development 2. 138kV San Juan Capistrano getaways	5 month overlap	I-5, Junipero Serra Road, and Camino Capistrano	50
1. San Juan Capistrano 138/12kV Substation (lower yard) relay testing 2. 230kV Segment 1 construction (Pole Nos. 1-4 only) 3. 138kV Segment 1 construction (Pole Nos. 4a-7a)	6 month overlap	I-5, Junipero Serra Road, and Camino Capistrano	50

Notes:
[1]Average Daily Trips are calculated by taking the total number of vehicle trips (for all vehicles combined) required and dividing by the approximate number of construction days. ADT values given include trips associated with the hauling of waste and materials, such as haul trucks and cement trucks.
[2]These ADT values represent where different phases of construction (such as San Juan Capistrano Substation construction and 138kV getaways construction) overlap with respect to location (i.e. affected roadways) and construction schedule.

Three road segments that would be used for the Proposed Project have been specifically designated by either the city of San Juan Capistrano or the city of San Clemente due to special conditions or existing traffic-related congestion problems. Table 4.14-8, Existing Traffic Congestion Problem Areas and Designated Special Land Use Areas, outlines those roadway segments or special land uses that either city has designated as a potential area of concern with respect to traffic and circulation.

Table 4.14-8: Designated Traffic Congestion Problem Areas and Special Land Use Areas

City	Affected Roadway	Identified Problem or Special Land Use	Proposed Project Component Affected
San Juan Capistrano	SR-74 (between Rancho Viejo Road and Del Obispo)	High ADT (up to 46,000) and LOS of F	San Juan Capistrano Substation and a portion of Transmission Line Segment 1
	Camino Capistrano (near Junipero Serra Road and Oso Road and near SR-74 and La Zanja Street)	Schools[1]	San Juan Capistrano Substation and a portion of Transmission Line Segment 1
	Vista Montana at La Pata Avenue	School[2]	Transmission Line Segment 2
San Clemente	Avenida Pico (at interchange with I-5)[2]	Substandard Intersection LOS (below D)	Construction of Talega Substation and Transmission Line Segments 3 (partial) and 4

Notes:
[1]There are two schools (JSerra Catholic High School and Saddleback Valley Christian School) located just north of the existing Capistrano Substation site, along Camino Capistrano and one school (Serra High School) south of the existing Capistrano Substation site.
[2]San Juan Hills High School is located at the terminus of Vista Montana, near the intersection with La Pata Avenue.
[3]While the Pico/ I-5 interchange is identified within the San Clemente Circulation Element as having LOS problems, the southbound off ramps are exempted from the standard of LOS D for intersections.

In general, the increases in ADT outlined in Table 4.14-7 (maximum construction generated ADT of approximately 72 two way trips [36 vehicles]), when compared to the existing roadway ADT (3,000 to 271,000), represent an insignificant increase in traffic volume that would not have a significant detrimental impact on existing LOS for any roadway affected by the Proposed Project. The majority of the daily traffic trips would be generated from the construction crew traveling to and from the construction site and, during some phases of construction, from waste and concrete hauling. Grading and site development activities at the San Juan Capistrano Substation site and at certain pole sites would result in additional daily trips for the removal of soil and old equipment. The construction equipment would be kept onsite during construction activities and, therefore, would not generate daily traffic trips.

Although the amount of construction-related traffic is minimal compared to the overall capacity of the majority of the roadways in the Proposed Project area, others factors could affect traffic flow within the Proposed Project vicinity. Specifically, the following factors can create significant adverse impacts on traffic:

- The length of time that construction activities would be impacting roadways; and
- The locations of specific special land uses (such as schools) that can create short term traffic delays on roadway segments that otherwise have acceptable LOS.

Specifically, construction activities would occur for approximately four years at the San Juan Capistrano Substation, with anticipated construction generated ADT ranging from eight trips to 36 trips. In addition, during short portions of construction (up to six months) construction generated ADT would get as high as 50 trips per day. Immediately north of the Capistrano Substation site is the Saddleback Valley Christian School, which includes an early childhood center, elementary school, junior high school, and high school and the JSerra Catholic High School. Access to all of these schools is provided via Camino Capistrano, which already experiences a high amount of pedestrian and vehicular traffic during the school year (September to June), especially during the mornings (the schools start at 7:45 AM to 8:30 AM) and afternoons (the schools end from 2:25 PM to 3:00 PM). Therefore, the addition of construction-related traffic along Camino Capistrano during the school year and especially during the morning and afternoon peak periods would reduce the performance of this roadway for the duration of construction activities. In order to avoid impacts associated during the specific times periods, APM TR-1 will be implemented. APM TR-1 would ensure that construction workers working at the San Juan Capistrano Substation would arrive and depart work at hours that would avoid school-generated traffic. Workers would arrive before 7:30 AM and depart after 3:30 PM. APM TR-1 would reduce the overload between this school-related traffic and construction-related traffic.

Another potential impact could arise where construction generated traffic would combine with areas of existing sub-standard LOS. There are two roadways segments where existing LOS reaches F: SR-74 (between Del Obispo [west of I-5] and La Novia [east of I-5) and along the I-5 itself. While congestion on the I-5 can be significant due to high volumes of traffic, the construction generated daily trips would not substantially increase ADT on the I-5. Although because the I-5 is the primary regional north-south transportation route use of the I-5 cannot feasibly be avoided, the impacted section of SR-74 can be largely avoided by construction-related traffic. The largest problem area for SR-74 is at the I-5 interchange, where ADT can reach 46,000, and this is the area highlighted in the CMP. Implementation of the APM TR-2, which requires construction traffic associated with the San Juan Capistrano Substation and the 138kV getaways to avoid the SR-74 off-ramp from I-5 would ensure that construction traffic does not access the San Juan Capistrano Substation site or any other associated construction areas in the vicinity of the substation by way of the SR-74 off ramp. Construction traffic would access these areas by way of the Junipero Serra Road exit to the north. Construction traffic associated with the San Juan Capistrano Substation and adjacent areas would generate so few additional trips (approximately 50 trips per day maximum) along the alternate route when compared to the existing traffic volumes (9,400 to 14,300 ADT) and would not be likely to have a substantial adverse affect on existing average daily LOS (A-C). Implementation of APM TR-1, as outlined above, would ensure that construction-related traffic does not overlap with localized school-related congestion near the intersection of Camino Capistrano with Oso Road and Junipero Serra Road. Therefore, impacts resulting from construction generated ADT would be less than significant.

Impacts from Construction of Underground Transmission Lines within Roadways (Potentially Significant Short Term Impact)

Segments 1 and 2 of the Proposed Project include installation of new underground transmission lines within existing roadways, which would require partial closure of the affected roadways during construction. Table 4.14-9, Lane Closures and Duration of Construction, outlines the roadways that would have lane closures due to construction of the underground transmission lines.

The significance of potential impacts to traffic and circulation due to the construction within roadways was evaluated considering the following factors:

1. Duration of construction activities within the roadways,
2. The LOS of the affected roadway, and
3. Presence of specific land uses (such as schools) which can create localized traffic congestion.

Table 4.14-9: Lane Closures and Duration of Construction

Project Component & Segment	Roadway(s) Affected	Duration of Construction (Months)	Source(s) of Localized Traffic Congestion
New 138kV underground transmission lines west of San Juan Capistrano Substation (Segment 1)	Camino Capistrano	1.5 months	JSerra High School and Saddleback Valley Christian School
	Calle San Diego	2 weeks	None
New 230kV underground transmission lines south of San Juan Hills High School (Segment 2)	Vista Montana	8 months total (two separate 4 month stretches)	San Juan Hills High School, Rancho San Juan Development
	Via Pomplona	2 months	
Source: SDG&E			

However, traffic control plans would be prepared (and approved by the city of San Juan Capistrano) for all work conducted within roadways within the city of San Juan Capistrano. The approved traffic control plans would describe lane closures and other methods for reducing adverse construction-related traffic impacts and require SDG&E to coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles, to ensure that emergency vehicle access is maintained and that impacts to traffic flow are minimized. However, short-term significant impacts to traffic flow could still occur where localized traffic congestion events coincide with the required lane closures. Segment 2 of the Proposed Project would meet this criterion. Vista Montana provides access to the San Juan Hills High School, which creates a localized traffic congestion situation when students are arriving and departing from school. Since construction of Segment 2 would have to occur during the school year, short-term significant impacts to traffic circulation on Vista Montana would occur. Construction of Segment 2 may not be able to occur during the summer months due to increased demand for

electric energy during this time. Construction of Segment 2 may require one of the three existing 138kV transmission lines to be de-energized during construction. All three existing 138kV transmission lines may be required to be energized during the summer months (June through September) in order to meet demand. However, implementation of the approved traffic control plans would ensure that this impact is mitigated to the greatest extent practical, although it would remain significant and not fully mitigated.

Operation & Maintenance – No Impact

Because operation and maintenance of the Proposed Project would occur in the same or essentially the locations as they occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project. SDG&E does not anticipate that any additional trips beyond those currently required for operation and maintenance of the existing facilities. As a result, there would be no long-term increase in traffic and, therefore, no long-term impact. Also refer to Section 4.14.5.7 for impacts relating to pedestrian and bicycle paths and mass transit.

4.14.4.3 Question 14b – Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highway?

Construction – Less Than Significant Impact with Incorporation of APMs

There is only one CMP-designated arterial and intersection in the Proposed Project study area, I-5 at SR-74. As discussed in Section 4.14.4.2 above, construction would generate so few additional trips in that area compared to the existing volume that the Proposed Project would not result in any significant impact. Furthermore, construction traffic would be directed to avoid the I-5/SR-74 interchange and utilize less impacted access points (refer to APM TR-2). As also discussed above, operations and maintenance would be the same as the existing conditions and therefore the Proposed Project would not generate any significant impacts on traffic over that already taking place with the existing conditions.

Besides the official CMP designated intersection discussed above, however, there also are road segments that the city of San Juan Capistrano or the city of San Clemente have designated as having special conditions or existing traffic congestion issues. As previously discussed in Section 4.14.4.2, the Proposed Project would result in significant short-term impacts to traffic circulation on Vista Montana during construction of Segment 2 (Rancho San Juan). Potential impacts relating to construction generated traffic combining with existing traffic congestion to create or exacerbate significant conflicts with acceptable LOS would be less than significant with implementation of APMs TR-1 and TR-2 for all other roadways.

Operation & Maintenance – No Impact

As described previously in Section 4.14.4.2, because operation and maintenance of the Proposed Project would occur in the same or essentially the locations as occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project. As a result, there would be no long-term impacts to the

existing LOS standards or other adopted traffic control standards as a result of operations and maintenance of the Proposed Project.

4.14.4.4 Question 14c – Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

Construction – No Impact

As described in Section 3.6.6, Helicopter Usage during Transmission Line Construction, helicopters may be used as a construction tool during the stringing of overhead conductor cable and other transmission line construction activities associated with the Proposed Project for proposed Pole Nos. 11 through 14 (refer to Figure 3-7). Helicopter flight would generally be limited to within SDG&E's existing easement and adjacent areas. Helicopters would only be utilized during daylight hours. Transmission line work would temporarily increase air traffic and encroach on navigable air space during construction; however, SDG&E or its contractor would coordinate flight patterns with local air traffic control and the FAA, prior to construction to prevent any adverse impacts due to increased air traffic. In addition, helicopter utilization would be compliant with applicable usage permits including a requirement for preparation of a Helicopter Lift Plan in compliance with FAA, Caltrans requirements, and Section 5-29.02 of the San Juan Capistrano Municipal Code. As a result, no impact to air traffic is anticipated.

The John Wayne Airport is the closest airport to the Proposed Project and is located approximately 15 miles northwest of the Capistrano Substation. The Proposed Project is not subject to airport land use approvals because of its distance from John Wayne Airport. In addition, none of the Proposed Project components or equipment used to construct the Proposed Project would be taller than 200 feet. Therefore, no FAA clearance would be required and no impact would occur.

Operation & Maintenance – No Impact

Because operation and maintenance of the Proposed Project would occur in the same or essentially the locations as they occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project. SDG&E does not anticipate that helicopter use beyond that currently required for their existing facilities would be necessary to operate or maintain the Proposed Project. As a result, there would be no impact to air traffic due to the operation and maintenance of the Proposed Project.

4.14.4.5 Question 14d – Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction – Less than Significant Impacts

Construction of the Proposed Project would not result in any permanent modification to existing public roadways. As previously discussed, temporary road or lane closures may be required to provide safety to the public and workers during certain activities. Road closures and encroachment into public roadways could increase hazards if appropriate safety measures are not in place, such as proper signage, safety cones, and flaggers. However, SDG&E would be

required to obtain encroachment permits in order to complete work with roadways. The encroachment permits would include traffic control plans that would ensure work is completed in a safe manner, in accordance with applicable local regulations. Therefore, impacts would be less than significant.

Operation & Maintenance – No Impact

Because operation and maintenance of the Proposed Project would occur in the same or essentially the locations as they occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project. Access for the operation and maintenance activities would be provided from existing public roads and a newly constructed spur road located on SDG&E-owned property. Because SDG&E's access roads are not accessible to the public, no new transportation hazards would result from operation and maintenance of the Proposed Project. As a result, there would be no impact.

4.14.4.6 Question 14e – Result in inadequate emergency access?

Construction – Less Than Significant Impact with Implementation of APMs

Emergency access would not be directly impacted during construction because all streets would remain open to emergency vehicles throughout construction. Increased vehicle traffic during construction and temporary lane closures during the undergrounding of new underground trench packages would occur. Although this can impact emergency access, the increase in increased vehicle traffic during construction would be minor and is not expected to significantly affect response times, and construction within public roadways would be conducted pursuant to approved traffic control plans that would ensure emergency vehicle access is preserved during construction activities. In addition, to ensure that emergency response access is maintained, SDG&E will coordinate with all of the local emergency response agencies during all construction within roadways (APM TR-3). Thus, impacts would be less than significant.

Operation & Maintenance – No Impact

As discussed previously, because operation and maintenance of the Proposed Project would occur in the same or essentially the locations as they occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project. Therefore, no impacts to emergency vehicle access would occur as a result of operation and maintenance of the Proposed Project.

4.14.4.7 Question 14f – Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Construction – No Impact

Construction of the Proposed Project would occur almost exclusively within existing SDG&E ROW areas and on SDG&E-owned land. The Proposed Project would not involve any activities that would conflict with transportation policies, plans, or programs, including bus transportation in the area. However, as described earlier, there is a bus stop in front of the existing Capistrano Substation site as part of Route 91, along Camino Capistrano. However, construction of the San

Juan Capistrano Substation would not restrict the utilization of this bus stop. Therefore, there would be no impact.

Operation & Maintenance – No Impact

Because operation and maintenance of the Proposed Project would occur in the same or essentially the locations as they occur today under baseline, existing conditions, there would not be any new impacts resulting from operation and maintenance of the Proposed Project. Rail, bus, and bicycle traffic are not affected by current operation and maintenance activities, and there would be no change to these activities as a result of the Proposed Project. Therefore, no impact would occur.

4.14.5 Applicant Proposed Measures

The only potential significant impacts associated with traffic and transportation for the Proposed Project are 1) construction traffic combining with existing traffic congestion or high traffic land uses to create unacceptable reduction in LOS and/or traffic flow, 2) significant reduction in LOS as a result of construction activities (e.g. trenching for underground transmission lines) within public roadways, 3) impacts to one existing bus stop, and 4) impacts to emergency response access. In order to ensure that potential traffic and transportation impacts 1, 3, and 4 are less than significant (and to ensure that impacts associated with traffic impact No. 2 are minimized to the greatest extent practicable), the following APMs will be incorporated by SDG&E during the construction of the Proposed Project

TR-1 Construction generated traffic associated with the San Juan Capistrano Substation and construction of the 138kV getaways (new underground cable packages and new Pole Nos. 1a through 7a) would avoid the start and ending time for the Saddleback Valley Christian School and the JSerra Catholic High School. Workers would arrive at construction sites by 7:30 AM and would not leave prior to 3:30 PM.

TR-2 Construction generated traffic associated with the San Juan Capistrano Substation and construction of the 138kV getaways (new underground cable packages and new Pole Nos. 1a through 7a) would avoid the SR-74 off ramp from I-5. Avoidance of the SR-74 and I-5 interchange would ensure that construction generated traffic would not exacerbate existing conditions on the stretch of road between the intersections of SR-74 and Rancho Viejo Road and SR-74 and Del Obispo.

TR-3 SDG&E will coordinate with local emergency response agencies during all construction within existing roadways. Coordination with local emergency response agencies (such as Orange County Sheriff's Department and Orange County Fire Authority) would ensure that impacts to emergency access are less than significant.

4.14.6 References

California Department of Transportation. 2010. *Traffic and Vehicle Data Systems Unit*.

City of San Clemente. 1992. *General Plan*.

City of San Clemente. 2010. *Current (2010) ADT Volumes (Map).*

City of San Clemente. 2009. *San Clemente Bike and Roadways Map*.

City of San Juan Capistrano. 1999. *General Plan*.

City of San Juan Capistrano. 2007. *Traffic Volume Map*.

City of San Juan Capistrano. 2007. *Recreational Trail Map (unpaved only).*

County of Orange. 2005. *General Plan.*

OCTA. 2011. *2011 Orange County Congestion Management Program*.

OCTA. 2011. Metrolink Rail. 2011. *OC Station Maps*. Online: http://www.octa.net/bus/feb11sysmap/index.html. Website visited September 2011.

State of California, Business, Transportation and Housing Agency, Department of Transportation, Division of Traffic Operations. 2010. *2010 Traffic Volumes, On the California State Highway System*.

This page intentionally left blank.

TABLE OF CONTENTS

4.15 UTILITIES AND SERVICE SYSTEMS 4.15-1
4.15.1 Introduction 4.15-1
4.15.2 Methodology 4.15-2
4.15.3 Existing Conditions 4.15-2
4.15.4 Potential Impacts 4.15-5
4.15.5 Applicant Proposed Measures 4.15-11
4.15.6 References 4.15-11

LIST OF TABLES

Table 4.15-1: Capacity of Landfills Serving the Proposed Project 4.15-9

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.15 UTILITIES AND SERVICE SYSTEMS

Would the project:		Potentially Significant Impact	Potentially Significant Unless APMs Incorporated	Less than Significant Impact	No Impact
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☑
b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
c.	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? In making this determination, the City shall consider whether the project is subject to the water supply assessment requirements of Water Code Section 10910, et. Seq. (SB 610), and the requirements of Government Code Section 664737 (SB 221).	☐	☐	☐	☑
e.	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☑	☐
g.	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☑

4.15.1 Introduction

This section of the PEA describes the existing conditions and potential project-related impacts to utilities and service systems. Utilities and service systems include water infrastructure and supply, wastewater, solid waste disposal, utilities (electricity and natural gas), and communications. No significant adverse impacts would occur to utilities and service systems, and less than significant impacts would result to landfill capacity from construction of the Proposed Project. The Proposed Project would have a positive impact on electric utility services within the South Orange County service area.

4.15.2 Methodology

Utilities and service systems data were obtained from searches of local government websites and other local service informational resources. Solid waste estimates for construction and demolition activities were provided by SDG&E.

4.15.3 Existing Conditions

4.15.3.1 Regulatory Setting

State

California Integrated Waste Management Board Solid Waste Policies, Plans and Regulations

The Integrated Waste Management Act of 1989 (Pub. Res. Code 40050 et seq. or AB 939, codified in Pub. Res. Code 40000), administered by the California Department of Resources Recycling and Recovery (CalRecycle), requires all local and county governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25 percent by the year 1995 and 50 percent by the year 2000. Senate Bill 1016 (2007) builds on AB 939 by implementing simplified measures of performance toward meeting solid waste reduction goals.

Local

San Juan Capistrano

The city of San Juan Capistrano obtains the majority of its water from the Metropolitan Water District of Southern California (MWD) through the South County Pipeline and the Tri-cities Municipal Water District through the Eastern and Joint Transmission Mains. This water is imported from the Colorado River and/or the California State Water Project (SWP). The remainder of the Capistrano Valley Water District's water consists of local groundwater from the San Juan Groundwater Basin.

The city of San Juan Capistrano also provides its own sewer service under an adopted Sewer Master Plan. In 1990 the city purchased additional wastewater capacity and it anticipates that the existing capacity will meet the needs of the projected General Plan buildout.

In 1999 the cities of San Juan Capistrano, San Clemente and Dana Point adopted a Source Reduction and Recycling Element (SRRE) to implement AB 939, as well as a Household Hazardous Waste Element (HHWE) to develop programs to address household hazardous waste in compliance with AB 2707, a companion bill to AB 939.

Southern California Gas Company provides natural gas to the City and SDG&E provides electricity. San Juan Capistrano disposes of its solid waste in a County of Orange Integrated Waste Management Department facility, the Prima Deshecha Landfill.

The *City of San Juan Capistrano General Plan* includes the following relevant goals and policies:

> *Public Services & Utilities Goal 6: Provide sufficient levels of water and sewer service*
>
> *Policy 6.1: Provide sufficient levels of water and sewer service to meet the needs of the community.*
>
> *Public Services & Utilities Goal 7: Work effectively with providers of natural gas, electricity, telephone, cable television and solid waste disposal to provide sufficient levels of these services.*
>
> *Policy 7.1: Work closely with providers of energy, communications and solid waste disposal in determining and meeting the needs of the community for energy, communications and solid waste disposal.*
>
> *Policy 7.2: Encourage energy efficient development.*
>
> *Policy 7.4: Reduce the per capita production of solid waste in San Juan Capistrano in concert with the city's Source Reduction and Recycling Element.*

San Clemente

The *City of San Clemente General Plan* includes the goal of establishing and maintaining adequate planning, construction, maintenance and funding for adequate water supply, transmission, distribution, storage and treatment facilities to support water demands projected by planned land uses in accordance with the General Plan as well as adequate planning, construction, maintenance and funding for wastewater collection and treatment facilities to support permitted land uses. Similarly, it includes the goal of establishing and maintaining adequate planning, maintenance, and funding for solid waste source reduction, recycling, composting, collection and disposal in accordance with AB 939 for existing and future land uses.

San Clemente also has a goal of providing adequate, safe and orderly supply of electrical energy to support existing and future land uses, and includes the following objective:

> *Objective 6.15: Work with the San Diego Gas and Electric Company to ensure that adequate electrical facilities are available to meet the demand of existing and future developments.*
>
> *Policy 6.15-2: Provide for the undergrounding of new and existing electrical distribution lines unless it is determined to be infeasible resulting from significant environmental or other constraints.*
>
> *Objective 6.16: Work with the Southern California Gas company to ensure that adequate natural gas facilities are available to meet the demands of existing and future developments.*

4.15.3.2 Water

Approximately two-thirds of the water sources for Southern California are located in northern California. The SWP brings water to Southern California, including water deliveries to the MWD, which supplies the water providers used by each jurisdiction potentially affected by the Proposed Project. Water services are provided by the city water departments of San Juan Capistrano and San Clemente, which are members of the Municipal Water District of Orange County. The Municipal Water District of Orange County is a regional water wholesaler and resource planning agency that manages Orange County's imported water supply and serves approximately 2.3 million residents in a 600-square-mile service area. In 2010, the total water demand for the Municipal Water District of Orange County member agencies was approximately 485,311 acre-feet per year (AFY) consisting of 220,132 AFY of imported water (treated and untreated), 220,052 AFY of local groundwater, 5,485 AFY of local surface water, and 39,642 AFY of recycled water.

The unincorporated areas of Orange County that the Proposed Project crosses, as well as part of San Clemente in the Proposed Project area, are under the jurisdiction of the Santa Margarita Water District.

4.15.3.3 Sewer

The cities of San Juan Capistrano and San Clemente are members of the South Orange County Wastewater Authority, which operates 12 wastewater treatment plants. The city of San Juan Capistrano's sewage system has approximately 100 miles of pipe and collects 3.43 million gallons per day (mgd) on average, and the city of San Clemente's sewage system consists of 179 miles of pipe collecting an average of 4.48 mgd.

The existing Capistrano and Talega Substations are not currently served by a sewer system for stormwater or domestic waste water disposal.

4.15.3.4 Solid Waste

CR&R Waste Management is the exclusive waste management provider for both San Clemente and San Juan Capistrano. There are three active landfills in Orange County: Frank R. Bowerman Sanitary Landfill, Olinda Alpha Sanitary Landfill, and Prima Deshecha Landfill. All three landfills are owned by the County of Orange Integrated Waste Management Department and are Class III solid waste landfills, meaning they cannot accept solid or liquid hazardous waste. The Prima Deshecha Landfill is located at 32250 La Pata Avenue in San Juan Capistrano, which is partially within the Rancho San Juan to Talega Substation segment of the Proposed Project (refer to Figure 3-7, Sheets 6 and 7). The Proposed Project passes by the La Pata Avenue Greenwaste Facility, an active solid waste composting facility owned by Tierra Verde Industries, at 31748 La Pata Avenue in San Juan Capistrano.

It is anticipated that solid waste generated during construction of the Proposed Project would be sent to the Prima Deshecha Landfill for standard solid waste and to either the Waste Management Kettleman Hills Facility or the Clean Harbor Environmental Service facility in Buttonwillow for hazardous or otherwise regulated wastes. The existing capacity of the Prima Deshecha Landfill is 87.4 million cubic yards, or 50 percent of the permitted capacity. It is therefore anticipated that the Prima Deshecha Landfill would not reach its planned capacity prior

to the completion of Proposed Project construction. The existing capacity of the Waste Management Kettleman Hills Landfill is 6 million cubic yards, or 56 percent of the permitted capacity. It is therefore anticipated that the Waste Management Kettleman Hills Landfill would not reach its planned capacity prior to the completion of Proposed Project construction. The Clean Harbor Environmental Services facility in Buttonwillow has a permitted maximum capacity of 14.3 million cubic yards and an anticipated closure date of 2040.

4.15.3.5 Utilities

Gas utilities in both San Clemente and San Juan Capistrano are provided by Southern California Gas Company. Electric utilities in both cities are provided by SDG&E. There is an existing 30-inch natural gas pipeline located west of the San Juan Capistrano Substation site, running parallel to the railroad ROW, between the railway line and the existing apartment complex. The natural gas pipeline is operated by the Southern California Gas Company.

4.15.3.6 Communications

AT&T and Cox Communications offer telephone and Internet services in both cities of San Clemente and San Juan Capistrano.

4.15.4 Potential Impacts

4.15.4.1 Significance Criteria

Standards of impact significance were derived from Appendix G of the *CEQA Guidelines*. Under these guidelines, the assessment of the Proposed Project should look to whether the Proposed Project would:

a) Exceed wastewater treatment requirements of the applicable RWQCB;

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;

e) Result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or

g) Comply with federal, state, and local statutes and regulations related to solid waste.

4.15.4.2 Question 15a – Exceed wastewater treatment requirements of the applicable RWQCB?

Construction – No Impact

Construction of the Proposed Project would not generate wastewater. Portable toilets would be provided for on-site use by construction workers and would be maintained by a licensed sanitation contractor. Portable toilets would be used in accordance with applicable sanitation regulations established by the Occupational Safety and Health Administration, which generally requires one portable toilet for every 10 workers. The licensed contractor would dispose of the waste at an off-site location and in compliance with standards established by the RWQCB.

During excavation activities, dewatering may be necessary in some locations. Construction dewatering procedures that would be implemented during construction are outlined in Section 3.0, Project Description. In addition, the water would be discharged in accordance with the cities of San Juan Capistrano and San Clemente and San Diego RWQCB requirements (refer to Section 4.8, Hydrology and Water Quality). As a result, it would not require treatment at a wastewater facility.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated, and activities for the Proposed Project would not materially increase in frequency or intensity, and current operations do not exceed the RWQCB's wastewater treatment requirements. Therefore the Proposed Project's operations and maintenance would not exceed wastewater treatment requirements of the San Diego RWQCB. Any future operations and maintenance activities would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. Thus, no impacts would result.

4.15.4.3 Question 15b – Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Construction – No Impact

Water would be utilized during construction of the Proposed Project in order to control dust on access roads, prepare concrete for foundations, for site development, in work areas and for establishment of landscaping at the San Juan Capistrano Substation. Because this water would be dispersed on-site and would either evaporate or be absorbed into the ground, no wastewater is anticipated. In addition, during excavation activities, dewatering may be necessary. As previously described, the Proposed Project includes procedures that would be implemented during construction and the water would be discharged in accordance with the cities of San Juan Capistrano and San Clemente and San Diego RWQCB requirements (refer to Section 4.8, Hydrology and Water Quality). There would not be any need for new or expanded water or wastewater treatment facilities because the construction needs would be so minimal; therefore, no impact would occur.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated. The only increase in water demand with operation of the Proposed Project would be the installation of new landscaping at the San Juan Substation. However, the minimal amount of water required for the new landscaping would not result in the construction or expansion of new water or wastewater treatment facilities. Any future operations and maintenance activities would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. Thus, no impacts would result.

4.15.4.4 Question 15c – Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Construction – No Impact

Impacts resulting from non-point water pollution associated with construction activities are discussed in more detail in Section 4.8, Hydrology and Water Quality. As concluded in Section 4.8, construction of the Proposed Project would result in less than significant impacts by implementing SDG&E's *BMP Manual*, and by adhering to existing regulations, including compliance with NPDES regulations and preparation of a SWPPP, which would control discharge and preclude the need for construction of new or expanded storm water drainage facilities. As a result, there would be no impacts resulting from construction or expansion of such facilities.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated, and activities for the Proposed Project would not materially increase in frequency or intensity, therefore would not require construction of new or expanded water or wastewater facilities. The rebuilt San Juan Capistrano Substation would include new on-site storm water control facilities, including above-ground retention ponds, designed and constructed in full compliance with the city of San Juan Capistrano's storm water ordinances, regulations, and standards. The on-site storm water control facilities at the new San Juan Capistrano Substation would ensure that no new or expanded storm water facilities would be required off site and would not create any significant additional environmental. Any future operations and maintenance activities would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. Therefore, there would be no impacts with regard to new or expanded storm water facilities.

4.15.4.5 Question 15d – Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Construction – No Impact

Water is anticipated to be the primary means for dust control during construction. Water would be brought to the site in trucks specially equipped to allow for the dispersal of water onto disturbed areas where grading or routine movement of construction vehicles occurs. Water would be used to wet the disturbed soils to reduce the potential for dust particles to enter the air. Water would also be used during grading and site development activities, and during foundation work (concrete). Approximately 26,618,996 gallons of water would be required for construction activities. Water for these uses would be obtained from municipal water sources. The Municipal Water District of Orange County currently has 485,311 AFY of water in their distribution system; therefore, a sufficient water supply is available to meet water demands for construction needs. The demand for water would be temporary and short-term, and would only be generated during the construction phase. Therefore, no impacts are anticipated.

Operation & Maintenance – No Impact

Since the Proposed Project involves replacement or enhancement of existing facilities and would not result in expanded development, there would not be an increase in water demand. Therefore, no impacts would occur.

4.15.4.6 Question 15e – Result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Construction– No Impact

As previously analyzed in responses to Questions 15a and 15b, the generation of wastewater during construction of the Proposed Project would be limited to portable toilets that would be provided for on-site use by construction workers and would be maintained by a licensed sanitation contractor. The licensed contractor would dispose of the waste at an off-site location and in compliance with standards established by the RWQCB. Therefore, the wastewater treatment provider would have adequate capacity to serve the Proposed Project's projected demand in addition to the provider's existing commitments, and no impacts would occur.

Operation & Maintenance – No Impact

As previously noted, SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated, and activities for the Proposed Project would not materially increase in frequency or intensity, therefore the wastewater treatment provider that already serves the site would have adequate capacity to serve the Proposed Project's projected operation and maintenance demands. Any future operations and maintenance activities would be

evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. Therefore, there would be no impacts.

4.15.4.7 Question 15f – Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Construction – Less Than Significant Impact

The total amount of solid waste anticipated as a result of construction of the Proposed Project would total approximately 75,500 cubic yards (including exported excess soil from grading and excavation). The Proposed Project could be served by a total of three possible landfills in Orange County, including; Prima Deshecha Landfill, Olinda Alpha Sanitary Landfill, and Frank R. Bowerman Sanitary Landfill, for disposal of typical construction debris (Landfill Class III). As illustrated in Table 4.15-1, Capacity of Landfills Serving the Proposed Project, the total remaining capacity of the three Class III landfills is 185.4 million cubic yards, with a daily throughput capacity of 20,500 tons per day (tons/day). It is anticipated that standard solid waste generated by the Proposed Project would be disposed of at the Prima Deshecha Landfill.

Table 4.15-1: Capacity of Landfills Serving the Proposed Project

Facility	Total Capacity (million cubic yards)	Remaining Capacity (million cubic yards)	Maximum Permitted Throughput (tons/day)
Landfill Class III			
Olinda Alpha Sanitary Landfill	74.9	38.6	8,000
Prima Deshecha Landfill	172.9	87.4	4,000
Frank R. Bowerman Sanitary Landfill	127.0	59.4	8,500
Total	**374.8**	**185.4**	**20,500**
Landfill Class I, II			
Kettleman Hill-B18 Nonhaz Codisposal	10.7	6.0	8,000
Clean Harbors Buttonwillow LLC	14.3	Not Available[1]	10,482
Total	**25.0**	**> 6.0**	**18,482**

Notes:
[1] Although the remaining capacity is not provided for the Clean Harbors Buttonwillow LLC, its closure date is anticipated to be January 2040, and therefore, it is assumed that there is remaining capacity at the Clean Harbors Buttonwillow LLC facility.
Source: CalRecycle. 2012. Solid Waste Information System (SWIS). Online: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx. Site visited February 3, 2012.

In addition, the Proposed Project would be required to comply with Senate Bill 1374, which requires that 50 percent of construction debris be diverted from landfills. Therefore, only approximately 37,750 cubic yards of solid waste would be transported to the Prima Deshecha Landfill, Olinda Alpha Sanitary Landfill, or Frank R. Bowerman Sanitary Landfill. As such, impacts in this regard would be less than significant.

In addition, a relatively small amount of hazardous or otherwise regulated waste would be generated during construction and demolition activities. The hazardous and regulated waste would be disposed of at either the Kettleman Hill-B-18 Nonhaz Codisposal or Clean Harbors Buttonwillow LLC facilities. As illustrated in Table 4.15-1, the two hazardous waste disposal facilities have a remaining capacity of more than 6.0 million cubic yards and a daily throughput of 18,482 tons/day. This minimal amount of hazardous or otherwise regulated waste is anticipated to be easily accommodated by the existing landfills and therefore, impacts in this regard would be less than significant.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated, and the solid waste being generated as part of the Proposed Project would not materially increase in frequency or intensity. Any future operations and maintenance activities would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. Therefore, there would be no impacts.

4.15.4.8 Question 15g –Comply with federal, state, and local statutes and regulations related to solid waste?

Construction – No Impact

Construction of the Proposed Project is not anticipated to generate a substantial amount of solid waste. As analyzed in response to Question 15f, solid waste produced during construction would be disposed of at the Prima Deshecha Landfill. Management and disposal of solid waste would comply with all applicable federal, state, and local statutes and regulations.

Similarly, waste generated by the demolition of the existing facilities would be properly disposed of in accordance with all applicable federal, state, and local statutes and regulations, with particular regard for the management and disposal of any hazardous materials. All treated wooden poles removed from the site would be properly handled, transported, and disposed of at the Prima Deshecha Landfill, consistent with federal, state, and local statutes and regulations and SDG&E protocols. Thus, the Proposed Project would not violate any solid waste statutes or regulations.

In addition, any waste generated during construction and/or demolition that is hazardous or otherwise regulated hazardous waste control laws would be handled and disposed of according to applicable regulations. Hazardous and other regulated wastes are anticipated to be disposed of at either the Waste Management Kettleman Hills Facility (located in Kettleman, California) or at the Clean Harbor Environmental Services facility in Buttonwillow, California. Refer to Section

4.7, Hazards and Hazardous Materials, for more detailed information concerning anticipated hazardous wastes and potential impacts relating to the handling and disposal of such wastes.

Operation & Maintenance – No Impact

SDG&E currently maintains and operates extensive existing electric transmission, distribution and substation facilities throughout the Proposed Project site. SDG&E's existing operations and maintenance activities constitute the baseline against which the impacts of the Proposed Project are evaluated, and activities for the Proposed Project would not materially increase in frequency or intensity. Handling and disposal of all waste products associated with operation and maintenance activities would comply with all applicable statutes and regulations. Any future operations and maintenance activities would be evaluated under G.O. 131-D and CEQA for purposes of assessing whether further CPUC approval is required. Therefore, no impact would occur.

4.15.5 Applicant Proposed Measures

The Proposed Project would not result in any significant adverse impacts relating to utilities and service systems and therefore, no APMs are required.

4.15.6 References

CalRecycle. 2012. *Solid Waste Information System (SWIS)*. Online: http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx. Site visited February 3, 2012.

City of San Clemente. 1993. *General Plan*.

City of San Juan Capistrano. 2002. *General Plan*.

County of Orange. 2005. *General Plan.*

City of San Juan Capistrano. 2012. *Solid Waste and Recycling*. Online: http://www.sanjuancapistrano.org/Index.aspx?page=114. Site visited January 26, 2012.

City of San Juan Capistrano. 2012. Water and Sewer Department. Online: http://sanjuancapistrano.org/index.aspx?page=1193. Site visited January 26, 2012.

Municipal Water District of Orange County. 2012. Online: http://www.mwdoc.com/fast_facts.htm. Site visited January 26, 2012.

Municipal Water District of Orange County. 2011. *2010 Urban Water Management Plan*. Adopted June 2011.

South Orange County Wastewater Authority. 2012. Online: http://www.socwa.com/Home/Home.aspx. Site visited January 26, 2012.

This page intentionally left blank.

TABLE OF CONTENTS

4.16 CUMULATIVE IMPACTS 4.16-1
4.16.1 Introduction 4.16-1
4.16.2 Significance Criteria 4.16-1
4.16.3 Timeframe of Analysis 4.16-2
4.16.4 Area of Analysis 4.16-2
4.16.5 Methodology 4.16-2
4.16.6 Existing/Operating Projects 4.16-3
4.16.7 Foreseeable Projects Inventory 4.16-3
4.16.8 Potential Cumulative Impacts 4.16-13
4.16.9 Application Proposed Measures 4.16-33
4.16.10 References 4.16-33

LIST OF FIGURES

Figure 4.16-1: Foreseeable Projects Map 4.16-7

LIST OF TABLES

Table 4.16-1: Planned and Proposed Projects within One Mile of the Proposed Project Area 4.16-4

THIS PAGE IS INTENDED TO BE LEFT BLANK

4.16 CUMULATIVE IMPACTS

4.16.1 Introduction

This section of the PEA discusses potential cumulative impacts related to the construction and operation of the Proposed Project. The purpose of the Proposed Project is to increase reliability and reduce the risk of a system-wide outage affecting all of its customers and substations in the South Orange County region, as described further in Section 2.0, Proposed Project Purpose and Need. As explained below, the Proposed Project would result in the following potentially significant cumulative impacts during construction activities:

- Construction Emissions of Criteria Pollutants (mainly nitrogen oxides and particulate matter), and
- Traffic Congestion and Deterioration of LOS.

These significant cumulative impacts would only occur where construction of the Proposed Project occurs concurrently with construction of other planned projects located in the immediate vicinity of the Proposed Project. APMs have been included to minimize these impacts (refer to Sections 4.3, Air Quality and Greenhouse Gases, and 4.14, Transportation and Traffic). These APMs, along with similar mitigation measures and regulatory requirements for the adjacent projects, would ensure that these impacts are minimized.

The Proposed Project would not contribute to any cumulatively significant impacts during operation and maintenance activities in any of the resource areas evaluated under CEQA.

4.16.2 Significance Criteria

CEQA defines a cumulative impact as one *"which is created as a result of the project…together with other [past, present, and future] projects causing related impacts."* Cumulative impacts refer to two or more individual effects which, when considered together, are considerable and cumulatively exceed the criterion established for each resource area as described in Sections 4.1 through 4.15 of the PEA. In such cases, the Proposed Project's contribution is analyzed to determine whether it is cumulatively considerable. *CEQA Guidelines* § 15064(h)(1) further explain that

> *…when assessing whether a cumulative effect requires an [Environmental Impact Report], the lead agency shall consider whether the cumulative impact is significant and [whether] the project's incremental effect, though individually limited, is 'cumulatively considerable.'*

Applying this qualitative standard necessarily requires application of judgment based on the facts of a particular project subject to CEQA.

Further, the significance of an impact may be weighed against the overall effect as both increases and decreases in impacts may balance one another. As noted in the *CEQA Guidelines*:

> *The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."*

4.16.3 Timeframe of Analysis

For the purpose of this cumulative impacts analysis, the Proposed Project is defined in terms of construction duration as well as post-construction operation and maintenance activities. SDG&E anticipates that construction of the Proposed Project would take a total of approximately 48 months. Operation and maintenance of the Proposed Project would occur for the foreseeable future following the completion of construction.

4.16.4 Area of Analysis

In accordance with *CEQA Guidelines* Section 15130(b), past, present, and planned/reasonably foreseeable future projects located within one mile of the Proposed Project were reviewed in order to identify any projects that could, when combined with the Proposed Project, create a cumulatively considerable effect. The analysis of potential cumulative impacts was limited to within one mile of the Proposed Project components because this distance was estimated to be the furthest that the Proposed Project impacts would extend.

4.16.5 Methodology

Existing conditions and reasonably foreseeable projects were identified within a one-mile radius of each Proposed Project component. Information was gathered from internet searches of local planning department and state agency websites and correspondence with agency staff. The websites of the following entities were reviewed and/or these agencies contacted regarding development projects, road and utility improvement projects, and capital investment projects:

- County of San Diego,
- County of Orange,
- City of San Juan Capistrano,
- City of San Clemente,
- City of Laguna Nigel,
- CPUC,
- CEC,
- CAISO, and
- Caltrans.

4.16.6 Existing/Operating Projects

The Proposed Project is generally surrounded by suburban (mainly single-family housing) and commercial development within the cities of San Juan Capistrano and San Clemente with some areas of undeveloped land, mainly within the unincorporated Orange County. Section 4.9, Land Use and Planning, outlined all of the specific existing land uses for the entire Proposed Project vicinity.

4.16.7 Foreseeable Projects Inventory

For the purposes of this document, "reasonably foreseeable" refers to projects that federal, state, or local agency representatives have knowledge of resulting from the formal application processes. Table 4.16-1, Planned and Proposed Projects Within One Mile of the Proposed Project Area, lists known projects that are within one-mile of the Proposed Project facilities with the potential to create cumulative impacts. A total of 11 such projects have been identified within one-mile of the Proposed Project. Figure 4.16-1, Foreseeable Projects Map, depicts the location of each project with respect to the Proposed Project components.

Projects are included that are located within one mile of the Proposed Project and are of sufficient size and type such that, when combined with the Proposed Project, there would be a potential for cumulative effects on the environment. For example, small-scale discretionary projects like usage permit projects (such as liquor license applications) that are internal to an existing building and have no potentially significant impact to the environment, modifications to existing individual homes or businesses that do not result in any increases in noise, traffic, air emissions, etc. (i.e. architectural modifications to existing structures such as patios, decks, fences, and awnings), and site-specific residential developments, including swimming pools, backyard renovations, and 2nd story additions), do not create incremental environmental impacts that, when added with the impacts from the Proposed Project, could potentially result in a cumulatively significant impact.

The remainder of this page is intentionally left blank.

Table 4.16-1: Planned and Proposed Projects within One Mile of the Proposed Project Area

Project Name	Project Location[1]	Approximate Distance from the Proposed Project[1]	Project Description/Size	Anticipated Construction Schedule	
				Begin	End
La Pata Avenue Gap Closure and Camino Del Rio Extension Project	Unincorporated Orange County, city of San Clemente	Immediately adjacent to Pole Nos. 18 through 31	This project would eliminate an existing gap in the County arterial highway system and establish a connection between Ortega Highway (SR-74) to the north and Avenida Vista Hermosa to the south. The proposed project also includes the completion of the planned extension of Camino Del Rio to Avenida La Pata.	2015	2018
SR-241 Extension Project	Unincorporated Orange County, Unincorporated San Diego County, city of Rancho Santa Margarita, city of San Clemente	Crosses under (between) Pole Nos. 43 and 44, 5b and 6b, 13a and 14a, 19a and 20a, and is adjacent to the Talega Substation	The Foothill Transportation Corridor-South is the continuation of the existing SR-241, which would complete the Foothill Toll Road, or SR-241. The 16-mile project extends the SR-241 south from Oso Parkway in Rancho Santa Margarita / Mission Viejo to the I-5 at the San Diego County line near San Onofre.	Unknown	Unknown
SR-74 Widening Project	From Calle Entradero to San Juan Capistrano / County of Orange limit line	The west end of the SR-74 Widening Project is located approximately 0.3 mile west-southwest of Pole No. 8	Caltrans would be widening approximately 0.9 mile of SR-74 from two lanes to four lanes, between Calle Entradero and the Orange County line. Construction is anticipated to last approximately 18 months.	2013	2015
I-5/SR-74 Interchange Project	I-5 and SR-74 Interchange within the city of San Juan Capistrano	0.8 mile south of the Capistrano Substation site and 0.5 mile southwest of Pole No. 7	Caltrans would be reconstructing the I-5/SR-74 Interchange. The new interchange would replace all four on/off-ramps and would affect adjacent land uses as the new I-5/SR-74 interchange would be larger than the existing interchange. The affected area is approximately 22 acres.	2012	2015
The Oaks Project	SR-74 and Avenida Siega	0.7 mile northeast of Pole No. 12	Residential development including 32 single family units and a 10-acre equestrian facility. The affected area is approximately 20.4 acres.	Unknown	Unknown

Table 4.16-1 (cont.): Planned and Proposed Projects within One Mile of the Proposed Project

Project Name	Project Location[1]	Approximate Distance from the Proposed Project[1]	Project Description/Size	Anticipated Construction Schedule	
				Begin	End
The Ranch Planned Community Project/ Rancho Mission Viejo / Sendero Village	Unincorporated Orange County	Planning Area 1 (Sendero) is located approximately 0.75-mile northeast of Pole No. 5 and Planning Area 8 is located approximately 0.72 mile northeast of the Talega Substation.	The Ranch Planned Community includes 14,000 residential units, 3.48 million square feet of Urban Activity Center uses, 500,000 square feet of Neighborhood Center uses, 1.22 million square feet of Business Park uses, a 25-acre Golf Resort, and 15,132 acres of open space. The first village on the Ranch would be Sendero, scheduled to open in summer of 2013 and currently under construction. The Sendero Village would be 690 acres in size and would include approximately 940 attached and detached homes, 200 apartment units, a gated active adult enclave of 285 single-level residences adjacent to a private clubhouse and recreational facilities. Additional features include a community hall, clubhouse and recreational core, a 15-acre community park, neighborhood parks, hiking/biking trails accessing Reserve trails and a County Regional hiking and biking trails network, a 10-acre retail plaza, fire station, and a child day care center.	Sendero is under construction. No dates for other construction.	2013 for Sendero. ~2030 for all construction
Historic Town Center (San Juan Capistrano) Master Plan	Down Town San Juan Capistrano – SR-74, Camino Capistrano, Del Obispo Street	0.6 mile southwest of Pole No. 6 and 0.7 mile south of the Capistrano Substation site	Re-define zoning and land use plan for the downtown area of San Juan Capistrano. The project would provide guidance for future redevelopment of the downtown San Juan Capistrano area. The Plaza Banderas Hotel and Mission Gate House Preservation Projects (see below) are the first two development projects under the Historic Town Center Master Plan. The overall project size is approximately 150 acres.	Unknown	~2035

Table 4.16-1 (cont.): Planned and Proposed Projects within One Mile of the Proposed Project

Project Name	Project Location[1]	Approximate Distance from the Proposed Project[1]	Project Description/Size	Anticipated Construction Schedule	
				Begin	End
Plaza Banderas Hotel	SR-74 and El Camino Real	0.6 mile southwest of Pole No. 6 and 0.7 mile south of the Capistrano Substation site	Mixed use development including a 124-room hotel, a 5,747 square-foot restaurant, 14,500 square feet of downtown commercial development, and a 1,971 square-foot office building. The affected area is approximately 3.18 acres. The Plaza Banderas Hotel is one of the first planned elements of the Historic Town Center Master Plan.	Unknown	Unknown
Mission San Juan Capistrano Gate House Preservation Project	SR-74 and Camino Capistrano	0.7 mile south of the Capistrano Substation site and 0.7 mile southwest of Pole No. 6	Alterations and repairs to the entry gate, gate house, electric room, gift shop, exterior wall, and landscaping for the Mission San Juan Capistrano.	Unknown	Unknown
Water and Sewer Line Construction	Del Obispo Street	0.9 mile south of the Capistrano Substation site	The city of San Juan Capistrano would be constructing/updating water and sewer lines and facilities throughout the city. This particular project is located in the Historic Town Center planning area, immediately south of the planned Plaza Banderas Hotel. The affected area is approximately 2 acres.	2012	2015
Rancho San Juan (Phase 1 and 2)	Intersection of La Pata Road and Vista Montana	Adjacent to Segment 2 of the Proposed Project	Residential development including 155 single family homes south of Vista Montana (Phase 1) and a 100-unit apartment complex north of Vista Montana, east of the San Juan Hills High School (Phase 2). The affected area is approximately 125 acres. Phase 1 is under construction and Phase 2 is under consideration (discretionary review) by the city of San Juan Capistrano.	Phase 1 is currently under construction; Phase 2 is under review by the city	Unknown

Notes:
[1]Refer to Figure 4.16-1 for locations of all of the projects listed in this table and locations relative to the Proposed Project facilities.
Sources: city of San Juan Capistrano, Caltrans, city of San Clemente, Orange County Public Works, Rancho Mission Viejo



Path: G:\SOCRUP\MXD\Project Description 2012\Figure 4-16 Foreseeable Projects11x17.mxd 04-25-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Transmission Line - Overhead
- Proposed Transmission Line - Underground
- SR-241 Extension Project
- La Pata Avenue Gap Closure and Camino Del Rio Extension
- SR-74 Widening
- Sendero Village (The Ranch Plan)
- Water and Sewer Line Construction
- The Oaks
- Historic Town Center Master Plan
- Mission San Juan Capistrano Gate House Preservation
- Plaza Banderas Hotel
- Rancho San Juan Phase 1
- Rancho San Juan Phase 2
- I-5/SR-74 Interchange

N

0 750 1,500 3,000 Feet

South Orange County Reliability Enhancement Project

Foreseeable Projects Map

Figure 4.16-1

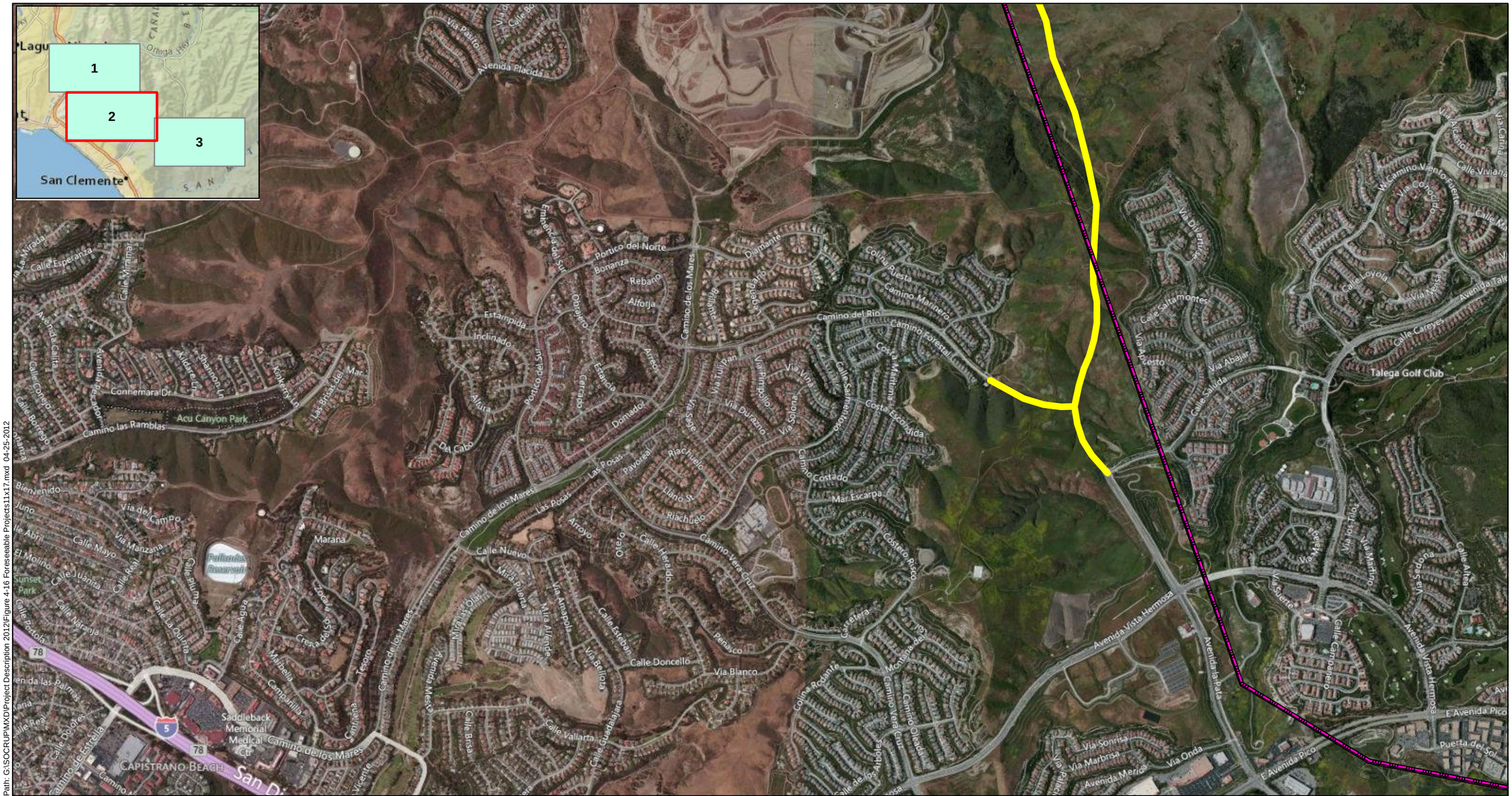
Sheet 1 of 3

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.16-1 (SHEET 1)


1
2
3
San Clemente
Via Pasitos
Avenida Placida
Calle Esperanza
Calle Mirabel
Avenida Calita
Connemara Dr
Acu Canyon Park
Camino las Ramblas
Las Brisas del Mar
Shannon Ln
Kildare Ct
Kenmore Ln
Calle Conejo
Calle Borrego
Embercia del Sur
Portico del Norte
Bonanza
Rebano
Alforja
Estampida
Inclinado
Obrajero
Portico del Sur
Cerrado
Estancia
Arroyo
Alfarda
Del Cabo
Camino de los Mares
Diamante
Rubi
Topacio
Colina Puesta
Camino del Rio
Camino Marinero
Camino Forestal
Via Tulipan
Via Pimpollo
Via Durazno
Via Viña
Via Solana
Calle Sahuesaco
Costa Mariposa
Costa Escondida
Las Posas
Pavoreal
Riachuelo
Llano St
Camino Costado
Mar Escarpa
Costero Risco
Bienvenido
Juno
Via del Campo
Via Manzana
Calle Mayo
Calle Real
Calle Abril
El Molino
Sunset Park
Calle Juanita
Calle Naranja
Calle Portola
Calle Alumna
Calle La Quinta
Calle Agua
Marana
Palisades Reservoir
Cresta Vista
Tesoro
Malibella
Campanilla
Camino de los Mares
Arenal
Mira Las Olas
Mira Puerta
Mira Alliende
Via Amapola
Calle Nuevo
Arroyo
Calle Esteban
Via Bellota
Calle Doncello
Via Blanco
Penasco
Calle Herald
Camino Vera Cruz
Carretera
Colina Robanta
Camino Oleada
Calle de los Arboles
Avenida Vista Hermosa
Avenida la Pata
Via Sonrisa
Via Marbrisa
Avenida Merica
Via Onda
E Avenida Pico
Puerta del Sol
Via Alcamo
Via Conocido
Via Cantina
Calle Viviana
Via Camino Viento Fuerte
Calle Loyola
Via Mendoza
Avenida Talega
Calle Saltamontes
Via Arroyo
Via Abejar
Calle Salida
Calle Careyes
Talega Golf Club
Via Serena
Via Suerte
Via Martino
Calle Campanero
Calle Altea
Via Lobo
Via Rosa
Via Rosada
Via Rosita
Via Rosal
Via Rosaleda
Via Rosalinda
Via Rosalia
Via Rosalina
Via Rosalita
Via Rosalia
Via Rosalina
Via Rosalita
Via Rosalia
Via Rosalina
Via Rosalita

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 4.16-1 (SHEET 2)



Path: G:\SOCRUP\MXD\Project Description 2012\Figure 4-16 Foreseeable Projects11x17.mxd 04-25-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Transmission Line - Overhead
- Proposed Transmission Line - Underground
- SR-241 Extension Project
- La Pata Avenue Gap Closure and Camino Del Rio Extension
- SR-74 Widening
- Sendero Village (The Ranch Plan)
- Water and Sewer Line Construction
- The Oaks
- Historic Town Center Master Plan
- Mission San Juan Capistrano Gate House Preservation
- Plaza Banderas Hotel
- Rancho San Juan Phase 1
- Rancho San Juan Phase 2
- I-5/SR-74 Interchange

N

0 750 1,500 3,000 Feet

South Orange County Reliability Enhancement Project

Foreseeable Projects Map

Figure 4.16-1

Sheet 3 of 3

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 4.16-1 (SHEET 3)

4.16.8 **Potential Cumulative Impacts**

This section of the PEA discusses potential cumulative impacts associated with the Proposed Project. As discussed in Section 4.16.2, cumulative impacts are those impacts that result from a combination of effects from the Proposed Project and other past, present, or planned, approved, or otherwise probable future projects. In order for cumulatively significant impacts to result, projects must generally share two factors in common; schedule and location. Thus, for cumulative impacts to occur, the Proposed Project must occur within the vicinity of other projects and be either constructed or operated at the same time. Projects that were not within one mile of the Proposed Project and would not likely be constructed or operated at the same time as the Proposed Project are not analyzed herein.

The potential cumulative impacts are analyzed for the following resource areas:

- Aesthetics,
- Air Quality and Greenhouse Gases,
- Biological Resources,
- Cultural Resources,
- Geology and Soils,
- Hazards and Hazardous Materials,
- Hydrology and Water Quality,
- Noise,
- Population and Housing,
- Public Services,
- Transportation and Traffic, and
- Utilities and Service Systems.

For each of these resource areas, only the areas in which a potential cumulative impact exists are discussed. Where there is no potential for the Proposed Project to create an adverse effect relating to an individual CEQA Appendix G criterion, no potential for cumulative effects were deemed possible and the particular criterion is not discussed. At the beginning of each subsection below, the specific criterion with no potential for impacts are listed. Where there is potential for adverse impact, the pertinent CEQA Appendix G criteria are discussed and the Proposed Project's contribution of any cumulatively considerable effects is analyzed.

No impacts were identified relating to the following CEQA Appendix G resource areas; therefore there is no discussion of potential cumulative impacts relating to these resources areas:

- Agriculture and Forestry,
- Mineral Resources,

- Land Use and Planning, and
- Recreation.

4.16.8.1 Aesthetics

The Proposed Project would not have any impacts associated with the following CEQA Appendix G significance criteria relating to aesthetics or visual resources during construction or operations and maintenance:

- Substantial adverse effects on scenic vistas (Question 1a), and
- Substantial damage to scenic resources (Question 1b).

In addition, as outlined in Section 4.1, Aesthetics, there is no potential for impacts during operation and maintenance of the Proposed Project associated with the following CEQA Appendix G significance criteria:

- New sources of light or glare (Question 1d).

Therefore, there would be no potential for cumulatively considerable impacts associated with these significance criteria and the above listed criteria are not further discussed herein. The remaining aesthetics-related impacts are discussed below for construction, operation, and maintenance of the Proposed Project.

Construction

Overall Visual Character

Construction of the Proposed Project is anticipated to have temporary, less than significant impacts on the overall visual character of the surrounding area. Similarly, the projects listed in Table 4.16-1 would also result in temporary impacts in this regard. Where construction of multiple projects overlap, and construction equipment and activities are visible within the same viewsheds, impacts would be cumulatively considerable. The Proposed Project could contribute to cumulative effects on the overall visual character of the surrounding area in conjunction with the following projects, assuming that construction activities overlap:

- Rancho San Juan (Phase 1 and 2),
- La Pata Avenue Gap Closure and Camino Del Rio Extension, and
- SR-241 Extension.

However, any resulting cumulatively considerable adverse impacts are not anticipated to be significant because construction of the Proposed Project would be mitigated through implementation of APMs (thereby minimizing the visual impact of Proposed Project construction), construction itself would be temporary, and there would be limited numbers of potential receptors. Where construction of the Proposed Project and the La Pata Avenue Gap Closure and Camino Del Rio Extension and SR-241 Extension projects physically overlap, the areas in which these cumulative projects would be visible contain few viewers, and large portions of the view would be blocked by intervening terrain, vegetation and other existing

topographic features that would limit potential public views of the construction activities. With respect to the Rancho San Juan project, construction of Phase 1 has already begun, and Phase 2 is unlikely to begin prior to completion of the construction of the Proposed Project, therefore it is not considered likely that construction would overlap with the Proposed Project, limiting the potential for the generation of adverse cumulative impacts.

While the following groups of projects identified in Table 4.16-1 could combine to create cumulatively considerable impacts to the overall visual character (due to the physical extent and location of construction activities), the Proposed Project construction would not substantially contribute to this effect because the Proposed Project is located at least 0.5 mile from each of the below listed groups of projects and, therefore, project construction is unlikely to be visible within a common viewshed with either of these groups of projects:

- Oaks, Sendero Village, and SR-74 Widening projects, and
- The Plaza Banderas Hotel, I-5/SR-74 Interchange, Water and Sewer Line Construction, and the Mission San Juan Capistrano Gate House Preservation projects.

Therefore, the Proposed Project is not anticipated to contribute to any significant cumulative adverse impacts relating to the overall visual character of the Proposed Project area.

New Light or Glare

Construction of the Proposed Project is anticipated to have less than significant impacts relating to new light or glare (refer to Section 4.1, Aesthetics). Minimal construction work would be performed at night; therefore the potential for significant cumulative impacts is low. The main location of night work is at the proposed San Juan Capistrano Substation site. There are, however, no other projects outlined in Table 4.16-1 within the vicinity of the proposed San Juan Capistrano Substation site that could combine with the Proposed Project to create cumulatively considerable adverse effects. Therefore, the Proposed Project is not anticipated to contribute to any cumulatively considerable adverse effects in this regard.

Operation & Maintenance

Overall Visual Character

Operation and maintenance of the Proposed Project is anticipated to have less than significant impacts on the overall visual character of the surrounding area with the incorporation of APMs (refer to Section 4.1, Aesthetics). The majority of the Proposed Project would be constructed within an existing transmission corridor and at two existing substation sites. The most intense visual changes that would result from the Proposed Project would be at the new San Juan Capistrano Substation. As outlined in Table 4.16-1 and Figure 4.16-1, there are no potential projects in this area that could combine with the Proposed Project to create a cumulative adverse effect on the overall visual character of the area.

Many of the projects listed in Table 4.16-1 would result in significant changes to the overall visual character of the surrounding area, most notably including the Plaza Banderas Hotel, The Ranch Plan/Sendero Village, Rancho San Juan, SR-241 Extension, and the La Pata Avenue Gap Closure and Camino Del Rio Extension projects. However, where these projects are in close

vicinity to the Proposed Project, significant cumulative effects are not anticipated because the Proposed Project facilities would be very similar, and located in very similar alignment, to current existing electric transmission and distribution facilities. Furthermore, the Plaza Banderas Hotel and Sendero Village projects are located over 0.7 mile from Proposed Project facilities and would not be visible in the same viewshed as the Proposed Project. Therefore, the Proposed Project is not anticipated to contribute to any cumulatively considerable adverse effects on the overall visual character of the Proposed Project area.

4.16.8.2 Air Quality and Greenhouse Gases

The Proposed Project would not have any impacts associated with the following CEQA Appendix G significance criterion relating to air quality and GHG during construction or operations and maintenance:

- Diminish existing rule or future compliance requirement (Question 3f).

In addition, as outlined in Section 4.3, Air Quality and Greenhouse Gases, there is no potential for impacts during operation and maintenance of the Proposed Project associated with the following CEQA Appendix G significance criterion:

- Objectionable odors (Question 3e).

Therefore, there would be no potential for cumulatively considerable impacts associated with these significance criteria and the above listed criteria are not further discussed herein. The remaining air quality and GHG-related impacts are discussed below for construction, operation, and maintenance of the Proposed Project.

Construction

Construction of the Proposed Project is anticipated to result in short-term significant impacts to air quality standards and less than significant impacts relating to compliance with the 2007 AQMP, exposure of sensitive receptors to pollutant emissions, creation of objectionable odors, generation of GHGs, and compliance with GHG plans, policies, and regulations. The potential for cumulatively considerable effects relating to these significance criteria is discussed below.

Compliance with the 2007 AQMP

Construction of the Proposed Project would comply with all requirements for construction equipment and fugitive dust control as outlined in the 2007 AQMP and is therefore anticipated to have only less than significant impacts. The 2007 AQMP anticipated construction within its emissions budget and assumes that projects would comply with the applicable rules and regulations implemented to attain and maintain air quality standards. Therefore, it is assumed that the projects outlined in Table 4.16-1 would also comply with all air quality applicable rules and regulations and as such there would be no cumulatively considerable adverse effect on compliance with the 2007 AQMP.

Air Quality Standards

As stated above and within Section 4.3, Air Quality and Greenhouse Gases, emissions from construction of the individual segments of the Proposed Project would result in significant, short-term impacts relating to emission of the criteria pollutant nitrogen oxide for both the regional significance thresholds and LSTs, and PM_{10} and $PM_{2.5}$ would exceed the localized significance thresholds. Maximum construction emissions with overlapping segments would result in significant, short-term impacts relating to emission of all criteria pollutants except sulfur dioxide. Similar to the Proposed Project, many of the projects listed in Table 4.16-1 could also result in significant, short-term impacts to air quality. Therefore, cumulatively considerable adverse effects would result where construction activities for multiple projects occur simultaneously. However, it is assumed that all projects would comply with the SCAQMD rules and regulations for the control of construction-generated emissions. Cumulative impacts would be significant and unavoidable, but are assumed to be minimized to the greatest extent feasible through compliance with SCAQMD rules and regulations and through the APMs outlined in Section 4.3, Air Quality and Greenhouse Gases.

Exposure of Sensitive Receptors

The Proposed Project was determined to have less than significant impacts relating to emissions of TACs during construction activities. These less than significant impacts are related to emissions of diesel particulate matter, which has been identified as having carcinogenic and chronic health effects. However, the duration of construction dictates that emissions would not occur long-term, and would occur in multiple, varying locations, thus diluting the potentially harmful emission throughout the length of the Proposed Project area. While the projects listed in Table 4.16-1 could have similar potential effects relating to exposure to sensitive receptors, these impacts would similarly be associated with construction activities, which are by nature short-term compared to carcinogenic and chronic exposure periods established by the CARB and the Office of Environmental Health Hazard Assessment guidelines. In addition, emissions would be minimized through project-level and regional compliance with the SCAQMD's rules and regulations for controlling construction-related emissions. Therefore, cumulative impacts are less than significant.

Objectionable Odors

Construction of the Proposed Project is anticipated to have less than significant impacts associated with the emission of objectionable odors. Typical odor nuisances include emissions of substances such as hydrogen sulfide, ammonia, chlorine, and other sulfide-related compounds. No substantial sources of these pollutants would exist during construction of the Proposed Project, and none of the projects identified in Table 4.16-1 are likely to result in the emission of any of these substances during construction or operation, because none of them are the type of project that typically uses odor-producing compounds. Construction equipment and construction operations for the Proposed Project and the cumulative projects would emit trace pollutants that could be considered to have objectionable odors, such as diesel exhaust. However, these odors would be temporary in nature, even where construction of the Proposed Project would occur simultaneously with other projects. Where construction of the Proposed Project is nearest to potential receptors for objectionable odors (near the proposed San Juan Capistrano Substation) there are no other planned or likely foreseeable projects that could potentially contribute to

cumulatively considerable adverse effects. Therefore, no cumulatively considerable adverse effects are anticipated relating to objectionable odors.

Greenhouse Gas Emissions

The Proposed Project would result in GHGs emissions during construction. These emissions would be below the SCAQMD's threshold of 10,000 metric tons of carbon dioxide equivalents annually for industrial projects. Impacts are therefore anticipated to be less than significant.

All GHG emissions can be considered to have a cumulative effect, and potential cumulative impacts associated with GHG emissions can be considered a state-wide effect. Existing thresholds were developed with this in mind. While construction of the Proposed Project could combine with construction of other projects to result in total GHG emissions that could exceed the SCAQMD threshold, these impacts and would not substantially hinder the long-term reduction of GHG emissions within the State of California. Therefore, cumulative effects are less than significant.

Compliance with Adopted GHG Plans, Policies, and Regulations

Construction of the Proposed Project would comply with AB 32 and CARB requirements for the reduction of GHG emissions. Construction emissions were also determined to be below the SCAQMD's significance threshold for industrial projects. Therefore, impacts are anticipated to be less than significant. While construction of the Proposed Project could combine with construction of other projects to result in total emissions that could exceed the SCAQMD threshold, these impacts would not substantially hinder the long-term reduction of GHG emissions within the State of California. Therefore, cumulatively considerable adverse effects are not anticipated from construction of the Proposed Project.

Operation & Maintenance

Air Quality Standards, Compliance with the 2007 AQMP, and Sensitive Receptors

In general, operation and maintenance activities for Proposed Project would be less than or equal to current operations and maintenance activities at the Capistrano and Talega Substations and along the Talega to Capistrano transmission corridor. Actual emissions from operation and maintenance activities were all calculated to be below SCAQMD significance thresholds, and therefore would not result in significant impacts. Therefore, the potential for significant cumulatively considerable adverse effects relating to emissions and/or compliance with the 2007 AQMP is considered to be very low and less than significant.

Greenhouse Gas Emissions and Policies

Operation and maintenance GHG emissions were calculated to be well below the SCAQMD's GHG significance threshold for industrial projects (refer to Section 4.3, Air Quality and Greenhouse Gases). Some of the projects listed in Table 4.16-1, such as those with new residential development, could result in increased GHG emissions. But other projects listed in Table 4.16-1, such as roadway extension projects, would reduce GHG emissions by improving regional circulation and reducing regional vehicles miles traveled and vehicle hours traveled.

For example, the EIR for the La Pata Avenue Gap Closure and Camino Del Rio Extensions project concluded that the project would reduce GHG emissions by 28,012 lbs per day.

None of the projects listed in Table 4.16-1 are anticipated to include sulfur hexafluoride. No cumulative impacts associated with the use and fugitive emission of sulfur hexafluoride are therefore anticipated.

Some of the projects listed in Table 4.16-1, such as the Sendero Village, Rancho San Juan, and the Oaks, would induce future population growth or development. The Proposed Project, however, would not induce this growth or development and would therefore not result in increased GHG emissions from growth or development.

In conclusion, any cumulative impacts to air quality and GHGs during operation and maintenance of the Proposed Project are anticipated to be less than significant.

4.16.8.3 Biological Resources

The Proposed Project would not have any impacts associated with the following CEQA significance criteria relating to biological resources during construction or operations and maintenance:

- Conflict with local policies and ordinances (Question 4e), and
- Conflict with adopted habitat conservation plans (Question 4f).

In addition, the Proposed Project would not have any impacts during operation and maintenance activities. Therefore, there is no potential for cumulative impacts associated with these significance criteria or operation and maintenance of the Proposed Project. The remaining biological resources-related impacts are discussed below for construction of the Proposed Project.

Construction

Impacts to Protected Species, Habitats, or Species Movement/Migration

Construction of the Proposed Project is anticipated to have less than significant impacts relating to state and federally listed species, protected habitats, and species movement and/or migration. Impacts to native vegetation communities resulting from the construction of substations, transmission lines, access roads, other support facilities, and temporary construction areas can be cumulatively significant when assessed with regional projects. As illustrated in Table 4.16-1, there are 11 projects that are either within a one-mile radius of the Proposed Project or large enough to have a regionally significant impact.

The majority of the Proposed Project's permanent impacts would be limited to areas that are not highly sensitive, with the exception of less than 1.5 acres of permanent impacts from poles and access roads located in CSS. The areas of permanent impacts from poles or access roads do not occur all in one place but rather are spread across the length of the transmission line in locations that are predominantly undeveloped and therefore continue to have substantial acreage of land available for biological resources and wildlife migration despite the Proposed Project's impact.

Cumulative impacts within a region are most effectively mitigated by comprehensive plans that addresses the impacts of regional growth on wildlife and its habitats. SDG&E has developed and implemented a regional, multi-species conservation program within its southern California range, known as the *SDG&E Subregional* NCCP. The *SDG&E Subregional NCCP* was developed in accordance with the California NCCP Act to reduce and mitigate for regionally cumulative impacts to biological resources. Impacts to CSS are pre-mitigated through the *SDG&E Subregional NCCP*, and therefore the Proposed Project's impacts to CSS would not be significant. Implementation of mitigation measures in the *SDG&E Subregional NCCP* would ensure that any other cumulative impacts to biological resources would not be significant. Similarly, all other projects listed in Table 4.16-1 would be required to mitigate any impacts to state and federally listed species and/or habitats through compliance with State and Federal Endangered Species Acts, CWA, and applicable local habitat conservation plans. Therefore, any impacts to biological resources from other projects listed in Table 4.16-1 would also be mitigated, and as such, cumulatively considerable impacts to biological resources would be less than significant.

4.16.8.4 Cultural Resources

The Proposed Project would not have any impacts associated with the following CEQA Appendix G significance criterion relating to cultural resources during construction or operations and maintenance:

- Impacts to historic resources (Question 5a).

In addition, operation and maintenance of the Proposed Project is not anticipated to have impacts on cultural resources. Therefore, no cumulative impacts would result from this significance criterion or operation and maintenance of the Proposed Project. The remaining cultural resources-related impacts are discussed below for construction of the Proposed Project.

Construction

Construction of the Proposed Project is anticipated to have less than significant impacts relating to cultural and paleontological resources with implementation of APMs (refer to Section 4.5, Cultural Resources) and less than significant impacts to human remains. For construction projects that occur within undisturbed soil units, potentially significant impacts to buried cultural resources can occur. Potential impacts can also occur where historic, cultural, and paleontological resources have been identified.

It is anticipated that projects of various scale and type would be developed within the area of the Proposed Project, given the nature of the area and the length and alignment of the transmission routes. As illustrated in Table 4.16-1, there are 11 projects that are either within a one-mile radius of the Proposed Project or large enough to have a regionally significant impact. However, impacts to cultural resources are site-specific, and as such are not expected to combine with the development of other projects to cumulatively increase the risk of impacting historic or prehistoric archaeological or paleontological resources or human remains. Potential impacts are mitigated on a case-by-case basis. As such, the Proposed Project's contribution to cumulative impacts related to cultural resources would be less than significant, with the APMs outlined in Section 4.5, Cultural Resources.

4.16.8.5 Geology, Soils, and Mineral Resources

The Proposed Project would not have any impacts associated with the following CEQA Appendix G significance criteria relating to geology, soils, and mineral resources during construction or operations and maintenance:

- Alquist-Priolo Earthquake Faults (Question 6a[i]),
- Soils incapable of supporting septic system use (Question 6e), and
- Loss of mineral resources (Questions 6f and 6g).
- In addition, as outlined in Section 4.6, Geology, Soils and Mineral Resources, there is no potential for impacts during operation and maintenance of the Proposed Project.

Therefore, there would be no potential for cumulatively considerable impacts associated with these significance criteria or operation and maintenance of the Proposed Project. The remaining geology, soils and mineral resources impacts are discussed below for construction of the Proposed Project.

Construction

Seismic and Geologic Hazards

Construction of the Proposed Project is anticipated to have less than significant impacts relating to seismic and geologic hazards, with implementation of APMs (refer to Section 4.6, Geology, Soils, and Mineral Resources). Potential geologic hazards, such as seismic shaking, liquefaction, and landslides, could adversely affect the Proposed Project, as well as some of the projects listed within Table 4.16-1. For instance, the La Pata Avenue Gap Closure and Camino Del Rio Extension project would involve construction of a new roadway segment through areas with some of the same geologic risks affecting the Proposed Project (such as landslide risk). However, these potential impacts are largely mitigated through adherence to design and engineering standards, which are applicable to all of the projects listed in Table 4.16-1. Furthermore, construction activities are short-term, and workers are not exposed to potential risks for long periods of time (i.e. only during work hours). Finally, construction activities would not occur at the same site, thereby reducing the probability of multiple construction crews (i.e. from different projects) substantially increasing the number of people exposed to potential risks during construction activities.

Soil Erosion and Loss of Topsoil

Construction of the Proposed Project would have less than significant impacts relating to soil erosion and loss of topsoil. The following projects would result in similar impacts during construction activities, and are located in close proximity to the Proposed Project:

- La Pata Avenue Gap Closure and Camino Del Rio Extension,
- SR-241 Extension, and
- Rancho San Juan (phase 1 and 2).

While these projects would have impacts relating to soil erosions and loss of topsoil in the immediate vicinity of the Proposed Project, all of these projects (including the Proposed Project) would be subject to NPDES requirements, including the preparation of a SWPPP. Adherence to NPDES requirements and erosion control BMPs included within the SWPPPs would ensure that while the cumulative effects from the combined projects would be less than significant.

4.16.8.6 Hazards and Hazardous Materials

The Proposed Project would not have any impacts associated with the following CEQA significance criteria relating to hazards and hazardous materials during construction or operations and maintenance:

- Section 65962.5 listed sites (Question 7d),
- Airport land use plans (Question 7e), and
- Private airstrip safety hazards (Questions 7f).

In addition, as outlined in Section 4.7, Hazards and Hazardous Materials, there is no potential for impacts during operation and maintenance of the Proposed Project.

Therefore, there would be no potential for cumulatively considerable impacts associated with these significance criteria or operation and maintenance of the Proposed Project. The remaining hazards and hazardous materials-related impacts are discussed below for construction of the Proposed Project.

Construction

Routine Transport and Handling of Hazardous Materials and Wastes

The Proposed Project would result in less than significant impacts associated with the routine handling and transport of hazardous materials as well as for potential accident or upset conditions with implementation of APMs (refer to Section 4.7, Hazards and hazardous Materials). Specifically, these impacts are reduced to a level less than significant through incorporation of APM HAZ-1 and adherence to existing hazardous materials and worker safety regulations, including SDG&E Environmental Standards and construction BMPs. APM HAZ-1 is specific to the existing Capistrano Substation and is not applicable to any other projects. Any other similar potential hazardous materials impacts associated with the projects outlined in Table 4.16-1 would similarly be minimized through adherence to existing regulations. None of the projects outlined within Table 4.16-1 involve large-scale utilization of hazardous or acutely hazardous substances (such as chemical plants, refineries, or heavy manufacturing) and as such the possibility of a cumulatively considerable threat from the routine transport or reasonably foreseeable accident or upset conditions involving hazardous materials is less than significant.

Hazardous Emissions within 0.25 Mile of a School

Construction of the San Juan Capistrano Substation would involve the handling of hazardous building materials such as asbestos-containing materials and lead-based paints. Adherence to existing worker safety and hazardous waste control regulations would ensure that potential impacts to nearby schools are less than significant. Additionally, none of the projects outlined in

Table 4.16-1 are in the immediate vicinity of the San Juan Capistrano Substation site (or the JSerra and Saddleback Valley Christian schools north of the San Juan Capistrano Substation site) and none of these projects would be likely to involve acutely hazardous materials or emissions. Therefore, any cumulative impacts would be less than significant.

Emergency Response and Evacuation

The Proposed Project would not interfere with any emergency plans. Refer to discussion for cumulative impacts associated with traffic and transportation under Section 4.16.8.13 (Transportation and Traffic) below.

Fire Hazards

Construction of the Proposed Project is anticipated to have less than significant impacts relating to fire hazards (refer to Section 4.7, Hazards and Hazardous Materials). Construction of the Proposed Project through vegetated areas, including areas designated as FTZs, could be cumulatively considerable with other projects that would involve construction in the same areas (including the La Pata Avenue Gap Closure and Camino Del Rio Extension and the SR-241 Extension projects). The remaining projects outlined in Table 4.16-1 are either not located in heavily vegetated areas or not in the immediate vicinity of the Proposed Project construction within such areas. With respect to potentially cumulatively considerable impacts resulting from construction of the Proposed Project and either the La Pata Avenue Gap Closure and Camino Del Rio Extension project or the SR-241 Extension project, impacts would be less than significant because none of these projects would expose large numbers of people to the risk of wildland fire and because all three projects involve construction of infrastructure and not housing, commercial, or industrial development.

4.16.8.7 Hydrology and Water Quality

The Proposed Project would not have any impacts associated with the following CEQA significance criteria relating to hydrology and water quality during construction or operations and maintenance:

- Substantial depletion of groundwater (Question 8b), and
- Placement of housing within flood zones (Question 8g).

In addition, as outlined in Section 4.8, Hydrology and Water Quality, there is no potential for impacts during operation and maintenance of the Proposed Project associated with the following CEQA significance criteria:

- Effects on existing drainage patterns (Questions 8c and 8d).

Therefore, there would be no potential for cumulatively considerable impacts associated with these significance criteria and the above listed criteria are not further discussed herein. The remaining hydrology and water quality-related impacts are discussed below for construction, operation, and maintenance of the Proposed Project.

Construction

Stormwater and Water Quality

Construction of the Proposed Project would result in less than significant impacts to water quality standards, stormwater, and other water quality. While construction of the Proposed Project has the potential to cause detrimental impacts to water quality, these potential adverse effects are minimized by complying with existing regulations, including NPDES and stormwater control regulations, and by implementing the *SDG&E BMP Manual*.

The projects listed in Table 4.16-1 would have similar potential to degrade water quality during construction, but these projects would also be subject to existing water quality and stormwater regulations and would also generally be considered to have less than significant impacts on water quality. The roadway extension projects listed in Table 4.16-1 could result in adding elevated levels of pollutants to the surface water drainage system from stormwater runoff from new or expanded roadways. Construction of the Proposed Project would not substantially contribute to this effect, however, because it would not increase the amount of impermeable surfaces.

None of the projects outlined in Table 4.16-1 involve direct discharges to surface waters that could result in significant adverse effects to surface water quality, although some of the projects would likely include impacts to WUS and waters of the State of California. Regardless, construction of the Proposed Project is not anticipated to result in significant adverse effects to surface water quality. No cumulatively considerable effects are anticipated. Overall, the Proposed Project is not anticipated to contribute to any cumulatively considerable adverse effects on water quality.

Drainage Patterns

Construction of the Proposed Project would not result in substantial effects to the existing drainage patterns in the Proposed Project area. Impacts are therefore anticipated to be less than significant. The Proposed Project would involve grading and earth-moving activities that could indirectly effect drainage patterns and flow rates. However, construction of the Proposed Project would ensure that grading and earthwork does not substantially alter the existing drainage pattern and would not result in increased surface flow outside of existing drainage patterns. The Proposed Project would therefore no result in significant adverse effects to surface water quality.

Some of the projects listed in Table 4.16-1 would alter existing drainage patterns and drainages within the Proposed Project area: Rancho San Juan, SR-241 Extension, and the La Pata Avenue Gap Closure and Camino Del Rio Extension projects. However, the Proposed Project does not include new impermeable surfaces that would substantially increase surface flow and would not actually impact existing drainages. The Proposed Project is therefore not anticipated to substantially contribute to any cumulatively considerable adverse effect on the existing drainage pattern or surface flow.

100-Year Flood Zone and Mudflow Effects

While the Proposed Project would place two pole structures within the 100-year flood zone, these structures would not create a substantial risk to people or other structures, and would be designed to withstand foreseeable floods conditions. Therefore, impacts are anticipated to be

less than significant. These structures are relatively small in scale in relation to the flood zone and are not expected to substantially alter flood conditions in the vicinity. While the Oaks and Sendero Village projects appear to potentially place habitable structures within the 100-year flood zone, the Proposed Project does not and would therefore not contribute to any cumulatively considerable adverse effect.

The Proposed Project would implement soil erosion and stormwater control BMPs and would therefore not result in significant impacts relating to potential mud flow conditions. The La Pata Avenue Gap Closure and Camino Del Rio Extension project would have the potential to create and/or be affected by mud flow conditions. This project, however, would be subject to the same stormwater control regulations, including BMPs, as the Proposed Project. The La Pata Avenue Gap Closure and Camino Del Rio Extension project has also been designed to include remedial grading activities to mitigate the potential for mud flow conditions to result from, or effect, the project or the surrounding area.

The Proposed Project is not anticipated to contribute to any cumulatively considerable adverse effects relating to the 100-year flood zone or mudflow.

Operation & Maintenance

Stormwater and Water Quality

Operation and maintenance of the Proposed Project is anticipated to have less than significant impacts to stormwater and water quality. Potential adverse effects on water quality during operation and maintenance of the Proposed Project would be controlled by complying with existing water quality regulations, such as the SPCC regulations, and implementing the *SDG&E BMP Manual*. Operation and maintenance of the Proposed Project would also be very similar to existing operation and maintenance activities at the Capistrano and Talega Substations and along the Talega to Capistrano transmission corridor.

Operations and maintenance effects on water quality would not represent a substantial change, if any, from existing conditions. Operation and maintenance of the Proposed Project is therefore not anticipated to contribute to cumulatively considerable adverse impacts to water quality.

100-Year Flood Zone and Mudflow Effects

Operation and maintenance of the Proposed Project is anticipated to have less than significant impacts relating to 100-year flood zones and mudflow effects with implementation of APMs (refer to Section 4.8, Hydrology and Water Quality). Once the Proposed Project is constructed, potential effects relating to mudflow conditions would be greatly reduced in relation to construction. The two pole structures placed within the 100-year flood zone would be properly designed for this placement and would not result in the exposure of substantial numbers of people to potential flood and/or mudflow conditions.

Operation and maintenance of the Proposed Project would also be very similar to existing operation and maintenance activities at the Capistrano and Talega Substations and along the Talega to Capistrano transmission corridor. Some of the projects listed in Table 4.16-1, such as the Oaks and Sendero Village projects, could result in the placement of large numbers of people and structures within existing flood zones. The Proposed Project would not contribute to any

potentially cumulative adverse effects in this regard because the Proposed Project would not place large numbers or structure or people at risk to flood conditions.

The La Pata Avenue Gap Closure and Camino Del Rio Extension project would affect drainage patterns and could alter the potential for mudflow or flood conditions in the vicinity of the Proposed Project. The La Pata Avenue Gap Closure and Camino Del Rio Extension project, however, would be designed to mitigate for these potential conditions. The Proposed Project would not involve similar construction within existing drainages or addition of new impermeable surfaces. The Proposed Project therefore is not anticipated to substantially contribute to any cumulatively considerable adverse effects.

4.16.8.8 Noise

The Proposed Project would not have any impacts associated with the following CEQA Appendix G significance criteria relating to Noise during construction or operations and maintenance:

- Effects associated with public airports (Question 10e), and
- Effects associated with private airports (Question 10f).

In addition, as outlined within Section 4.10, Noise, construction of the Proposed Project would not have any impacts associated with the following CEQA Appendix G significance criterion:

- Increases in ambient noise levels (Question 10c).

As also outlined in Section 4.10, Noise, operation and maintenance of the Proposed Project would not have any impacts associated with the following CEQA Appendix G criteria:

- Groundborne vibration (Question 10b).

Therefore, there is no potential for cumulative impacts associated with these significance criteria. The remaining noise-related impacts are discussed below for construction, operation, and maintenance of the Proposed Project.

Construction

Generation of Noise and Vibration

As outlined in Section 4.10, Noise, construction of the Proposed Project would have less than significant impacts relating noise and groundborne vibration. Construction of the Proposed Project would generate noise and groundborne vibration, as would the projects outlined in Table 4.16-1. However, most of the projects outlined in Table 4.16-1 are not located in the immediate vicinity of Proposed Project (i.e. are located greater than 0.5 mile from Proposed Project features) and are therefore not likely to combine with Proposed Project-generated noise or vibration to create significant adverse effects. Furthermore, the most noise sensitive portion of the Proposed Project is the San Juan Capistrano Substation site, because it is the location in which sensitive receptors are located nearby, but the substation site area does not contain any other projects which would contribute to cumulatively considerable adverse noise effects. The

main areas where the Proposed Project could be constructed in close proximity to other construction projects, there are much less noise sensitive land uses. Specifically, potential cumulative noise effects are most likely at the following locations:

- Segment 3, near Pole Nos. 18 through 28, where construction of the Proposed Project could overlap with construction of the La Pata Avenue Gap Closure and Camino Del Rio Extension project.
- Segment 4, where construction of the Proposed Project could overlap with construction of the SR-241 Extension project.

However, even if construction of the Proposed Project were to combine with construction of one of the other projects (thereby providing for the maximum potential for cumulative noise effects), construction activities are sporadic and are would only occur during allowable construction hours, when the potential adverse affects of noise are minimized. Therefore, while the potential for cumulatively considerable adverse noise effects are possible where the construction of the Proposed Project could overlap with construction of other projects in the immediate vicinity, impacts would be less than significant.

Compliance with Noise Codes

As outlined in Section 4.10, Noise, construction of the Proposed Project would have less than significant impacts relating to local noise standards and ordinances. The Proposed Project would comply with applicable noise codes during construction, because the majority of construction activities would occur during allowable construction periods and because where construction activities may occur outside of allowable construction periods, the construction activities are not anticipated to generate high levels of noise that would exceed local noise ordinance limits. It is assumed that the projects listed within Table 4.16-1 would also be constructed during allowable construction timeframes. Where other projects may require extensive work outside of allowable construction timeframes (such as, for example, the I-5/SR-74 Interchange project which may require extensive work at night) it is unlikely that the Proposed Project would substantially contribute such effects either due to distance or the limited potential for the Proposed Project to generate construction noise during non-allowable construction hours. The majority of the construction work to occur outside of allowable construction hours would be conducted at the San Juan Capistrano Substation site, where no other projects were identified. Therefore, no cumulatively considerable adverse effects relating to compliance with noise codes are anticipated.

Operation & Maintenance

Generation of Noise and Compliance with Noise Codes

Operation and maintenance of the Proposed Project would have less than significant impacts relating noise and groundborne vibration, mainly occurring at the San Juan Capistrano Substation, where new equipment would be installed that would have different noise output levels that the current substation equipment. Actual operation and maintenance activities (i.e. substation maintenance, structure brushing, and access road maintenance) at both substations and along the transmission corridor would be very similar to those that occur as part of the operation and maintenance of existing facilities. Therefore, the only potential for significant noise-related

cumulative impacts associated with the operation and maintenance of the Proposed Project would be at the new San Juan Capistrano Substation. However, no other projects were indentified within 0.7 mile of the San Juan Capistrano Substation site, therefore, there is not potential for noise generated from the new substation equipment to contribute to a cumulatively considerable adverse effect.

4.16.8.9 Population and Housing

The Proposed Project would not have any impacts associated with the following CEQA Appendix G significance criteria relating to population and housing during construction or operations and maintenance:

- Displacement substantial numbers of existing housing (Question 11b), and
- Displacement of substantial numbers of people (Question 11c).

In addition, operation and maintenance of the Proposed Project is not anticipated to have any impacts on population and housing. Therefore, there is no potential for cumulative impacts associated with these significance criteria or operation and maintenance of the Proposed Project. The remaining population and housing-related impacts are discussed below for construction of the Proposed Project.

Construction

Construction of the Proposed Project is anticipated to have less than significant impacts relating to induced population growth in the Proposed Project area. Construction of the Proposed Project, while lasting approximately 48 months, would not include substantial numbers of workers (up to approximately 60 workers at one time). Therefore, construction of the Proposed Project is not anticipated to combine with other projects to create cumulatively significant impacts relating to population growth.

4.16.8.10 Public Services

The Proposed Project would not have any impacts associated with the following CEQA Appendix G significance criteria relating to public services during construction or operations and maintenance:

- Schools (Question 12a[iii]), and
- Other public facilities (Question 12a[v]).

In addition, as outlined in Section 4.12, Public Services, there is no potential for impacts during operation and maintenance of the Proposed Project associated with the following CEQA Appendix G significance criteria:

- Police and fire protection (Question 12a [i and ii]).

Therefore, there would be no potential for cumulatively considerable impacts associated with these significance criteria and the above listed criteria are not further discussed herein. The

remaining public services-related impacts are discussed below for construction, operation, and maintenance of the Proposed Project.

Construction

Police and Fire Protection Services

While construction of the Proposed Project would have less than significant impacts relating to the operation of police and fire protections services, these impacts are not associated with any increased demand for these services, or any direct impacts to these services that would require new or expanded facilities. While some of the projects outlined within Table 4.16-1 (such as the Ranch Plan and Sendero Village project, Rancho San Juan, the Plaza Banderas Hotel, and The Oaks project) would increase demand for these services and require the construction of new or expanded facilities, the Proposed Project would not contribute to any cumulatively considerable effect because the Proposed Project would not result in similar impacts to these services.

Parks

Utilization of Parks

The Proposed Project's impacts to existing parks would similarly not be related to increased use or the construction or expansion of park facilities. While the Ranch Plan/Sendero Village, Rancho San Juan, Plaza Banderas Hotel, and the Oaks projects all could increase utilization of park facilities, and, in the case of the Oaks and Ranch Plan/Sendero Village, would include new parks and similar facilities the Proposed Project would not add to these impacts. Therefore, no cumulative impacts are anticipated for park facilities.

Restricted Access and Physical Impacts to Existing Parks and Recreational Facilities

While the Proposed Project would have less than significant temporary impacts associated with restricted access to certain parks and recreational facilities, the projects listed in Table 4.16-1 for the most part would not have similar effects. Therefore, there is a low likelihood of cumulative impacts associated with restricted access to existing recreational facilities.

Reduction in Availability of Existing Equestrian Facilities

The Oaks and Sendero Village (The Ranch Plan) projects do propose impacts to existing equestrian facilities (the Oaks project would to replace an existing private equestrian facility with a similar, but smaller facility at the same site and the Sendero Village site is partially located on an existing equestrian facility). While the combination of these two projects could be considered to have an impact on recreation due to reduction of availability of equestrian facilities, the Proposed Project does not include any similar impacts to existing equestrian facilities and as such would not result in any cumulative impacts.

Operation & Maintenance

Restricted Access and Physical Impacts to Existing Parks and Recreational Facilities

While the Proposed Project would result in less than significant impacts (with incorporation of APMs) to existing parks and recreational facilities that occur within the existing SDG&E ROW, none of the projects listed in Table 4.16-1 are likely to have similar impacts. The Oaks and Sendero Village projects would involve a net reduction in the availability of private equestrian facilities in the San Juan Capistrano area; however, the Proposed Project would not result in similar impacts. Therefore, no cumulatively considerable impacts are anticipated.

4.16.8.11 Transportation and Traffic

The Proposed Project would not have any impacts associated with the following CEQA Appendix G significance criteria relating to transportation and traffic during construction or operations and maintenance:

- Changes to air traffic control patterns (Question 14c), and
- Impacts to public transit (Question 14f).

In addition, as discussed in Section 4.14, Transportation and Traffic, the Proposed Project would not have any impacts relating to transportation and traffic during operation and maintenance. Therefore, there is no potential for cumulative impacts associated with these significance criteria or operations and maintenance. The remaining traffic and transportation-related impacts are discussed below for construction of the Proposed Project.

Construction

Traffic Congestion and LOS

Construction of the Proposed Project would result temporary potentially significant impacts relating to the traffic congestion and LOS (Questions 14a and 14b) due to construction activities during the school year within Vista Montana, which provides access to the existing San Juan Hills High School. All of the roadway projects listed in Table 4.16-1 (I-5/SR-74 Interchange, SR-74 Widening, and the La Pata Avenue Gap Closure and Camino Del Rio Extension projects) would have similar impacts to the Proposed Project during construction activities on/within existing roadways. However, with respect to the I-5/SR-74 Interchange and SR-74-Widening projects, the impacted roadway segments would not be located in the same roadway segments that the Proposed Project would affect. The Proposed Project would involve construction within the following roadways:

- Camino Capistrano,
- Calle San Diego,
- Vista Montana, and
- Via Pomplona.

While none of the roadway projects listed in Table 4.16-1 directly involve any of the above listed roadways, the La Pata Avenue Gap Closure and Camino Del Rio Extension project involves the widening of La Pata Avenue between the Prima Deshecha Landfill to approximately 2,700 feet south of the intersection of SR-74 and La Pata Avenue. This section of La Pata Avenue connects to Vista Montana. Therefore, should construction of the La Pata Avenue Gap Closure and Camino Del Rio Extension project be conducted concurrently with construction of Segment 2 of the Proposed Project during the hours when the San Juan Hills High School has students arriving and departing from the school campus cumulatively considerable impacts to traffic congestion and LOS would occur.

The Rancho San Juan project (Phase 1 and 2) is also located at the intersection of La Pata Avenue and Vista Montana, and as such could also contribute to traffic impacts during construction of the Proposed Project and the La Pata Avenue Gap Closure and Camino Del Rio Extension project. However, Phase 1 of the Rancho San Juan project is already under construction and Phase 2 has not yet been approved by the city of San Juan Capistrano. Considering that construction of the Proposed Project (Segment 2) would not occur until 2016/2017 and the La Pata Avenue Gap Closure and Camino Del Rio Extension project is not scheduled to begin construction until 2015, it is likely that construction of Rancho San Juan (Phase 1) would already be complete by the time Proposed Project construction began.

Construction of the Proposed Project at the San Juan Capistrano Substation would last approximately 48 months, with varying levels of intensity, including construction related traffic. However, none of the projects listed in Table 4.16-1 are in the vicinity of the San Juan Capistrano Substation site and it is unlikely that construction traffic associated with any of the projects located in the downtown San Juan Capistrano area (I-5/SR-74 Interchange project, Plaza Banderas Hotel, Historic Town Center Master Plan, Mission San Juan Capistrano Gate House Preservation project, and the Water and Sewer Line Construction project) would generate traffic in the vicinity of the San Juan Capistrano Substation site or in the vicinity of the transmission line work west of the substation. Therefore, there would not be any cumulatively considerable traffic effects in the area of the San Juan Capistrano Substation as a result of the Proposed Project combined with the other cumulative projects.

Emergency Access

Construction of the Proposed Project would result in less than significant impacts to emergency access with incorporation of APMs (refer to Section 4.14, Transportation and Traffic). The following projects could also have impacts to emergency access that would require mitigation:

- I-5/SR-74 Interchange project,
- SR-74 Widening project, and
- La Pata Avenue Gap Closure and Camino Del Rio Extension project.

The combination of these projects could result in cumulative impacts to emergency vehicle response and access if the roadway construction were to take place in the same area (i.e. on the same roads) and at the same time. Only the La Pata Avenue Gap Closure and Camino Del Rio Extension project has this potential. However, similar to the Proposed Project, the potential impacts would be mitigated through adherence to applicable local regulations for traffic control

and emergency vehicle access. The La Pata Avenue Gap Closure and Camino Del Rio Extension project would include the preparation of a Traffic Management Plan that would ensure that construction activities would not restrict the movement of emergency vehicles. Implementation of APM TR-3 would ensure that the Proposed Project is constructed in compliance with the Traffic Management Plan for the La Pata Avenue Gap Closure and Camino Del Rio Extension project. Therefore, potentially cumulative impacts to emergency vehicle access would be less that significant.

Design Hazards

The Proposed Project would result in less than significant impacts during construction within public roadways, as discussed above. As outlined above, only the La Pata Avenue Gap Closure and Camino Del Rio Extensions project would involve construction within roadways in the immediate vicinity of the Proposed Project (at Segment 2 – Rancho San Juan). However, the La Pata Avenue Gap Closure and Camino Del Rio Extension project would have in place similar traffic control measures that would mitigate potential hazards associated with the construction along La Pata Avenue. Therefore, any cumulative impacts associated with temporary design hazards would be less than significant.

4.16.8.12 Utilities and Service Systems

The Proposed Project would not have any impacts associated with the following CEQA Appendix G significance criteria relating to utilities and service systems during construction or operations and maintenance:

- Wastewater treatment requirements (Question 15a),
- New water or wastewater facilities (Question 15b),
- New stormwater facilities (Question 15c),
- Water supply (Question 15d),
- Wastewater treatment services (Question 15e), and
- Compliance with solid waste regulations (Question 15g).

In addition, operation and maintenance of the Proposed Project is not anticipated to have any impacts relating to utilities and service systems. Therefore, there is no potential for cumulative impacts associated with these significance criteria or operations and maintenance. The remaining utilities and service system-related impacts are discussed below for construction of the Proposed Project.

Construction

Solid Waste and Landfill Capacity

Construction of the Proposed Project would result in less than significant impacts to solid waste (landfill) capacity. While almost of all of the projects listed in Table 4.16-1 would have a similar potential to impact solid waste and landfill capacity, the existing local landfill system has ample capacity for the foreseeable future. As outlined in Table 4.15-1, the three local landfills have a

combined existing capacity of 185.4 million cubic yards. Therefore, there would not be a cumulatively considerable adverse effect on solid waste and landfill capacity.

4.16.9 Application Proposed Measures

Two potentially significant cumulative impacts could result during construction of the Proposed Project if the construction of the Proposed Project occurs simultaneously with the construction of other key projects. These impacts relate to 1) emission of the criteria pollutants, and 2) traffic congestion and deterioration of LOS. These potential impacts are discussed in Sections 4.16.8.2 and 4.16.8.11, respectively. APMs relating to these impacts have been included within Sections 4.3 (Air Quality and Greenhouse Gases) and 4.14 (Transportation and Traffic), respectively. These APMs would effectively minimize these potentially significant cumulative impacts, and as such no additional APMs are included herein.

4.16.10 References

California Department of Transportation. 2012. Advertised Projects, Awarded Contracts, and Ready to List Projects. Accessed online in February and March 2012. Accessed at: http://www.dot.ca.gov/hq/esc/oe/weekly_ads/all_upcoming.php

California Energy Commission. 2012. Energy Facility Status (Power Plant Projects Filed Since 1996). Downloaded March 15, 2012. Downloaded from: http://www.energy.ca.gov/sitingcases/all_projects.html

California Independent System Operator. March 13, 2012. Generator Interconnection Queue. Downloaded from: http://www.caiso.com/planning/Pages/GeneratorInterconnection/Default.aspx

California Public Utilities Commission. 2012. Current Projects Webpage. Accessed online on March 15, 2012. Accessed at: http://www.cpuc.ca.gov/PUC/energy/Environment/Current+Projects/

Caltrans District 12 (Yvonne Washington). 2012. Personnel conversation with Lindsay Anderson of TRC.

Caltrans. 2012. *Map of Orange County Construction Projects to Advertise in 2011 and 2012 (revised 2-15-12).*

Caltrans. 2009. *Final Environmental Impact Report for the State Route 74 Lower Ortega Highway Widening.*

Caltrans. 2009. *Final Environmental Impact Report/ Environmental Assessment with Finding of no Significant Impact for the Interstate 5/ State Route 74 (Ortega Highway) Interchange Improvement Project.*

City of San Juan Capistrano, Planning Department. 2012. List of Approved/Monitoring and Denied Projects.

City of San Juan Capistrano and Templeton Planning Group. 2011. *Draft Environmental Impact Report for the Historic Town Center Master Plan, General Plan Amendment and Rezone.*

City of San Juan Capistrano. 2010. *Draft Environmental Impact Report for the Plaza Banderas Hotel.*

City of San Juan Capistrano. 2012. Project Alert Webpage. Accessed online on March 21, 2012. Accessed at: http://www.sanjuancapistrano.org/Index.aspx?page=1249

City of San Juan Capistrano. 2011. *Mitigated Negative Declaration for the Mission San Juan Capistrano Gate House Preservation, Entry and Gift Shop.*

City of San Juan Capistrano, Planning Department. 2011. Preliminary Review Form for the Oaks project.

County of Orange Public Works (Chris Uzodribe). Personnel and electronic communication with Lindsay Anderson of TRC.

County of Orange Planning Department (Richard Voung). Personnel and electronic communication with Lindsay Anderson of TRC.

County of San Diego Planning Department (Donna Beddow). Personnel and electronic communication with Lindsay Anderson of TRC.

City of San Clemente (Tonya Bigney). 2011 and 2012. Personnel and electronic mail communication with Joshua Taylor and Lindsay Anderson of TRC.

Orange County Public Works. 2012. Personnel and electronic mail communication with Joshua Taylor and Lindsay Anderson or TRC.

Orange County Public Works. 2012. Planned Community Project webpage. Accessed March 15, 2012. Accessed at: http://www.ocpublicworks.com/PCPW/project.aspx

SanGIS. 2012. SanGIS Interactive Mapping System. Site accessed on March 16, 2012. Accessed at: http://files.sangis.org/interactive/viewer/viewer.asp

LSA Associates, Inc. November 2010. Draft Environmental Impact Report for the La Pata Avenue Gap Closure and Camino Del Rio Extension Project.

Rancho Mission Viejo. 2012. Website and online Brochure. Accessed on March 22, 2012. Accessed at: http://ranchomissionviejo.com/

Transportation Corridor Agencies. 2005. *Final Subsequent Environmental Impact Report for the South Orange County Transportation Infrastructure Improvement Project (Foothill South).*

Trumark Companies. *Conceptual Development Plan for the Oaks.*

TABLE OF CONTENTS

5.0 DETAILED DISCUSSION OF SIGNIFICANT IMPACTS 5-1
5.1 APPLICANT PROPOSED MEASURES TO MINIMIZE SIGNIFICANT EFFECTS ... 5-1
5.2 DESCRIPTION OF PROJECT ALTERNATIVES TO MINIMIZE SIGNIFICANT EFFECTS 5-2
5.2.1 Introduction 5-2
5.2.2 Methodology 5-2
5.2.3 Proposed Project Objectives 5-3
5.2.4 Alternatives Considered but Rejected 5-3
5.3 GROWTH-INDUCING IMPACTS 5-43
5.3.1 Economic or Population Growth 5-43
5.3.2 New Employment 5-44
5.3.3 Extended Access or Public Services 5-44
5.3.4 Existing Community Services 5-45
5.3.5 New Development 5-45
5.3.6 Conclusion 5-45
5.4 REFERENCES 5-46

LIST OF FIGURES

Figure 5-1: Development Constraints within the South Orange County Transmission Load Center 5-25
Figure 5-2: Alternative 230/138kV Air Insulated Substation Site Location at the Prima Deshecha Landfill 5-29

THIS PAGE IS INTENDED TO BE LEFT BLANK

5.0 DETAILED DISCUSSION OF SIGNIFICANT IMPACTS

In accordance with the PEA Checklist issued by the CPUC on October 7, 2008, this section:

- Identifies the potentially significant impacts that would result from the construction, operation, or maintenance of the Proposed Project;
- Discusses the alternatives that were evaluated in determining the Proposed Project and the justification for the selection of the preferred alternative; and
- Discusses the Proposed Project's potential to induce growth in the area.

5.1 APPLICANT PROPOSED MEASURES TO MINIMIZE SIGNIFICANT EFFECTS

Based on the findings in Section 4.0, Environmental Impact Assessment, the Proposed Project would result in the following short-term significant, unavoidable impacts during construction:

1. Emissions of Criteria Pollutants in excess of SCAQMD CEQA Significance Thresholds (refer to Section 4.3, Air Quality and Greenhouse Gases). This adverse effect could also contribute to cumulatively considerable significant effects where construction of the Proposed Project would occur simultaneously with other projects in the immediate vicinity (refer to Section 4.16, Cumulative Impacts). These significant effects would be minimized to the extent feasible through adherence to SCAQMD Rule 403 and construction emission BMPs.
2. Traffic Congestion and deterioration of LOS during construction of Segment 2 of the proposed Transmission Line portion of the Proposed Project (refer to Section 4.14, Transportation and Traffic). This significant effect could also contribute to cumulatively considerable significant effects where construction of the Proposed Project would occur simultaneously with other projects (refer to Section 4.16, Cumulative Impacts). APMs are proposed that would minimize these impacts to the extent feasible.

Other potential significant impacts were identified that could be reduced to a level less than significant with the incorporation of APMs for the following resource areas:

- Aesthetics,
- Air Quality,
- Cultural Resources,
- Geology, Soils and Mineral Resources,
- Hazards and Hazardous Materials,
- Noise,

- Public Services, and
- Transportation and Traffic.

SDG&E has identified 22 APMs that it plans to implement during construction and/or operation of the Proposed Project to reduce or avoid impacts. Section 3.0, Proposed Project Description, provides a list of all of the APMs that have been proposed as part of the Proposed Project, as well as the justification for each (refer to Tables 3-17 and 3-18). Additionally, all of the proposed APMs are detailed within Section 4, Environmental Impact Assessment.

5.2 DESCRIPTION OF PROJECT ALTERNATIVES TO MINIMIZE SIGNIFICANT EFFECTS

5.2.1 Introduction

The CPUC PEA Checklist directs public utilities to provide a summary of alternatives that would meet most of the objectives of the Proposed Project and an explanation as to why they were not chosen as the Proposed Project. The CPUC PEA Checklist further requires that the discussion of alternatives include alternatives capable of substantially reducing or eliminating any significant environmental effects, even if the alternative(s) substantially impede the attainment of the project objectives, and are more costly.

5.2.2 Methodology

In accordance with the CPUC PEA Checklist, this section considers the following potential alternatives:

- No Project Alternative
- System or Facility Alternatives
    - Energy Conservation
    - Transmission System Load Management
    - Rebuild the 230/138kV Talega Substation
    - Rebuild 138/12kV Capistrano Substation
    - Rebuild Capistrano Substation to 230/138/12kV Air Insulated Substation
    - Rebuild the SDG&E Northern 138kV System
- Alternative Locations and Routes
    - Alternative Sites within the Transmission Load Center
    - 230/138kV Air Insulated Substation Located at Prima Deshecha Landfill
    - Eastern Talega to San Juan Capistrano 230kV Transmission Line Route
    - 230kV Connection with SCE at 230/138kV Substation Located at Prima Deshecha Landfill
    - 230kV Connection with SCE at 230/138kV Capistrano Substation

- Partial Underground within La Pata Road and San Juan Creek Road
- Proposed Project with 230kV Connection to Escondido Substation

The Proposed Project involves the replacement, modernization, and upgrade of electric facilities within an existing electric transmission corridor and substation sites. The Proposed Project has been designed to avoid and minimize potential environmental impacts, and the PEA confirms that there are no long-term significant unmitigated impacts associated with the Proposed Project. With regards to potentially significant short-term, construction-related environmental effects, the PEA has concluded that short-term air quality impacts and short-term traffic impacts during construction of Segment 2 of the Proposed Project would be significant and unavoidable.

This section of the PEA considers whether any of the potential impacts of the Proposed Project could be avoided or substantially reduced by each particular alternative. As discussed below, a range of project alternatives that could achieve at least some of the project objectives was considered, but there is no feasible, environmentally superior alternative to the Proposed Project.

5.2.3 Proposed Project Objectives

As outlined in Section 2.0, Proposed Project Purpose and Need, the fundamental objectives for the Proposed Project are:

1. Provide transmission system reliability:
    a. Reduce the risk of an uncontrolled outage of all South Orange County load.
    b. Reduce the risk of a controlled interruption of a portion of South Orange County load.
    c. Comply with mandatory NERC, WECC, and CAISO Transmission Planning Standards.
2. Rebuild Capistrano Substation to replace aging equipment and increase capacity.
3. Improve transmission and distribution operating flexibility.
4. Accommodate customer load growth in the South Orange County area.
5. Locate proposed facilities within existing transmission corridors, SDG&E ROW and utility owned property.

5.2.4 Alternatives Considered but Rejected

SDG&E evaluated several alternatives based upon feasibility and ability to fulfill project objectives. Feasible alternatives that met the fundamental project objectives were not found. Each alternative that was considered but rejected is discussed in detail in the following subsections.

5.2.4.1 <u>No Project Alternative</u>

CEQA requires consideration of a "No Project Alternative." The purpose of the No Project Alternative is to enable decision-makers to compare the impacts of approving the Proposed Project against the impacts of not approving the Proposed Project.

The No Project Alternative assumes that the Capistrano and Talega Substations would remain in their current configuration with the installed equipment remaining in service and that the transmission facilities within the existing transmission corridor would remain in their current configuration.

For the reasons discussed in Section 2.0, Proposed Project Purpose and Need, SDG&E cannot meet expected load or assure service reliability to South Orange County without replacement and upgrade of the existing transmission network. Thus, the No Project Alternative would compromise service for nearly 130,000 customers and is not feasible.

In the absence of the Proposed Project, SDG&E would be required to construct replacements and improvements to its system in order to continue providing service. A likely "No Project" scenario would be the "Rebuild South Orange County 138kV System Alternative," which is described and assessed later on in this section. At this time, the full range of potential environmental consequences associated with the No Project Alternative without other replacements and improvements to its system is broad and speculative.

The Capistrano Substation is approaching 60 years old and was not constructed to meet today's customer load growth or today's engineering standards. The substation's aging equipment and infrastructure need to be upgraded and rebuilt.

The Talega Substation in its current configuration represents older standards in design, reliability, and operating. The existing construction of four bulk power 230/138kV transformers sharing common positions on the 230kV and 138kV busses results in system vulnerabilities during normal operation and routine maintenance. In the event of any loss to the 230kV and/or 138kV busses, the South Orange County would lose its entire power source, resulting in a complete load loss of the area.

There are 18 different outage scenarios which could cause loss of load in the South Orange County area due to the existing configuration at Talega Substation. Among the 18 outages, half of them could drop the entire electric load in South Orange County. This risk would continue under the No Project alternative.

Attainment of Project Objectives by the No Project Alternative

Objective 1: Provide Transmission System Reliability

Objective 1a: Reduce the Risk of an Uncontrolled Outage of all South Orange County Load

The No Project Alternative would leave South Orange County vulnerable to power system failures which may lead to the interruption of power to customers and does not meet Objective 1a. The Talega Substation is the only power source available to feed the seven distribution substations in South Orange County. Power from the 230kV network enters South Orange County at the Talega Substation 230kV bus and flows through the substation's four 230/138kV transformers to the substation's 138kV bus. The Talega Substation 138kV bus supplies power to the 138kV transmission network which supplies the distribution substations. If a failure occurs, which requires the Talega Substation 230kV or 138kV bus to be removed from service, power flow to South Orange County would be interrupted. Also, the existing Talega Substation configuration restricts the conditions under which maintenance can be done and creates 18

different outage scenarios which could cause the interruption of customer load in South Orange County. As mentioned above, the No Project Alternative does not meet Objective 1a.

Objective 1b: Reduce the Risk of a Controlled Interruption of a Portion of South Orange County Load

Customer load growth in South Orange County has increased the amount of power flowing on the 138kV transmission system to the point that transmission lines are near their maximum capacity and the No Project Alternative does nothing to increase their capacity. Without transmission improvements, transmission operators may be forced to disconnect customer load to keep power flow on the transmission lines below maximum ratings. Therefore, the No Project Alternative would do nothing to meet Objective 1b.

Objective 1c: Comply with mandatory NERC, WECC, and CAISO Transmission Planning Standards

Customer load growth in South Orange County has increased the amount of power flowing on the 138kV transmission system to the point that transmission lines are near their maximum capacity and the No Project Alternative does nothing to increase their capacity. Without transmission improvements, transmission operators may be forced to disconnect customer load to keep power flow on the transmission lines below maximum ratings and in some cases this may be a violation of Transmission Planning Standards. The NERC Standard TPL-002-0 does not allow interruption of customer load to be used to remove overloads caused by the loss of a single transmission line or transformer. Therefore, the No Project Alternative does not meet Objective 1c.

Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

As noted above, the Capistrano Substation was built almost 60 years ago and was not constructed to meet today's customer load growth or today's reliability standards. The substation's aging equipment and infrastructure needs to be upgraded and rebuilt.

Unlike the Proposed Project, the No Project Alternative does not:

- Modernize substation infrastructure to meet current standards.
- Improve reliability by adding new 12kV bus ties.
- Increase ultimate 12kV (distribution) capacity.
- Improve operating flexibility.
- Increase available 12kV tie capacity.
- Rebuild equipment to new seismic standards.
- Improve security.
- Reduce maintenance requirements.
- Utilize new substation standards in electrical and structural design.

Under the No Project Alternative, Capistrano Substation would not be rebuilt and therefore would not meet Objective 2; replace aging equipment and the supporting infrastructure to allow expansion of the 138kV and 12kV busses.

Objective 3: Improve Transmission and Distribution Operating Flexibility

Under the No Project Alternative scenario, existing maintenance and outage issues would continue because South Orange County would still rely solely on the decades-old construction at Talega Substation without having a second 230kV source for reliability or a rebuilt 138kV bus at Capistrano Substation for operational flexibility. Moreover, SDG&E would continue to have limited ability to schedule maintenance outages at Talega Substation. Also, the distribution portion of the Capistrano Substation would be at high loading in 2015. This high load limits the available tie capacity between neighboring Laguna Niguel and Trabuco Substations. Under this scenario, outage and reliability issues would continue to increase to residences and businesses served by the distribution system in South Orange County. Therefore, the No Project Alternative does not meet Objective 3.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

South Orange County customer load, which is expected to grow 10 percent over the next ten years (refer to Figure 2-2), would not be met with the No Project Alternative. The existing 138kV transmission network in South Orange County is near its capacity limit and without additional capacity, transmission operators may be forced to disconnect customer load to keep power flows below maximum transmission line ratings. Also, the No Project Alternative does not allow for expansion of the distribution portion of the Capistrano Substation which is needed to meet future customer load growth. Therefore, the No Project Alternative does not meet Objective 4.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

The No Project Alternative assumes that the proposed facilities would not be constructed. However, to continue providing electric service some new construction would be required. Such construction may not be accommodated within the existing SDG&E ROW or other easements. Therefore, the No Project Alternative would not meet Objective 5. For a more specific delineation of the potential issues associated with what would actually occur under the No Project Alternative, see the Rebuild South Orange County 138kV System Alternative.

Avoidance or Reduction of Potentially Significant Impacts

Under the No Project Alternative, all of the existing transmission facilities (both the Talega and Capistrano Substations, as well as the existing 138kV transmission lines) would remain in place within the existing transmission corridor or substation site. These existing substations and transmission line facilities would not be replaced or upgraded.

The potentially significant short-term environmental impacts identified for the Proposed Project would be avoided in the short-term under this alternative, including air quality and traffic impacts during construction. However, SDG&E would be required to undertake other construction activities in order to continue providing electric service within South Orange

County. These construction activities would likely result in their own significant short-term environmental impacts similar to the Proposed Project and could also result in potential long-term impacts not attributable to the Proposed Project due to requirements for additional easements and ROW. For additional description of theses potential effects, see the Rebuild South Orange County 138kV System Alternative.

Conclusion

The No Project Alternative would not meet any of the project objectives and would not avoid any significant short-term impacts and could result in long-term impacts that do not occur with the Proposed Project. The Proposed Project would replace existing substation and transmission facilities within an existing transmission corridor or substation sites. This already-developed environmental setting would remain unchanged. Instead of the specific rebuilds and upgrades identified as part of the Proposed Project, the No Project Alternative would require the incremental construction of system replacements and improvements on a piecemeal basis, and could require new construction outside of the existing substation locations and transmission corridor. For these reasons, SDG&E rejects the No Project Alternative.

5.2.4.2 System or Facility Alternatives

As part of this analysis, SDG&E explored potential system and facility alternatives. SDG&E identified no system or facility alternatives that could fulfill project objectives or substantially reduce or avoid environmental impacts. The system and facility alternatives considered are detailed within the following subsections.

Energy Conservation Alternative

Under the direction of the CPUC, SDG&E offers a number of energy conservation programs for customers, including financial incentives for installing specific energy-efficient appliances or taking other measures to conserve energy. SDG&E also provides existing programs, such as online energy profiling and in-home energy audits, to make customers more aware of their energy usage and of ways to conserve, as well as a variety of free brochures on improving energy efficiency. These programs play an important role in energy savings and have successfully reduced energy use in the service territory. These energy conservation goals are already included in SDG&E's demand forecast. This alternative implements these existing energy conservation programs in the place of the improvements proposed under the Proposed Project. As this alternative implements existing programs, it is similar to the No Project Alternative previously discussed.

Attainment of Project Objectives by the Energy Conservation Alternative

Objective 1: Provide Transmission System Reliability

Objective 1a: Reduce the Risk of an Uncontrolled Outage of all South Orange County Load

The Energy Conservation Alternative would leave South Orange County vulnerable to power system failures which may lead to the interruption of power to customers. The Talega Substation is the only power source available to feed the seven distribution substations in South Orange County. Power from the 230kV network enters South Orange County at the Talega Substation

230kV bus and flows through the substation's four 230/138kV transformers to the substation's 138kV bus. The Talega Substation 138kV bus supplies power to 138kV transmission lines which supply the distribution substations. If a failure occurs, which requires the Talega Substation 230kV or 138kV bus to be removed from service, power flow to South Orange County would be interrupted. This problem is made worse by the existing Talega Substation configuration. The configuration creates 18 different outage scenarios, any one of which could cause the interruption of customer load in South Orange County and restricts the periods when maintenance can be done. Therefore, as stated above, the Energy Conservation Alternative does not meet Objective 1a.

Objective 1b: Reduce the Risk of a Controlled Interruption of a Portion of South Orange County Load

Customer load growth in South Orange County has increased the amount of power flowing on the 138kV transmission network to the point that transmission lines are near their maximum capacity. The Energy Conservation Alternative does nothing to increase transmission line capacity and without transmission improvements, transmission operators may be forced to disconnect customer load to keep power flow on the transmission lines below maximum ratings. Therefore, the Energy Conservation Alternative does not meet Objective 1b.

Objective 1c: Comply with Mandatory NERC, WECC, and CAISO Transmission Planning Standards

Customer load growth in South Orange County has increased the amount of power flowing on the 138kV transmission system to the point that transmission lines are near their maximum capacity. The Energy Conservation Alternative does nothing to increase transmission line capacity and without transmission improvements, transmission operators may be forced to disconnect customer load to keep power flow on the transmission lines below maximum ratings. In some cases this may be a violation of Transmission Planning Standards. Therefore, the Energy Conservation Alternative does not meet Objective 1c.

<u>Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity</u>

The Capistrano Substation was built almost 60 years ago and was not constructed to meet today's customer load growth or today's reliability standards. The substation's aging equipment and infrastructure needs to be upgraded and rebuilt.

Unlike the Proposed Project, the Energy Conservation Alternative does not:

- Modernize substation infrastructure to meet current standards.
- Improve reliability by adding new 12kV bus ties.
- Increase ultimate 12kV (distribution) capacity.
- Improve operating flexibility.
- Increase available 12kV tie capacity.
- Rebuild equipment to new seismic standards.

- Improve security.
- Reduce maintenance requirements.
- Utilize new substation standards in electrical and structural design.

Under the Energy Conservation Alternative, Capistrano Substation would not be rebuilt and therefore would not meet Objective 2; replace aging equipment and its supporting infrastructure to allow expansion of the 138kV and 12kV busses.

Objective 3: Improve Transmission and Distribution Operating Flexibility

Under the Energy Conservation Alternative scenario, existing maintenance and outage challenges would continue because South Orange County would still rely solely on the decades-old construction at Talega Substation without having a second 230kV source for reliability or a rebuilt 138kV bus at Capistrano Substation for operational flexibility, and despite conserving energy, South Orange County would still continue to need reliable energy. Also, the distribution portion of the Capistrano Substation would be at high loading in 2015. This high load limits the available tie capacity between neighboring substations Laguna Niguel and Trabuco. Under this scenario, outages and reliability risks would continue to increase to residences and businesses served by the distribution system in South Orange County. Therefore, the Energy Conservation Alternative does not meet Objective 3.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

The Energy Conservation Alternative does not provide any additional capability to meet expected customer load needs in South Orange County, which is expected to grow 10 percent over the next ten years. The existing 138kV transmission network in South Orange County is near its capacity limit and without additional capacity, transmission operators may be forced to disconnect customer load to keep power flows below maximum transmission line ratings. Also, the Energy Conservation Alternative does not allow for expansion of the distribution portion of the Capistrano Substation which is needed to meet future customer load growth. Therefore, the Energy Conservation Alternative does not meet Objective 4.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

The Energy Conservation Alternative assumes that the proposed facilities would not be constructed, but energy conservation alone cannot reliably reduce the risk of an uncontrolled outage because simply conserving energy does not provide any redundancy to the existing system and, as discussed above, cannot fully meet the reasonably expected energy needs of South Orange County. Thus, to continue providing reliable and sufficient electric service to South Orange County some new construction is required. Such construction may not be accommodated within the existing SDG&E ROW or other easements. Therefore, the Energy Conservation Alternative would not meet Objective 5. For a more specific delineation of the potential issues associated with what would actually occur under the No Project alternative, see the Rebuild South Orange County 138kV System Alternative.

Avoidance or Reduction of Potentially Significant Impacts

Under the Energy Conservation Alternative, all of the existing transmission facilities (both the Talega and Capistrano Substations, as well as the existing 138kV transmission lines) would remain in place within the existing transmission corridor or substation site. These existing substations and transmission line facilities would not be replaced or upgraded.

No potential long-term environmental impacts have been identified for the Proposed Project. The potentially significant short-term environmental impacts identified for the Proposed Project would be avoided in the short-term under this alternative, including air quality and traffic construction impacts. The Energy Conservation Alternative does nothing to increase transmission line capacity and without transmission improvements, transmission operators may be forced to disconnect customer load to keep power flow on the transmission lines below maximum ratings. Therefore, SDG&E would be required to undertake other construction activities in order to continue providing electric service within South Orange County. These construction activities would likely result in their own significant short-term environmental impacts similar to the Proposed Project and could also result in potential long-term impacts not attributable to the Proposed Project due to requirements for additional easements and ROW. For additional description of these potential effects, see the Rebuild South Orange County 138kV System Alternative.

Conclusion

The Energy Conservation Alternative would not meet any of the project objectives and likely would not avoid any significant long- or short-term impacts, since construction still ultimately would be required. The Proposed Project would replace existing substation and transmission facilities within an existing transmission corridor or substation sites. This already-developed environmental setting would remain unchanged. Instead of the specific rebuilds and upgrades identified as part of the Proposed Project, the Energy Conservation Alternative would require the incremental construction of system replacements and improvements on a piecemeal basis, and could require new construction outside of the existing substation locations and transmission corridor. For these reasons, SDG&E rejects the Energy Conservation Alternative.

Transmission System Load Management Alternative

Load management programs reduce peak electric demand or have the primary effect of shifting electric demand from peak to non-peak time periods. SDG&E has already incorporated demand response programs as a result of its most recent generation procurement.

An example of these efforts is contained in the CPUC's March 27, 2001 Decision on the implementation of Public Utilities Code Section 399.15(b), Paragraphs 4-7; Load Control and Distributed Generation Initiatives.[1] In this Decision, the CPUC authorized SDG&E to administer a pilot program designed to test the viability of a new approach to residential load control and demand-responsiveness through the use of Internet technology and thermostats that affect central air conditioning use. More recently, the CPUC approved dynamic pricing options for large commercial/industrial customers. These rate options offer customers a commodity

[1] CPUC, Rulemaking 98-07-037, Decision 01-03-073, March 27, 2001.

discount in exchange for reducing load during critical periods. SDG&E's air-conditioning (A/C) load cycling program has produced good results, but it is not expected to deliver much more than the 25 MW it currently delivers. Dynamic pricing programs show promise, but have only been rolled out to SDG&E's largest customers. The full impact of these rate options have yet to be evaluated to determine actual results.

At this time, for the purposes of transmission system planning, actual load reduction from load management programs is difficult to quantify. With the voluntary nature of these programs, and their dependencies on uncontrollable factors, like weather, SDG&E cannot rely on such load curtailment mechanisms as a project alternative. Therefore, this alternative was eliminated from consideration.

Attainment of Project Objectives by the Transmission System Load Management Alternative

Objective 1: Provide Transmission System Reliability

Objective 1a: Reduce the risk of an uncontrolled outage of all South Orange County load

The Transmission System Load Management Alternative would leave South Orange County vulnerable to power system failures which may lead to the interruption of power to customers and does not meet Objective 1a. The Talega Substation is the only power source available to feed the seven distribution substations in South Orange County. Power from the 230kV network enters South Orange County at the Talega Substation 230kV bus and flows through the substation's four 230/138kV transformers to the substation's 138kV bus. The Talega Substation 138kV bus supplies power to 138kV transmission lines which supply the distribution substations. If a failure occurs, which requires the Talega Substation 230kV or 138kV bus to be removed from service, power flow to South Orange County would be interrupted. This problem is made worse by the existing Talega Substation configuration. The configuration creates 18 different outage scenarios which could cause the interruption of customer load in South Orange County and restricts the periods when maintenance can be done. Therefore, as stated above, the Transmission System Load Management Alternative does not meet Objective 1a

Objective 1b: Reduce the Risk of a Controlled Interruption of a Portion of South Orange County Load

Customer load growth in South Orange County has increased the amount of power flowing on the 138kV transmission system to the point that transmission lines are near their maximum capacity and the Transmission System Load Management Alternative does nothing to increase transmission line capacity. Without transmission improvements, transmission operators may be forced to disconnect customer load to keep power flow on the transmission lines below maximum ratings. Therefore, the Transmission System Load Management Alternative does not meet Objective 1b.

Objective 1c: Comply with mandatory NERC, WECC, and CAISO Transmission Planning Standards

Customer load growth in South Orange County has increased the amount of power flowing on the 138kV transmission system to the point that transmission lines are near their maximum capacity. The Transmission System Load Management Alternative does nothing to increase

transmission line capacity and without transmission improvements, transmission operators may be forced to disconnect customer load to keep power flow on the transmission lines below maximum ratings. In some cases this may be a violation of Transmission Planning Standards. Therefore, the Transmission System Load Management Alternative does not meet Objective 1c.

Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

The Capistrano Substation was built almost 60 years ago and was not constructed to meet today's customer load growth or today's reliability standards. The substation's aging equipment and infrastructure needs to be upgraded and rebuilt.

Unlike the Proposed Project, the Transmission System Load Management Alternative does not:

- Modernize substation infrastructure to meet current standards.
- Improve reliability by adding new 12kV bus ties.
- Increase ultimate 12kV (distribution) capacity.
- Improve operating flexibility.
- Increase available 12kV tie capacity.
- Rebuild equipment to new seismic standards.
- Improve security.
- Reduce maintenance requirements.
- Utilize new substation standards in electrical and structural design.

Under the Transmission System Load Management Alternative, Capistrano Substation would not be rebuilt and therefore would not meet Objective 2; replace aging equipment and its supporting infrastructure to allow expansion of the 138kV and 12kV busses.

Objective 3: Improve Transmission and Distribution Operating Flexibility

Under the Transmission System Load Management Alternative scenario, existing maintenance and outage issues would continue because South Orange County would still rely solely on the decades-old construction at Talega Substation without having a second 230kV source for reliability or a rebuilt 138kV bus at Capistrano Substation for operational flexibility. Also, the distribution portion of the Capistrano Substation would be at high loading in 2015. This high load limits the available tie capacity between neighboring substations Laguna Niguel and Trabuco. Under this scenario, outage and reliability issues would continue to increase to residences and businesses served by the distribution system in South Orange County.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

South Orange County customer load is expected to grow 10 percent over the next ten years and the Transmission System Load Management Alternative does not provide a long range plan to meet expected customer load needs. The existing 138kV transmission network in South Orange County is near its capacity limit and without additional capacity, transmission operators may be

forced to disconnect customer load to keep power flows below maximum transmission line ratings. Also, the Transmission System Load Management Alternative does not allow for expansion of the distribution portion of the Capistrano Substation which is needed to meet future customer load growth. Therefore, the Transmission System Load Management Alternative does not meet Objective 4.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

The Transmission System Load Management Alternative assumes that the proposed facilities would not be constructed. However, to continue providing electric service some new construction would be required. Such construction may or may not occur within the existing transmission corridor, SDG&E ROW. Therefore, the Transmission System Load Management Alternative does not meet Objective 5.

Avoidance or Reduction of Potentially Significant Impacts

Under the Transmission System Load Management Alternative, all of the existing transmission facilities (both the Talega and Capistrano Substations, as well as the existing 138kV transmission lines) would remain in place within the existing transmission corridor or substation site. These existing substations and transmission line facilities would not be replaced or upgraded.

The Transmission System Load Management Alternative would not avoid any significant long-term environmental impacts, as none have been identified for the Proposed Project. The potentially significant short-term environmental impacts identified for the Proposed Project would be avoided in the short-term under this alternative, including construction impacts at Rancho San Juan, Capistrano Substation, Junipero Serra Park and the ROW/private recreation facilities west of the Capistrano Substation. However, SDG&E would be required to undertake other unidentified construction activities in order to continue providing electric service within South Orange County. These construction activities would likely result in significant short- and long-term environmental impacts.

Conclusion

The Transmission System Load Management Alternative would not meet any of the project objectives and would not avoid any significant long- or short-term impacts. The Proposed Project would replace existing substation and transmission facilities within an existing transmission corridor or substation sites. This already-developed environmental setting would remain unchanged. Instead of the specific rebuilds and upgrades identified as part of the Proposed Project, the Transmission System Load Management Alternative would require the incremental construction of unidentified system replacements and improvements on a piecemeal basis, and could require new construction outside of the existing substation locations and transmission corridor. For these reasons, SDG&E rejects the Transmission System Load Management Alternative.

Rebuild 230/138kV Talega Substation Alternative

The Rebuild 230/138kV Talega Substation Alternative was eliminated because it did not meet the project objectives of increasing bulk power transmission system reliability, development of a

long range transmission plan, nor address the aging infrastructure at Capistrano Substation. Rebuilding Talega Substation would install 138kV and 230kV bus ties and relocate transmission lines and banks to reduce the effects of a bus outage. This requires moving existing equipment outside the substation to an adjacent approximately two-acre piece of property that must be obtained. This would require a new 230kV Gas Insulated Substation to be installed where the relocated equipment exists now. All the existing 138kV elements would be rearranged. This project would create additional reliability risks to South Orange County due to the multiple outages needed for construction. This alternative would cost more than the Proposed Project and does not fully meet all of the objectives of the Proposed Project.

Attainment of Project Objectives by the Rebuild 230/138kV Talega Substation Alternative

Objective 1: Provide Transmission System Reliability

Objective 1a: Reduce the Risk of an Uncontrolled Outage of all South Orange County Load

The Rebuild 230/138kV Talega Substation Alternative would reduce the risk of an uncontrolled outage of all South Orange County load and partially meets Objective 1a, but it may not be feasible. In order to meet Objective 1a, the transmission lines and transformers at Talega Substation would need to be connected to the substation in a different configuration than the configuration which exists today. Since the existing Talega Substation supplies all South Orange County load, it cannot be de-energized and rebuilt at the current location. The only way to rebuild Talega Substation would be to build a new substation next to the existing substation, which would result in greater impacts than the Proposed Project, at least in the area surrounding Talega.

Furthermore, the Rebuild 230/138kV Talega Substation Alternative does not supply an independent 230kV transmission source to South Orange County and therefore does not achieve the desired reliability. For the reasons stated above, the Rebuild 230/138 Talega Substation Alternative does not fully meet Objective 1a.

Objective 1b: Reduce the Risk of a Controlled Interruption of a Portion of South Orange County Load

While the Rebuild 230/138kV Talega Substation Alternative improves the reliability of the Talega Substation, it does nothing to improve the 138kV transmission system in South Orange County. Customer load growth in South Orange County has increased the amount of power flowing on the 138kV transmission system to the point that South Orange County transmission lines are near their maximum capacity. Because the Rebuild 230/138kV Talega Substation Alternative makes no transmission line improvements, the transmission system capacity stays the same and does not increase. Without increases in transmission capacity, transmission operators may be forced to disconnect customer load to keep power flow on the transmission lines below their maximum ratings. Therefore, the Rebuild 230/138kV Talega Substation Alternative would not meet Objective 1b.

Objective 1c: Comply with Mandatory NERC, WECC, and CAISO Transmission Planning Standards

The Rebuild 230/138kV Talega Substation Alternative improves the reliability of the Talega Substation, but it does nothing to upgrade the 138kV transmission system in South Orange County. Customer load growth in South Orange County has increased the amount of power flowing on the 138kV transmission system to the point that transmission lines are near their maximum capacity. Because the Rebuild 230/138kV Talega Substation Alternative makes no transmission improvements, transmission system capacity stays the same and does not increase. Without transmission improvements, transmission operators may be forced to disconnect customer load to keep power flow on the transmission lines below maximum ratings. In some cases, this would be a violation of mandatory NERC transmission criteria. Therefore, the Rebuild 230/138kV Talega Substation Alternative would not meet Objective 1c.

Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

The Capistrano Substation was built almost 60 years ago and was not constructed to meet today's customer load growth or today's reliability standards. The substation's aging equipment and infrastructure needs to be upgraded and rebuilt.

Unlike the Proposed Project, the Rebuild 230/138kV Talega Substation Alternative does not :

- Modernize substation infrastructure to meet current standards.
- Improve reliability by adding new 12kV bus ties.
- Increase ultimate 12kV (distribution) capacity.
- Improve operating flexibility.
- Increase available 12kV tie capacity.
- Rebuild equipment to new seismic standards.
- Improve security.
- Reduce maintenance requirements.
- Utilize new substation standards in electrical and structural design.

Under the Rebuild 230/138kV Talega Substation Alternative, Capistrano Substation would not be rebuilt and therefore would not meet Objective 2.

Objective 3: Improve Transmission and Distribution Operating Flexibility

The Rebuild 230/138kV Talega Substation Alternative would improve transmission operating flexibility for Talega Substation only. The Capistrano Substation distribution and transmission would continue to have operational problems because without the new 230kV source into South Orange County area, the ability of Grid Operations to schedule outages at Talega Substation for maintenance and construction is still constrained. In addition, without the rebuilt and modernized San Juan Capistrano Substation the operational flexibility of the 138kV and 12kV

systems would not be improved. Therefore, the Rebuild 230/138kV Talega Substation Alternative does not meet Objective 3.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

South Orange County customer load is expected to grow 10 percent over the next ten years and the Rebuild 230/138kV Talega Substation Alternative only provides part of a long-range plan to meet expected customer load needs. The existing 138kV transmission network in South Orange County is near its capacity limit and without additional capacity, transmission operators may be forced to disconnect customer load to keep power flows below maximum transmission line ratings. Also, the Rebuild 230/138kV Talega Substation Alternative does nothing for expansion needs of the distribution portion of the Capistrano Substation. Therefore, the Rebuild 230/138kV Talega Substation Alternative does not meet Objective 4.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

Existing SDG&E transmission ROW would continue in their current configuration. The Rebuild 230/138kV Talega Substation Alternative would also require SDG&E to obtain additional land from Camp Pendleton for expansion of Talega Substation, which is not consistent with the objective of using utility owned property. Therefore, this alternative does not meet Objective 5.

Avoidance or Reduction of Potentially Significant Impacts

Some potentially significant short-term environmental impacts would be avoided under this Rebuild 230/138kV Talega Substation Alternative. This includes construction impacts at Rancho San Juan, Capistrano Substation, Junipero Serra Park and the ROW/private recreation facilities west of the Capistrano Substation. Short- and long-term impacts would increase at Talega Substation due to the required expansion of the substation into undisturbed land which has several environmental constraints. These long-term impacts include sensitive and/or occupied habitat for arroyo toad and California gnatcatcher, recent land slide area which would require significant remedial grading requiring a large impact footprint and 25 percent or greater slopes which would be subject to erosion during construction.

Conclusion

This Rebuild 230/138kV Talega Substation Alternative fails to fully meet all of the fundamental project objectives and would likely result in increased potential short and long term impacts. Construction impacts at Talega Substation would be greater than the Proposed Project and several facilities would have to be upgraded over time rather than all at once in a defined existing ROW area in a comprehensive manner as would occur under the Proposed Project. All of these incremental and piecemeal system improvements would also cost more than the Proposed Project without fully attaining all of the project objectives. Since the existing Talega Substation supplies all South Orange County load, it cannot be de-energized and rebuilt at the current location. Therefore, a new substation site next to the existing substation would have to be acquired. This would require new and/or modified easements from Camp Pendleton which may or may not be granted depending on the effects of the expansion on base operations, environmental considerations and other Camp Pendleton goals. Therefore, the 230/138kV Talega Substation

Alternative is not considered to be feasible. Due to the above considerations, SDG&E rejects this alternative.

Rebuild 138/12kV Capistrano Substation Alternative

The Rebuild 138/12kV Capistrano Substation Alternative consists of rebuilding the 138kV at Capistrano Substation as a Gas Insulated Substation to accommodate eight 138kV transmission lines, two 138kV capacitors, and four 138/12kV transformers. This rebuild would include the undergrounding of 138kV transmission lines located west of Capistrano Substation in the existing ROW/private recreational area.

While the Rebuild 138/12kV Capistrano Substation Alternative improves the reliability of the Capistrano Substation, it does nothing to improve the 138kV transmission system in South Orange County and does not add a second source to the area. Customer load growth in South Orange County has increased the amount of power flowing on the 138kV transmission network to the point that transmission lines are near their maximum capacity. Modernizing the San Juan Capistrano Substation without making improvements to the 138kV transmission system may require transmission operators to disconnect customer load to keep power flow on the transmission lines below their maximum ratings. In some cases, this would be a violation of mandatory NERC transmission criteria. The above 138kV transmission system improvements are described under the Rebuild South Orange County 138kV System Alternative.

Attainment of Project Objectives by the Rebuild 138/12kV Capistrano Substation Alternative

Objective 1: Provide Transmission System Reliability

Objective 1a: Reduce the Risk of an Uncontrolled Outage of all South Orange County Load

Although the Rebuild 138/12kV Capistrano Substation Alternative does improve the reliability of the 138kV bus at Capistrano Substation, it does not supply an independent 230kV transmission source to South Orange County or remove the problems associated with the Talega Substation configuration. Therefore, the Rebuild 138/12kV Capistrano Substation Alternative does not meet Objective 1a.

Objective 1b: Reduce the Risk of a Controlled Interruption of a Portion of South Orange County Load

Although the Rebuild 138/12kV Capistrano Substation Alternative does improve the reliability of the 138kV bus at Capistrano Substation, it does not substantially reduce the risk of a controlled interruption of a portion of South Orange County customer load and therefore does not meet Objective 1b.

Objective 1c: Comply with mandatory NERC, WECC, and CAISO Transmission Planning Standards

The Rebuild 138/12kV Capistrano Substation Alternative improves the reliability of the Capistrano Substation, but it does nothing to upgrade the 138kV transmission system in South Orange County. Customer load growth in South Orange County has increased the amount of power flowing on the 138kV transmission system to the point that transmission lines are near

their maximum capacity. Because the Rebuild 138/12kV Capistrano Substation Alternative makes no transmission improvements, transmission system capacity stays the same and does not increase. Without transmission improvements, transmission operators may be forced to disconnect customer load to keep power flow on the transmission lines below maximum ratings. In some cases, this would be a violation of mandatory Transmission Planning Standards. Therefore, the Rebuild 138/12kV Capistrano Substation Alternative does not meet Objective 1c.

Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

Objective 2 would be met by the Rebuild 138/12kV Capistrano Substation Alternative

Objective 3: Improve Transmission and Distribution Operating Flexibility

The Rebuild 138/12kV Capistrano Substation Alternative would improve distribution and transmission operating flexibility for Capistrano Substation only. The Talega Substation transmission would continue to have operational problems because without the new 230kV source into South Orange County area, the ability of Grid Operations to schedule outages at Talega Substation for maintenance and construction is still constrained. Therefore, the Rebuild 138/12kV Capistrano Substation Alternative does not meet Objective 3.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

The South Orange County customer load is expected to grow 10 percent over the next ten years and the Rebuild 138/12kV Capistrano Substation Alternative only provides part of a long range plan to meet expected customer load needs. The existing 138kV transmission network in South Orange County is near its capacity limit and without additional capacity, transmission operators may be forced to disconnect customer load to keep power flows below maximum transmission line ratings. Although the Rebuild 138/12kV Capistrano Substation Alternative meets the distribution expansion needs of the Capistrano Substation, it does not meet Objective 4.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

The Rebuild 138/12kV Capistrano Substation Alternative would be within SDG&E's utility owned property. However, to continue providing electric service reliably and accommodate planned load growth additional transmission construction would be required. Such construction may not occur within the existing SDG&E ROW and easements. The above 138kV transmission system improvements are described under the Rebuild South Orange County 138kV System Alternative. Therefore, the Rebuild 138/12kV Capistrano Substation would not meet Objective 5 when taking into account the associated transmission line work that would need to occur to meet reliability and accommodate planned growth.

Avoidance or Reduction of Potentially Significant Impacts

Under the Rebuild 138/12kV Capistrano Substation Alternative, all of the existing transmission facilities (both the Talega and Capistrano Substations, as well as the existing 138kV transmission lines) would remain in place within the existing transmission corridor or substation site. Only the 138/12kV Capistrano Substation would be replaced or upgraded with the Rebuild 138/12kV Capistrano Substation Alternative.

The Rebuild 138/12kV Capistrano Substation Alternative would not avoid any significant long-term environmental impacts, as none have been identified for the Proposed Project. With exception of the Capistrano Substation, all of the potentially significant short-term environmental impacts identified for the Proposed Project would be avoided in the short-term under this alternative, including construction impacts at Rancho San Juan, Junipero Serra Park and the ROW/private recreation facilities west of the Capistrano Substation. However, SDG&E would be required to undertake construction activities in order to continue providing electric service within South Orange County. These construction activities would likely result in their own significant short- environmental impacts similar to the Proposed Project and could also result in potential long-term impacts not attributable to the Proposed Project due to requirements for additional easements and ROW. For additional description of theses potential effects, see the Rebuild South Orange County 138kV System Alternative.

Conclusion

This Rebuild 138/12kV Capistrano Substation Alternative fails to meet fundamental project objectives and would likely result in increased potential short- and long-term impacts. The Proposed Project would replace existing substation and transmission facilities within an existing transmission corridor or substation sites. This already-developed environmental setting would remain unchanged. Instead of the specific rebuilds and upgrades identified as part of the Proposed Project, the Rebuild 138/12kV Capistrano Substation Alternative would require the incremental construction of system replacements and improvements on a piecemeal basis, and require new construction outside of the existing substation locations and transmission corridor. For these reasons, SDG&E rejects the Rebuild 138/12kV Capistrano Substation Alternative.

Rebuild Capistrano to 230/138/12kV Air Insulated Substation

The Rebuild Capistrano to 230/138/12kV Air Insulated Substation Alternative consists of rebuilding Capistrano to a 230/138/12kV air insulated substation. An air insulated substation configuration requires approximately 10 acres, larger than the proposed gas insulated substation design, which requires approximately six acres. The additional area is needed to provide cooling of equipment by air, rather than using gas insulation to cool equipment inside an enclosed building. The upgrade of the 138kV line from Talega to Capistrano to 230kV would also be implemented under this alternative similar to the Proposed Project.

Attainment of Project Objectives by the Rebuild Capistrano 230/138/12kV Air Insulated Substation Alternative

<u>Objective 1: Provide Transmission System Reliability</u>

Since the Rebuild Capistrano to 230/138/12kV Air Insulated Substation Alternative is the same as the Proposed Project, but uses different technology, the alternative would meet transmission reliability Objectives 1a, 1b and 1c.

<u>Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity</u>

This alternative would meet this objective since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 3: Improve Transmission and Distribution Operating Flexibility

This alternative would meet this objective since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

This alternative would meet this objective since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

This objective would not be met since constructing a new air insulated 230/138kV substation requires approximately 10 acres, and the existing site is only 6.5 acres. Thus, the required size of a 230/138/12kV air insulated substation design would not fit in the footprint of SDG&E owned property at the existing Capistrano Substation site and would require obtaining adjoining properties to the north and east. This includes approximately 45 single family homes total, with an estimated nine residential properties immediately north of the substation and 36 properties to the northeast, east and southeast. A portion of Junipero Serra Park may also be affected.

Avoidance or Reduction of Potentially Significant Impacts

Potentially significant short-term environmental impacts increase under the Rebuild Capistrano to 230/138/12kV Air Insulated Substation Alternative. The construction impacts at Rancho San Juan, Junipero Serra Park and the ROW/private recreation facilities west of the Capistrano Substation would be the same as the Proposed Project. Short-term construction impacts would increase at Capistrano Substation due to the required acquisition of new property for the substation rebuild. Acquiring property, including a portion of the existing park to the east, would result in the displacement of homes and recreational area. The displacement of homes and recreational area is unnecessary and avoidable with implementation of the Proposed Project.

Conclusion

The Rebuild Capistrano to 230/138/12kV Air Insulated Substation Alternative meets all but one project objective and increases short-term impacts at Capistrano Substation, where short-term noise and air quality impacts would occur with increased severity and duration due to the increased grading required for an air insulated substation and demolition of homes. Long-term impacts would occur due to the required property acquisitions and displacement of housing and park land. Due to the above considerations, SDG&E rejects this alternative because it requires unnecessary additional property acquisition and the taking of approximately 45 homes on the north and east side of the existing substation property. Due to the above considerations, SDG&E rejects the Rebuild Capistrano to 230/138/12kV Air Insulated Substation Alternative.

Rebuild the SDG&E Northern 138kV System Alternative

The Rebuild the SDG&E Northern 138kV System Alternative consists of adding a dynamic voltage control device and replacing two 230/138kV transformers at the Talega Substation, rebuilding the existing Capistrano Substation, upgrading several 138kV transmission lines,

modifying three 230kV transmission lines and adding a new 138kV transmission line from San Luis Rey Substation to San Mateo Substation. This additional 138kV transmission line at San Luis Rey Substation, located in the city of Oceanside, County of San Diego would also require the addition of two new 230/138kV transformers. The addition of new transformers would require an expansion of the existing San Luis Rey Substation. The addition of the dynamic voltage control device at Talega Substation would require an expansion of the existing facility. The CAISO, when presented with this project, rejected the Rebuild the SDG&E Northern 138kV System Alternative due to the costs, which are significantly greater than the Proposed Project. In addition, due to the technical challenges associated with designing and building this alternative, this alternative cannot be implemented in a timely manner. Therefore, the Rebuild the SDG&E Northern 138kV System Alternative is not feasible for economic reasons and because it cannot be accomplished within a reasonable period of time. Nonetheless, this alternative is discussed below for purposes of providing a complete analysis of alternatives that were considered.

Attainment of Project Objectives by the Rebuild the SDG&E Northern 138kV System Alternative

Objective 1: Provide Transmission System Reliability

Objective 1a: Reduce the Risk of an Uncontrolled Outage of all South Orange County Load

The Rebuild the SDG&E Northern 138kV System Alternative would connect South Orange County to a second source and would meet Objective 1a.

Objective 1b: Reduce the Risk of a Controlled Interruption of a Portion of South Orange County Load

The Rebuild the SDG&E Northern 138kV System Alternative would improve reliability by upgrading the existing 138kV transmission and providing a second source to South Orange County, but it would not eliminate the need to interrupt customer load. San Mateo Substation is approximately 18 miles from San Luis Rey Substation. Due to the distance, the new 138kV transmission line would provide a weak connection between South Orange County and the 230kV network at San Luis Rey Substation. Under certain system conditions, South Orange County load may have to be disconnected to keep flows on the new transmission line at acceptable levels. Although the risk would be reduced and Objective 1b would be at least partially met, the gains would be short term. As load grows, the new transmission line would not be able to supply power to South Orange County and the risk to customer load would return.

Objective 1c: Comply with Mandatory NERC, WECC, and CAISO Transmission Planning Standards

The Rebuild the SDG&E Northern 138kV System Alternative would meet Objective 1c by upgrading the 138kV transmission system in South Orange County.

Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

The Rebuild the SDG&E Northern 138kV System Alternative would partially meet this objective since at Capistrano Substation the 138kV transmission and distribution capacity and arrangement is the same as the Proposed Project, but the rebuilt Capistrano Substation would not have the

230kV voltage level that provides the required additional capacity as would occur under the Proposed Project.

Objective 3: Improve Transmission and Distribution Operating Flexibility

Although the Rebuild the SDG&E Northern 138kV System Alternative would improve transmission and distribution operating flexibility, a 138kV network upgrade would not be as robust as providing an additional 230kV transmission source and would not offer flexibility in the future. Therefore, the Rebuild the SDG&E Northern 138kV System Alternative would not meet Objective 3.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

A 138kV network upgrade would not be as robust as additional 230kV transmission source and would not offer customer load growth capacity in the future. Therefore, the Rebuild the SDG&E Northern 138kV System Alternative would not meet Objective 4.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

The construction of the 138kV transmission line from San Luis Rey Substation to San Mateo Substation in SDG&E's existing 230kV transmission ROW would meet Objective 5. However, any future 230kV transmission line in this corridor would require the acquisition of new transmission ROW because it was utilized for a 138kV transmission line for this alternative. Also, the required expansion of Talega Substation would extend out of existing utility-owned property and require leasing additional land from Camp Pendleton. Therefore, the Rebuild the SDG&E Northern 138kV System Alternative would not meet Objective 5.

Avoidance or Reduction of Potentially Significant Impacts

In the event the Proposed Project is denied, SDG&E would need to undertake one or more projects to continue to provide service to South Orange County. A likely scenario would be the Rebuild the SDG&E Northern 138kV System Alternative. Thus, as noted above, the Rebuild the SDG&E Northern 138kV System Alternative is a possible "No Project" Alternative. The new 138kV transmission line network proposed under this alternative would be upgraded over a broader area as compared to the Proposed Project. This alternative includes the construction of system replacements and improvements over a longer period of time. Because of the longer duration and broader area of construction, short-term impacts would be greater than they would be with the Proposed Project. Localized short-term air and traffic construction impacts would still occur at similar or possibly greater levels as compared to the Proposed Project.

Long-term impacts would occur under this alternative which would not occur under the Proposed Project because of the expansion of the Talega Substation outside of the existing substation site. The rebuilding of a 138kV transmission line to a double circuit transmission line would require a similar level of work as compared to the Proposed Project at Rancho San Juan, Junipero Serra Park and the ROW/private recreation facilities west of the Capistrano Substation similar to the Proposed Project, since the structures to accommodate two 138kV circuits to existing SDG&E standards would be approximately the same height and configuration as the Proposed Project transmission line(s) at 230kV.

Conclusion

As noted above, the CAISO previously rejected the Rebuild the SDG&E Northern 138kV System Alternative. Therefore, this alternative is not feasible. In addition, the Rebuild the SDG&E Northern 138kV System Alternative fully meets only two project objectives and would result in additional potential short-term construction impacts as compared to the Proposed Project. Furthermore, the Rebuild the SDG&E Northern 138kV System Alternative would be substantially more costly than the Proposed Project due to additional work at Talega Substation and the need to add a new 138kV transmission line from a source outside of South Orange County. Long-term impacts would potentially occur with the expansion of the 138kV source (San Luis Rey) substation and additional ROW. Construction would also occur over a longer time frame over a broader area (since additional lines and facilities would have to be upgraded to attain some of the load and reliability benefits of the Proposed Project) rather than all at once in a defined existing ROW area as would occur under the Proposed Project. Due to the above considerations, SDG&E rejected this alternative since not all project objectives are fully met; short-term construction impacts cannot be demonstrably minimized or avoided and would instead be greater overall than the Proposed Project. Long-term impacts associated with acquiring additional ROW and new construction would also occur which do not occur with the Proposed Project and costs would likely be greater than the Proposed Project.

5.2.4.2 Alternative Locations and Routes

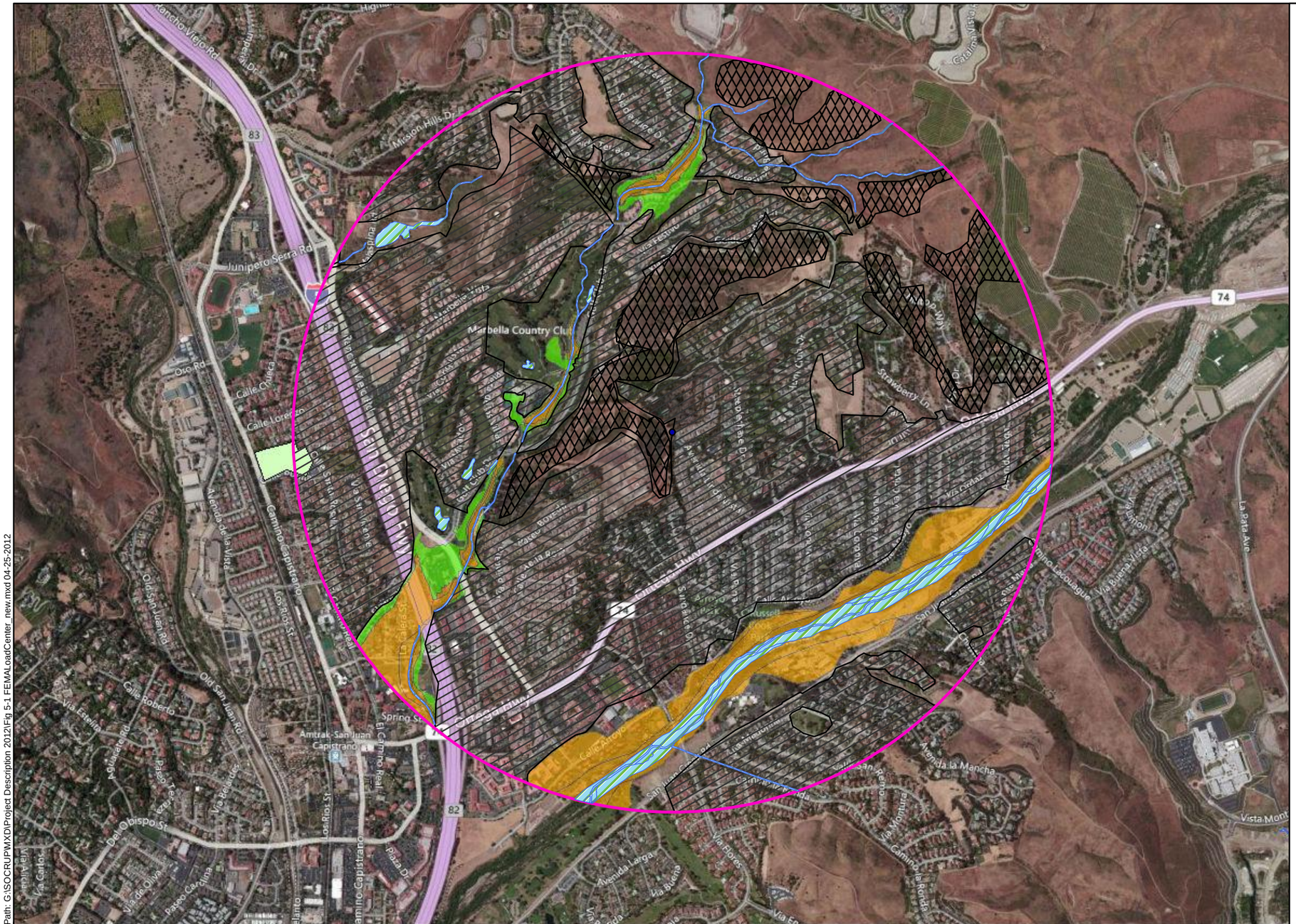
Alternative Sites within the Transmission Load Center

Potential sites for the relocation of the San Juan Capistrano Substation located within the south Orange County transmission load center were reviewed. The Capistrano Substation load center is a zone within approximately a one mile radius around the existing transmission load center as defined in Section 2.0, Proposed Project Purpose and Need (see Figure 2-2, South Orange County 138kV Substation Load Center Diagram [Confidential] and Figure 5.1, Development Constraints within the South Orange County Transmission Load Center). Ideally, the 230/138kV substation in the Proposed Project should be placed as close as possible to the load center. To construct a new 230/138kV substation, approximately 10 acres is required for a new substation site and corresponding easements for extending transmission and distribution facilities to the new site.

The existing 138/12kV Capistrano Substation would also have to be rebuilt on the existing property or moved to a new 230/138kV substation site. If a distribution substation is relocated to the new 230/138kV substation site, approximately one acre of additional property would need to be acquired. Additional acreage would be required for new transmission and distribution ROWs and ingress and egress to the new site.

Within one mile of the existing Capistrano Substation load center, there is currently extensive development; including established residential, cultural, commercial, educational, undeveloped areas and recreational communities and facilities. SDG&E prefers not to unnecessarily displace any existing uses within this community. Existing recreational facilities include the Marbella Country Club, equestrian facilities, and parks such as the Junipero Serra Park.

THIS PAGE IS INTENDED TO BE LEFT BLANK


Rancho Viejo Rd
Mission Hills Dr
83
Junipero Serra Rd
Marbella Country Club
Ortega Hwy
Calle Clarea
Calle Lorenzo
Camino Capistrano
Los Rios St
Old San Juan Rd
Amtrak-San Juan Capistrano
Spring St
Camino Real
Calle Arroyo
82
74
Avenida La Cabeza
Avenida La Pata
Avenida La Caballeria
Avenida La Mancha
Via Buena Vista
Via Flores
Via Estrella
Calle Roberto
Paseo Tesoro
Via Reboles
Del Obispo St
Paseo Cardona
Via de Oliva
Plaza De
Vista Montana
Strawberry Ln
Via Pacifica
Via Cortez
Via Arroyo
Via Rancho
Via Estrella
Via Montura
Via Ronda
Via Encanto
Via Lacouague
Via Buena Vista
Via Flores
Via Arroyo
Via Cortez
Via Pacifica

THIS PAGE IS INTENDED TO BE LEFT BLANK

BACK OF FIGURE 5-1

The only undeveloped areas in the transmission load center radius area are steep slope areas (25% or greater), designated open space, Rancho Mission Viejo and its dedicated open space, drainage course and floodplains. The potential constraints encountered when siting a new substation in these areas include the following:

Topography: A large portion of the open space to the north of the load center radius area is located on hillsides. Hillsides, and the associated potential for landslides in this area, are not ideal for the construction of a substation, and sites are typically not chosen when the existing slope is greater than 25 percent.

Hydrology: Another pertinent feature within the existing open space south and northwest of the load center radius area is existing hydrology, including San Juan Creek. San Juan Creek runs east-west and drains into Arroyo Creek and is south of the load center. Another significant drainage course (Horno Creek) runs adjacent to the Marbella Country Club in a northwest to north east and continues to Rancho Mission Viejo. San Juan Creek and Horno Creek both include important limiting factors for development including wetlands mapped by the USFWS's NWI and high risk flood hazards zones designated by the Federal Emergency Management Agency. Wetlands are considered an environmentally sensitive habitat type and flood hazard zones are not ideally suitable for the construction of substations.

Site Access: Finding a suitable site for the new San Juan Capistrano Substation would entail more than the approximately 10 acres needed for the new substation. A new site selected at a location other than the Proposed Project would require significant new transmission and distribution ROW for egress and ingress of electric facilities needed to feed the substation. Existing substation sites are always the first choice for the siting of new or upgraded substations due to the fact that the use of existing sites minimizes the amount of new transmission and distribution line rerouting work that is otherwise required. This additional transmission and distribution ROW would cause additional environmental impacts greater than would occur with the Proposed Project. Using the Capistrano Substation as an example, all of the affected existing transmission and distribution lines already terminate at, or pass immediately by, the existing substation site by way of existing transmission and distribution ROW. The further the new substation is moved from the existing substation site, the more transmission and distribution line work that would be required in order to connect the new substation to the existing transmission and distribution networks. Constructing the new San Juan Capistrano Substation on a new site within the load center would also likely require the construction of new access roads and driveways that would connect the substation site to the existing transmission infrastructure.

The relocation of existing transmission and distribution lines would result in increased physical and environmental effects on the existing landscape, including installation of new transmission structures and underground trench packages where none were previously located. The required relocation of transmission and distribution lines would be heavily constrained by existing infrastructure located in roadways and lack of availability of land for new overhead ROW.

For the reasons cited above, no additional sites were found that could be considered for the relocation of the Proposed Project in its load center other than the existing site. Therefore, the Alternative Sites within the Transmission Load Center Alternative was rejected by SDG&E and not further analyzed.

230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative

The 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative would consist of building a new 230/138kV substation on a portion of County of Orange property in the Prima Deshecha area (see Figure 5-2, Alternative 230/138kV Air Insulated Substation Site Location at the Prima Deshecha Landfill). A general site area was identified within the county property where a minimum of eight level acres of land would need to be acquired for the substation location. This partially disturbed but undeveloped land is in need of substantial site development work to compensate for the known landslides in the area. In general, the disturbance area for the substation at this site would cover approximately 12 acres.

This 230/138kV Air Insulated Substation Located at Prima Deshecha Landfill Alternative would also include modernizing the existing Capistrano 138/12kV Substation to an expanded 138/12kV gas insulated substation and the 138kV undergrounding would also be completed west of Capistrano Substation. A new 138kV transmission line and a rebuild of an existing 138kV transmission line from the new substation to the existing Capistrano Substation would also be required. This alternative would also require four 138kV transmission lines and two 230kV transmission lines extended from SDG&E's existing ROW to the substation site on new ROW that would need to be acquired.

Attainment of Project Objectives by the 230/138kV Substation Located at Prima Deshecha Landfill Alternative

Objective 1: Provide Transmission System Reliability

Objective 1a: Reduce the Risk of an Uncontrolled Outage of all South Orange County Load

Moving South Orange County's second 230kV source from Capistrano Substation to a new substation located near the Prima Deshecha Landfill would reduce the risk of an uncontrolled outage of all South Orange County load and would meet Objective 1a.

Objective 1b: Reduce the Risk of a Controlled Interruption of a Portion of South Orange County Load

Building a new 230/138kV substation at the Prima Deshecha Landfill instead of adding a new 230kV substation at Capistrano Substation would increase the number of controlled interruptions needed to keep power flows on the 138kV transmission network below maximum ratings. This is because the Prima Deshecha site is not located at the load center as is Capistrano Substation, and is not as effective at relieving the loading on the 138kV network. Therefore, the 230/138kV Air Insulated Substation Located at Prima Deshecha Landfill Alternative does not meet Objective 1b.



Path: G:\SOCRUP\MXD\WhisperingHillsAlternative04052012.mxd 04-13-12

0 250 500 1,000 Feet

South Orange County Reliability Enhancement Project

Alternative 230/138kV Air Insulated Substation
Site Location at the Prima Deshecha Landfill

Figure 5-2

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

Potential Substation Location

Source: Bing Maps Imagery

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

THIS PAGE IS INTENTIONALLY LEFT BLANK

BACK OF FIGURE 5-2

Objective 1c: Comply with Mandatory NERC, WECC, and CAISO Transmission Planning Standards

Building a new 230/138kV substation at the Prima Deshecha Landfill instead of adding a new 230kV substation at Capistrano Substation would require an existing transmission line to be rebuilt and a new 138kV transmission line at similar size specifications as the Proposed Project. Therefore, the 230/138kV Air Insulated Substation Located at Prima Deshecha Landfill Alternative does not meet Objective 1c.

In summary, the 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative does not meet Objective 1.

Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

The 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative would meet this objective since the rebuilding of the Capistrano 138/12kV Substation is included in this alternative.

Objective 3: Improve Transmission and Distribution Operating Flexibility

At Capistrano Substation, under the 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative there would be no second 230kV source for reliability within the load center but the modernized Capistrano Substation would improve operational flexibility for the 138kV transmission network and distribution system. Therefore, this 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative does meet this objective.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

The 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative does not provide for customer load growth beyond the immediate future. This site is not located within the transmission load center. For this alternative to meet this objective, future 138kV transmission line rebuilds and additional 138kV transmission lines would be required. Therefore, this 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative does not meet this objective.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

Objective 5 would not be met since this substation would require approximately 12 acres of land to be acquired and developed by SDG&E. This also would require that an estimated four 138kV transmission lines and two 230kV transmission lines be extended from SDG&E's existing ROW to the substation site on ROW that would need to be acquired. Therefore, the 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative does not meet Objective 5.

Avoidance or Reduction of Potentially Significant Impacts

Potentially significant short-term environmental impacts would only be somewhat reduced under this alternative at Capistrano Substation since the modernization of the Capistrano Substation would still be completed. Short-term and long-term construction impacts would increase at the

Prima Deshecha Substation site since as mentioned previously, it is a disturbed but undeveloped area and would require significant site preparation and grading. Short-term impacts would not be reduced at Junipero Serra Park since the reconductor of an existing 138kV transmission line and the new 138kV transmission line would consist of the same construction impacts as the proposed 230kV transmission lines. Impacts at the ROW/private recreation facilities west of the Capistrano Substation would be approximately the same as the Proposed Project since all of the 138kV improvements would still occur. Therefore, the 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative would not avoid or reduce potentially short-term impacts and would increase long-term impacts.

Conclusion

The 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative would not meet most of the project objectives and would result in a substantial increase of both short-term and long-term impacts. Not only would the Prima Deshecha Landfill substation location be subjected to the site grading and construction impacts needed to construct a 230/138kV substation, but it would also be subjected to the construction of new 230kV and 138kV transmission lines to and from the new substation. Grading and construction for the 138/12kV rebuild at Capistrano Substation would also need to occur. This represents a more than 50 percent increase in the overall amount of grading activity to be done as compared to the Proposed Project (more than one half of the Capistrano Substation property for the rebuilt 138kV substation plus 12 acres for the Prima Deshecha substation site). Essentially, this alternative would result in the construction of one replacement substation and one new substation at two different locations. This expands the impact area and would require the extension of transmission lines on new ROW to connect the Prima Deshecha Landfill substation to the network as previously described. The Proposed Project would not require these additional extensions and provides the same facilities in one consolidated area. Project objectives would not be met, construction impacts would be greater and costs would be greater; therefore, SDG&E rejects the 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative.

Eastern Talega to San Juan Capistrano 230kV Transmission Line Route Alternative

The Eastern Talega to Capistrano 230kV Route Alternative would construct approximately 13 miles of new 230kV double circuit steel structures from Talega to Capistrano Substations on a northern route following an existing SDG&E transmission ROW. The following sections describe the transmission scope of work in detail.

The existing 100 foot ROW extending north from Talega Substation would need to be expanded to a total width of 120 feet by the acquisition of an additional 20 feet of ROW width. The existing 138kV single pole transmission line would be removed and approximately 7.5 miles of new 230kV double circuit steel structures would be installed in its place. Conductors installed on the western side of the towers would be energized as the new 230kV circuit and the conductors on the eastern side of the towers would be tied back into the existing 138kV line to Margarita Substation. This would allow the 138kV transmission line to be reestablished in its original Talega to Margarita 138kV configuration.

From a structure located outside of the Margarita Substation, which would be replaced by a 230kV cable pole, the route would run approximately 4.5 miles of 230kV double circuit

underground (due to space constraints at the existing ROW) in newly acquired easement along SR-74 until crossing I-5 to the Trabuco Substation. The existing TL13830 transmission line is currently underground in two sections between SDG&E's existing Margarita and Trabuco Substations. SDG&E would need to build the new 230kV underground section in a separate trench with two cables per phase (approximately three feet width of trench). The separation would be a minimum of ten feet center to center from the existing underground trench/conduit package. The existing easement width for transmission line TL13830 is 20 feet and the transmission line is located in the center of the easement. Therefore, SDG&E would need to acquire a new easement for a new 230kV transmission line.

At the Trabuco Substation, the line would turn south to Capistrano Substation and would require the acquisition or expansion of existing ROW to accommodate the approximately four miles of 230kV transmission line. This segment may also require a combination of undergrounding and overhead construction due to the adjacent railroad tracks and freeway crossings.

Attainment of Project Objectives by the Eastern Talega to San Juan Capistrano 230kV Route Alternative

Objective 1: Provide Transmission System Reliability

The Eastern Talega to San Juan Capistrano 230kV Route Alternative would meet Objective 1 since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

The Eastern Talega to San Juan Capistrano 230kV Route Alternative would meet Objective 2 since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 3: Improve Transmission and Distribution Operating Flexibility

The Eastern Talega to San Juan Capistrano 230kV Route Alternative would meet Objective 3 since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

The Eastern Talega to San Juan Capistrano 230kV Route Alternative would meet Objective 4 since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

The Eastern Talega to San Juan Capistrano 230kV Route Alternative would not meet Objective 5 because new land rights may be needed throughout the entire route. As stated previously, the existing 100 foot ROW extending north from Talega Substation approximately nine miles to Margarita Substation would need to be expanded to a total width of 120 feet by the acquisition of an additional 20 feet of ROW width to accommodate the 230kV poles which are replacing the 138kV poles due to the increase in structure width. Also, at Trabuco Substation the line would turn south to Capistrano Substation and would require the acquisition or expansion of existing ROW to accommodate the approximately four miles of 230kV transmission line. This would

total approximately 13 miles of expanded and/or new ROW which is a significant increase as compared to the Proposed Project.

Avoidance or Reduction of Potentially Significant Impacts

Potentially significant short-term environmental impacts would only be avoided under this alternative at Rancho San Juan and Junipero Serra Park. Short-term construction impacts would be the same at Capistrano Substation and the ROW/private recreation facilities west of the Capistrano Substation as in the Proposed Project. Substantial increases in short- and long-term impacts would occur along approximately 13 miles for this alternative route due to the need for new and/or expanded ROW. The significant increase in length of expanded and/or new transmission line ROW would result in increased traffic impacts, air quality and noise impacts and other construction related issues.

Conclusion

The Eastern Talega to San Juan Capistrano 230kV Route Alternative meets all of the project objectives except for Objective 5. Nonetheless, the eastern route is approximately twice the length of the proposed route and consequently would result in substantially greater environmental impacts and costs than the Proposed Project. Because of the additional construction impacts and higher costs, SDG&E rejects this alternative.

230kV Connection with SCE at 230/138kV Substation located at Prima Deshecha Landfill Alternative

The 230kV Connection with SCE at 230/138kV Substation located at Prima Deshecha Landfill Alternative would consist of building a new 230/138kV substation in the Prima Deshecha area of South Orange County, modernizing the 138/12kV Capistrano Substation and undergrounding the 138kV transmission lines west of Capistrano Substation, adding a new 138kV transmission line from the new substation to Capistrano Substation and reconductoring an existing 138kV transmission line. This substation would be fed by extending a new 230kV transmission line approximately ten miles from the SONGS 230kV SCE bus to the new substation. A minimum of 12 acres of land would need to be acquired for the substation location, possibly the same location as the 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative. It is anticipated that this would be undeveloped land and in need of substantial site development work to compensate for the known landslides in the area. Because SDG&E has not secured permission from SCE or the CAISO to connect to the SCE 230kV transmission network, this Alternative may not be feasible. This Alternative could require unknown additional work to tie SCE to SDG&E at the new location.

Attainment of Project Objectives by the 230kV Connection with Southern California Edison (SCE) at 230/138kV Substation Located at Prima Deshecha Landfill Alternative

<u>Objective 1: Provide Transmission System Reliability</u>

Currently, SDG&E is connected to SCE at the San Onofre 230kV bus. Connecting SDG&E to SCE in South Orange County would add to the complexity of grid operations and may require Special Protection Systems to manage parallel flows through South Orange County. This alternative would subject the 138kV network in South Orange County to Southern California

network loop flows for which it was not designed. Additionally, this alternative would modify SCE's Path 43 (north of SONGS) and may trigger a WECC path rating study. For this reason, the 230kV Connection with SCE at 230/138kV Air Insulated Substation located at Prima Deshecha Landfill Alternative does not meet Objective 1 and may not be feasible.

Objective 1a: Reduce the Risk of an Uncontrolled Outage of all South Orange County Load

The 230kV Connection with SCE at 230/138kV Substation Located at Prima Deshecha Alternative is similar to connecting the Prima Deshecha 230kV bus to SDG&E, but may require protection system additions and 138kV transmission network upgrades. Connecting with SCE at the Prima Deshecha 230kV Substation would partially meet Objective 1a.

Objective 1b: Reduce the Risk of a Controlled Interruption of a Portion of South Orange County Load

The 230kV Connection with SCE at 230/138kV Substation located at Prima Deshecha Landfill Alternative may require protection system additions and would require 138kV transmission network upgrades to meet Objective 1b.

Objective 1c: Comply with Mandatory NERC, WECC, and CAISO Transmission Planning Standards

The 230kV Connection with SCE at 230/138kV Substation Located at Prima Deshecha Landfill Alternative requires building a new 230/138kV substation at the Prima Deshecha property instead of adding a new 230kV substation at Capistrano Substation and would require an existing transmission line to be rebuilt as well as a new 138kV transmission line at similar size specifications as the proposed project. To meet Objective 1c, this alternative may require protection system additions and several additional transmission lines would need to be reconductored/rebuilt. Therefore, the 230kV Connection with SCE at 230/138kV Substation located at Prima Deshecha Landfill Alternative does not meet Objective 1c.

In summary, the 230kV Connection with SCE at 230/138kV Substation located at Prima Deshecha Landfill Alternative does not meet Objective 1.

<u>Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity</u>

The 230kV Connection with SCE at 230/138kV Substation Located at Prima Deshecha Landfill Alternative and rebuilding the Capistrano Substation to 138/12kV would meet Objective 2.

<u>Objective 3: Improve Transmission and Distribution Operating Flexibility</u>

The 230kV Connection with SCE at 230/138kV Substation Located at Prima Deshecha Landfill Alternative may increase the operating complexity which would impede this objective. Connecting SDG&E to SCE in South Orange County would add to the complexity of grid operations and could require Special Protection Systems to manage parallel flows through South Orange County. This alternative would subject the 138kV network in South Orange County to Southern California network loop flows for which it was not designed. Additionally, this alternative would modify SCE's Path 43 (north of SONGS) and would trigger a WECC path rating study. The modernized San Juan Capistrano Substation would improve Capistrano

Substation for operational flexibility for the 138kV transmission and distribution systems. Therefore, the 230kV Connection with SCE at 230/138kV Substation Located at Prima Deshecha Alternative would not meet Objective 3 and, in some respects, would impede it.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

The 230kV Connection with SCE at 230/138kV Substation at Prima Deshecha Landfill Alternative is similar to the Proposed Project and it is not known if it could meet Objective 4 without further study. The new 230kV bus at the San Juan Capistrano Substation would take power from SCE instead of SDG&E. This makes the San Juan Capistrano Substation dependent on SCE's ability to supply power to it from their 230kV transmission lines.

Adding a new load substation to an existing SCE transmission line would increase the loading on that line and could trigger new transmission upgrades. In order to avoid the upgrades, SCE could be forced to limit the amount of power that could be supplied to the new substation. This would limit the amount of customer load growth which could be served from the new substation. Therefore, it is unknown if the 230kV Connection with SCE at 230/138kV Substation at Prima Deshecha Landfill Alternative could meet Objective 4 without further study.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

Objective 5 would not be met since this substation would require approximately 12 acres of land to be acquired and developed by SDG&E. This also would require four 138kV transmission lines and two SCE 230kV transmission lines extended from SDG&E and SCE's ROW to the substation site on ROW that would need to be acquired. Therefore, the 230kV Connection with SCE at 230/138kV Substation Located at Prima Deshecha Landfill Alternative would not meet Objective 5.

Avoidance or Reduction of Potentially Significant Impacts

Potentially significant short-term environmental impacts would only be somewhat reduced under this alternative at Capistrano Substation since the modernization of the Capistrano Substation would still be completed. Short-term and long-term construction impacts would increase at a new Prima Deshecha Substation site while short-term impacts would be not reduced at Junipero Serra Park since the reconductor of an existing 138kV transmission line and the new 138kV transmission line would consist of the same construction impacts as the proposed 230kV transmission lines. Impacts at the ROW/private recreation facilities west of the Capistrano Substation would be approximately the same as the Proposed Project since all of the 138kV improvements would still occur. In addition, this alternative could require unknown additional work to tie SCE to SDG&E at the new location. Therefore, the 230kV Connection with SCE at 230/138kV Substation Located at Prima Deshecha Landfill Alternative would not avoid or reduce potentially short-term impacts and would increase long-term impacts.

Conclusion

The 230kV Connection with SCE at 230/138kV Substation Located at Prima Deshecha Landfill Alternative would not meet the project objectives and would result in a substantial increase in both short-term and long-term impacts. In addition to the construction impacts associated with

construction of a 230/138kV substation, additional construction impacts would result from the construction of new 230kV and 138kV transmission lines to and from the new substation. Grading and construction for the 138/12kV rebuild at Capistrano Substation would also need to occur. This represents a more than 50 percent increase in the overall amount of grading activity to be done as compared to the Proposed Project (more than one half of the Capistrano Substation property for the rebuilt 138kV substation plus 12 acres for the Prima Deshecha Substation site). Project objectives would not be fully met, impacts would be greater and costs would be greater. Connecting SDG&E to SCE in South Orange County would add to the complexity of grid operations and could require Special Protection Systems to manage parallel flows through South Orange County because this alternative would subject the 138kV network in South Orange County to Southern California network loop flows for which it was not designed. Additionally, this alternative would modify SCE's Path 43 (north of SONGS) and could trigger a WECC path rating study. Because SDG&E has not performed the detailed technical analysis or secured permission from SCE and the CAISO to connect to the SCE 230kV transmission network, SDG&E rejects the 230kV Connection with SCE at 230/138kV Substation Located at Prima Deshecha Landfill Alternative.

230kV Connection with SCE at 230/138kV Capistrano Substation Alternative

The 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative would construct two 230kV transmission lines from the location where the SDG&E transmission lines leave the ROW they share with SCE transmission lines to the Capistrano Substation. The construction of the two 230kV transmission lines would be similar to the Proposed Project from this location to Capistrano Substation. This alternative would include rebuilding the Capistrano Substation to 230/138/12kV gas insulated substation and undergrounding the 138kV transmission lines west of the Capistrano Substation as with the Proposed Project. Connecting SDG&E to SCE in South Orange County would add to the complexity of grid operations and could require Special Protection Systems to manage parallel flows through South Orange County. This alternative would subject the 138kV network in South Orange County to Southern California network loop flows for which it was not designed. Additionally, this alternative would modify SCE's Path 43 (north of SONGS) and could trigger a WECC path rating study and add Special Protection Systems. This could lead to possible unknown additional work which would be necessary to tie SCE to SDG&E at the new location. Because SDG&E has not performed the detailed technical analysis or secured permission from SCE and the CAISO to connect to the SCE 230kV transmission network, the 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative may not be feasible.

Attainment of Project Objectives by the 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative

Objective 1: Provide Transmission System Reliability

Currently, SDG&E is connected to SCE at the San Onofre 230kV bus. Connecting SDG&E to SCE in South Orange County would add to the complexity of grid operations and could require Special Protection Systems to manage parallel flows through South Orange County. This alternative would subject the 138kV network in South Orange County to Southern California network loop flows for which it was not designed. Additionally, this alternative would modify SCE's Path 43 (north of SONGS) and could trigger a WECC path rating study. For this reason,

the 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative does not meet Objective 1.

Objective 1a: Reduce the Risk of an Uncontrolled Outage of all South Orange County Load

The 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative is similar to the Proposed Project, but this alternative could require protection system additions and 138kV transmission network upgrades. Connecting with SCE at the Capistrano Substation 230/138kV substation location would only partially meet Objective 1a.

Objective 1b: Reduce the Risk of a Controlled Interruption of a Portion of South Orange County Load

The 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative could require protection system additions and would require 138kV transmission network upgrades to meet Objective 1b. In addition, unknown work could be required by the CAISO on SCE's network. For this reason, this alternative only partially meets Objective 1b.

Objective 1c: Comply with Mandatory NERC, WECC, and CAISO Transmission Planning Standards

To meet Objective 1c, this alternative could require protection system additions and/or other system upgrades or additions based on CAISO system studies. Therefore, SDG&E concludes that the 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative does not meet Objective 1c as proposed.

In summary, the 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative does not meet Objective 1.

Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

The 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative would meet Objective 2 since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 3: Improve Transmission and Distribution Operating Flexibility

The 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative may increase the operating complexity which would impede this objective. Connecting SDG&E to SCE in South Orange County would add to the complexity of grid operations and could require Special Protection Systems to manage parallel flows through South Orange County. This alternative would subject the 138kV network in South Orange County to Southern California network loop flows for which it was not designed. Additionally, this alternative would modify SCE's Path 43 (north of SONGS) and could trigger a WECC path rating study. The modernized San Juan Capistrano Substation would improve Capistrano Substation for operational flexibility for the 138kV transmission and distribution systems. Therefore, the 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative would not meet Objective 3.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

It is not known if the 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative could meet Objective 4 without further technical analysis. From an SDG&E system capacity and arrangement perspective, it is the same as the Proposed Project although it is dependent upon SCE having sufficient capacity on their system to compensate for the added South Orange County load to their transmission system. Therefore, it is unknown if the 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative could meet Objective 4 without further study.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

The 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative may not meet Objective 5 since the actual connection point to SCE is not known at this time and additional SCE and SDG&E ROW may need to be acquired.

Avoidance or Reduction of Potentially Significant Impacts

Potentially significant short-term environmental impacts are the same as the Proposed Project under the 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative. The construction impacts at Rancho San Juan, Junipero Serra Park and the ROW/private recreation facilities west of the Capistrano Substation would be the same as the Proposed Project. Long-term impacts may increase due to the potential need to acquire additional SDG&E and SCE ROW and because of unknown modifications that may be required on SCE's system.

Conclusion

The 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative would not reduce the short-term impacts associated with the Proposed Project. Connecting SDG&E to SCE in South Orange County would add to the complexity of grid operations and could require Special Protection Systems to manage parallel flows through South Orange County, because this alternative would subject the 138kV network in South Orange County to Southern California network loop flows for which it was not designed. Additionally, this alternative would modify SCE's Path 43 (north of SONGS) and could trigger a WECC path rating study. This alternative could add potentially significant system and environmental impacts because the interconnection with SCE has not been fully studied by SCE and the CAISO. Without a comprehensive technical analysis, the impacts of this interconnection remain unknown but could impede project objectives and may not be feasible. Therefore, SDG&E rejects the 230kV Connection with SCE at 230/138kV Capistrano Substation Alternative.

Partial Underground within La Pata Road and San Juan Creek Road Alternative

The Partial Underground within La Pata Road and San Juan Creek Road Alternative has all of the same elements of the Proposed Project but would minimize construction activity within Vista Montana. The existing 138kV conduit package that traverses within Vista Montana would be replaced with a 230kV conduit package similar to the Proposed Project. The second 230kV conduit package would be placed underground within La Pata Road at the cable pole just south of Vista Montana in a northerly direction. The line would deviate underground at an existing dirt

road and connect to and traverse westerly underground within San Juan Creek Road to the existing ROW. A new cable pole would be installed in the Tar Farms horse stable area where the 230kV line would proceed northwest along the current ROW consistent with the Proposed Project.

Attainment of Project Objectives by the Partial Underground within La Pata Road and San Juan Creek Road Alternative

Objective 1: Provide Transmission System Reliability

The Partial Underground within La Pata Road and San Juan Creek Road Alternative would meet Objective 1 since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

The Partial Underground within La Pata Road and San Juan Creek Road Alternative would meet Objective 2 since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 3: Improve Transmission and Distribution Operating Flexibility

The Partial Underground within La Pata Road and San Juan Creek Road Alternative would meet Objective 3 since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

The Partial Underground within La Pata Road and San Juan Creek Road Alternative would meet Objective 4 since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

The Partial Underground within La Pata Road and San Juan Creek Road Alternative would not meet Objective 5 because new land rights may be needed for the connection between La Pata Road and San Juan Creek Road.

Avoidance or Reduction of Potentially Significant Impacts

Potentially significant short-term environmental impacts would be minimized under this alternative at Rancho San Juan and the San Juan Hills High School. Short-term construction impacts similar to the Proposed Project would still occur at Capistrano Substation, Junipero Serra Park and the ROW/private recreation facilities west of the Capistrano Substation.

Conclusion

The Partial Underground within La Pata Road and San Juan Creek Road Alternative would meet most of the project objectives and substantially minimize construction impacts at one location

(Rancho San Juan), but not for the overall Proposed Project. Construction impacts would be minimized at Vista Montana with additional short-term impacts also occurring within La Pata Road and San Juan Creek Road affecting approximately two miles of road way as compared to the project which affects only 0.2 mile of road. If the conduit within La Pata Road could be constructed during the widening of La Pata Road which is an approved County of Orange project then that portion of potential construction impact would be avoided. At this time, SDG&E cannot know whether the timing of the Proposed Project and the La Pata Road widening can be synchronized. In any case, additional construction impacts would occur along San Juan Creek Road that would not occur under the Proposed Project. In addition, undergrounding would result in an approximate three-fold increase in cost on a per mile basis as compared to the proposed overhead design. SDG&E rejects this alternative since short-term construction impacts cannot be substantially reduced and in fact may be greater and costs would likely be greater than the Proposed Project.

Proposed Project with 230kV Connection to Escondido Substation Alternative

The Proposed Project with 230kV Connection to Escondido Substation Alternative consists of the Proposed Project with a 230kV interconnection to Escondido Substation located in the city of Escondido, County of San Diego. The new 230kV transmission line would be built on existing structures on an existing tower line from the Escondido Substation to Talega Substation. To accommodate the new transmission line at Escondido Substation a new 230kV bay position would be added within the existing substation. At Talega Substation, the new 230kV transmission line would bypass the substation and continue on to the new 230kV bus at San Juan Capistrano Substation in the existing ROW the same as the Proposed Project. The other 230kV transmission line from San Onofre Substation to San Juan Capistrano Substation would also be constructed the same as the Proposed Project. All other aspects of this alternative are the same as the Proposed Project. The CAISO, when presented with this alternative as a way to meet the Proposed Project objectives, rejected it due to the costs, which are greater than the Proposed Project.

Attainment of Project Objectives by the Proposed Project with 230kV Connection to Escondido Substation Alternative

Objective 1: Provide Transmission System Reliability

The Proposed Project with 230kV Connection to Escondido Substation Alternative is technically superior to the Proposed Project and meets Objective 1. Furthermore, it strengthens the 230kV system connection to South Orange County. This alternative would meet transmission reliability Objectives 1a, 1b and 1c.

Objective 2: Rebuild Capistrano Substation to Replace Aging Equipment and Increase Capacity

The Proposed Project with 230kV Connection to Escondido Substation Alternative would meet Objective 2 since from a system capacity and arrangement perspective it is the same as the Proposed Project.

Objective 3: Improve Transmission and Distribution Operating Flexibility

The Proposed Project with 230kV Connection to Escondido Substation Alternative would meet Objective 3 since from a system capacity and arrangement perspective it is the same as the Proposed Project. Furthermore, the Proposed Project with 230kV Connection to Escondido Substation Alternative is technically superior because it has an independent 230kV transmission connection between San Juan Capistrano and Escondido substations allowing for more flexible operating and outage coordination.

Objective 4: Accommodate Customer Load Growth in the South Orange County Area

The Proposed Project with 230kV Connection to Escondido Substation Alternative would meet Objective 4 since from a system capacity and arrangement perspective it is the same as the Proposed Project. Furthermore, the Proposed Project with 230kV Connection to Escondido Substation Alternative is technologically superior because it has an independent 230kV transmission connection between San Juan Capistrano and Escondido substations that provides more transmission capacity.

Objective 5: Locate Proposed Facilities within Existing Transmission Corridors, SDG&E Rights of Way and Utility Owned Property

The Proposed Project with 230kV Connection to Escondido Substation Alternative would largely meet Objective 5. A small additional ROW may be required in the 230kV corridor north of Highway 78. Of all the alternatives, this alternative would make maximum use of existing SDG&E ROW and facilities.

Avoidance or Reduction of Potentially Significant Impacts

Potentially significant short-term environmental impacts would slightly increase under the Proposed Project with 230kV Connection to Escondido Substation Alternative. The construction impacts at Capistrano Substation, Rancho San Juan, Junipero Serra Park and the ROW/private recreation facilities west of the Capistrano Substation would be the same as the Proposed Project. There would be additional short-term construction impacts associated with the installation of the new 230kV transmission line on the existing structures from the Escondido to Talega substations.

Conclusion

The Proposed Project with 230kV Connection to Escondido Substation Alternative is technologically the best alternative and meets or exceeds all objectives; however, the CAISO preferred the Proposed Project as a more cost-effective way to achieve the objectives of the Proposed Project and rejected the additional 230kV transmission line segment between Talega and Escondido substations. The CAISO, when presented with this project, rejected the Proposed Project with 230kV Connection to Escondido Substation Alternative due to the costs, which are greater than the Proposed Project.

5.3 GROWTH-INDUCING IMPACTS

CEQA requires a lead agency to review and discuss whether the project would foster economic or population growth, either directly or indirectly, in the surrounding environment, including projects that could remove obstacles to growth. The *CEQA Guidelines* consider a project to be growth-inducing if it fosters economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding area. New employees hired for proposed commercial and industrial development projects and population growth resulting from residential development projects represent direct forms of growth. Other examples of growth-inducing projects are the expansion of urban services into previously undeveloped areas or the removal of major obstacles to growth, such as transportation corridors and potable water supply.

Consistent with the *CEQA Guidelines*, the Proposed Project could be considered to have growth-inducing impacts if it would either directly or indirectly foster economic or population growth within the San Juan Capistrano, San Clemente, or South Orange County areas, or remove existing obstacles to growth in these areas above what would be expected without the Proposed Project. The Proposed Project could also have a growth-inducing impact if it would provide a substantial amount of new employment, create a substantial new burden on existing communities, provide access to previously inaccessible areas or extend public services to previously un-served areas, or cause new development elsewhere (outside of the South Orange County area).

As explained below, although the Proposed Project would increase electrical service reliability in the South Orange County service area, implementation of the Proposed Project would not result in any significant growth-inducing environmental effects.

5.3.1 Economic or Population Growth

5.3.1.1 Background and Anticipated Growth in the Proposed Project Area

As outlined in Section 4.11, Population and Housing, Orange County is projected to grow to a total population of 3,266,000 by the year 2020, an increase of approximately 255,768 people (or 8.5 percent) as predicted by SCAG's *2012 Proposed Final Regional Transportation Plan*. The populations within the cities of San Juan Capistrano and San Clemente are anticipated to grow to 38,100 and 68,100, respectively. These increases represent growth of approximately 10 and 7 percent, respectively, above 2010 populations.

Similarly, the South Orange County service area has been experiencing continuing load growth: over 15 percent in the last ten years and an expected 10 percent in the next ten years.

5.3.1.2 Growth and the Proposed Project

In order to keep up with increasing customer load, SDG&E has added two of the existing seven 138/12kV distribution substations located within the South Orange County service area over the last ten years. As previously discussed in Section 2.0, Proposed Project Purpose and Need, all seven distribution substations are connected to the existing 138kV transmission network which is currently supplied solely by the Talega Substation. The 138kV transmission network—which connects the distribution substations together and connects them to the power source located at the Talega Substation—has reached its maximum capacity. Thus, SDG&E has developed the

Proposed Project in order to continue to supply the South Orange County service area with reliable electric service, additional capacity, and the increased operational flexibility needed for the overall transmission network in the South Orange County service area. Without the Proposed Project, the transmission network is vulnerable to power system failures that may lead to the interruption of power to existing customers.

The Proposed Project is being implemented to increase the reliability of the existing electrical system in a developed, urban area. The Proposed Project is not being implemented in advance of growth but, rather, in response to existing demand and forecasted load growth in the South Orange County service area. SDG&E is legally required to provide services as development is approved through the local planning process (i.e. distribution network). The Proposed Project is designed to provide safe and reliable electric power to the existing cities and communities of South Orange County and remove a projected deficiency in the current transmission system. The Proposed Project would not increase housing, bring in new services, or improve the existing infrastructure system (with the exception of making the existing electric service more reliable and adding additional capacity to accommodate forecasted growth based on adopted land use plans by local and regional government entities). The Proposed Project would accommodate projected demand in the service area by providing additional electric transmission capacity to a system where, based on projected growth information, the existing transmission capacity cannot meet anticipated needs. If these improvements are not implemented, deterioration of services and an increased likelihood of system instability would result. The Proposed Project would not directly or indirectly foster substantial growth; result in a new concentration of residents, businesses, or industries; or remove obstacles to economic or population growth in the area.

5.3.2 New Employment

The Proposed Project would provide short-term construction employment, but no new permanent employment increase in employment. During peak construction times, SDG&E would employ up to approximately 60 workers per day (including construction monitors and support staff), with up to 20 people working at a substation at one time. The limited, temporary nature of this employment would not result in long-term growth within the Proposed Project area.

Furthermore, operation and maintenance activities for the Proposed Project would be performed by current SDG&E personnel, and no new jobs would be required. As a result, the Proposed Project would not induce any increase in employment.

5.3.3 Extended Access or Public Services

While there are currently undeveloped, under-serviced areas located east of the Proposed Project area, the Proposed Project would not provide access to these or other previously inaccessible areas, or extend public services to any currently un-served areas. SDG&E currently provides electric service to the Proposed Project area (South Orange County service area) and the Proposed Project does not include the expansion of the distribution system into areas that currently do not have electric service infrastructure. Therefore, the Proposed Project would not induce growth by extending access or public services (electric service infrastructure) into areas that currently un-served areas.

5.3.4 Existing Community Services

The Proposed Project would not burden existing community services. The Proposed Project would not require new or expanded services for wastewater or solid waste services, and its demand for City- and County-provided services, such as road improvements, law enforcement, and fire protection, would be negligible and short-term (for construction) and equal to or less than existing demand for operations and maintenance. The entirety of the Proposed Project constitutes a replacement or enhancement of existing facilities and, as such, SDG&E has existing operations and maintenance resources available to service the Proposed Project upon completion.

5.3.5 New Development

The Proposed Project would not promote new development, either in the South Orange County service area (including the cities of San Juan Capistrano and San Clemente) or elsewhere, because it is primarily a response to existing and planned development and a corrective action for existing and foreseeable future transmission system reliability shortfalls. The Proposed Project would satisfy SDG&E's obligation to accommodate the demand that the development market and local governments have projected or planned. Established and locally supported patterns of development and growth carry with them a corresponding electrical demand that SDG&E is obligated to anticipate and serve to avoid the consequences of electrical overload, as discussed in Section 2.0, Proposed Project Purpose and Need. The Proposed Project would not directly or indirectly cause or promote new development that would not otherwise be constructed, as approved through local land use approval processes.

Only local jurisdictional government agencies (i.e., cities and counties) can direct (plan, approve, deny) new development. All new development is subject to the appropriate land use guidance document(s) and local agency design and review processes. The local agencies, through their land use guidance documents and review processes, dictate the actual location and intensity of new development, if any. Electrical utility upgrades for new development is more often a distribution-level requirement that is addressed either during or after the plan review process.

5.3.6 Conclusion

The Proposed Project is designed to improve transmission system reliability and flexibility, and increase capacity for projected load growth in the South Orange County service area based on existing regionally and locally adopted land use plans. With the addition of a second 230kV source within the South Orange County service area, the transmission system would meet all NERC, CAISO, and WECC transmission planning standards (refer to Section 2.0, Proposed Project Purpose and Need). The Proposed Project would also replace aging equipment at the Capistrano Substation while allowing for a new substation to be constructed in place of the Capistrano Substation that would be able to support anticipated load growth as well as the upgraded transmission infrastructure (230kV transmission lines).

The Proposed Project would not create a new customer-level service or source of power (distribution lines) that would indirectly allow for an increase in population, housing, or other development because the Proposed Project would not extend electrical service infrastructure into previously un-served areas. The Proposed Project would accommodate existing and planned power demands in SDG&E's service territory through increasing the transmission system reliability and upgrading the existing Capistrano Substation to allow for future distribution

circuits. SDG&E responds to projected development and forecasts, rather than inducing growth by extending infrastructure for future unplanned development. Therefore, the Proposed Project would not induce population growth in this manner. The Proposed Project would require new employment for construction activities; however, most of the construction force is anticipated to come from the existing local workforce from a pool of existing SDG&E electrical personnel and contractors. Operation and maintenance of the Proposed Project would be similar to the existing operations and maintenance needs for the Capistrano and Talega Substations and the Talega to Capistrano transmission corridor. Therefore, the Proposed Project would have only minor and therefore less than significant impacts relating to growth inducement within the Proposed Project area.

5.4 REFERENCES

California Independent System Operator. May 18, 2011. *2010-2011 Transmission Plan*. 207-210. http://www.caiso.com/Documents/Board-approvedISO2010-2011TransmissionPlan.pdf

North American Electric Reliability Corporation. October 29, 2008. *Transmission Planning Standard TPL-001-0.1, System Performance Under Normal (No Contingency) Conditions (Category A)*. http://www.nerc.com/files/TPL-001-0_1.pdf.

North American Electric Reliability Corporation. November 5, 2009. *Transmission Planning Standard TPL-002-0b, System Performance Following the Loss of a Single Bulk Electric System Element (Category B)*. http://www.nerc.com/files/TPL-002-0b.pdf.

North American Electric Reliability Corporation. July 30, 2008. *Transmission Planning Standard TPL-003-0a, System Performance Following the Loss of Two or More Bulk Electric System Elements (Category C)*. http://www.nerc.com/files/TPL-003-0a.pdf.

North American Electric Reliability Corporation. February 8, 2005. *Transmission Planning Standard TPL-004-0, System Performance Following Extreme Events Resulting in the Loss of Two of More Bulk Electric System Elements (Category D)*. http://www.nerc.com/files/TPL-004-0.pdf.

SCAG. 2008. *2008 Regional Transportation Plan*.

State of California, Department of Finance. May 2010. *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark*. Sacramento, California.

U.S. Census Bureau. 2011. *Orange County Quick Facts from the U.S. Census Bureau*. Online: http://quickfacts.census.gov/qfd/states/06/06059.html. Site visited January 26, 2012.

U.S. Census Bureau, Quick Facts. 2010. http://quickfacts.census.gov/qfd/states/06/06059.html, accessed September 2011.

PEA PREPARERS AND CONTRIBUTORS

The following individuals contributed to the preparation of the San Diego Gas & Electric South Orange County Reliability Enhancement Project Proponent's Environmental Assessment.

Task/Section	Person and Title	Organization
Project Management	Mary Turley, Project Manager	SDG&E
	Elisha Back, Principal	TRC
General, Technical, and Peer Reviewers	Mary Turley, Project Manager (All PEA Chapters) Chris Terzich, REA, Principal Environmental Specialist (All PEA Chapters) Hashim Navrozali, Principal Environmental Specialist (Air Quality) Ronald Freeman, Team Lead, Biological Resources (Biological Resources) Sue Campbell, Substation Engineer Darleen Evans, Project Coordinator	SDG&E
	Tom Wolf, Principal Engineer (Air Quality) Joe Stenger, PG, REA, Project Director (Geology and Traffic) Tony Agresti, Principal Consulting Scientist (Noise) Julie Allison, Lead Planner (Land Use) Steve Ferrara, REA, Vice President (Hazards) Marc Cassady, CPESC, Senior Biologist (Biological Resources) Elisha Back, Principal (General Review) Joshua Taylor, Lead Planner (General Review)	TRC

Task/Section	Person and Title	Organization
1. PEA Summary	Mary Turley, Project Manager	SDG&E
	Elisha Back, Principal Joshua Taylor, Lead Planner	TRC
2. Project Purpose and Need	Mary Turley, Project Manager John Jontry, Manager, Transmission Planning Cory Smith, Principal Engineer, Transmission Planning Sue Campbell, Substation Engineer, Substation Team Lead Chris Terzich, REA, Principal Environmental Specialist	SDG&E
	Elisha Back, Principal Joshua Taylor, Lead Planner	TRC
3. Project Description	Mary Turley, Project Manager Dan Klausenstock, Transmission Engineer Chuck Matyac, Senior Transmission Designer Sue Campbell, Substation Engineer, Team Lead Willie Thomas, Transmission Team Lead Chris Terzich, REA, Principal Environmental Specialist Ellis Jones, Principal Engineer, Electric Distribution Planning Fardin Sarraf, Senior Engineer, Electric Distribution Planning	SDG&E
	Elisha Back, Principal Joshua Taylor, Lead Planner	TRC
4.1 Aesthetics	Marsha Gale, Managing Principal Chuck Cornwall	Environmental Vision

Task/Section	Person and Title	Organization
4.2 Agriculture and Forestry Resources	Joshua Taylor, Lead Planner	TRC
4.3 Air Quality and GHG	Valorie Thompson, PhD, Principal	Scientific Resources Associated
4.4 Biological Resources	Ceri Williams-Dodd, PhD, Senior Biologist Travis Kegel, Staff Biologist Kirstie Reynolds, Lead Biologist	TRC
4.5 Cultural and Paleontological Resources	Susan Underbrink, RPA, Project Manager Archaeology Mark Roeder, Paleontologist Susan Hector, PhD, RPA, Principal Environmental Specialist	TRC TRC SDG&E
4.6 Geology, Soils, and Minerals Resources	Sarah Mearon, PG, Project Geologist	TRC
	Ron Brunton, Civil Engineer Tyler Lonsdale, Civil Engineer Tim Moore, Civil Engineer	SDG&E
4.7 Hazards and Hazardous Materials	Joshua Taylor, Lead Planner	TRC
4.8 Hydrology and Water Quality	Joe Stenger, PG, REA, Project Director	TRC
4.9 Land Use and Planning	Joshua Taylor, Lead Planner Kathleen Cooney, Lead Planner	TRC
4.10 Noise	Bob Mantey, Principal Consultant	Alliance Acoustical Consultants, Inc.
4.11 Population and Housing	Joshua Taylor, Lead Planner Kathleen Cooney, Lead Planner	TRC

Task/Section	Person and Title	Organization
4.12 Public Services	Joshua Taylor, Lead Planner Kathleen Cooney, Lead Planner	TRC
4.13 Recreation	Joshua Taylor, Lead Planner Kathleen Cooney, Lead Planner	TRC
4.14 Transportation and Traffic	Joshua Taylor, Lead Planner	TRC
4.15 Utilities and Service Systems	Joshua Taylor, Lead Planner Kathleen Cooney, Lead Planner	TRC
4.16 Cumulative Impacts	Joshua Taylor, Lead Planner	TRC
5. Detailed Discussion of Significant Environmental Impacts	Joshua Taylor, Lead Planner	TRC
5.2 Alternatives	Mary Turley, Project Manager Chris Terzich, REA, Principal Environmental Specialist Sue Campbell, Substation Engineering, Team Lead Cory Smith, Principal Engineer, Transmission Planning John Jontry, Manager, Transmission Planning Joshua Taylor, Lead Planner	SDG&E SDG&E SDG&E SDG&E SDG&E TRC
5.3 Growth-Inducing Impacts	Julie Allison, Project Manager/Lead Planner Joshua Taylor, Lead Planner	TRC
Graphics	Karyn Sernka, Senior GIS/Biologist Travis Kegel, Staff Biologist/GIS Technician Land Services Department	TRC TRC SDG&E

CAPITOL OFFICE
STATE CAPITOL
ROOM 3082
SACRAMENTO CA 95814
TEL (916) 651-4033
FAX (916) 445-9754

DISTRICT OFFICE
24031 EL TORO ROAD
SUITE 210
LAGUNA HILLS, CA 92653
TEL (949) 457-7333
FAX (949) 457-7305

California State Senate

SENATOR
MIMI WALTERS
THIRTY-THIRD SENATE DISTRICT

COMMITTEES:
LEGISLATIVE ETHICS
CHAIR
APPROPRIATIONS
VICE CHAIR
PUBLIC EMPLOYMENT
& RETIREMENT
VICE CHAIR
BANKING & FINANCIAL
INSTITUTIONS
MEMBER
BUSINESS, PROFESSIONS
& ECONOMIC DEVELOPMENT
MEMBER

February 2, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: Support for the South Orange County Reliability Enhancement

Dear Mr. Cave: Duane

Thank you for taking the time to brief me and my staff regarding the San Diego Gas & Electric (SDG&E) South Orange County Reliability Enhancement (SOCRE). I was thrilled to learn that SDG&E is taking a pro-active approach to upgrade infrastructure that is decades old and in need of modernization. Thanks to the SOCRE, SDG&E customers will continue to receive the high quality service to which they have grown accustomed.

As Southern California residents increase their use of electricity, it is clear that the region's electrical infrastructure will need to be upgraded to continue to meet and exceed the expectations of safe and reliable power by the residents and businesses in my 33rd Senatorial District. Thank you for your extensive bilingual outreach. I appreciate your recognition of the fact that providing English and Spanish outreach material is critical to ensuring a comprehensive public information and education campaign in my district. It is wonderful to learn that you personally visited more than 2,000 homes to inform them about this project.

I support SDG&E's South Orange County Reliability Enhancement and look forward to keeping track of its progress as it moves through the two-year permitting process. Please keep me and my staff updated via e-mail and regular project briefings.

Sincerely,

Mimi

MIMI WALTERS
State Senator, 33rd District

STATE CAPITOL
SACRAMENTO, CA 95814
(916) 651-4038
(916) 446-7382 FAX

DISTRICT OFFICES
1910 PALOMAR POINT WAY
SUITE 105
CARLSBAD, CA 92008
(760) 931-2455
(760) 931-2477 FAX

27126A PASEO ESPADA
SUITE 1621
SAN JUAN CAPISTRANO, CA 92675
(949) 489-9838
(949) 489-8354 FAX

California State Senate

SENATOR
MARK WYLAND
THIRTY-EIGHTH SENATE DISTRICT

COMMITTEES
BUSINESS & PROFESSIONS
GOVERNMENTAL ORGANIZATION
INSURANCE
LABOR & INDUSTRIAL RELATIONS

January 31, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: Support for the South Orange County Reliability Enhancement

Dear Mr. Cave:

I appreciate the briefing San Diego Gas & Electric (SDG&E) provided to my staff about the South Orange County Reliability Enhancement (SOCRE). My staff briefed me on this proposed electric reliability project and it is clear that to ensure future safety and reliability, this project is much needed.

For decades, SDG&E has had a stellar reputation of providing safe and reliable power to residents and businesses throughout my 38th Senatorial District. It is wonderful to learn that this project will not only help update infrastructure but will create and protect hundreds of jobs. For example, the substation in San Juan Capistrano that will be upgraded was last renovated in the 1950's. In addition to this substation, decades-old poles and lines will be replaced with state-of-the-art modern equipment to help meet the needs of SDG&E's customer base.

I strongly support SDG&E's South Orange County Reliability Enhancement. I look forward to hearing updates from you on the significant progress in the upcoming months.

Sincerely,

Mark Wyland

Senator Mark Wyland
California State Senator-38th District

PATRICIA C. BATES
ORANGE COUNTY BOARD OF SUPERVISORS
SUPERVISOR, FIFTH DISTRICT

ORANGE COUNTY HALL OF ADMINISTRATION
333 W. SANTA ANA BLVD.
10 CIVIC CENTER, SANTA ANA, CALIFORNIA 92701
PHONE (714) 834-3550 FAX (714) 834-2670
http://bos.ocgov.com/fifth/

February 9, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: South Orange County Reliability Enhancement Project

Dear Mr. Cave:

Thank you for your briefing on the San Diego Gas & Electric (SDG&E) South Orange County Reliability Enhancement Project intended to modernize and improve reliability to the existing electrical system.

I am pleased that SDG&E has made a commitment to community outreach and public education during this process. Keeping the affected community informed at all times will be vitally important to the success of this large-scale infrastructure project. I have confidence that SDG&E's level of commitment to public outreach will continue through the permitting process and the four years of construction.

I appreciate you keeping me informed and look forward to continued updates as the project progresses.

Sincerely,

Patricia C. Bates
Supervisor, Fifth District
County of Orange

City of San Clemente
City Manager

George Scarborough, City Manager
Phone: (949) 361-8322 Fax: (949) 361-8283
scarboroughg@san-clemente.org

April 3, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: SDG&E's South Orange County Reliability Enhancement

Dear Mr. Cave:

We appreciate the briefing San Diego Gas & Electric (SDG&E) has provided to the City of San Clemente regarding its South Orange County Reliability Enhancement project. Electric infrastructure and power reliability are essential to preserving and maintaining the quality of life of the residents of San Clemente. The infrastructure is decades old and our community would benefit from the replacement and modernization of this outdated equipment. Additionally, the project will provide much-needed system redundancy, which will reduce the likelihood of regional power outages.

The City of San Clemente also recognizes SDG&E for its extensive community outreach effort. SDG&E has held three open houses and has sent its community outreach team door-to-door in our City informing residents about the proposed project. We look forward to SDG&E keeping us informed and involved throughout the public regulatory review process and during the construction period to follow.

Sincerely,

George Scarborough
City Manager

ASSOCIATION OF CALIFORNIA CITIES
ORANGE COUNTY

600 South Main Street, #940, Orange, CA 92868 | P: 714.953.1300 | F: 714.953.1302 | www.ACCOC.org

February 15, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

RE: Support for the South Orange County Reliability Enhancement (SOCRE)

Dear Mr. Cave,

The Association of California Cities – Orange County (ACC-OC) is a non-profit organization established to be a resource for elected officials and municipal staff. Our three key initiatives are:

- To serve as an educational resource for city leaders
- To be the hub for good public policy in Orange County
- To preserve local control while serving as a catalyst for regional collaboration

San Diego Gas & Electric (SDG&E) recently presented to the ACC-OC Legislative Committee about its South Orange County Reliability Enhancement (SOCRE). The Committee strongly endorsed this project and the ACC-OC Board of Directors agrees. Orange County needs power reliability projects like this, which will provide enhanced safety and system redundancy to the electrical transmission grid in South Orange County.

Although the construction for this project is not expected to begin for approximately two years, we understand the importance of public involvement throughout the permitting process and would like to remain involved so that our voice is heard. We encourage the California Public Utilities Commission to support this power reliability project and look forward to the completion of this project that will provide jobs as well as reliable power to our county.

Sincerely,

Robert Ming
President
Association of California Cities – Orange County

SAN JUAN CAPISTRANO
Chamber of Commerce

2011-2012
BOARD OF DIRECTORS

Executive Board
Stephanie Frisch
Chairman
Larry Thomas
Past Chair/Treasurer
Neil O'Connor
Secretary

DIRECTOR
Ricardo Beas
David Boyle
Jim Carter
Carolyn Franks
Steve Freygang
O.J. Gause
John Heffernan
Anthony L. Holguin
Carl Linhardt
David Malt
Becky Rodarte
Stacey Strausbaugh

CHAMBER STAFF

Mark Bodenhamer
Chief Executive Officer
Jennifer Pointer
Operations Manager
Claire Sussex
Office Administrator

Wednesday, April 18, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: Support for the South Orange County Reliability Enhancement

Dear Mr. Cave:

The San Juan Capistrano Chamber of Commerce is a non-profit, volunteer driven organization representing approximately 300 local businesses in San Juan Capistrano, CA. Our chamber strives to create and promote a climate where business can operate in a productive and profitable manner.

One key to running a successful business is reliable power. Our city's businesses have grown accustom to receiving reliable power from San Diego Gas & Electric (SDG&E) and this project will greatly assist with minimizing the number of business-killing power outages. Further, the project will bring much needed jobs and economic growth to our community and the surrounding region during construction.

With that in mind, the San Juan Capistrano supports the South Orange County Reliability Enhancement project. In addition to supporting the overall project, our Board of Directors specifically commended the public outreach efforts that SDG&E has carried out with regard to this project. We felt that their dedication to ensuring public awareness was exceptional.

We look forward to continued involvement in the public process as the permitting for this project moves forward.

Sincerely,

Mark Bodenhamer
CEO/President
San Juan Capistrano Chamber of Commerce

Location: 31421 La Matanza St.
Mailing Address: P.O. Box 1878, San Juan Capistrano, California 92693
Phone: (949) 493-4700 • Fax: (949) 489-2695
Email: info@sanjuanchamber.com • Website: www.sanjuanchamber.com

January 13, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: Support for the South Orange County Reliability Enhancement

Dear Mr. Cave:

Thank you for your presentation to the San Clemente Chamber of Commerce Board of Directors on January 13, 2012. The economic strength of our city and our region is reliant on quality infrastructure including safe and reliable electric power. The South Orange County Reliability Enhancement is a project that will not only provide jobs and economic growth to the region during the four-year construction effort, but it will provide decades of continued power reliability that we have come to enjoy and expect from San Diego Gas & Electric (SDG&E).

The San Clemente Chamber of Commerce recognizes the responsible planning that is being undertaken by SDG&E to ensure a redundant electric system that will enhance safety and reduce the chance for regional power outages.

Replacing the older wooden poles with stronger and fewer steel poles will enhance safety and reduce the chance of damage or power interruption from wind, fire or earthquakes. We look forward to taking part in the public process as the permitting for this project moves forward to the California Public Utilities Commission.

The San Clemente Chamber of Commerce is proud to offer its strong endorsement and support of SDG&E's South Orange County Reliability Enhancement.

Sincerely,

Lynn Wood
Chief Executive Officer

ACCREDITED
☆ ☆ ☆ ☆ ☆
(949) 492-1131 • (949) 492-3764 FAX • 1100 N. EL CAMINO REAL • SAN CLEMENTE, CA 92672
www.scchamber.com

ORANGE COUNTY
BUSINESS COUNCIL

2 Park Plaza, Suite 100 | Irvine, California 92614-5904
phone: 949.794.2242 | fax: 949.476.0443 | www.ocbc.org

April 17, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92763

RE: South Orange County Reliability Enhancement (SOCRE) - SUPPORT

Dear Mr. Cave:

On behalf of Orange County Business Council (OCBC), representing the largest and most innovative employers in America's sixth largest county, we support the San Diego Gas & Electric's (SDG&E) South Orange County Reliability Enhancement (SOCRE.) OCBC understands how important infrastructure projects like this one are to improving Orange County and enhancing our business climate and economy.

An adequate infrastructure system is critical to meeting the growing needs of Orange County's residents and businesses. As our County's need for electrical power increases, it is imperative that electric utility companies keep up with the demand by improving and modernizing their infrastructure. Quite simply, Infrastructure needs to be created so that the physical assets for economic growth are in place throughout the County. SOCRE is a needed forward-thinking project focused on upgrading our critical electric system.

Through its four core initiatives, one being infrastructure, OCBC works to help the region's vibrant economy to continue to expand, bringing the benefits of prosperity to every corner of the county. This project will not only create and protect hundreds of jobs throughout the planning and construction phases, but once operational, the SOCRE will provide safe and reliable power for decades to come.

The South Orange County Reliability Enhancement is a much needed project to ensure Orange County's infrastructure is able to meet the demands of a growing population and expanding economy. OCBC stands ready to assist you for Orange County's future.

Sincerely,

Kate Klimow
Vice President of Government Relations

South Orange County
Regional Chamber
of Commerce

24031 El Toro Road, Suite 300
Laguna Hills, CA 92653
Phone 949.600.5470
Fax 949.600.5474
www.socchamber.com

February 10, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: Support for the South Orange County Reliability Enhancement

Dear Mr. Cave:

For the past 43 years, the South Orange County Regional Chamber of Commerce (SOCRCC) has been dedicated to the support of business and economic growth through the region. The reliability of power through the region has been exceptional and has been a positive factor in the attraction of business to the area. However, it is notable that the electrical infrastructure that has supported that growth has remained virtually unchanged since the Chambers' incorporation in 1969.

SOCRCC recognizes that upgrades and modernization is a necessary component of continued growth and improvement. Our electrical needs in 2012 are far greater than they were in the 50's when San Diego Gas & Electric's (SDG&E) San Juan Capistrano substation was last upgraded. For the good of the residents and businesses throughout the SDG&E service area, the South Orange County Regional Chamber of Commerce offers its unmitigated support for the construction and completion of the South Orange County Reliability Enhancement (SOCRE).

The level of public outreach and education conducted by SDG&E and its communications consultants for this project has been exceptional. As the Chairman of the Chamber, I'm involved in several business and community groups and have seen that SDG&E has provided information in a variety of formats and media throughout the region with a depth and breadth that is unmatched.

Please keep me informed about the progress of the permitting process and let me know what SOCRCC can do to support the SOCRE and facilitate its completion.

Sincerely,

John Whitman
Chairman
South Orange County Regional Chamber of Commerce

South Orange County
Economic Coalition

24031 El Toro Road, Suite 300
Laguna Hills, CA 92653
Phone 949.600.5470
Fax 949.600.5474
www.economiccoalition.com

February 10, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: Support for the South Orange County Reliability Enhancement

Dear Mr. Cave:

Thanks so much for the briefing San Diego Gas & Electric (SDG&E) provided to the South Orange County Economic Coalition on October 28, 2011. While SDG&E has provided safe and reliable power to South Orange County for decades, it's clear from the presentation that much of the infrastructure that provides that power is outdated and in need of replacement. Additionally, the electric needs of Orange County have increased significantly over the past three decades as we have become more reliant on computers, electronic mobile devices and home entertainment systems. Again, it's clear from your presentation that the South Orange County Reliability Enhancement project will provide redundancy in the electrical transmission system throughout South Orange County and provide a badly-needed, modernized and upgraded substation in San Juan Capistrano.

The South Orange County Economic Coalition enthusiastically supports infrastructure projects that will promote economic and job growth throughout the region. The South Orange County Reliability Enhancement will do both. By providing hundreds of direct jobs throughout the four-year construction process the power reliability project will generate economic growth in the short term. Providing continued safe and reliable electric power is a critical decision-making component of businesses interested in operating in Orange County.

The South Orange County Economic Coalition fully supports SDG&E's South Orange County Reliability Enhancement and looks forward to actively advocating for it throughout the public process.

Sincerely,

James M. Leach
Chief Executive Officer
South Orange County Economic Coalition

OCTax.org
OCTAX
Orange County Taxpayers Association

25 Orchard Suite 200 Lake Forest, CA 92630
phone (949) 768-8131 • fax (949) 768-1601 • www.octax.org

January 24, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: Support for the South Orange County Reliability Enhancement

Dear Mr. Cave:

The Orange County Taxpayers Association (OCTax) is the only countywide organization whose exclusive focus is to represent taxpayers on governmental tax and spending policy issues. Its mission is to ensure that taxes and tax-supported programs are fair, understandable, cost-effective, and good for the economy.

OCTax supports infrastructure projects that are developed by private industry and financed by user fees rather than taxes. The South Orange County Reliability Enhancement is such a project. It will ensure continued safe and reliable power to South Orange County for generations to come. The San Juan Capistrano substation nearing six decades of use; it is time to modernize and upgrade the facility.

It makes sense to increase the power capacity for the region by replacing one of the existing 138KV transmission lines with a 230KV line. The transmission line replacement will remain in the existing transmission corridor, but the upgrade of the poles from wood to steel will enhance the safety of the system and protect against wind, fire or earthquake damage.

As the public review process for this project commences, OCTax will be a stalwart supporter. We look forward to explaining that support to the California Public Utilities Commission (CPUC) throughout the public comment process.

Sincerely,

Reed L Royalty

Reed Royalty
President
Orange County Taxpayers Association

RANCHO MISSION VIEJO

April 20, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: Support for the South Orange County Reliability Enhancement Project

Dear Mr. Cave:

Thank you for your meeting with us to discuss the South Orange County Reliability Enhancement on January 10, 2012. As Rancho Mission Viejo continues its tradition of Master Planned Community development designed to meet the future housing and employment needs of South Orange County, it is heartening to know that San Diego Gas & Electric (SDG&E) is investing in the modernization of its electrical infrastructure system to continue to provide safe and reliable power to the region.

While Rancho Mission Viejo and SDG&E have already partnered, through the construction of your latest substation located within the Rancho Mission Viejo development, to provide for the energy needs of that community, RMV supports SDG&E's plan as proposed, to upgrade its transmission and substation system to bring an additional 230 kV source into the region. The project will provide improved safety, reliability and increased capacity of the South Orange County power system..

Rancho Mission Viejo appreciates the pro-active outreach approach SDG&E has undertaken to educate and inform the community and key stakeholders about this project before it even submits its application to the California Public Utilities Commission (CPUC).

Please keep me informed of the progress of this important and needed infrastructure improvement project and I look forward to communicating Rancho Mission Viejo's support for this project in the proper public meeting forums.

Sincerely,

Richard M. Broming
Senior Vice President, Planning & Entitlement
Rancho Mission Viejo

DRUG USE IS LIFE ABUSE

28811 ORTEGA HIGHWAY • P.O. BOX 9 • SAN JUAN CAPISTRANO, CA 92693 • (949) 240-3363 • FAX (949) 248-1763

ORANGE COUNTY
ASSOCIATION OF REALTORS®

A Step Ahead

March 28, 2012

Mr. Duane Cave
External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Subject: Support for the South Orange County Reliability Enhancement

Dear Mr. Cave:

The Orange County Association of REALTORS® (OCAR) is committed to the principles of sustainability, energy conservation and the safe extraction and transmission of domestic energy supplies.

Our 10,000 REALTOR® and Affiliate members appreciate the reliable service that San Diego Gas & Electric offers to provide for the reliable transmission of electricity and gas. Because of SDG&E's investment and work on the network over the years, we rarely experience the kinds of outages that used to be common place and that used to cause disruptions for homeowners, even causing economic loss because of lost refrigeration and in the most extreme cases, health crises for patients who relied on medical devices and monitors to treat their condition.

As our communities continue to grow we understand that the utilities that we rely on require upgrades and enhancements. Our association is supportive of SDG&E's foresight in making the necessary improvements to transmission lines, substations, and utility poles as part of the South Orange County Reliability Enhancement project. These changes will ensure that homeowners and businesses throughout our growing communities will continue to enjoy the same uninterrupted, safe, and reliable power they enjoy today.

Please do not hesitate to contact our Governmental Affairs Director Dave Stefanides if you should have any questions, at (949) 268-0416 or Dave@OCAR.org.

Sincerely,

Maria Elena Banks, ePro, SFR, SRES
President

25552 La Paz Road, Laguna Hills, CA 92653 • Tel: (949) 586-6800 • Fax: (949) 586-0382 • www.ocar.org
8071 Slater Avenue, Ste. 240, Huntington Beach, CA 92647 • (714) 375-9313 • Fax (714) 375-9322 • www.ocar.org

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0073
(916) 319-2073
FAX (916) 319-2173

WEBSITE
WWW.ASSEMBLY.CA.GOV/HARKEY

Assembly
California Legislature

COMMITTEES
VICE CHAIR: APPROPRIATIONS
BANKING AND FINANCE
BUDGET
PUBLIC EMPLOYEES, RETIREMENT AND SOCIAL SECURITY
REVENUE AND TAXATION

DIANE L. HARKEY
ASSEMBLYWOMAN, SEVENTY-THIRD DISTRICT

April 25, 2012

Mr. Duane Cave, External Affairs Manager
San Diego Gas & Electric
662 Camino de los Mares
San Clemente, CA 92673

Re: South Orange County Reliability Enhancement

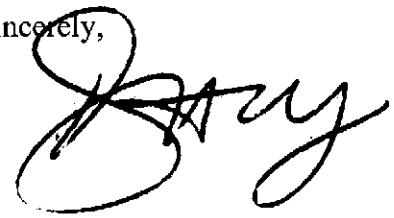
Dear Mr. Cave:

Thank you for the personal briefing on San Diego Gas & Electric's (SDG&E) South Orange County Reliability Enhancement (SOCRE). While I understand that legally SDG&E may proceed with or without approvals from local or state government, I do appreciate that you are making a concerted effort to keep my constituents and me updated about the project through community outreach.

Over the past several decades, it is obvious that our need for electrical power has increased significantly. The state seems to be unwilling to accommodate those needs but rather insists that we can add millions of people over the next two decades and do more with less. New technology products are becoming staples in every household, electric automobiles are being encouraged, which will add the equivalent of another house on to the grid for each car. Yet the state will be penalizing producers of electricity, however produced, under the implementation of AB 32 the Global Warming Solutions Act of 2006, approved by the Democrat majority in Sacramento and signed into law by the Governor, Arnold Schwarzenegger. And so, I do understand the need for SDG&E to modernize and upgrade the infrastructure system within the district, as we will need every supply source allowable in future years.

As SDG&E moves forward with the South Orange County Reliability Enhancement, I encourage you to continue to work with community and the San Juan Capistrano City Council to accomplish the best possible solutions and outcome. I trust that you will work with city leaders to mitigate to the extent possible any impacts of the proposed improvements. Please advise me if there is anything I can do to assist as the project moves through the regulatory process or any legislation that might allow you to facilitate the development and help you to work with the community. I look forward to updates from you as the project moves forward.

Sincerely,



ORANGE COUNTY OFFICE • 29122 RANCHO VIEJO RD., SUITE 111 • SAN JUAN CAPISTRANO, CA 92675 • (949) 347-7301 • FAX (949) 347-7302
SAN DIEGO COUNTY OFFICE • 300 N. COAST HWY • OCEANSIDE, CA 92054 • (760) 757-8084 • FAX (760) 757-8087

Printed on Recycled Paper

SOCRE

One Mile Radius Map

VERSION DATE: 4/20/2012

1 inch = 3,100 feet @ 11" X 17"

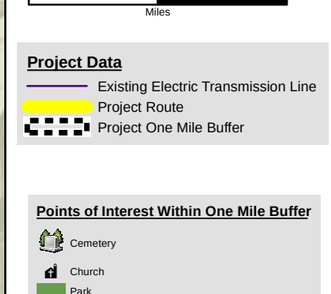
0 0.5 1
Miles

Project Data

- Existing Electric Transmission Line
- Project Route
- Project One Mile Buffer

Points of Interest Within One Mile Buffer

- Cemetery
- Church
- Park



LAND SERVICES GIS
Geographic Information Systems
GIS & Survey & Land Records
http://gis.sempra.com

SDGE
A Sempra Energy utility

SDG&E is providing this map with the understanding that the map is not survey grade.

Created by: dwuertz
Requested By: Mary Turley

M:\Projects\South_OC_Reliability_Upgrade\MXD's\20120410_Cap_to_Talega_overview_CPUC.mxd

32400 PASEO ADELANTO
SAN JUAN CAPISTRANO, CA 92675
(949) 493-1171
(949) 493-1053 FAX
www.sanjuancapistrano.org

MEMBERS OF THE CITY COUNCIL
SAM ALLEVATO
LAURA FREESE
LARRY KRAMER
DEREK REEVE
JOHN TAYLOR

April 18, 2012

San Diego Gas & Electric
Attn: Duane Cave
662 Camino Las Mares, SD1420
San Clemente, CA 92673

Re: San Diego Gas & Electric's South Orange County Reliability Enhancement Project

Dear Mr. Cave:

As you know, SDG&E has indicated its intent to file an application with the California Public Utilities Commission for approval of a "Reliability Enhancement Project." The project proposes to construct a 10-foot tall, 360 feet in circumference security wall; two 50-feet tall buildings, and the replacement of the existing utility towers with new taller steel poles. This would also include the demolishing of the current 1918 building that is listed on the City's "Buildings of Distinction" listing.

While it is not always easy to match utility solutions with a given community's desire for quality of life, at the same time, consideration must be taken to the impacts on the immediate residents and the historic nature of the building and its surroundings in this historic town. The City Council believes that through careful planning and a true spirit of cooperation, the City and SDG&E can work out a project agreeable to both entities. Alternatively, we bring to your attention the fact that a major electric facilities corridor exists just east of our City where properties are mostly undeveloped, and which provides an opportunity for SDG&E to fully expand and plan for future expansions with minimal impacts to a well-established community at a location that is fully built out with residences.

Attached to this communication is a resolution passed by the City Council on February 21, 2012, opposing negative impacts of the proposed project, unless fully mitigated. The Mayor and City Council have also established an "Aesthetics Mitigation Team" to work with SDG&E to resolve issues that may arise. On behalf of the Mayor and City Council, I ask that SDG&E partner with the City to mitigate any issues that arise regarding the project. It is imperative to the City Council and San Juan Capistrano residents that the integrity of this beautiful historic town be maintained and its historic aspects respected.

Printed on 100% recycled paper

Please do not hesitate to contact me if you have any questions regarding this matter at (949) 443-6317.

Sincerely,

Karen P. Brust
City Manager

C: Mayor and City Council

Attachment: Resolution Number 12-02-21-02 dated February 21, 2012.

RESOLUTION NO. 12-02-21-02

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN JUAN CAPISTRANO, CALIFORNIA OPPOSING NEGATIVE IMPACTS OF THE PROPOSED SAN DIEGO GAS AND ELECTRIC (SDG&E) SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT PROJECT UNLESS FULLY MITIGATED

WHEREAS, San Diego Gas & Electric (SDG&E) currently operates an electrical substation in the heart of the small, historic town of San Juan Capistrano, and

WHEREAS, SDG&E operates transmission lines serving the electrical substation, and

WHEREAS, SDG&E has commenced a public relations campaign to gain support for upgrading and substantially increasing the size of these facilities which will include increasing operating voltage and capacity of the transmission lines in order to serve areas far from San Juan Capistrano, and

WHEREAS, SDG&E has indicated its intent to file an application to the California Public Utilities Commission for approval of what SDG&E is calling the "Reliability Project", and

WHEREAS, SDG&E has offered no actual plan of mitigation for the impact of the upgrade to the transmission lines on nearby residences, schools, public open spaces, historic assets, and other public property, and

WHEREAS, SDG&E's proposed "Reliability Project" negatively impacts the quality of life for this community while its benefits principally accrue to other cities where the additional substation capacity should be more logically located.

THEREFORE, BE IT RESOLVED, that the City Manager is directed to prepare and deliver a letter to SDG&E and the California Public Utilities Commission (CPUC) on behalf of the City and its residents expressing formal opposition to any upgrade or modification to the transmission lines that would have a measurable impact on nearby residences, schools, public open spaces, historic assets, and other public property unless corresponding mitigations are available to reduce the measurable impacts at or below corresponding levels of the existing transmission line, and

FURTHER, BE IT RESOLVED, that the City Manager is directed to monitor the future progress of SDG&E in its related CPUC filings and proceedings and ensure that the resolution of this Council is forwarded at each appropriate point until such time as this Council rescinds or replaces this resolution.

PASSED, APPROVED, AND ADOPTED this 21st day of February, 2012.

LARRY KRAMER, MAYOR

ATTEST:

MARIA MORRIS, CITY CLERK

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss.
CITY OF SAN JUAN CAPISTRANO)

I, MARIA MORRIS, appointed City Clerk of the City of San Juan Capistrano, do hereby certify that the foregoing **Resolution No. 12-02-21-02** was duly adopted by the City Council of the City of San Juan Capistrano at a Regular meeting thereof, held the 21st day of February 2012, by the following vote:

AYES:	COUNCIL MEMBERS:	Freese, Reeve, Taylor and Mayor Kramer
NOES:	COUNCIL MEMBER:	None
ABSENT:	COUNCIL MEMBER:	None
RECUSED:	COUNCIL MEMBER:	Allevato

MARIA MORRIS, City Clerk

AGENDA REPORT

February 28, 2012

TO: Cultural Heritage Commission

FROM: Development Services Department

SUBJECT: Information Item, Inter-jurisdictional Project Review (IJPR) 12-01, San Diego Gas & Electric (SDG&E) South Orange County Reliability Enhancement Project (SDG&E Project Manager: Mary Turley)(City Project Manager: Grant Taylor, Development Services Director)

RECOMMENDATION:

By motion: receive and file.

SITUATION:

San Diego Gas & Electric (SDG&E) has notified the City that they are proceeding with planning for the proposed Reliability Enhancement Program project at the San Juan Capistrano Substation located at the northeast corner of Camino Capistrano and Calle Bonita (see Attachment 1, Project Location Map). The project proposes to demolish the existing 1920's substation building which fronts Camino Capistrano. That building is listed on the City's "Buildings of Distinction" List due to its historical significance (see Attachment 2, Board of Directors). The project proposes constructing two buildings up to fifty feet in height, installing a ten-foot tall, 360-foot long perimeter security wall, and replacing the existing utility towers with new, taller towers. The project also proposes to upgrade the existing 138 kilovolt (KV) power lines to 230 KV.

The potential loss of the historic substation building is a significant concern, as is the proposal to install large modern buildings and fencing that is not consistent with the historic character of San Juan Capistrano. SDG&E stated that they intend to submit their application for a Certificate of Public Convenience and Necessity (CPCN) to the California Public Utilities Commission (CPUC) in late April or early May, have conducted two public open house meetings, and have performed exploratory borings near the substation property.

On Tuesday, February 14, 2012, SDG&E representatives made a presentation to the Planning Commission on the proposed project (see Attachment 3, SDG&E PowerPoint Presentation to the Planning Commission).

Analysis and Discussion:

California State Law grants a substantial pre-emption to electrical utilities in the State such as SDG&E from local land use jurisdiction. The pre-emption allows electrical utility

providers such as SDG&E to plan and develop their projects without having to navigate the City's land use and zoning ordinances.

However, the City retains substantial legal rights under the California Environmental Quality Act (CEQA) to challenge the CPUC's environmental determination and SDG&E's project should the City Council ultimately conclude that the project's Environmental Impact Report (EIR) does not comply with all applicable provisions of CEQA.

SDG&E has stated that they plan to file their California Public Utilities Commission (CPUC) permit application in late April or possibly early May. At that time, more details on SDG&E's proposal will become public. As part of the CPUC's review and action on the permit application, the project will be required to comply with the provisions of the California Environmental Quality Act (CEQA). Given the proposed project's plan to demolish the historically significant sub-station structure which could not be mitigated to a less-than-significant level, the project will require the preparation of an Environmental Impact Report (EIR). SDG&E representatives have stated the CPUC will likely require an Environmental Impact Report (EIR) for the project and they would not oppose such a determination. The CEQA review process for this project presents the City with an important opportunity to assure that project impacts are fully identified and mitigated to the City's satisfaction. Further, as part of the CEQA review process, the EIR will identify and evaluate and the CPUC will be required to consider "project alternatives" including alternative site design or alternative sites. Both provide an opportunity to demonstrate how the project objectives could be met while preserving the existing substation building. Preservation of that structure should be an important City priority.

On Tuesday, February 21, 2012, the City Council took action to allow the Mayor to appoint an Aesthetics Team. The Aesthetics Team will consider all aspects of the project's design-related impacts which may include the proposed demolition of the historic substation building. More importantly, the City will have the opportunity to participate in the preparation of the EIR through the public scoping process and also review and comment on the Draft EIR. The CEQA process provides the City with important "leverage" in assuring the City's objectives are met, specifically historic and neighborhood preservation and public health.

Respectfully submitted:

Nick Taylor, Associate Planner
Secretary

Prepared by:

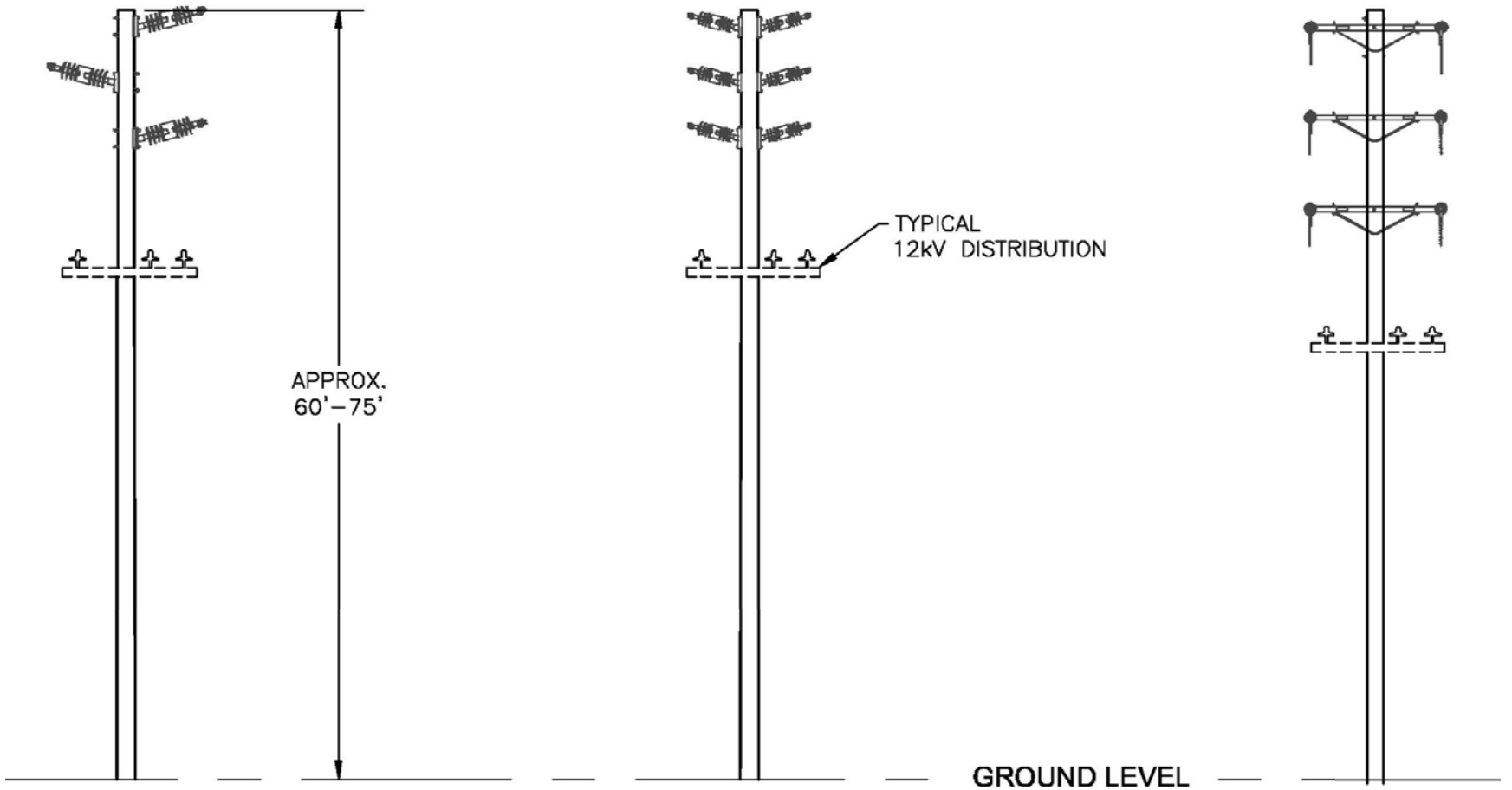
William A. Ramsey, AICP
Principal Planner

Attachments:

1. Project Location Map.
2. Buildings of Distinction.
3. SDG&E PowerPoint Presentation to the Planning Commission.

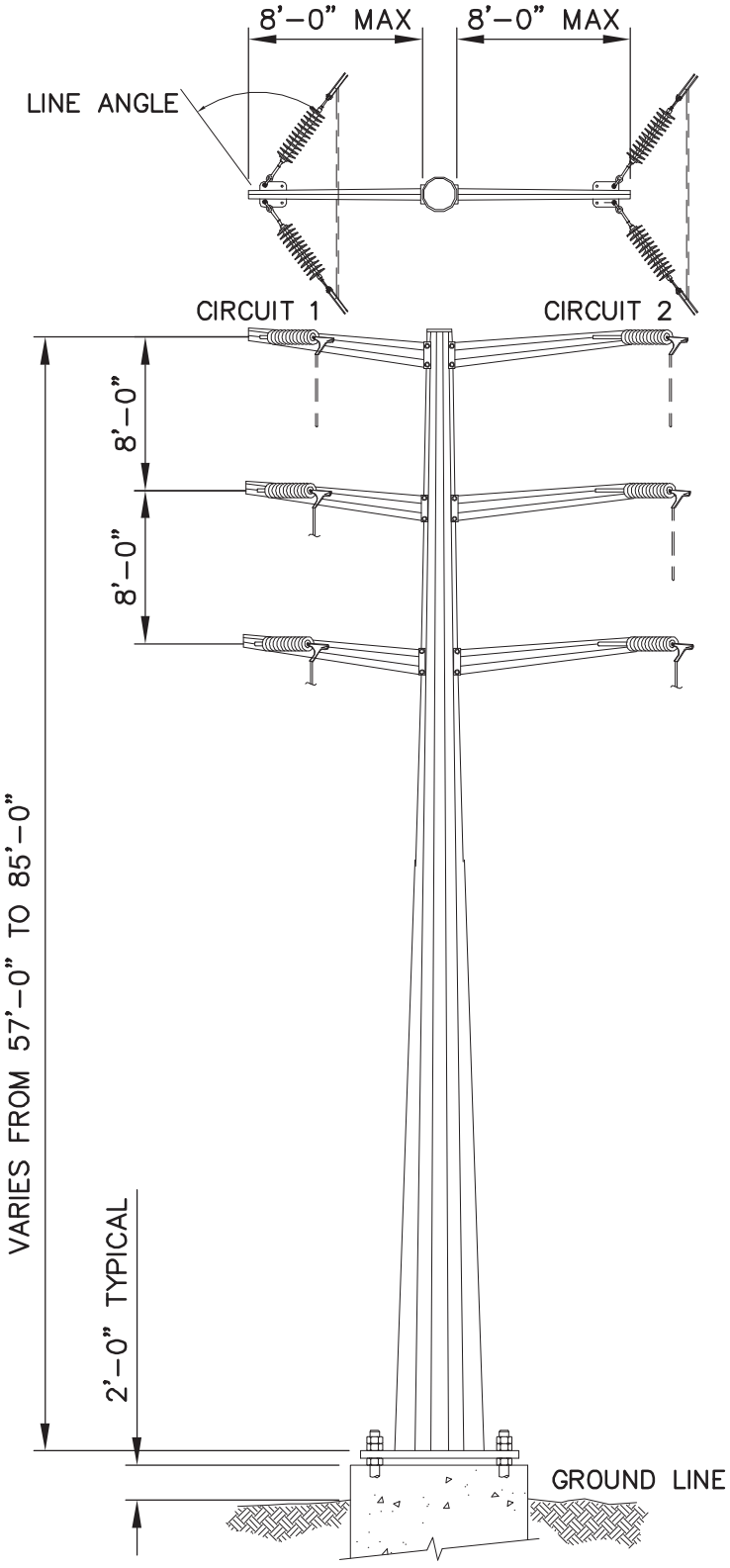
APPENDIX 3-B

TYPICAL STRUCTURE DIAGRAMS AND PHOTOGRAPHS



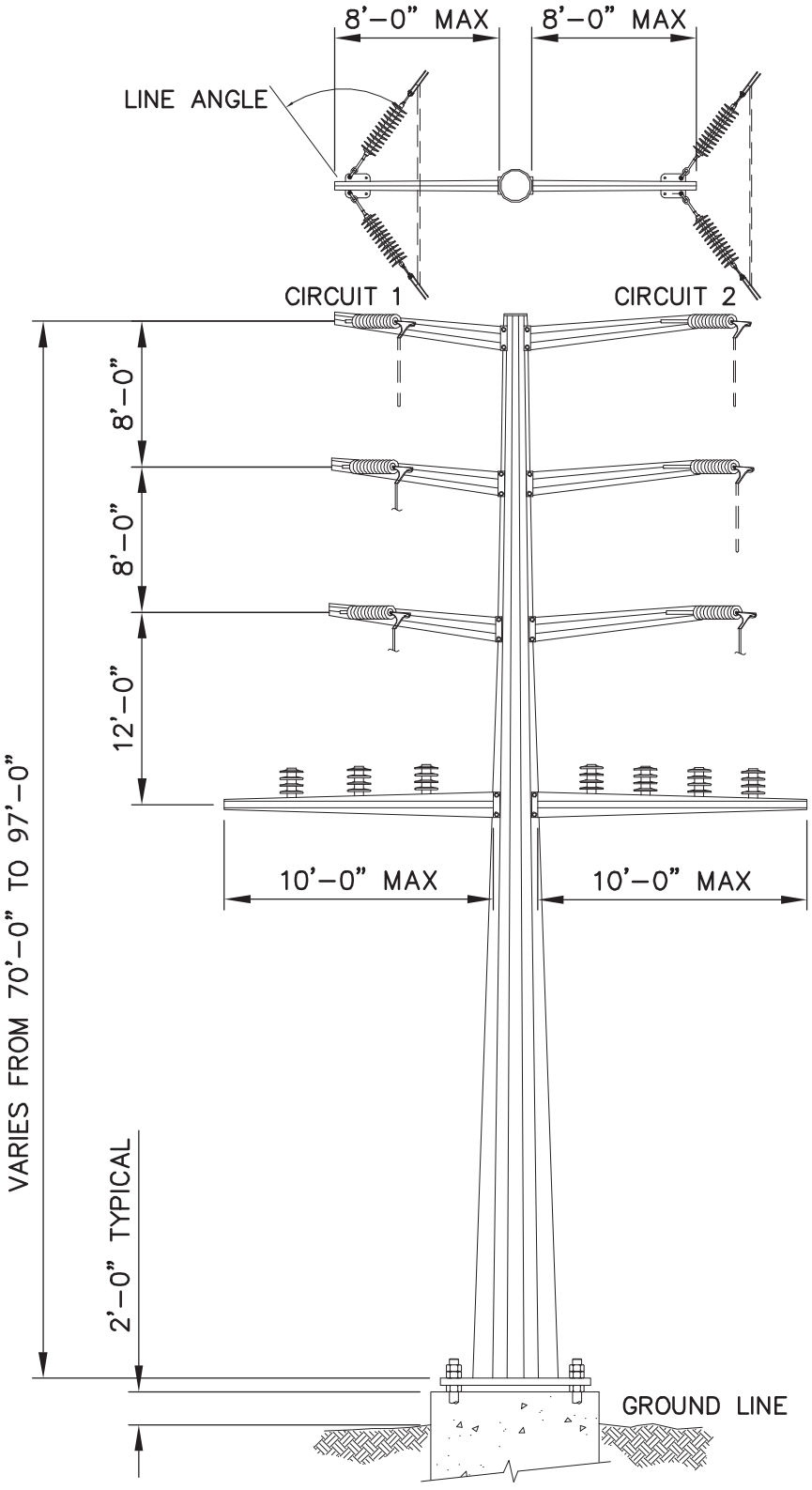
SDGE
A Sempra Energy utility

Typical 69 kV Wood Poles



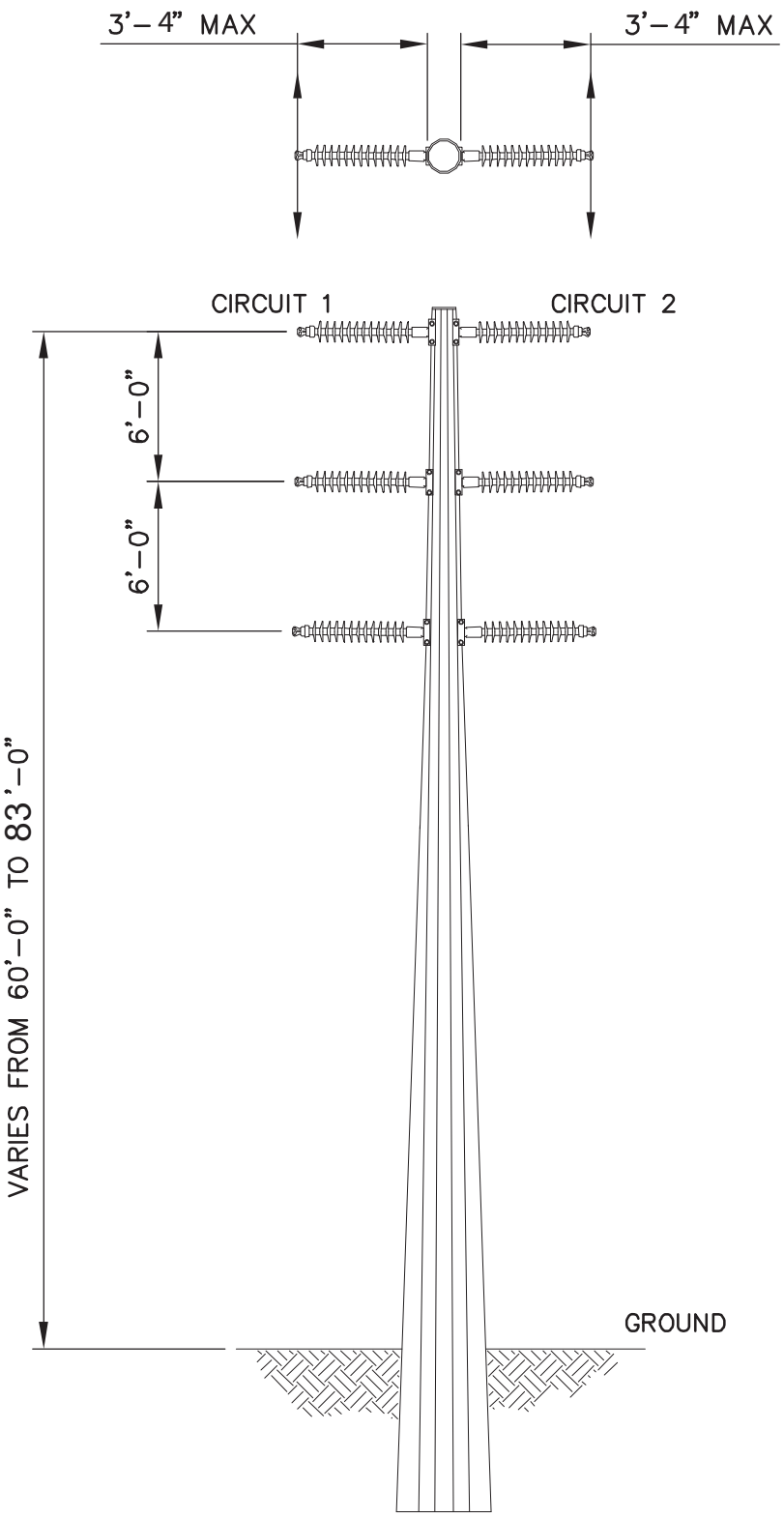
Typical 69kV Anchor Bolted Foundation Dead End Steel Pole
(Transmission only)

SDGE
A Sempra Energy utility



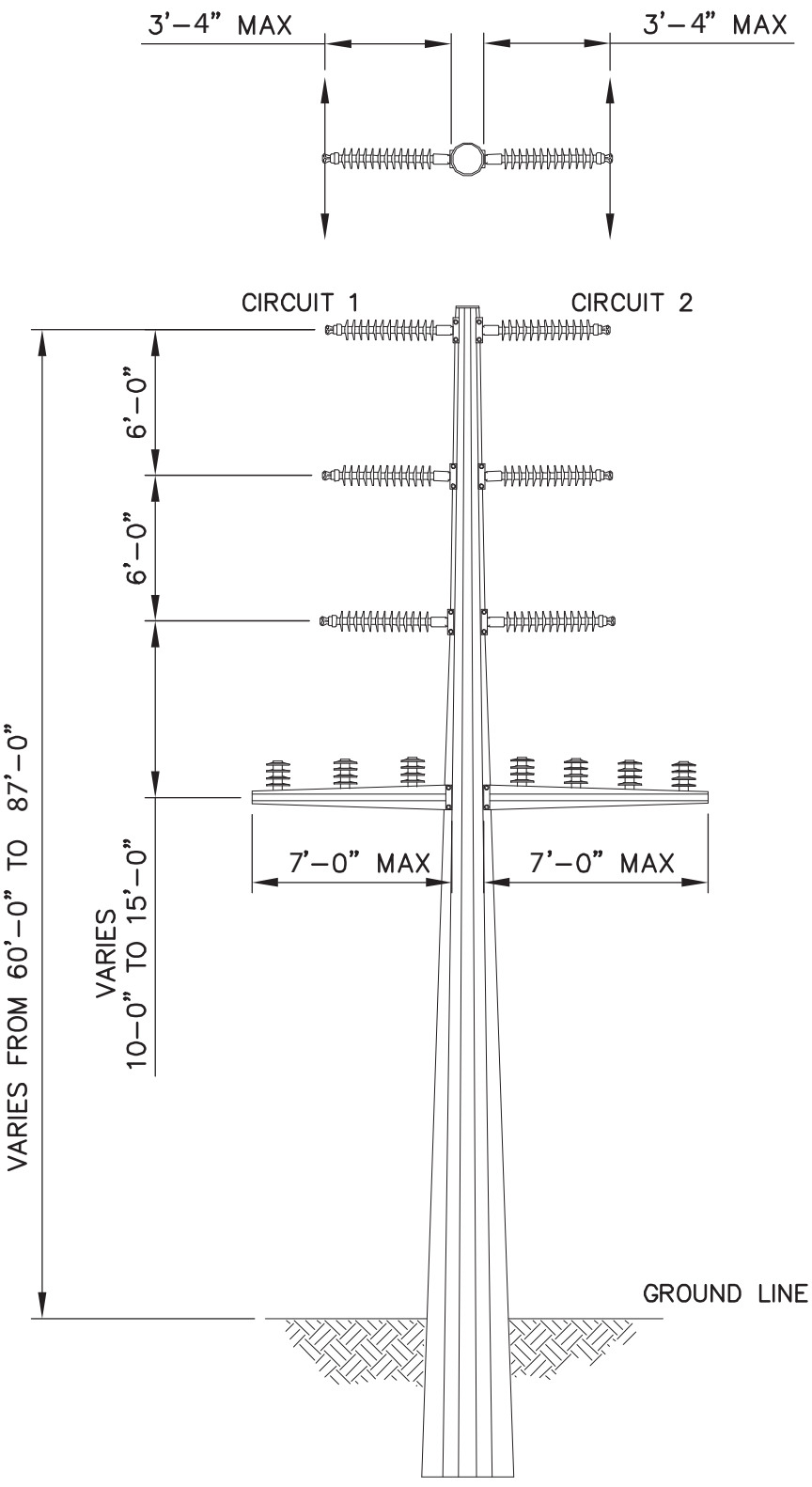
Typical 69 kV Anchor Bolted Foundation Dead End Steel Pole
(Transmission and Distribution)

SDGE
A Sempra Energy utility



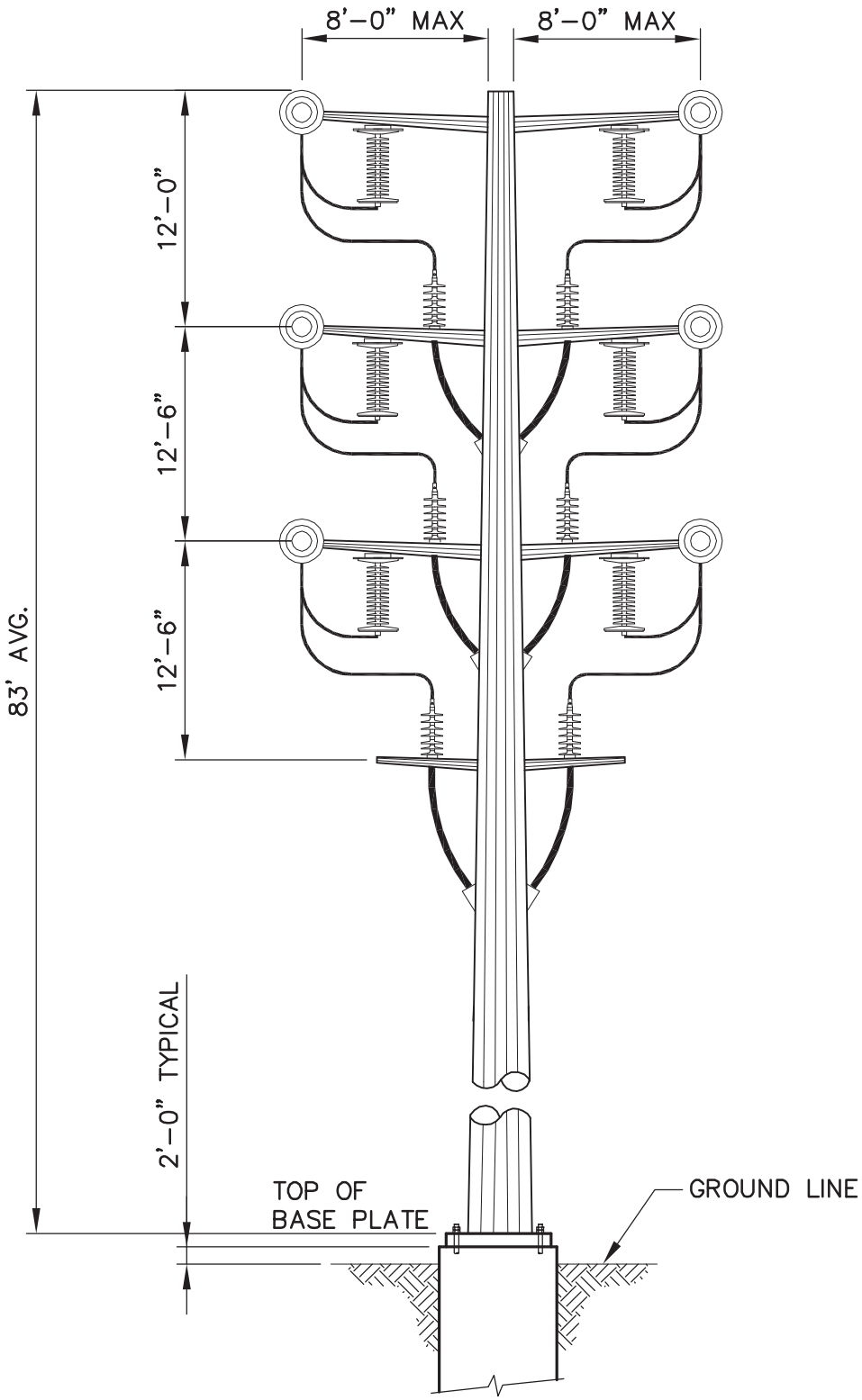
Typical 69 kV Direct-Embedded SW Tangent Steel Pole
(Transmission only)

SDGE
A Sempra Energy utility



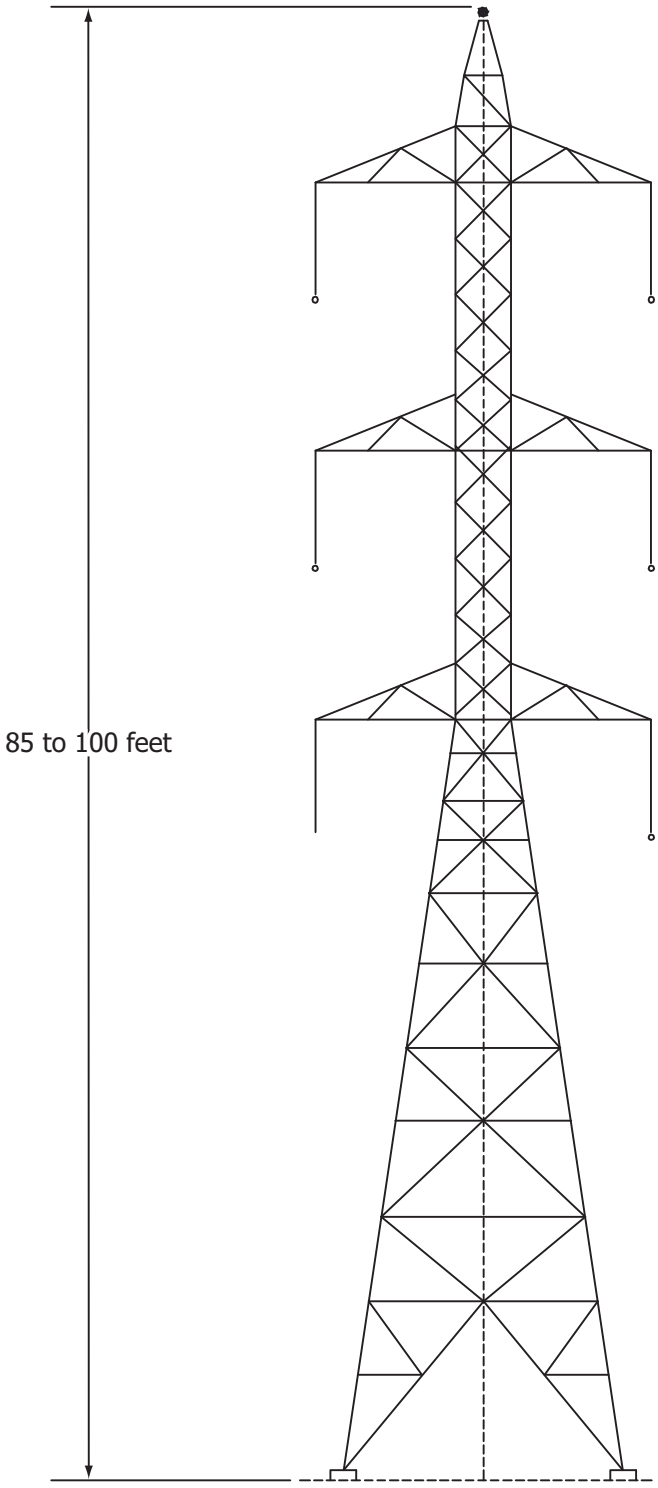
Typical 69 kV Tubular Direct-Embedded Tangent Steel Pole
(Transmission and Distribution)

SDGE
A Sempra Energy utility



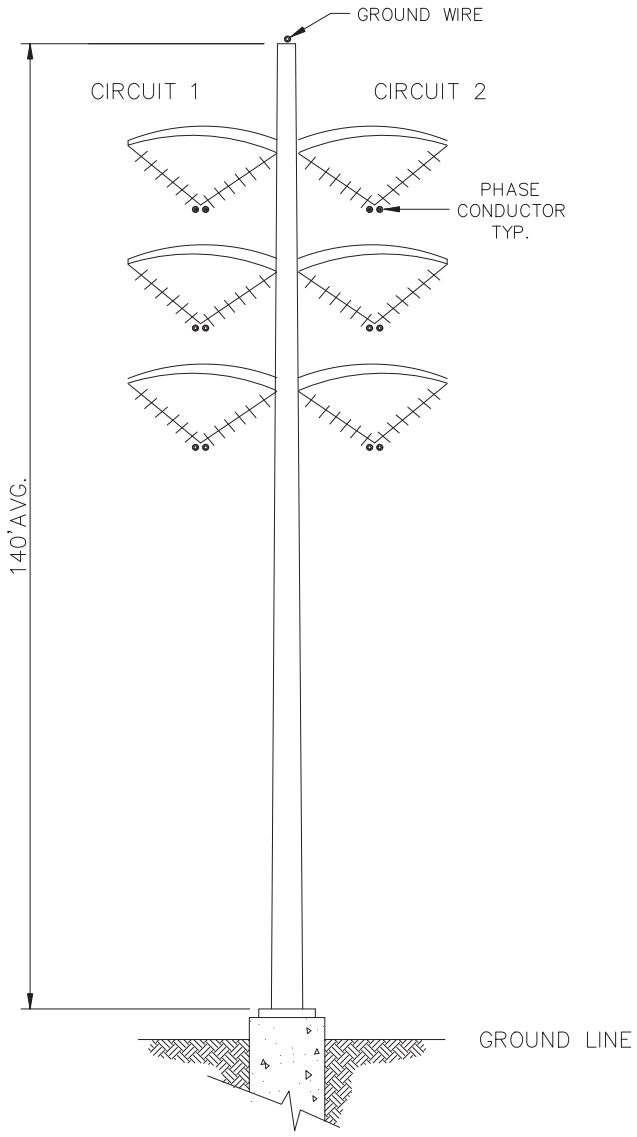
Typical 69kV Cable Riser Pole

SDGE
A Sempra Energy® utility



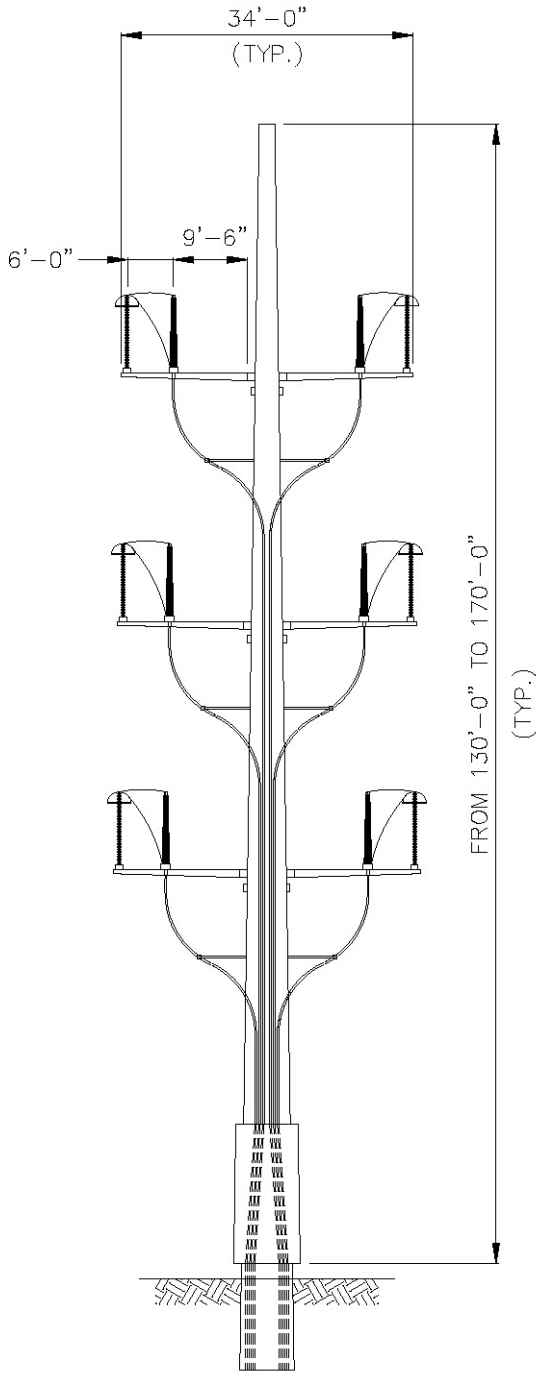
SDGE
A Sempra Energy utility™

Existing 138 kV Steel Lattice Structure

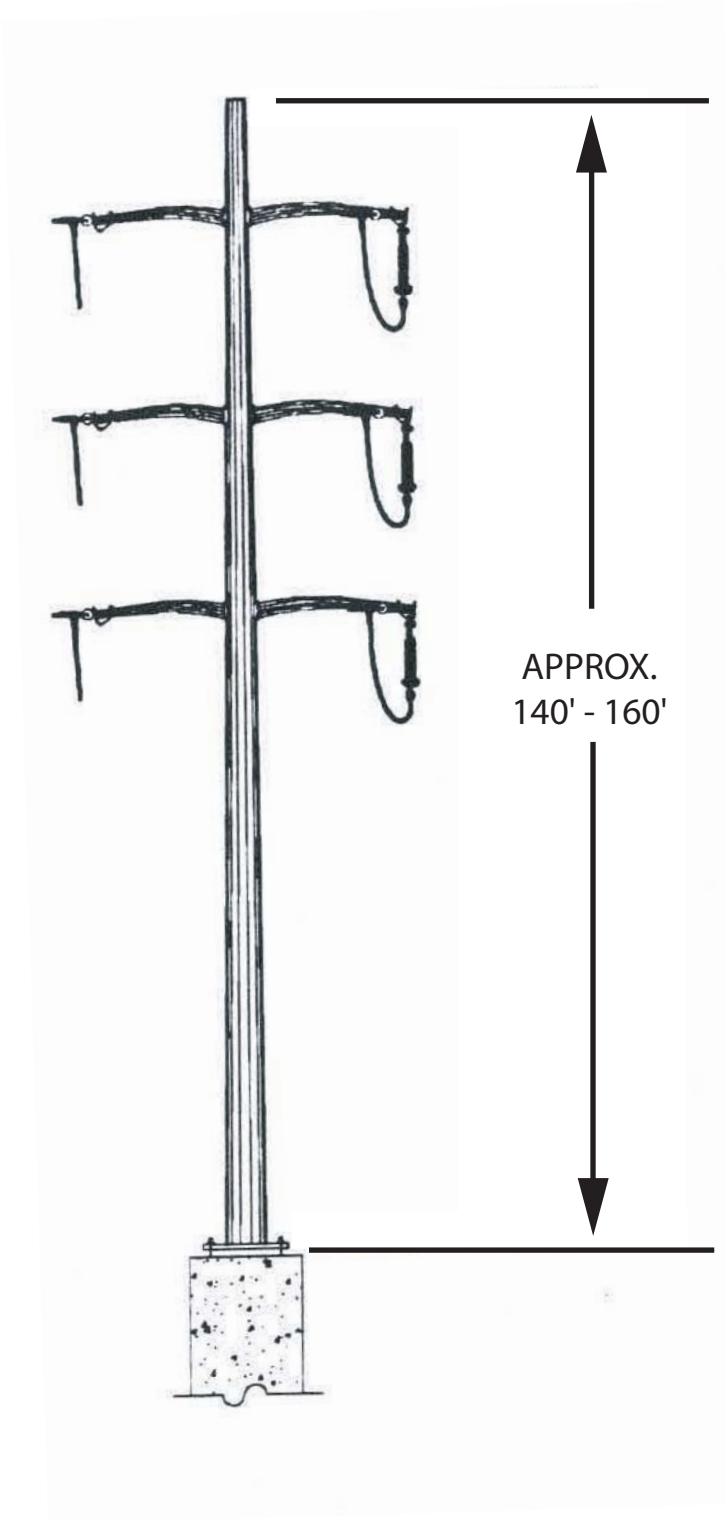


Typical Double-Circuit Steel Tubular Pole

SDGE
A Sempra Energy® utility

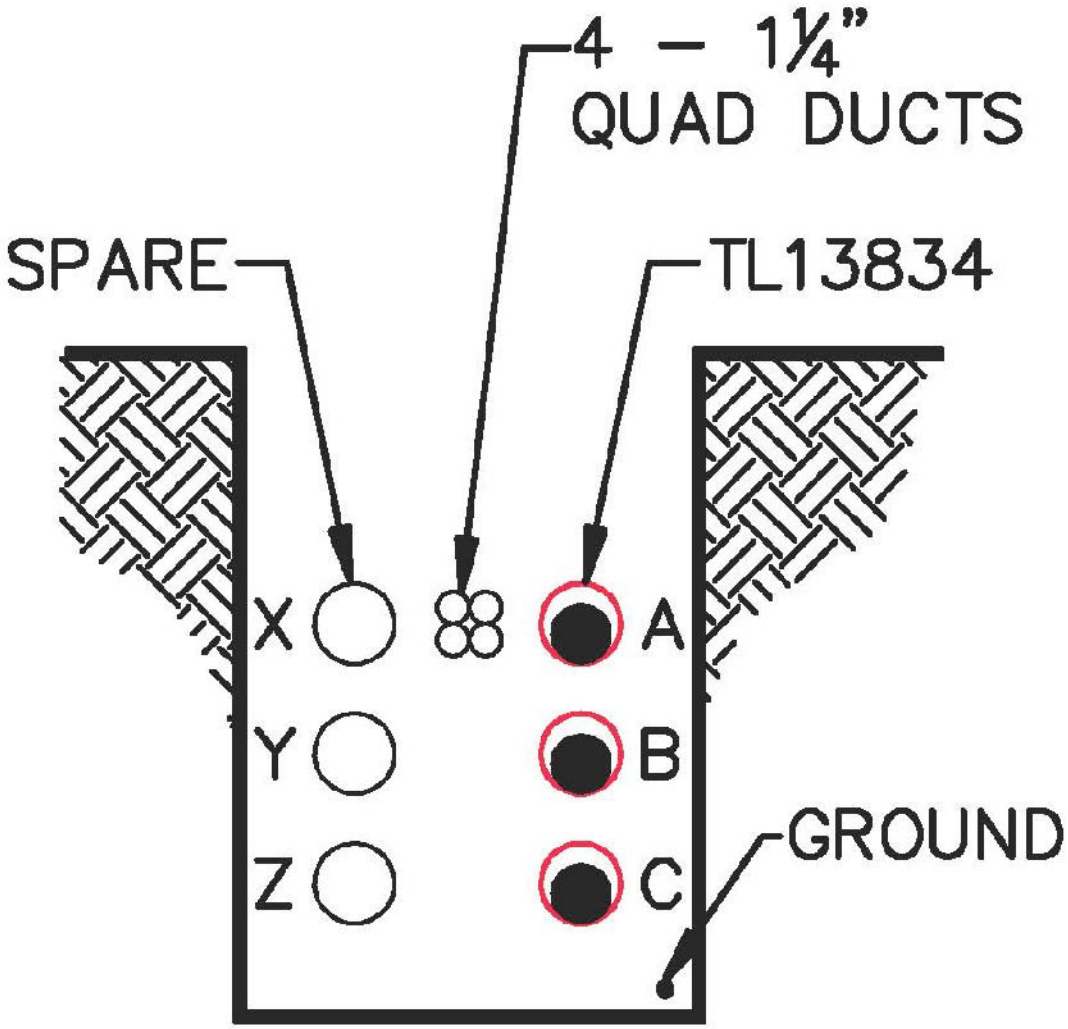


Typical 230kV Double-Circuit Steel Cable Pole



Typical 230kV Double-Circuit Steel Deadend Structure

SDGE
A Sempra Energy utility



SECTION "B–B"

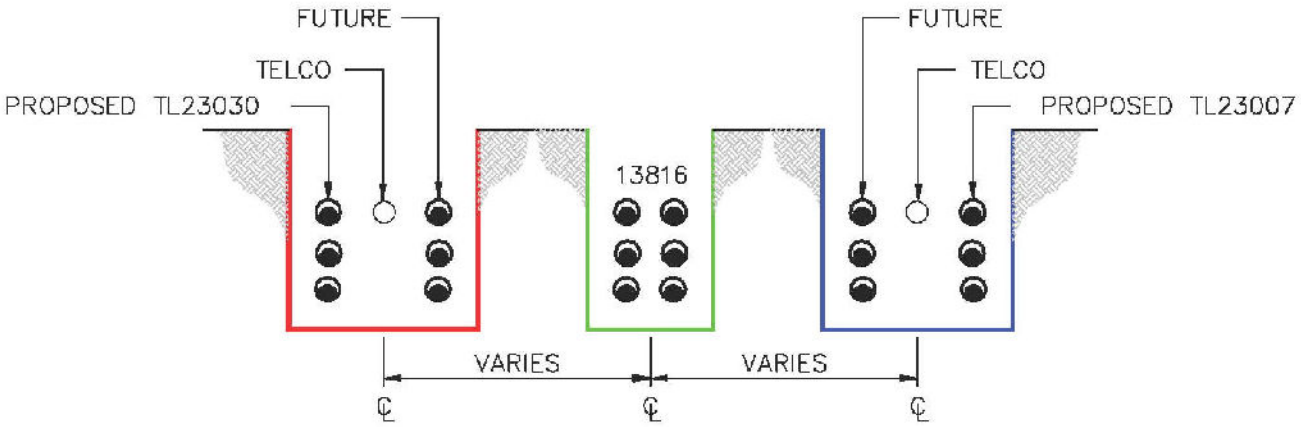
G:\SO\CRUP\MXD\BankConfig8.11seg1.mxd 02-18-2012

San Diego Gas and Electric

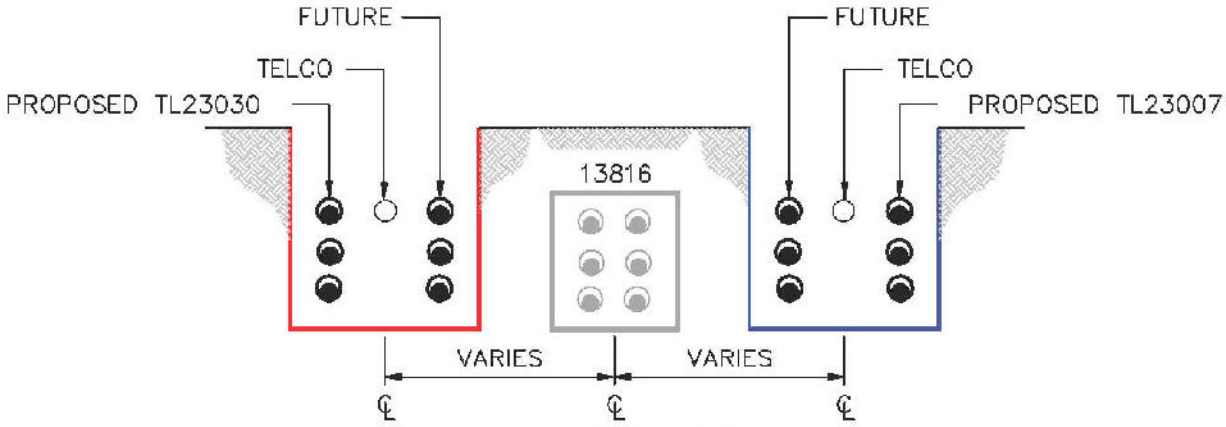
South Orange County Reliability Enhancement Project

Typical Duct Bank Configuration - Segment 1

Source: Nolte Associates, Inc.



SECTION "A–A"



SECTION "B–B"

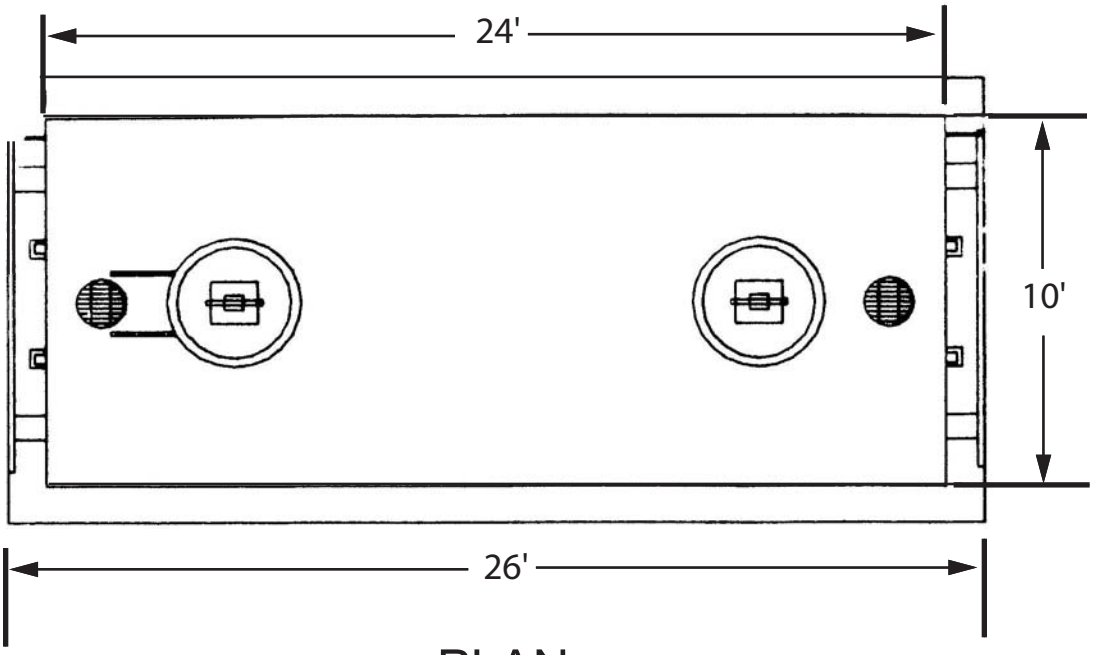
G:\SO.CRUP\MXD\BankConfig8.11seg2.mxd 02-18-2012

San Diego Gas and Electric

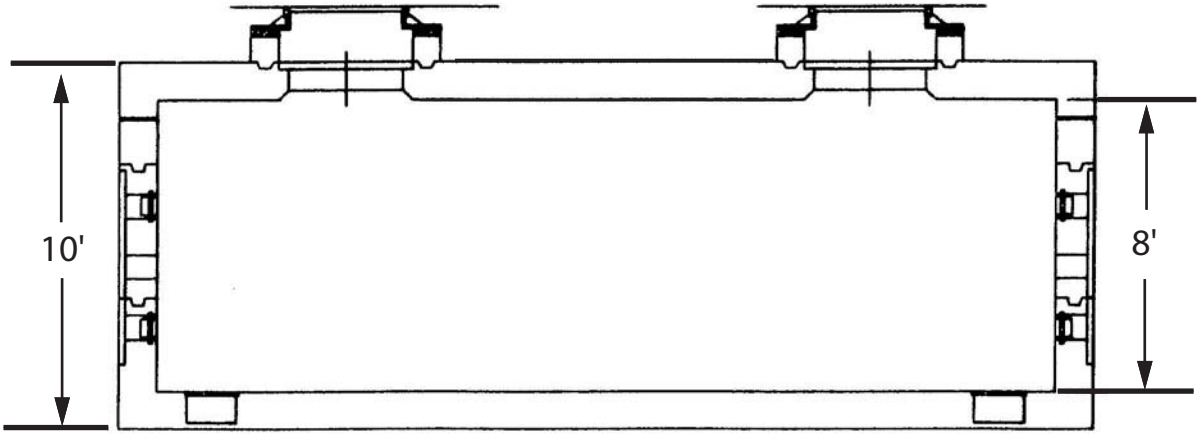
South Orange County Reliability Enhancement Project

Typical Duct Bank Configuration for Segment 2 - Rancho San Juan

Source: Nolte Associates, Inc.



PLAN



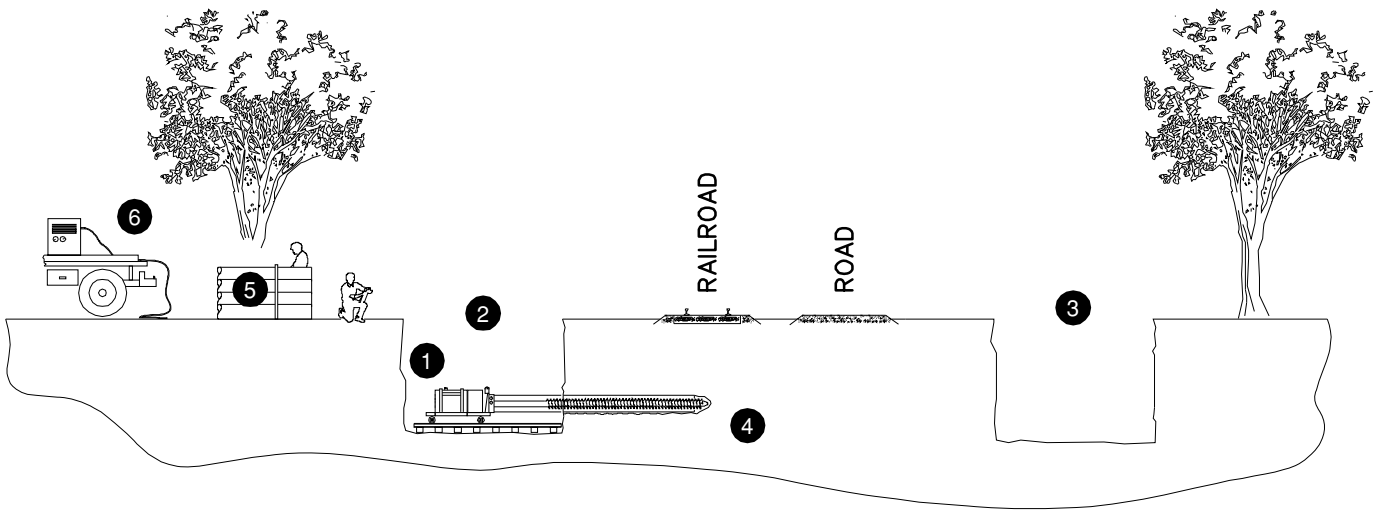
ELEVATION

Typical Splice Vault Configuration

South Orange County Reliability Enhancement Project

SDGE

A Sempra Energy utility



LEGEND:

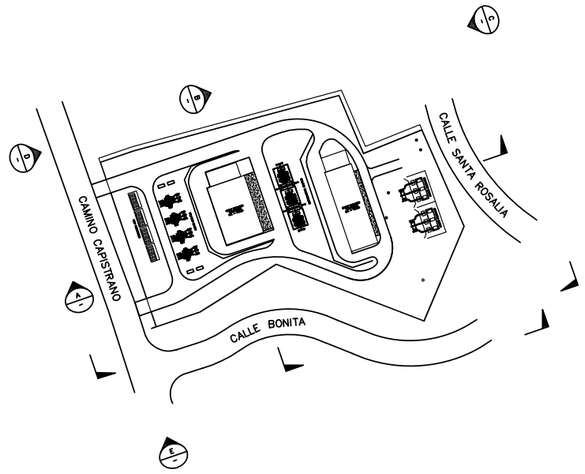
1. JACK & BORE DRILL MACHINE
2. ENTRY PIT
3. RECEIVING PIT
4. CASING PIPE
5. CASING PIPE SUPPLY
6. WELDING CREW

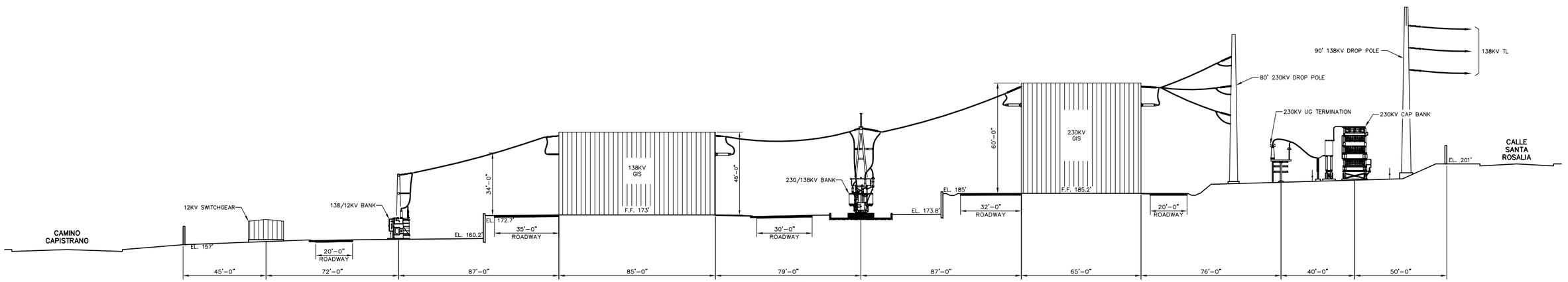
TYPICAL JACK & BORE WORK AREA



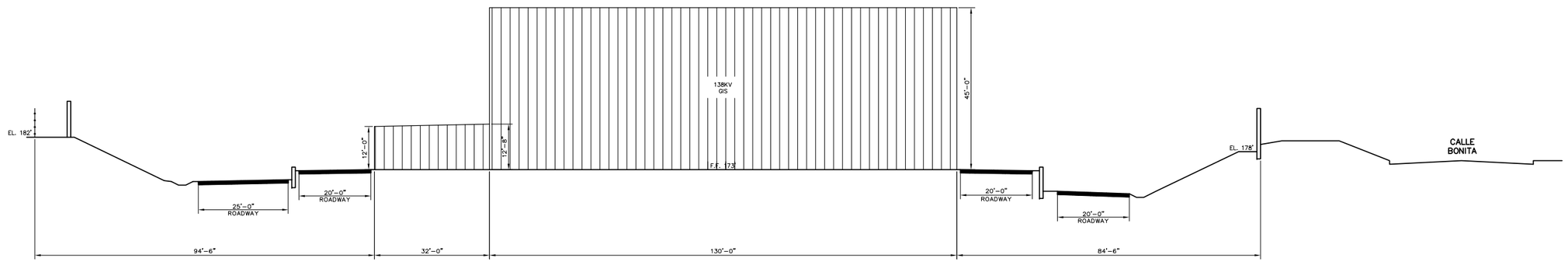
Typical Guard Structure

SAN JUAN CAPISTRANO SUBSTATION ELEVATION DRAWINGS





SECTION A
SCALE: 1"=25'-0"



SECTION B
SCALE: 1"=15'-0"

All building and equipment sizes depicted are approximate and subject to final manufacturer design.

REVISIONS

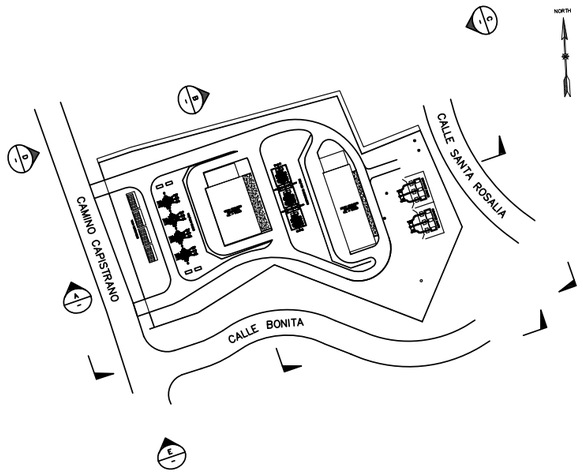
NO.	WORK DONE	DATE	BY:	APP'D:
0	NEW DWG (B&V)			

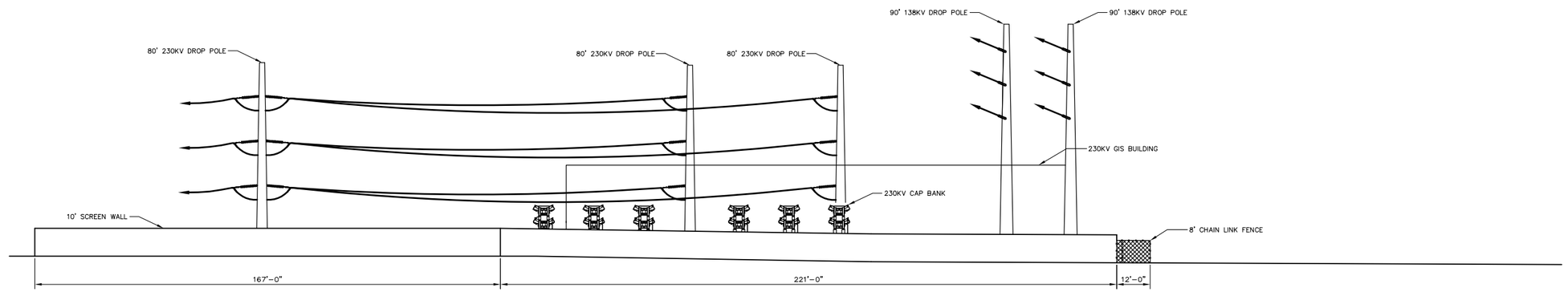
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

CAPISTRANO SUBSTATION
ELEVATION

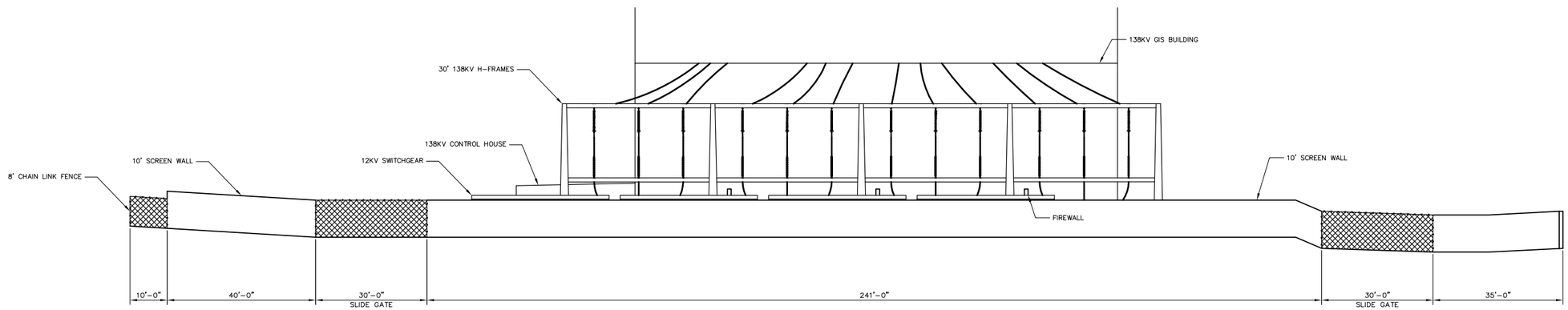
DRAWN BY: BV	DATE: 1/11/12	SCALE: NONE	W.O.	REV. 0	XX-X-XXX
CHECKED BY:	DATE:				
APPROVED BY:	DATE:				
CAD NO.: ELEVATIONS A-B	PLOT SCALE: 1 = 1				

Apr 19, 2012 - 16:13:51





SECTION C
SCALE: 1"=20'-0"



SECTION D
SCALE: 1"=15'-0"

All building and equipment sizes depicted are approximate and subject to final manufacturer design.

REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:
0	NEW DWG (B&V)			

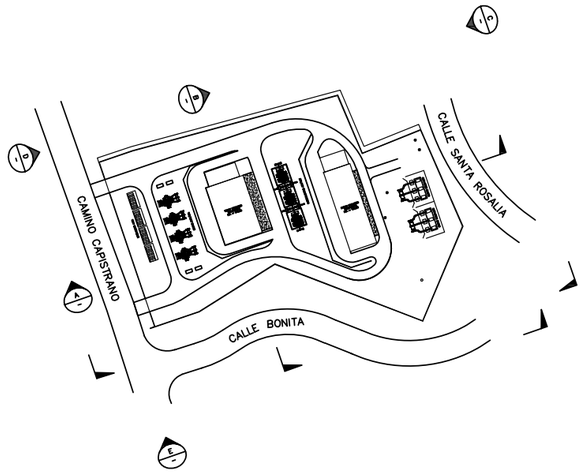
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

CAPISTRANO SUBSTATION

ELEVATION

DRAWN BY: BV	DATE: 1/11/12	SCALE: NONE	W.O. / REV. 0
CHECKED BY:	DATE:		
APPROVED BY:	DATE:		XX-X-XXX
CAD NO.: ELEVATIONS C-D	PLOT SCALE: 1 = 1		

Apr 19, 2012 - 15:03:34



All building and equipment sizes depicted are approximate and subject to final manufacturer design.

SECTION E
SCALE: 1"=15'-0"

REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:
0	NEW DWG (B&V)			

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

CAPISTRANO SUBSTATION
ELEVATION

DRAWN BY: BV	DATE: 1/11/12	SCALE: NONE	W.O.	REV. 0
CHECKED BY:	DATE:		XX-X-XXX	
APPROVED BY:	DATE:			
CAD NO.: ELEVATION E	PLOT SCALE: 1 = 1			

Apr 19, 2012 - 16:25:55

Project Component	Activity	Approximate Duration (months)	Approximate Start Date
Substation: Talega 138 kV	Site Development	n/a	n/a
	Below Grade Construction	3	Nov 2013
	Above Grade Construction	**6**	Feb 2014
	Relay Testing	1	Jun 2014
	138 kV Substation Cutover	1	July 2014
	Energization (138 kV)	1	July 2014
Transmission Segment 4: 69/138kV	Site Grading/Retaining Walls	6	Nov 2013
	Re-establish Existing Access Roads	0.5	Nov 2013
	New Access Roads	0.5	Nov 2013
	Foundation Installations	3	Dec 2012
	Underground Trench/ Conduit/Substructure	5	Jan 2014
	Steel Structure Installations	5	Feb 2014
	Cable/Conductor Pulling and Tensioning	3	April 2014
	Removal of Wood Pole Structures	5	Feb 2014
Substation: San Juan Capistrano 138/12 kV	Building Removal	2	Oct 2013
	Re-route 12 kV Circuit	1	Nov 2013
	Site Development	3	Dec 2013
	Below Grade Construction	8	June 2014
	Above Grade Construction	13	Jan 2015
	Relay Testing	6	Aug 2015
	Energization (138 kV)	1	Feb 2016
	138/12 kV Substation Cutovers	1	Feb 2016
	Energize Temporary TL13835	1	Mar 2016

Project Component	Activity	Approximate Duration (months)	Approximate Start Date
Transmission Segment 1: Capistrano 138/230kV	Site Development	0.5	Nov 2013
	Bore Pits	1	Dec 2013
	Foundation Installations	1	Jan 2014
	Underground Trench/ Conduit/ Substructure	4	Feb 2014
	Steel Structure Installations	6	Aug 2015
	Cable/Conductor Pulling and Tensioning	6	Sept 2015
	Removal of Structures	6	Aug 2015
Substation: San Juan Capistrano 230 kV	Remove RFS 138/12 kV Equipment	2	Mar 2016
	Site Development	3	May 2016
	Below Grade Construction	6	Aug 2016
	Above Grade Construction	10	Dec 2016
	Relay Testing	5	June 2017
	De-energize Temporary TL13835	1	Oct 2017
	Energization (230 kV)	1	Nov 2017
	230 kV Substation Cutovers	1	Nov 2017
Transmission Segment 3: Talega to Rancho San Juan 230 kV	Site Grading/Re-establish and Extend Existing Access Roads	2	June 2014
	Retaining Wall Construction	1	July 2014
	Foundation Installations	6	Sept 2015
	Steel Structure Installations	6	Oct 2015
	Conductor Pulling and Tensioning	3	Mar 2016
	Removal of Wood Structures	6	Oct 2015
Transmission Segment 2: Rancho San Juan 230kV (South Run)	Site Grading	1	Dec 2015
	Foundation Installations	2	Dec 2015
	Underground Trench/Conduit/Substructure	2	Feb 2016
	Steel Structure Installations	0.5	Mar 2016
	Cable/Conductor Pulling and Tensioning	2	Apr 2016
	Removal of Steel Riser Structures	0.5	May 2016

Project Component	Activity	Approximate Duration (months)	Approximate Start Date
Transmission Segment 1: Capistrano to Rancho San Juan (230 kV)	Site Grading/Re-establish and Extend Existing Access Roads	2	Jun 2014
	Retaining Wall Construction	1	July 2014
	Foundation Installations	3	Sept 2015
	Steel Structure Installations	6	Oct 2015
	Conductor Pulling and Tensioning	3	Mar 2016
	Removal of Wood & Steel Structures	6	Oct 2015
Transmission Segment 4: Talega Hub 230kV	Site Grading/ Re-establish Existing Access Roads	3	Jun 2014
	Retaining Walls	1	July 2014
	New Access Roads	0.5	July 2014
	Foundation Installations	6	Sept 2015
	Steel Structure Installations	5	Nov 2015
	Conductor Pulling and Tensioning	3	Mar 2016
	Removal of Wood Pole Structures	0.5	Feb 2016
Transmission Segment 2: Rancho San Juan 138/230kV (North Runs)	Site Grading	1	Nov 2016
	Underground Trench/Conduit/Substructure	3	Jan 2017
	Steel Structure Installations	0.5	Mar 2017
	Cable/Conductor Pulling and Tensioning	3	Mar 2017
	Removal of Steel Riser Structures	0.5	May 2017

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Transmission Segment 4 (Talega Hub to Talega Substation): 69kV and 138kV work	General Construction	3/4-ton or 1-ton Pick-up Truck	Transport construction personnel	6	NA	2
		Maintenance Truck	Maintain/Refuel Equip	1	NA	1
		Air Compressor	Operate Air Tools	3	NA	4
		Water Truck	Suppress Dust	2	NA	5
	Site Grading/Re-establish and Extend Existing Access Roads/Retaining Walls	Bulldozer	Grade pads and access roads	2	1.5	6
		Road Grader/Blade	Construct, maintain, and upgrade roads	1	1	8
		Scraper	Grade pads and access roads	1	2	3
		Compactor	Compact soil	1	3	4
		Backhoe/Front Loader	Load dump trucks, stockpile, excavation	2	2	4
		Dump/Haul Truck	Transport import/export material	3	2	8
		Excavator	Excavate and load material	2	2	6
		Drill Rig with Augers	Wall Foundation	2	1	8
		Crane (25 Ton)	Setting piers/lagging for wall	2	1	8
		Concrete Truck	Wall foundation	2	1	8

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
	Foundation Installations	Concrete Truck	Pour Concrete	1	3	2
		Drill Rig with Augers	Foundation Construction	2	3	6
		Backhoe	Foundation Construction	2	3	4
		Dump/Haul Truck	Haul excavated materials	2	3	4
	Underground Trench/ Conduit/ Substructure	Dump/Haul Truck	Transport excavated materials and import backfill	2	5	3
		Backhoe	Excavate trenches	1	5	4
		Large Crane (100 Ton)	Lift and set substructures	1	1	6
		Concrete Truck	Pour Concrete	1	1	4
		Compactor	Compact backfill within the trench	1	2	4
	Steel Structure Installations	2-ton Flatbed Truck	Deliver pole to site	1	5	2
		Large Crane	Pole Erection	2	5	3
		Aerial Bucket Truck	Pole Erection and Conductor Installation	4	5	6
	Cable/Conductor Pulling and Tensioning	Aerial Bucket Truck	Conductor Installation	2	3	6
		Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	3	6
		Reel Trailer	Feed new conductor to the pulling and tensioner	2	3	6

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
			or collect old conductor			
		Splice Trailer	Store splicing supplies	1	3	6
	Removal of Wood Pole Structures	2-ton Flatbed Truck	Remove pole sections and hardware from site	1	4	2
		Aerial Bucket Truck	Pole deconstruction	2	4	3
		Chainsaw	Cut existing poles	2	4	1
		Backhoe/Frontloader	Excavate pole bases	1	4	2
		100 Ton Crane/Boom Truck	Lower pole sections and load onto trucks	1	4	2
Transmission Segment 1: Capistrano Substation Getaways 138 kV	General Construction	3/4-ton or 1-ton Pick-up Truck	Transport construction personnel	6	NA	2
		Maintenance Truck	Maintain/Refuel Equip	1	NA	1
		Air Compressor	Operate Air Tools	2	NA	4
		Water Truck	Suppress Dust	1	NA	4
	Site Development	Bulldozer	Grade pads and access roads	1	0.5	6
		Compactor	Compact soil	1	2	4
		Loader	Load dump trucks and stockpile	1	4	4
		Backhoe	Trench Excavation	1	4	4
		Dump/Haul Truck	Transport import/export	1	4	3

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
			material			
Transmission Segment 1: Capistrano Substation Getaways 138 kV	Bore Pits	Excavator	Excavate and load material	1	1	6
		Crane	Install/Remove shoring/boring equipment	1	1	3
		Jack-n-Bore Machine	Installs casing under RxR	1	1	8
	Foundation Installations	Concrete Truck	Pour Concrete	1	1	3
		Drill Rig with Augers	Foundation Construction	1	1	8
		Backhoe	Foundation Construction	1	1	3
		Dump/Haul Truck	Haul excavated materials and import backfill	1	1	2
	Underground Trench/ Conduit/ Substructure	Dump/Haul Truck	Transport excavated materials and import backfill	1	3	3
		100 Ton Crane	Lift and place materials	1	1	4
		Excavator	Excavate trenches	2	3	8
		Backhoe/Frontloader	Move dirt/excavate dirt	2	4	8
		Concrete Truck	Pour Concrete	1	3	2
		Compactor	Compact backfill within the trench	1	1	4

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Transmission Segment 1: Capistrano Substation Getaways 138 kV	Steel Structure Installations	2-ton Flatbed Truck	Deliver pole to site	1	1	4
		100 Ton Large Crane	Pole Erection	1	1	4
		Bucket Truck/Manlift	Pole Erection and Conductor Installation	2	2	8
	Cable/Conductor Pulling and Tensioning	Aerial Bucket Truck	Pole Erection and Conductor Installation	2	3	6
		Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	1	3	4
		Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	1	3	4
		Splice Trailer	Store splicing supplies	1	2	4
	Removal of Structures	2-ton Flatbed Truck	Remove pole sections and hardware from site	1	1	3
		Aerial Bucket Truck	Detach conductor and equipment	2	1	6
		Backhoe/Front Loader	Break foundations and load material	1	1	4
		Jackhammer	Break foundations	1	1	4
		Dump/Haul Truck	Haul excavated materials and import backfill	1	1	3
		Large Crane (100 Ton)	Lower pole sections and	1	0.25	4

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
			load onto trucks			
Transmission Segment 3: Talega to Rancho San Juan 230 kV	General Construction	3/4-ton or 1-ton Pick-up Truck	Transport construction personnel	3	NA	2
		Maintenance Truck	Maintain/Refuel Equip	1	NA	1
		Air Compressor	Operate Air Tools	2	NA	4
		Water Truck	Suppress Dust	1	NA	4
	Site Grading/Re-establish and Extend Existing Access Roads/Retaining Walls	Bulldozer	Grade pads and access roads	1	2	6
		Road Grader/Blade	Construct, maintain, and upgrade roads	1	1	8
		Scraper	Grade pads and access roads	1	1	8
		Compactor	Compact soil	1	2	6
		Backhoe/Front Loader	Load dump trucks and stockpile	2	3	6
		Drill rig with augers	Drill piers for retaining wall	1	1	8
		Excavator	Excavate and load material	2	2	6
		Dump/Haul Truck	Transport import/export material	2	2	4
		Crane (25 Ton)	Set piers/lagging for	1	2	4

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
			retaining wall			
		Concrete Truck	Retaining wall piers	1	1	4
Transmission Segment 3: Talega to Rancho San Juan 230 kV	Foundation Installations	Concrete Truck	Pour Concrete	2	6	2
		Drill Rig with Augers	Foundation Construction	2	6	4
		Backhoe/Front Loader	Foundation Construction	2	6	6
		Dump/Haul Truck	Haul excavated materials and import backfill	2	6	3
	Steel Structure Installations	2-ton Flatbed Truck	Deliver pole to site	2	6	2
		Large Crane (100 Ton)	Tower Erection	2	6	3
		Aerial Bucket Truck	Tower Erection and Conductor Installation	4	6	4
	Conductor Pulling and Tensioning	Aerial Bucket Truck	Conductor Installation	4	3	4
		Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	3	6
		Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	2	3	6

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Transmission Segment 3: Talega to Rancho San Juan 230 kV	Removal of Wood Structures	2-ton Flatbed Truck	Remove pole sections and hardware from site	2	6	2
		Aerial Bucket Truck	Detach conductor and equipment	4	6	4
		Backhoe/Front Loader	Break foundations and load material	2	6	3
		Jackhammer	Break foundations	1	6	3
		Dump/Haul Truck	Haul excavated materials and import backfill	1	6	2
		Crane (12 Ton)	Lower pole sections and load onto trucks	1	6	3
Transmission Segment 2: Rancho San Juan 230kV (South Run)	General Construction	3/4-ton or 1-ton Pick-up Truck	Transport construction personnel	3	NA	2
		Maintenance Truck	Maintain/Refuel Equip	1	NA	1
		Air Compressor	Operate Air Tools	2	NA	4
		Water Truck	Suppress Dust	1	NA	4

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Transmission Segment 2: Rancho San Juan 230kV (South Run)	Site Grading/Re-establish and Extend Existing Access Roads	Bulldozer	Grade pads and access roads	1	1	4
		Excavator	Excavate and load material	1	1	8
		Backhoe/Front Loader	Load dump trucks and stockpile	1	1	8
		Dump/Haul Truck	Transport import/export material	1	1	4
		Compactor	Compact soil	1	1	4
	Foundation Installations	Drill Rig with Augers	Foundation Construction	1	2	3
		Backhoe/Front Loader	Foundation Construction	1	2	3
		Dump/Haul Truck	Haul excavated materials and import backfill	1	2	2
		Concrete Truck	Pour Concrete	1	2	2
	Underground Trench/ Conduit/ Substructure	Excavator	Excavate trench and material	2	2	8
		Backhoe/Front Loader	Excavate trenches	2	2	8
		Dump/Haul Truck	Transport excavated materials and import backfill	2	2	5
		Crane (12-ton)	Lift and place materials	1	2	2
		Concrete Truck	Pour Concrete	2	2	2

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
		Compactor	Compact backfill	1	2	2
Transmission Segment 2: Rancho San Juan 230kV (South Run)	Steel Structure Installations	2-ton Flatbed Truck	Deliver pole to site	1	0.5	4
		Large Crane (100 Ton)	Tower Erection	1	0.5	8
		Aerial Bucket Truck	Tower Erection and Conductor Installation	2	0.5	8
	Cable/Conductor Pulling and Tensioning	Aerial Bucket Truck	Tower Erection and Conductor Installation	4	2	6
		Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	2	4
		Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	2	2	4
		Splice Trailer	Store splicing supplies	2	2	4
	Removal of Steel Riser Structures	2-ton Flatbed Truck	Remove pole sections and hardware from site	1	0.5	4
		Aerial Bucket Truck	Tower Erection and Conductor Installation	2	0.5	8
		Backhoe/Front Loader	Break foundations and load material	1	0.5	4
		Jackhammer	Break foundations	2	0.5	6
		Dump/Haul Truck	Haul excavated materials and import backfill	1	0.5	2

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
		Large Crane (100 Ton)	Lower pole sections and load onto trucks	1	0.5	2
Transmission Segment 1: Rancho San Juan to San Juan Capistrano 230 kV	Site Grading/Re-establish and Extend Existing Access Roads/Retaining Walls	Water Truck	Suppress dust	1	3	6
		Bulldozer	Grade pads and access roads	1	2	6
		Road Grader/Blade	Construct, maintain, and upgrade roads	1	1	8
		Scraper	Grade pads and access roads	1	1	8
		Compactor	Compact soil	1	2	6
		Backhoe/Front Loader	Load dump trucks and stockpile	2	3	6
		Drill rig with augers	Drill piers for retaining wall	1	1	8
		Excavator	Excavate and load material	2	2	6
		Dump/Haul Truck	Transport import/export material	2	2	4
		Crane (25 Ton)	Set piers/lagging for retaining wall	1	2	4
		Concrete Truck	Retaining wall piers	1	1	4

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Transmission Segment 1: Rancho San Juan to San Juan Capistrano 230 kV	Foundation Installations	Concrete Truck	Pour Concrete	1	3	2
		Drill Rig with Augers	Foundation Construction	1	3	4
		Backhoe/Front Loader	Foundation Construction	1	3	6
		Dump/Haul Truck	Haul excavated materials and import backfill	1	3	3
	Foundation Installations	Concrete Truck	Pour Concrete	1	3	2
		Drill Rig with Augers	Foundation Construction	1	3	4
		Backhoe/Front Loader	Foundation Construction	1	3	6
		Dump/Haul Truck	Haul excavated materials and import backfill	1	3	3
	Steel Structure Installations	2-ton Flatbed Truck	Deliver pole to site	2	6	2
		Large Crane	Tower Erection	2	6	3
		Aerial Bucket Truck	Tower Erection and Conductor Installation	4	6	4
	Conductor Pulling and Tensioning	Aerial Bucket Truck	Conductor Installation	4	3	4
		Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	3	6
		Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	2	3	6

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Transmission Segment 1: Rancho San Juan to San Juan Capistrano 230 kV	Removal of Wood Structures	2-ton Flatbed Truck	Remove pole sections and hardware from site	1	6	2
		Aerial Bucket Truck	Tower Erection and Conductor Installation	2	6	4
		Backhoe/Front Loader	Break foundations and load material	1	6	3
		Jackhammer	Break foundations	1	6	3
		Dump/Haul Truck	Haul excavated materials and import backfill	1	6	2
		Crane (12 Ton)	Lower pole sections and load onto trucks	1	6	3
Transmission Segment 4: Talega Hub to Talega Substation TL230kV	General Construction	3/4-ton or 1-ton Pick-up Truck	Transport construction personnel	3	NA	2
		Maintenance Truck	Maintain/Refuel Equip	1	NA	1
		Air Compressor	Operate Air Tools	3	NA	4
		Water Truck	Suppress Dust	2	NA	5

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Transmission Segment 4: Talega Hub to Talega Substation TL230kV	Site Grading/Re-establish and Extend Existing Access Roads/Retaining Walls	Bulldozer	Grade pads and access roads	1	0.5	6
		Road Grader/Blade	Construct, maintain, and upgrade roads	1	0.5	8
		Scraper	Grade pads and access roads	1	0.5	3
		Compactor	Compact soil	1	2	2
		Backhoe/Front Loader	Load dump trucks, stockpile, excavation	2	2	4
		Dump/Haul Truck	Transport import/export material	2	2	3
		Excavator	Excavate and load material	1	2	6
		Drill Rig with Augers	Wall Foundation	1	1	6
		Crane (25 Ton)	Setting piers/lagging for wall	1	1	6
		Concrete Truck	Wall foundation	1	2	3
	Foundation Installations	Concrete Truck	Pour Concrete	1	2	3
		Drill Rig with Augers	Foundation Construction	2	2	6
		Backhoe	Foundation Construction	1	2	4
		Dump/Haul Truck	Haul excavated materials	2	2	3

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Transmission Segment 4: Talega Hub to Talega Substation TL230kV	Steel Structure Installations	2-ton Flatbed Truck	Deliver pole to site	1	5	2
		Large Crane (100 Ton)	Pole Erection	1	5	3
		Aerial Bucket Truck	Pole Erection and Conductor Installation	2	5	6
	Conductor Pulling and Tensioning	Aerial Bucket Truck	Conductor Installation	2	3	6
		Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	3	6
		Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	2	3	6
	Removal of Wood Pole Structures	2-ton Flatbed Truck	Remove pole sections and hardware from site	1	4	2
		Aerial Bucket Truck	Pole deconstruction	2	4	3
		Chainsaw	Cut existing poles	2	4	1
		Backhoe/Frontloader	Excavate pole bases	1	4	2
		Large Crane (100 Ton)	Lower pole sections and load onto trucks	1	4	2
Transmission Segment 2: Rancho San Juan	General Construction	3/4-ton or 1-ton Pick-up Truck	Transport construction personnel	3	NA	2
		Maintenance Truck	Maintain/Refuel Equip	1	NA	1
		Air Compressor	Operate Air Tools	2	NA	4

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
138/230kV (North Runs)		Water Truck	Suppress Dust	1	NA	4
Transmission Segment 2: Rancho San Juan 138/230kV (North Runs)	Site Grading/Re-establish and Extend Existing Access Roads	Excavator	Trench Excavate and load material	1	1	4
		Backhoe/Front Loader	Trench Excavation and load material	1	1	8
		Dump/Haul Truck	Transport import/export material	1	1	8
		Compactor	Compact soil	1	1	4
	Underground Trench/ Conduit/ Substructure	Excavator	Trench Excavate and load material	2	3	8
		Backhoe/Front Loader	Trench Excavation and load material	2	3	8
		Dump/Haul Truck	Transport excavated materials and import backfill	2	3	4
		Crane (12-ton)	Lift and place materials	1	3	2
		Concrete Truck	Pour Concrete	2	3	2
		Compactor	Compact backfill within the trench	1	3	2
	Steel Structure Installations	2-ton Flatbed Truck	Deliver pole to site	1	0.5	4
		Large Crane (100 Ton)	Tower Erection	2	0.5	8

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
		Aerial Bucket Truck	Tower Erection and Conductor Installation	2	0.5	8
Transmission Segment 2: Rancho San Juan 138/230kV (North Runs)	Cable/Conductor Pulling and Tensioning	Aerial Bucket Truck	Tower Erection and Conductor Installation	4	3	6
		Puller and Tensioner	Pull the conductor into position and secure it at the correct tension	2	3	4
		Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	2	3	4
		Splice Trailer	Store splicing supplies	2	3	4
	Removal of Steel Riser Structure	2-ton Flatbed Truck	Remove pole sections and hardware from site	1	0.5	4
		Aerial Bucket Truck	Tower Erection and Conductor Installation	2	0.5	8
		Excavator	Break foundations and load material	1	0.5	4
		Jackhammer	Break foundations	2	0.5	6
		Dump/Haul Truck	Haul excavated materials and import backfill	1	0.5	2
		Large Crane (100 Ton)	Lower pole sections and load onto trucks	1	0.5	2

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Substation: Talega 138 kV	General Construction[1]	¾-ton or 1-ton Pickup Truck	Transport and support construction personnel	3	10	1
		Air Compressor	Operate air tools	1	8	1
		Mechanic Truck	Maintain and refuel equipment	1	4	1
	Site Development	Bulldozer	Grade pads and access roads	NA		
		Road Grader/Blade	Construct, maintain, and upgrade roads	NA		
		Scraper	Grade pads and access roads	NA		
		Compactor	Compact soil	NA		
		Loader	Load dump trucks and stockpile	NA		
		Backhoe	Trench Excavation	NA		
		Water Truck	Suppress dust	NA		
		Dump/Haul Truck	Transport import/export material	NA		
		Excavator	Excavate and load material	NA		

[1] Equipment associated with General Construction would be used throughout construction of the entire Proposed Project component.

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
	Below Grade Construction	Concrete Truck	Pour concrete	71	1	1
		Drill Rig with Augers	Drill pier foundations	1	.5	6
		Backhoe	Excavate pad foundations	1	.5	6
		Fork Lift/Skid Steer Loader	Move rebar, equipment, masonry, and other materials	NA		
		Small Mobile Crane (12-ton)	Place material and set steel	NA		
		Trencher/Ditch Witch	Excavate trenches	1	3	6
		Loader	Move bulk material	1	2	6
		Water Truck	Suppress dust	1	3	1
		Handheld Compactor	Compact soil	2	2	4
		Dump/Haul Truck	Transport import/export material	62	1	1
Substation: Talega 138 kV	Above Grade Construction	¾-ton or 1-ton Pickup Truck	Transport and support construction personnel	3	6	1
		Bucket Truck/Manlift	Set steel and install equipment	1	6	6
		Large Crane	Place material and set steel	NA		
		Boom Truck	Place material and set	1	3	6

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
			steel			
Substation: Talega 138 kV	Above Grade Construction	Fork Lift/Skid Steer Loader	Unload and move material	1	.3	2
		Line Truck	Assist with overhead conductor installation	2	6	1
		Cable Dolly (trailer)	Transport reels of conductor	1		1
		Stringing Rig (trailer)	Assist with conductor installation	1		1
		100-hp Oil Processing Truck	Process transformer Oil	NA		
	Relay Testing	Relay/Telecommunication Van	Transport and support construction personnel	1	1	1
	138 kV Substation Cutover & Energization (138kV)	Line Truck	Assist with overhead conductor installation	4	1	8
		Relay/Telecommunication Van	Test relay and telecommunications devices	1	1	1
Substation: San Juan Capistrano 230kV	Remove RFS 138/12 kV Equipment	Dump/Haul Truck	Haul excavated materials and import backfill	62	1	1
		Large Crane	Remove steel	1	.5	8
		Flatbed	Haul steel & RFS sub equipment	40	1	3

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
		Boom Truck	Lift equipment	2	2	6
		Crew trucks	Transport crew & tools	2	2	1
Substation: San Juan Capistrano 230kV	Site Development	Bulldozer	Grade pads and access roads	2	3	8
		Road Grader/Blade	Construct, maintain, and upgrade roads	1	3	8
		Scraper	Grade pads and access roads	2	3	8
		Compactor	Compact soil	1	3	8
		Loader	Load dump trucks and stockpile	1	3	8
		Backhoe	Trench Excavation	1	3	8
		Water Truck	Suppress dust	1	3	2
		Dump/Haul Truck	Transport import/export material	761	3	1
		Excavator	Excavate and load material	1	3	6

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Substation: San Juan Capistrano 230kV	Below Grade Construction	Concrete Truck	Pour concrete	962	6	1
		Drill Rig with Augers	Drill pier foundations	1	.5	8
		Backhoe	Excavate pad foundations	1	6	8
		Fork Lift/Skid Steer Loader	Move rebar, equipment, masonry, and other materials	1	6	4
		Small Mobile Crane (12-ton)	Place material and set steel	1	6	2
		Trencher/Ditch Witch	Excavate trenches	1	6	8
		Loader	Move bulk material	1	4	6
		Water Truck	Suppress dust	1	6	2
		Handheld Compactor	Compact soil	1	4	8
		Dump/Haul Truck	Transport import/export material	600	4	1
	Above Grade Construction	¾-ton or 1-ton Pickup Truck	Transport and support construction personnel	4	10	1
		Bucket Truck/Manlift	Set steel and install equipment	2	10	8
		Large Crane	Place material and set steel	1	3	6
		Boom Truck	Place material and set	2	9	6

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
			steel			
Substation: San Juan Capistrano 230kV	Above Grade Construction	Fork Lift/Skid Steer Loader	Unload and move material	2	10	6
		Line Truck	Assist with overhead /underground conductor installation	2	2	8
		Cable Dolly (trailer)	Transport reels of conductor	1	2	2
		Stringing Rig (trailer)	Assist with conductor installation	1	1	8
		SF6 gas cart (electric)	Fill equipment with SF6	1	.75	24
		100-hp Oil Processing Truck	Process transformer Oil	1	.5	24
	Relay Testing	Relay/Telecommunication Van	Transport and support construction personnel	2	5	1
	De-energize Temporary TL13835	Relay/Telecommunication Van	Transport and support construction personnel	1	.3	1
		Line Truck	Assist with overhead /underground conductor installation	2	.3	8
		Cable Dolly (trailer)	Transport reels of conductor	1	.5	2
		Boom Truck	Place material and set	1	.5	8

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
			steel			
Substation: San Juan Capistrano 230kV	Energization 230 kV Substation & Cutovers	Relay/Telecommunication Van	Transport and support construction personnel	2	1	1
		Line Truck	Assist with sub const	2	1	1
Substation: San Juan Capistrano 138/12 kV	Building Removal	2-ton Flatbed Truck	Remove building material	1	2	8
		Bucket Truck/Manlift	Building removal	1	2	6
		Excavator	Break foundations and load material	1	2	6
		Jackhammer	Break foundations	2	2	6
		Forklift	Load building spoil	2	2	6
		Dump/Haul Truck	Haul excavated materials and import backfill	32.5	2	1
		Large Crane	Knock building down	1	1	6
		Reel Trailer	Feed new conductor to the pulling and tensioner or collect old conductor	1	.5	6

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Substation: San Juan Capistrano 138/12 kV	Site Development	Bulldozer	Grade pads and access roads	2	4	8
		Road Grader/Blade	Construct, maintain, and upgrade roads	2	4	8
		Scraper	Grade pads and access roads	2	4	8
		834 Rubber Tire Compactor	Compact soil	1	6	8
		Loader	Load dump trucks and stockpile	1	6	6
		Backhoe	Trench Excavation	1	6	6
		Water Truck	Suppress dust	1	6	4
		Dump/Haul Truck	Transport import/export material	641	6	1
		Excavator	Excavate and load material	1	2	6
	Below Grade Construction	Concrete Truck	Pour concrete	1290	5	1
		Drill Rig with Augers	Drill pier foundations	1	1	8
		Backhoe	Excavate pad foundations	1	8	8
		Fork Lift/Skid Steer Loader	Move rebar, equipment, masonry, and other materials	1	8	5

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Substation: San Juan Capistrano 138/12 kV	Below Grade Construction	Small Mobile Crane (12-ton)	Place material and set steel	1	8	2
		Trencher/Ditch Witch	Excavate trenches	1	8	8
		Loader	Move bulk material	1	5	6
		Water Truck	Suppress dust	1	8	2
		Handheld Compactor	Compact soil	1	5	6
		Dump/Haul Truck	Transport import/export material	806	6	1
	Above Grade Construction	¾-ton or 1-ton Pickup Truck	Transport and support construction personnel	4	13	1
		Bucket Truck/Manlift	Set steel and install equipment	2	13	8
		Large Crane	Place material and set steel	1	3	8
		Boom Truck	Place material and set steel	2	10	5
		Fork Lift/Skid Steer Loader	Unload and move material	2	12	8
		Line Truck	Assist with underground conductor installation	2	1	6

Project Component	Activity	Equipment	Use	Approximate Quantity	Approximate Duration On Site (months)	Average Duration of Use (hours per day)
Substation: San Juan Capistrano 138/12 kV	Above Grade Construction	Cable Dolly (trailer)	Transport reels of conductor	1	3	2
		Stringing Rig (trailer)	Assist with conductor installation	NA		
		SF6 gas cart (electric)	Fill equipment with SF6	1	1	24
		100-hp Oil Processing Truck	Process transformer Oil	1	.2	24
	Relay Testing	Relay/Telecommunication Van	Transport and support construction personnel	2	6	1
	Energization (138 kV) 138/12 kV Substation Cutovers	Relay/Telecommunication Van	Transport and support construction personnel	2	1	1
		Line Truck	Assist with sub const	2	1	1
	Energize Temporary TL13835	Relay/Telecommunication Van	Transport and support construction personnel	2	1	1
		Line/Crew Truck	Assist with sub const	2	1	1
		Bucket Truck/Manlift	Set steel and install equipment	2	1	8
		Stringing Rig (trailer)	Assist with conductor installation	1	.5	4

Detailed Magnetic Field Management Plan for the South Orange County Reliability Enhancement Project

Project Engineer: **Willie Thomas** (Team Lead IV-Trans Eng)
Project Designer: **Chuck Matyac** (Sr. Trans Eng Designer- Trans Eng)

Work Order No.: **BP5984480**
In-Service Date: **2017**

Transmission Lines: **TL695, 13812, 13816, 13831, 13833, 13834, 13835, 13836,13837, 13846, 13847, 13848, 23007, 23030**

Central File No.: **ELA 140.B.XX**

Prepared by: Gerald Bennett – Transmission portion
S.C. Campbell - Substation portion

Date: 04/23/2012

Table of Contents

I. PROJECT SCOPE 1

II. MAGNETIC FIELD MANAGEMENT DESIGN GUIDELINES 1

III. METHODOLOGY 1

IV. PROJECT DESCRIPTION 3

FIGURE 1: DRAWING SYMBOL DEFINITIONS 6

V. FIELD MANAGEMENT MEASURES CONSIDERED FOR THE TRANSMISSION PORTION OF THE PROPOSED PROJECT 7

TABLE 1: MAGNETIC FIELD REDUCTION MEASURES ADOPTED OR REJECTED 7

VI. MAGNETIC FIELD REDUCTION MEASURES EVALUATED FOR THE TRANSMISSION PORTION OF THE PROPOSED PROJECT 9

VII. MAGNETIC FIELD REDUCTION MEASURES RECOMMENDED FOR THE TRANSMISSION PORTION OF THE PROPOSED PROJECT 11

A. "NO-COST" FIELD MANAGEMENT TECHNIQUE: 11
B. "LOW-COST" FIELD MANAGEMENT TECHNIQUE: 11

VIII. SUMMARY OF CALCULATED MAGNETIC FIELD LEVELS FOR THE TRANSMISSION PORTION OF THE PROPOSED PROJECT 12

TABLE 2: SEGMENT 1A – UNDERGROUND TL13847 AND TL13837 WEST OF CAPISTRANO SUBSTATION. 12
TABLE 3: SEGMENT 1B – OVERHEAD TL23007 AND TL23030 FROM CAPISTRANO SUBSTATION EAST TO RANCHO SAN JUAN RESIDENTIAL DEVELOPMENT 13
TABLE 4: SEGMENT 2 – UNDERGROUND AT RANCHO SAN JUAN RESIDENTIAL DEVELOPMENT WITHIN FRANCHISE OF VISTA MONTANA BETWEEN VIA PAMPLONA AND LA PATA AVENUE 13
TABLE 5: SEGMENT 3A – OVERHEAD FROM RANCHO SAN JUAN UNDERGROUND TO PICO SUBSTATION 14
TABLE 6: SEGMENT 3B – OVERHEAD FROM PICO SUBSTATION TO TALEGA HUB. 14

IX. SIMPLIFIED FIELD MANAGEMENT PLAN CHECKLIST FOR THE SAN JUAN CAPISTRANO SUBSTATION PORTION OF THE PROPOSED PROJECT 15

I. Project Scope

The South Orange County Reliability Enhancement Project (Proposed Project) is intended to meet the area load growth and service reliability for approximately 129,000 customers within southern Orange County. In order to increase service and reliability to its customers and substations in the southern Orange County region, SDG&E is proposing to replace the existing 138/12kV Capistrano Substation with a new 230/138/12kV Gas Insulated Substation (GIS), conducting minor alterations to the existing Talega Substation, and bringing two (2) new 230kV transmission lines into the southern Orange County area by replacing a section of an existing 138kV transmission line (TL13835) with a new 230kV double-circuit extension between Capistrano Substation and Talega Substation. The Proposed Project would have an anticipated in-service date of approximately 2017.

The new 230kV double circuit will be an extension of TL23007 and TL23030 from the Talega Substation area to the Capistrano Substation. This "Detailed Magnetic Field Management Plan (FMP)" is for analysis of the new 230kV double circuit extension.

II. Magnetic Field Management Design Guidelines

The California Public Utilities Commission ("CPUC") requires SDG&E apply its *EMF*[1] *Design Guidelines for Electrical Facilities* ("Guidelines") to all new electric transmission projects to reduce public exposure to magnetic fields. SDG&E filed its Guidelines with the CPUC in accordance with CPUC Decision 93-11-013 and updated them in accordance with the 2006 CPUC Decision 06-01-042.

Consistent with SDG&E's Guidelines and with the CPUC order, magnetic fields and possible magnetic field management measures were evaluated along the existing, and proposed, transmission circuit locations associated with the Project. The results of this evaluation are contained in this FMP.

The FMP deals solely with magnetic fields. Moreover, reducing the magnetic field strength is but one of many factors to be considered in planning and designing a transmission system, along with other issues such as safety, environmental concerns, reliability, insulation and electrical clearance requirements, aesthetics, cost, operations and maintenance.

III. Methodology

In Decision 06-01-042, the CPUC notes that modeling is used to compare the relative effectiveness of field-reduction options and is not to be used to predict post-construction field levels. CPUC Decision 06-01-042, Finding of Fact 14: "Utility modeling methodology is intended to compare differences between alternative EMF [Electromagnetic Field] mitigation measures and not determine actual EMF amounts."[2] The CPUC also notes that "modeling indicates relative differences in magnetic field reductions between different transmission line construction methods, but does not measure actual environmental magnetic fields."[3]

[1] EMF refers to electric and magnetic fields.
[2] CPUC Decision D.06-01-042, Finding of Fact 14, p. 20.
[3] Ibid, p.11.

In accordance with its Guidelines, SDG&E will take the following measures for the Project:

- Apply SDG&E's EMF Guidelines for transmission circuit facilities to the Project design.
- Identify and implement appropriate "no-cost" measures, i.e., those that will not increase overall project costs but will reduce the magnetic field levels.
- Identify and implement appropriate "low-cost" measures, i.e., those measures costing in the range of 4% of the total budgeted project cost that will reduce the magnetic field levels by 15% or more at the edge of the right-of-way (ROW).
- When a sufficiency of "low-cost" measures is available to reduce magnetic field levels, such that it is difficult to stay within the 4% cost guideline, apply these "low-cost" measures by priority, per the Guidelines.

The 15% minimum reduction required for low-cost measures is in addition to any field reduction due to "no-cost" measures. It is not cumulative.

Since the Project requires permitting under General Order 131-D, a Detailed Field Management Plan ("FMP") will be used. The Detailed FMP consists of a project description, a checklist table showing evaluation of magnetic field reduction measures adopted or rejected per segment, evaluation of "no-cost" and "low-cost" magnetic field reduction techniques, magnetic field models, and a summary with recommendations, including tables showing resultant magnetic field reduction levels at the edge of the ROW where applicable.

Tables showing calculated resultant magnetic field levels at the edges of the ROW are included in "Section VIII- Summary of Calculated Magnetic Field Levels" in this report.

Field levels were calculated using the Resicalc program developed and maintained by the Electric Power Research Institute**.** As the proposed in-service date of the Project would be Fall 2017, the projected high usage currents, "2017 heavy summer," were used in the calculations. For the purpose of evaluating the field management measures, magnetic field levels were calculated and compared at a height of one meter above ground.

To evaluate the effectiveness of various magnetic field reduction measures, calculated values for a given technique were compared to calculated values without the technique. Since all segments of the Project are within defined easements, magnetic field levels were calculated and compared at the adjacent parallel property lines, or edges of ROW.

The edges of the ROW are identified as "West", "East", "North", or "South" for consistency when reviewing the sketches included in "Appendix 1" and the tables included in "Section VIII- Summary of Calculated Magnetic Field Levels" in this report.

IV. Project Description

The South Orange County Reliability Enhancement Project (Proposed Project) is intended to meet the area load growth and service reliability for approximately 129,000 customers within southern Orange County. In order to increase service reliability to its customers and substations in the southern Orange County region, SDG&E is proposing to replace the existing 138/12kV Capistrano Substation with a new 230/138/12kV Gas Insulated Substation (GIS), make minor changes to the existing Talega Substation, and bring two (2) new 230kV transmission lines into the southern Orange County area by replacing a section of existing 138kV transmission line (TL13835) with a new 230kV double-circuit extension between Capistrano Substation and Talega Substation. The Proposed Project will have an anticipated in-service date of 2017.

The transmission line portion of this Proposed Project is approximately eight miles in length with components primarily located in portions of the cities of San Juan Capistrano and San Clemente, as well as unincorporated Orange County, and the United States Marine Corps Base Camp Pendleton (Camp Pendleton). (see Appendix 1, "Segment Map") This area of southwestern Orange County is composed of residential, commercial, recreational, and open space land uses.

This "Detailed Magnetic Field Management Plan" is specifically for the following Proposed Project components:

- Relocate the three existing 138kV transmission lines from the Capistrano Substation into the new San Juan Capistrano substation. Loop-in the two 138kV transmission lines that currently bypass the existing substation into the new San Juan Capistrano substation. Underground all of the westbound 138kV transmission line getaways.
- The Proposed Project includes replacing an existing 138kV transmission line, TL13835, between Capistrano Substation and Talega Substation, with two (2) new 230kV transmission lines which will be installed on common, double-circuit structures. TL23007 will be disconnected from Talega Substation and connected to the new transmission lines on the west side of the common double-circuit structures, extending it from its other terminating substation, San Onofre Substation, beyond Talega Substation to Capistrano Substation. The other new transmission line on the east side of the structures will tie to TL23030 where it currently enters Talega Substation on the east side coming from its other termination at Escondido Substation, making it a three terminal line at that point, and extending it from Talega Substation to Capistrano Substation. These changes are described as follows:
    - Within SDG&E's existing right-of-way (ROW) build approximately 7.5 miles of new overhead double-circuit 230kV transmission lines connecting to existing 230kV transmission lines (TL2007, TL23030) near Talega Substation;
    - Acquire new ROW for approximately 0.25 mile of new overhead 230kV transmission line (TL23030) adjacent to SDG&E's Talega Substation;
    - Within SDG&E's existing Vista Montana street easement and franchise position, replace 0.36 miles of one (1) existing 138kV underground transmission duct bank with two (2) new 230kV underground transmission duct banks;
- Remove and relocate 12kV distribution lines from within SDG&E's existing Capistrano to Talega utility corridor to accommodate the new 230kV double-circuit line;
- Relocate existing 69kV and 138kV transmission lines near the Talega Substation;

- Install approximately 81 new steel transmission line structures (49 - 230kV structures, 23 - 138kV structures, and 9 - 69kV structures);
- Remove approximately 86 wood structures, 12 - steel structures, and 5 - steel lattice towers;
- Upgrade remote ends of 138kV and 230kV transmission lines affected, as required.

For the purposes of this document, the transmission line work associated with the Proposed Project has been divided into four (4) segments. Segment 1 and 3 were further subdivided due to configuration changes in those segments which affect modeling:

Segment 1a – Following the completion of the new San Juan Capistrano 230/138/12kV gas insulated substation, six (6) 138kV transmission lines will connect to the new facility via underground getaways. Four of the six 138kV transmission lines, TL13833, TL13834, TL13847, and TL13837, will exit the substation site via underground conduit duct banks on the west side, and cross under Camino Capistrano, heading west to four new steel cable poles. Two of these, TL13847 and TL13837, will continue west in an underground position within an existing 60 foot wide SDG&E easement for approximately 600 feet until transitioning to an overhead position on a new steel cable pole located along Avenida de la Vista. There is a community recreation facility on the north side of this easement, along with residential structures on both sides. From there they connect to their existing transmission circuits within franchise, and continue westerly to Laguna Niguel Substation.

The other two, TL13833 and TL13834, transition overhead to new steel cable poles near Camino Capistrano, approximately 200 feet from Capistrano Substation, where they connect to their existing transmission circuits and head north, within franchise, to Trabuco Substation.

The last two of the six 138kV transmission lines, TL13816 and TL13848, will exit the substation to the east via new steel cable poles that will be installed in the northeast corner of the substation site. From there, these two 138kV lines will connect to their appropriate, existing, transmission lines, which currently reside within an existing 150 foot wide SDG&E easement, and head toward Rancho San Juan residential development, along with the new 230kV double circuit transmission lines as defined in Segment 1b. Land use in this Segment is residential.

Segment 1b – This Segment includes construction of a new 230kV double circuit overhead transmission line between the new San Juan Capistrano 230/138/12kV gas insulated substation and the Rancho San Juan residential development, located near the intersection of La Pata Avenue and Vista Montana, a distance of approximately 2.7 miles. It will involve the removal of wood structures, lattice towers and steel poles, and the installation of new taller steel poles. The new 230kV steel poles will be installed within SDG&E's existing 150 foot ROW, using the same alignment as existing TL13835. Land use in this Segment is residential and undeveloped land.

Segment 2 – Segment 2 will include the installation of two separate 230kV underground conduit duct banks, for a distance of approximately 0.4 miles, where the Proposed Project goes past San Juan Hills High School. The first 230kV circuit, TL23030, will be located in a franchise position just north of centerline within Vista Montana between Via Pamplona and La Pata Avenue. The second 230kV circuit, TL23007, will also be installed within Vista Montana, but south of centerline, within an existing 30-foot easement. The 230kV circuits will transition on both sides

of Vista Montana from underground to overhead via two new 230kV steel cable poles at each end of the Rancho San Juan segment, for a total of four new 230kV steel cable poles. It should be noted that this segment removes two existing 138kV steel cable poles, one on each end of Vista Montana, and the associated 138kV cable as they are no longer necessary. One existing 138kV double-circuit steel cable pole (currently TL13833 and TL13816) located near the intersection of Vista Montana and Via Pamplona will be replaced. The replaced pole will be installed just north of the existing pole to make room for the new 230kV (TL23030) underground cable system. Land use for this segment is residential and school.

Segment 3a – Segment 3a of the Proposed Project will include the installation of approximately 3.4 miles of new 230kV overhead on approximately twenty-two (22) double-circuit steel poles located within the cities of San Juan Capistrano and San Clemente, as well as within unincorporated Orange County following the previous, TL13835, alignment. It begins where the new underground transmission lines will transition to an overhead position adjacent to the proposed Rancho San Juan residential development, and end where the 138kV tielines loop in to Pico Substation. Land use for this segment is mostly undeveloped land until it nears Pico Substation where there are commercial/industrial and residential areas.

Segment 3b – This Segment includes the section of Segment 3 from Pico Substation where the two 138kV tielines (TL13846 and TL13836) come out and head east, staying parallel to the new 230kV transmission lines, then south to the Talega Hub, a distance of approximately 0.8 miles. At the Talega Hub, the new TL23030 circuit continues on east (see Segment 4) to the north east corner of Talega Substation, where it turns south to the new TL23030 Talega Tap. The other 230kV tieline, TL23007, continues south within the Talega Hub area and connects to the existing TL23007 pole line (see Segment 4), which ultimately terminates at the San Onofre Substation. The existing connection of TL23007 at Talega Hub to Talega Substation will be disconnected. Land use for this segment is commercial/industrial and undeveloped.

Within Segment 3, approximately thirty-two (32) 138kV wood structures (two and three pole structures currently used to support TL13835) will be removed along with all associated 138kV conductor and hardware to make room for the new 230kV transmission lines and structures.

Segment 4 – Within Segment 4 of the Proposed Project, the two new 230kV transmission lines will follow separate routes. Therefore, each new 230kV transmission line is described separately below by circuit number.

TL23007

TL23007 will travel south within the Talega Hub area for approximately 600 feet until it connects to existing TL23007 at an existing steel lattice tower structure.

TL23030

TL23030 will continue traveling east, on centerline of a new 100 foot-ROW, until it turns south at the northeast corner of Talega Substation, then continue south until it ends at the new Talega Tap where existing TL23030 transmission line coming from Escondido Substation currently enters Talega Substation, a total distance of approximately 2,630 feet. To provide for this, an existing 230kV dead end steel pole will be replaced with a 230kV steel pole.

Transmission line work within Segment 4 also includes re-locating existing 138kV and 69kV transmission lines, both within new and existing ROWs, by installing new overhead structures and underground duct banks. This is required for clearance purposes when the new 230kV transmission lines and structures are installed near Talega Substation. All of Segment 4 lies well within the SDG&E utility easements at the Talega Hub and Talega Substation site so modeling was not performed. Land use adjacent to Segment 4 is Camp Pendleton Military Base on the east and south with buildings over 1,000 feet away, a golf course to the west, and undeveloped land for at least 500 feet to the north. For these reasons land use was defined as "undeveloped land". Modeling was not done due to the complexity of placement of the transmission lines.

Drawings and descriptions showing a typical pole top configuration, tieline relative locations to each other and left and right ROW are included in Appendix 1. Figure 1 below shows the drawing symbols; the arrows on the drawings indicate the viewing direction for orienting each drawing and the direction of current flow.

Figure 1: Drawing Symbol Definitions

Symbol	Interpretation	Meaning
	Viewing Direction	The orientation as seen when looking toward the north
	Current flow into the page	Direction of current flow is same as viewing direction
	Current flow out of the page	Direction of current flow is opposite of viewing direction
	Underground Transmission Circuit	Location of underground transmission circuit
	Underground Transmission Circuit	Location of Underground Transmission in Bridge Cell

V. Field Management Measures Considered for the Transmission Portion of the Proposed Project

Per the "EMF Design Guidelines for Electrical Facilities, Table 3-1", all Segments were reviewed for suitable application of magnetic field reduction measures, as listed in "*Table 1: Magnetic Field Reduction Measures Adopted or Rejected*" below. These techniques will be discussed under the "Section VI- Magnetic Field Reduction Measures Evaluated for the Project" that follows.

Table 1: Magnetic Field Reduction Measures Adopted or Rejected

Segment(s)	Location (Street, Area)	Adjacent Land Use	Reduction Measure Considered	Measure Adopted? (Yes/No)	Estimated Cost to Adopt
All	Entire Project Corridor	Residential, Commercial, Industrial, Undeveloped	**Locate power lines closer to center of the utility corridor to extent possible.**	**No**	**N/A**
	Reason not adopted: SEG 1a and SEG 2 underground is designed to be as close to center of easement as possible. The new 230kV tielines in SEG 1b, SEG 3a, and SEG 3b are using the existing 138kV pole alignment within the SDG&E corridor. TL23030 is designed to be in the center of the new easement in SEG 4. No other alignment is feasible for safety and reliability reasons for other transmission lines in SEG 4. Therefore this option was discarded.				
1b, 3a, 3b	Overhead Project Corridor	Residential, Commercial, Industrial, Undeveloped	**Increase structure height.**	**Yes**	**Not Available**
	SEG. 1b, SEG. 3a, and SEG. 3b will require a standard 230kV double circuit steel pole. Some structure heights will increase to maintain or increase sag distance from ground to the circuit by design. Making structure heights taller was modeled for 15% reduction at ROW and consideration of the cost exceeding 4% of the total Proposed Project cost was evaluated. A conclusion was made and is discussed below. (see "Magnetic Field Reduction Measures Evaluated for the Project" below)				
4	Overhead Project Corridor	Residential, Commercial, Industrial, Undeveloped	**Increase structure height.**	**No**	**N/A**
	Reason not adopted: Land use adjacent to SEG 4 is "undeveloped land " to the north, east and west . There are no structures for at least 400 feet on land north of Segment 4, and for at least 1,000 feet on the east and south sides. To the west is a golf course, on which the nearest structure is more than 1,000 feet from the Segment 4 corridor. Due to the adjacent land uses to the north, east and south, and the complexity of placement of the transmission lines in this Segment, increasing structure heights to reduce magnetic fields was rejected for Segment 4.				
All	Entire Project Corridor	Residential, Industrial, Undeveloped	**Reduce conductor (phase) spacing.**	**No**	**N/A**
	Reason not adopted: In SEG 1b, SEG. 3a, SEG. 3b,and SEG 4, pole top spacing is per SDG&E Standards recommended for a 230kV double circuit steel pole to avoid possibility of blow-out. SEG. 1a and SEG. 2 underground will be installed in SDG&E Standards recommended				

	underground conduit duct banks with set conductor phase spacing. Therefore this option was discarded.				
1b, 3a, 3b	Overhead Project Corridor	Residential, Commercial, Industrial, Undeveloped	**Place Overhead Underground**	**No**	**N/A**
	<u>Reasons not adopted</u>: The combined length of the 230 kV tielines in proposed project segments 1b, 3a and 3b is approximately 7.7 miles. The cost to underground these segments would far exceed the 4% benchmark guideline for "low-cost" magnetic field reduction. Therefore, undergrounding the proposed 230 kV tielines in these segments was rejected as an option to reduce magnetic fields.				
1a & 2	Underground Project Corridor	Residential, School	**Increase trench depth**.	**Yes**	**Not Available**
	Undergrounding the 138kV tielines in SEG 1a, and the 138kV and 230kV tielines in SEG 2, is per SDG&E Standards designed to be at 3 feet top-of-conduit (TOC). Increasing the depth was modeled and consideration of the cost exceeding 4% of the total Proposed Project cost and the possibility of degradation of the ampacity and rating of the tieline due to more heat at deeper depths was reviewed. A conclusion was made and is discussed below. (see "Magnetic Field Reduction Measures Evaluated for the Project" below)				
All	Project Corridor	Residential, Commercial, Industrial, Undeveloped	**Phasing circuits to reduce magnetic fields.**	**No**	**N/A**
	<u>Reasons not adopted</u>: Reduction of magnetic field values (milligauss) through phasing techniques was considered and modeled for the Proposed Project. **SEG 1a** 138kV tielines, TL13847 and TL13837, were phased per a previous FMP for Laguna Niguel and must keep their existing phasing for lowest field values. TL13833 and TL13844 were found to be phased for lowest field values so should remain as is. The 138kV tielines in **SEG 1b, 3a, and 3b** were reviewed in various combinations of phasing and also found to be phased for lowest field values so should remain as is. The SDG&E proposed 230kVextension tielines were modeled with various phase combinations and it was found if TL23030 were reverse phased C-B-A(top-to-bottom) from TL23007 A-B-C(top-to-bottom) a reduction was achieved at the edge of ROW for **SEG 1b, 3a, and 3b.** However, TL23030 should remain as is, since the southerly termination of that circuit is at Escondido Substation, which is out of scope of this Proposed Project and it shares common structures with other transmission lines within the corridor between Talega Sub and Escondido Sub which were phased for lowest field values at ROW in previous FMPs. The phasing of underground **Segment 2,** and overhead phasing of **Segment 4,** being portions of the new 230kV extension between Capistrano and Talega Sub. must remain consistent with that of the overhead lines. This is do to safety issues that may arise when "fault tracking" a tieline from either substation it ties into, any phase change of a tieline must be done as it connects to the rack at each substation it terminates at. The portion of Segment 4 containing TL23007 has a southerly termination at San Onofre Substation and outside the scope of this Proposed Project, thereby precluding analysis of phase arrangement, as described above. In summary, phase arrangement was rejected as an option for all segments of the Proposed Project.				

VI. Magnetic Field Reduction Measures Evaluated for the Transmission Portion of the Proposed Project

Per SDG&E EMF Design Guidelines for Electrical Facilities, this FMP is limited to an assessment of increasing structure height for SEG 1b, SEG 3a, and SEG 3b, and increasing trench depth, as field reduction techniques for SEG 1a and SEG 2. Other techniques such as changes in locating power lines closer to the center of the corridor, reducing conductor (phase) spacing, and phasing circuits to reduce magnetic fields were not implemented.

Locating power lines closer to the centerline of the corridor: Every effort was made to locate the power line closer to center of corridor or franchise for the Proposed Project. SEG1a and SEG 2 underground is designed to be as close to center of easement as possible. The new 230kV tielines in SEG 1b, SEG 3a, and SEG 3b are using the existing 138kV pole alignment within the SDG&E corridor for safety and reliability reasons. TL23030 is designed to be in the center of the new easement in SEG 4. For all other transmission lines in SEG 4, no other alignment is feasible for safety and reliability reasons. Therefore this option was discarded.

Increasing structure height: Land use adjacent to SEG 4 is "undeveloped land " to the north, east and west . There are no structures for at least 400 feet on land north of Segment 4, and for at least 1,000 feet on the east and south sides. To the west is a golf course, on which the nearest structure is more than 1,000 feet from the Segment 4 corridor. Due to the adjacent land uses to the north, east and south, and the complexity of placement of the transmission lines in this Segment, increasing structure heights to reduce magnetic field**s** was rejected for Segment 4.

Reducing conductor phase spacing: Reducing conductor spacing of overhead and underground installations is not an acceptable mitigation technique. The SDG&E Standards for underground installation provides the closest separation without degradation of the circuit's rating due to interference and heat between the three phases. The overhead pole top spacing is per SDG&E Standards recommended for a 230kV double circuit steel pole to avoid possibility of blow-out. Therefore this option was discarded.

Phasing circuits to reduce magnetic fields: Reduction of magnetic field values (milligauss) through phasing techniques was considered and modeled for the Proposed Project. SEG 1a 138kV tielines, TL13847, TL13837, were phased per a previous FMP for Laguna Niguel and must remain their existing phase for lowest field values. TL13833 and TL13844 were found to be phased for lowest field values so should remain as is. The 138kV tielines in SEG 1b – SEG 3b were reviewed in various combinations of phasing and also found to be phased for lowest field values so should remain as is. The SDG&E proposed 230kVextension tielines were modeled with various phase combinations and it was found if TL23030 were reverse phased C-B-A(top-to-bottom) from TL23007 A-B-C(top-to-bottom) a reduction was achieved at the edge of ROW for SEG 1b – SEG 3b. However, TL23030 should remain as is, since the southerly termination of that circuit is at Escondido Substation, which is out of scope of this Proposed Project. TL23030 also shares common structures with other transmission lines within the corridor between Talega Substation and Escondido Substation, which were phased for lowest field values at ROW in previous FMPs. Also, do to safety issues that may arise when "fault tracking" a tieline from either substation it ties into, any phase change of a tieline must be done as it connects to the rack at each substation it terminates at. Therefore this option was discarded.

Increasing structure height: The design pole height required to maintain minimum 30 foot sag (distance from ground) for 230kV tielines was used for the new 230kV double circuit steel poles in SEG 1b, SEG 3a, and SEG 3b. Some structure heights were increased to maintain or increase sag distance from ground to the circuit by design due to the contour of the land they travel over. Increasing pole height, which will increase sag height, would not be a "no-cost" option but a "low-cost" option. To adopt a "low-cost" option, the calculated reduction at one edge-of-ROW, must be at least 15% and the other edge-of-ROW must not increase in milligauss value. Modeling was done to try to get an additional 15% reduction at edge-of-ROW for these overhead Segments, which includes residential, commercial/industrial, and undeveloped land use, and the structure height would have to increase an additional 8 feet (38 feet minimum sag). Therefore, increasing structure height was recommended as a low-cost measure for SEG 1b, 3a and 3b. (see "Magnetic Field Reduction Measures Recommended for the Project" below).

For SEG 4, there are no structures for at least 400 feet on land north of SEG 4, and for at least 1,000 feet on the east and south sides. To the west is a golf course, on which the nearest structure is more than 1,000 feet away. Due to the adjacent land uses to the north, east and south and the complexity of placement of the transmission lines in this segment, increasing structure heights to reduce magnetic field**s** was rejected for Segment 4.

Increasing trench depth: Designed depth of the underground duct bank for TL13847, TL13837 in SEG1a, and the new 230kV tielines, TL23007 and TL23030 in SEG 2, is the standard 3 feet top-of-conduit. Going beyond this depth would not be a "no-cost" option but a "low-cost" option.

Land uses adjacent to SEG 1a includes residential and a community park; land uses adjacent to SEG 2 include San Juan Hills high school.

Magnetic field modeling showed that the trench depth would have to increase approximately 5 feet for SEG 1a (8 feet top-of-conduit), and approximately 3 feet for Segment 2 (6 feet-top-of-conduit), to achieve a 15% reduction at the edge of ROW. Therefore, increasing trench depth was recommended as a low-cost measure for Segments 1a and 2. (see "Magnetic Field Reduction Measures Recommended for the Project" below)

VII. Magnetic Field Reduction Measures Recommended for the Transmission Portion of the Proposed Project

Reduction of magnetic field values by increasing structure height and increasing trench depth field reduction techniques were adopted as viable methods to reduce magnetic fields at the edge-of-ROW for the Proposed Project. For the percentage of magnetic field reduction see tables located in *"Section VIII. - Summary of Calculated Magnetic Field Levels."* The recommended field reduction techniques are:

A. "No-Cost" Field Management Technique:

There are no "no-cost" magnetic field reduction techniques recommended for this Project.

B. "Low-Cost" Field Management Technique:

After discussing increasing structure height and increasing trench depth field reduction techniques with Transmission Engineering, the following was selected for most viable "low-cost" techniques to reduce magnetic fields:

SEG 1a: Modeling was done to try to get an additional 15% reduction at edge-of-easement for SEG 1a, which includes residential land use and a community park, and the depth would have to increase to approximately **8 feet top-of-conduit**.

SEG 1b: Modeling was done to try to get an additional 15% reduction at edge-of-ROW for SEG 1b, which includes residential and undeveloped land use, and the structure height would have to increase an additional **8 feet (38 feet minimum sag)**.

SEG 2: Modeling was done to try to get an additional 15% reduction in SEG 2, which goes past San Juan Hills High School, by making the 230kV duct banks deeper, and the depth would have to increase to approximately **6 feet top-of-conduit**.

SEG 3a: Modeling was done to try to get an additional 15% reduction at edge-of-ROW for SEG 3a, which includes residential, commercial/industrial, and undeveloped land use, and the structure height would have to increase an additional **8 feet (38 feet minimum sag)**.

SEG 3b: Modeling was done to try to get an additional 15% reduction at edge-of-ROW for SEG 3b, which includes commercial/industrial, and undeveloped land use, and the structure height would have to increase an additional **8 feet (38 feet minimum sag)**.

VIII. Summary of Calculated Magnetic Field Levels for the Transmission Portion of the Proposed Project

The following tables show the initial design and recommended ("low-cost") design magnetic field values (milligauss) and the percent change for SEG1a – SEG 3b of the Proposed Project. A positive percentage value shows a reduction in milligauss, while a negative value shows an increase in milligauss from the initial design. The magnetic field values were calculated at the edges-of-ROWs, or edge-of-easement for all Segments. Since increasing structure height and increasing trench depth field reduction techniques were the only viable techniques, other modeling tables were not included. The location of the Segments and their corresponding land uses are included in the attached "Appendix 1".

Table 2: Segment 1a – Underground TL13847 and TL13837 west of Capistrano Substation.

SEGMENT 1a			Make Underground Deeper			
Underground 13847_13837 west of Capistrano Substation						
INITIAL	DESIGN		Low-Cost	Design	Percent (%)	
TL13847	(A-B-C)t-b				milligauss	
TL13837	(C-B-A)t-b				Reduction	
3 foot Top-Of-Conduit			Make 5 feet deeper (8 ft. TOC)			
North	South		North	South	North	South
2.71	2.71		2.21	2.21	18.5%	18.5%

- Residential land use. Community Park on north edge-of-easement.
- Length = approx. 600 feet, 60 foot wide SDG&E easement
- Make trench 5 ft. deeper, making TOC 8 ft.
- See "**Appendix 1 – Segment 1a**" attached for further detail.

Table 3: Segment 1b – Overhead TL23007 and TL23030 from Capistrano Substation east to Rancho San Juan residential development.

SEGMENT 1b		Raise SAG Height				
Overhead- Capistrano Substation east to Rancho San Juan UG						
INITIAL	DESIGN		Low-Cost	Design	Percent (%) milligauss Reduction	
TL13816	C-B-A (t-b)					
TL13848	A-B-C (t-b)					
TL23030	A-B-C (t-b)					
TL23007	A-B-C (t-b)					
			Raise by 8 feet			
North	South		North	South	North	South
13.84	32.26		12.68	27.32	8.4%	15.3%

- Residential and undeveloped land use.
- Length = approx. 2.7 miles, 150 ft. wide SDG&E ROW
- Increase structure height 8 ft.
- See "**Appendix 1 – Segment 1b**" attached for further detail

Table 4: Segment 2 – Underground at Rancho San Juan residential development within franchise of Vista Montana between Via Pamplona and La Pata Avenue

SEGMENT 2		Make Underground Deeper				
Rancho San Juan - Underground						
INITIAL	DESIGN		Low-Cost	Design	Percent (%) milligauss Reduction	
TL23030	A-B-C (t-b)					
TL23030	A-B-C (t-b)					
TL13816	C-B-A (t-b)					
TL13848	A-B-C (t-b)					
TL23007	A-B-C (t-b)					
TL23007	A-B-C (t-b)					
			Make 3 feet deeper (6ft. TOC)			
North	South		North	South	North	South
3.16	14.16		2.95	11.83	6.6%	16.5%

- Residential land use. Goes past San Juan Hills High School to the north.
- Length = approx. 0.4 miles, within franchise Vista Montana
- Increasing the depth by 3 ft. (6 ft. TOC)
- See "**Appendix 1 – Segment 2**" attached for further detail.

Table 5: Segment 3a – Overhead from Rancho San Juan Underground to Pico Substation

SEGMENT 3a		Raise SAG Height				
Overhead- Rancho San Juan UG - Pico Substation						
INITIAL	DESIGN		Low-Cost	Design	Percent (%) milligauss Reduction	
TL13816	C-B-A (t-b)					
TL13847	A-B-C (t-b)					
TL23030	A-B-C (t-b)					
TL23007	A-B-C (t-b)					
			Raise by 8 feet			
East	West		East	West	East	West
13.84	32.26		12.68	27.32	8.4%	15.3%

- Commercial/industrial and residential land use
- Length = approx. 3.4 miles, 150ft. wide SDG&E ROW
- Increasing structure height 8 ft.
- See "**Appendix 1 – Segment 3a**" attached for further detail.

Table 6: Segment 3b – Overhead from Pico Substation to Talega Hub.

SEGMENT 3b		Raise SAG Height				
Overhead-Pico Substation - Talega Hub						
INITIAL	DESIGN		Low-Cost	Design	Percent (%) milligauss Reduction	
TL13836	C-B-A (t-b)					
TL13846	A-B-C (t-b)					
TL23030	A-B-C (t-b)					
TL23007	A-B-C (t-b)					
			Raise by 8 feet			
East	West		East	West	East	West
18.02	32.80		16.79	27.80	6.8%	15.2%

- Commercial/Industrial and undeveloped land use.
- Length = approx. 0.8 miles, 150ft. wide SDG&E ROW
- Increasing structure height 8 ft.
- See "**Appendix 1 – Segment 3b**" attached for further detail.

IX. Simplified Field Management Plan Checklist for the San Juan Capistrano Substation Portion of the Proposed Project

Generally, magnetic field values along the substation perimeter are low compared to the substation interior because of the distance to the energized equipment. Normally, the highest values of magnetic fields around the perimeter of a substation are caused by overhead power lines and underground duct banks entering and leaving the substation, and not by substation equipment. Therefore, the magnetic field reduction measures generally applicable to a substation project are as follows:

- Site selection for a new substation;
- Setback of substation structures and major substation equipment (such as bus, transformers, and underground cable duct banks, etc.) from perimeter;
- Field reduction for transmission lines entering and exiting the substation.

The Substation Checklist FMP evaluates the no-cost and low-cost measures considered for the substation project, the measures adopted, and reasons that certain measures were not adopted.

No.	No-Cost and Low-Cost Magnetic Field Reduction Measures Evaluated for a Substation Project	Measure Adopted? (Yes/No)	Reason(s) if not Adopted
1	Keep high current devices, transformers, capacitors, and reactors, away from the substation property lines by bringing into the substation property as much as possible.	Yes	
2	For underground duct banks, the minimum distance should be 12 feet from the adjacent property lines or to the extent practical.	Yes	
3	Locate new substations close to existing transmission line rights-of-way to the extent practical.	Yes	
4	Increase the substation property boundary to the extent practical.	Yes	
5	Other:		

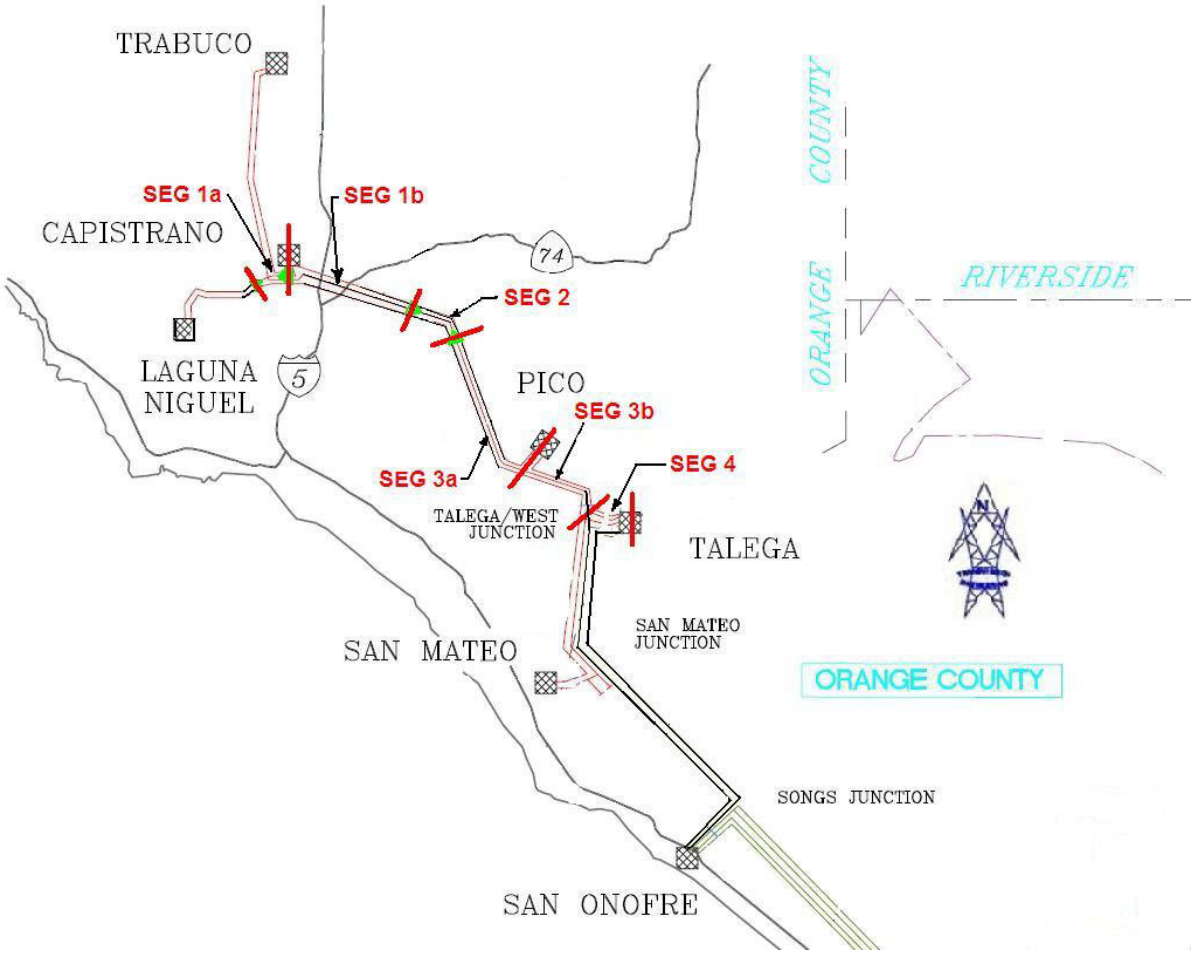
Prepared By: Date:

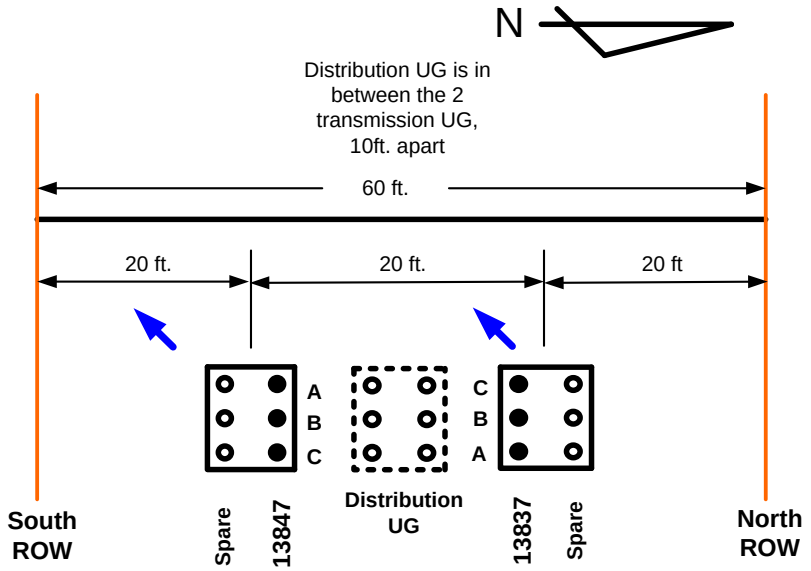
S.C. Campbell April 24, 2012
Substation Engineering Team Lead

Appendix 1

South Orange County
Reliability Enhancement Project

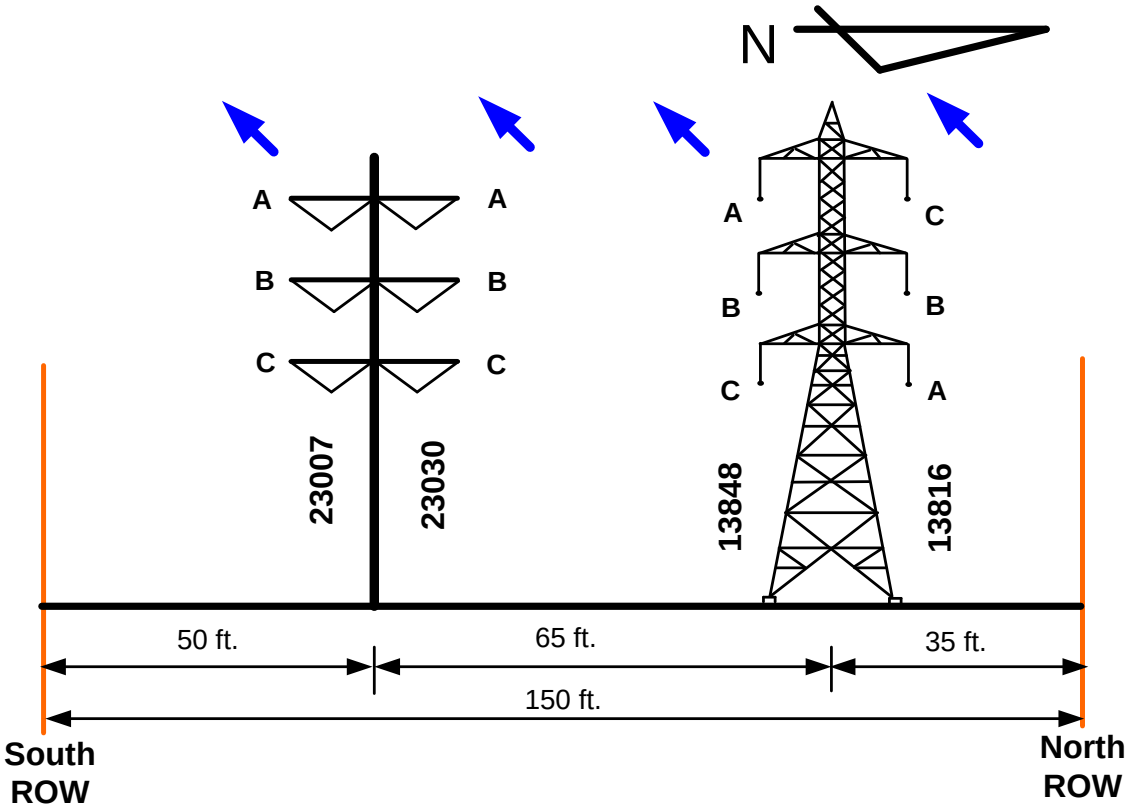
Segment Map





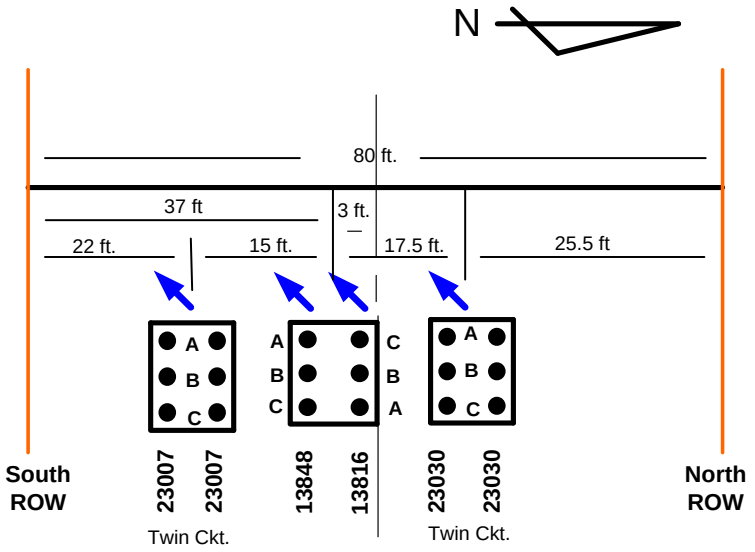
Segment 1a – Initial Design

Approximate Location:	Underground getaway west of Capistrano Substation
Transmission Circuits:	TL13847, TL13837
Land Use:	Residential
Length:	600 ft.
Right-of-Way Width:	60 ft.



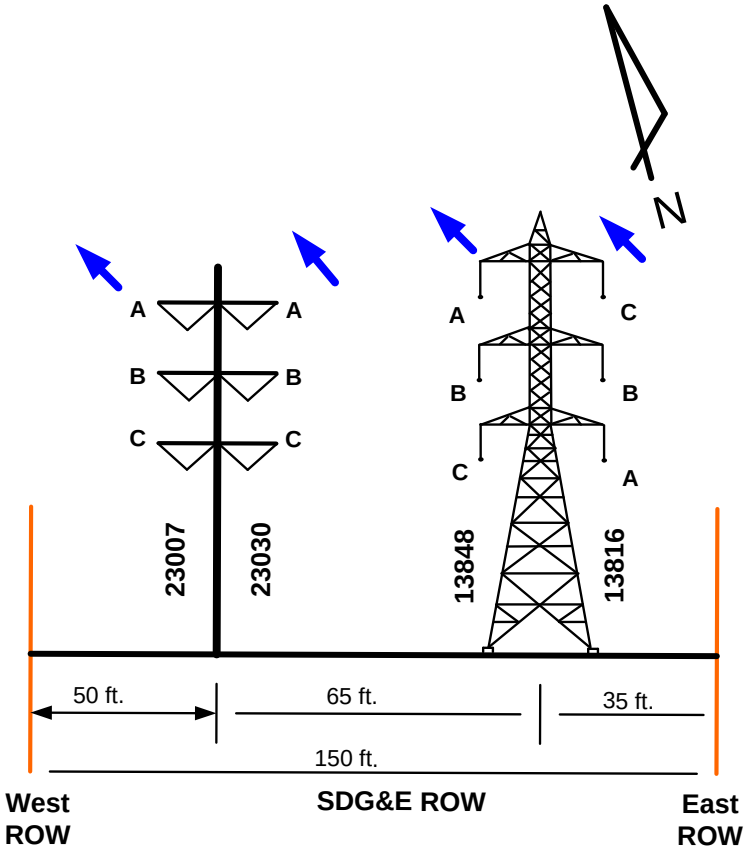
Segment 1b – Initial Design

Approximate Location:	Overhead- east of Capistrano Substation to Rancho San Juan UG
Transmission Circuits:	TL13816, TL13848, TL23030, TL23007
Land Use:	Residential, Undeveloped
Length:	2.7mi.
Right-of-Way Width:	150 ft.



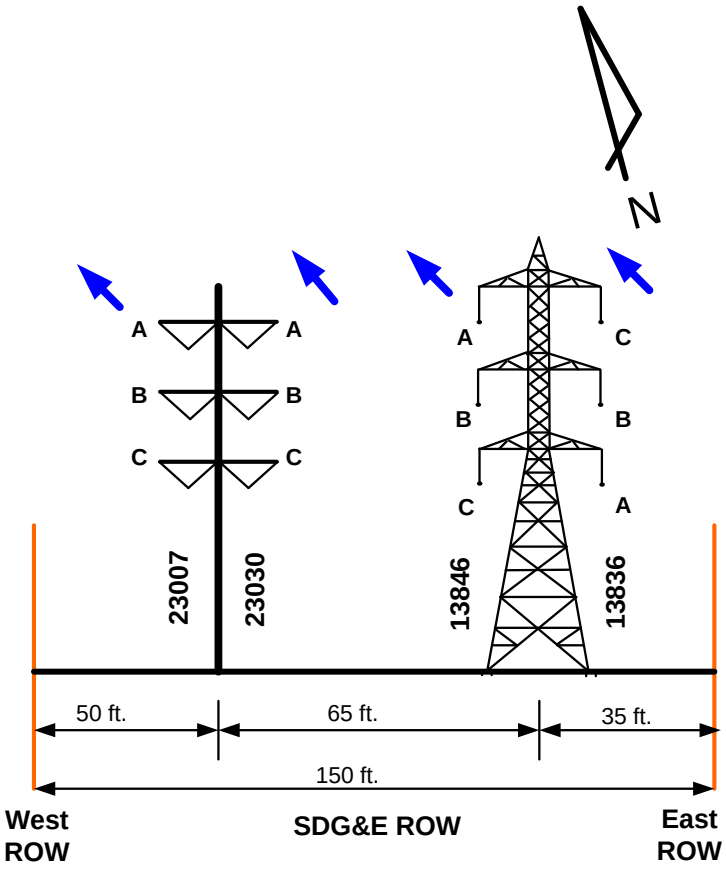
Segment 2 – Initial Design

Approximate Location:	Underground within Vista Montana between Via Pamplona and La Pata Avenue at Rancho San Juan
Transmission Circuits:	TL23030, TL13816, TL13848, TL23007
Land Use:	Residential, School (San Juan Hills High School)
Length:	0.40 mi.
Right-of-Way Width:	80 ft., within franchise Vista Montana



Segment 3a – Initial Design

Approximate Location:	Overhead - from Rancho San Juan UG to Pico Substation
Transmission Circuits:	TL13816, TL13848, TL23030, TL23007
Land Use:	Residential, Commercial/Industrial, Undeveloped
Length:	3.4 mi.
Right-of-Way Width:	150 ft.



Segment 3b – Initial Design

Approximate Location:	Overhead - Pico Substation to Talega Hub
Transmission Circuits:	TL13836, TL13846, TL23030, TL23007
Land Use:	Residential, Commercial/Industrial, Undeveloped
Length:	0.8 mi.
Right-of-Way Width:	150 ft.

Segment 4 – Initial Design

Do to the complex nature of Segment 4, and that adjacent land use out a minimum of 400 feet is undeveloped land or Camp Pendleton Military Base modeling was not required and a profile was not needed.

Approximate Location:	Talega Hub to Talega Substation
Transmission Circuits:	Many
Land Use:	Undeveloped, Camp Pendleton Military Base
Length:	TL23007 (approx. 600 ft.), TL23030 (approx. 2,630 ft.)
Right-of-Way Width:	200 ft. for Talega Hub, 150 ft. for SDG&E corridor

Table A-1
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Segment 4: Talega Hub to Talega Substation 69kV/138kV

Segment 4: Talega Hub to Talega Substation 69kV and 138 kV

			Emission Factors													Emissions								
Equipment/Phase	**FUEL**	**HP**	**ROG (lb/hr)**	**CO (lb/hr)**	**NOX (lb/hr)**	**SOX (lb/hr)**	**PM10 (lb/hr)**	**PM2.5 (lb/hr)**	**CO2 (lb/hr)**	**CH4 (lb/hr)**	**N2O (lb/hr)**	**No of Equipment**	**Hrs Per Day**	**Days in Service**	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**
Trans: Talega Hub to Talega Substatio	2013																						
Bulldozer	DIESEL	350	0.3211	1.4228	2.7305	0.0026	0.1133	0.1008544	264.8725	0.0290	0.2594	2	6	33	3.85	17.07	32.77	0.03	1.36	1.21	3178.47	0.35	3.11
Road Grader/Blade	DIESEL	350	0.1855	0.6289	1.6842	0.0023	0.0608	0.0541153	229	0.0167	0.1600	1	8	22	1.48	5.03	13.47	0.02	0.49	0.43	1835.87	0.13	1.28
Scraper	DIESEL	350	0.3186	1.2113	2.8288	0.0032	0.1099	0.0978252	321.4286	0.0287	0.2687	1	3	44	0.96	3.63	8.49	0.01	0.33	0.29	964.29	0.09	0.81
Compactor	DIESEL	250	0.1262	0.3887	1.3124	0.0017	0.0451	0.0401412	153.0898	0.0114	0.1247	1	4	66	0.50	1.55	5.25	0.01	0.18	0.16	612.36	0.05	0.50
Loader	DIESEL	200	0.1259	0.3685	1.2125	0.0017	0.0417	0.0371039	149.0	0.0114	0.1152	2	4	44	1.01	2.95	9.70	0.01	0.33	0.30	1191.81	0.09	0.92
Water Truck	DIESEL	175	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	2	5	66	1.40	3.84	12.37	0.02	0.41	0.37	1665.45	0.13	1.18
Dump/Haul Truck	DIESEL	235	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	3	8	44	3.36	9.21	29.70	0.04	0.99	0.88	3997.09	0.30	2.82
Excavator	DIESEL	300	0.1735	0.5271	1.4763	0.0023	0.0516	0.0459342	234	0.0157	0.1402	2	6	44	2.08	6.33	17.72	0.03	0.62	0.55	2804.83	0.19	1.68
Drill Rig	DIESEL	82	0.0447	0.4698	0.4583	0.0009	0.0257	0.0228866	77.1	0.0040	0.0435	2	8	22	0.71	7.52	7.33	0.01	0.41	0.37	1233.95	0.06	0.70
Small Crane	DIESEL	75	0.0919	0.3618	0.5508	0.0006	0.0493	0.0438598	50.1	0.0083	0.0523	2	8	22	1.47	5.79	8.81	0.01	0.79	0.70	802.37	0.13	0.84
Concrete Trucks	DIESEL	235	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	2	8	22	2.24	6.14	19.80	0.03	0.66	0.59	2664.73	0.20	1.88
Subtotal															**19.07**	**69.05**	**165.40**	**0.22**	**6.57**	**5.85**	**20951.21**	**1.72**	**15.71**
Trans: Talega Hub to Talega Substatio	2014																						
Concrete Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	2	66	0.27	0.75	2.21	0.00	0.07	0.07	333.09	0.02	0.21
Drill Rig	DIESEL	82	0.0409	0.4684	0.4254	0.0009	0.0204	0.0181324	77.1	0.0037	0.0404	2	6	66	0.49	5.62	5.10	0.01	0.24	0.22	925.46	0.04	0.48
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0902	0.4119	0.5654	0.0007	0.0477	0.0424203	58.9	0.0081	0.0537	2	4	66	0.72	3.30	4.52	0.01	0.38	0.34	471.31	0.07	0.43
Dump Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	2	4	66	1.06	3.01	8.84	0.01	0.29	0.26	1332.36	0.10	0.84
Subtotal															**2.54**	**12.68**	**20.68**	**0.04**	**0.99**	**0.88**	**3062.22**	**0.23**	**1.96**
Trans: Talega Hub to Talega Substatio	2014																						
Dump Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	2	3	110	0.80	2.26	6.63	0.01	0.22	0.20	999.27	0.07	0.63
Crane	DIESEL	399	0.1468	0.4948	1.2979	0.0018	0.0470	0.041826	180.1	0.0132	0.1233	1	6	22	0.88	2.97	7.79	0.01	0.28	0.25	1080.61	0.08	0.74
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0902	0.4119	0.5654	0.0007	0.0477	0.0424203	58.9	0.0081	0.0537	1	4	110	0.36	1.65	2.26	0.00	0.19	0.17	235.65	0.03	0.21
Concrete Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	4	22	0.53	1.50	4.42	0.01	0.15	0.13	666.18	0.05	0.42
Compactor	DIESEL	250	0.1180	0.3717	1.2002	0.0017	0.0407	0.036263	153.0898	0.0106	0.1140	1	4	44	0.47	1.49	4.80	0.01	0.16	0.15	612.36	0.04	0.46
Subtotal															**3.04**	**9.86**	**25.90**	**0.04**	**1.00**	**0.89**	**3594.08**	**0.27**	**2.46**
Trans: Talega Hub to Talega Substatio	2014																						
2-ton Flatbed Truck	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	2	110	0.27	0.75	2.21	0.00	0.07	0.07	333.09	0.02	0.21
Crane	DIESEL	399	0.1468	0.4948	1.2979	0.0018	0.0470	0.041826	180.1	0.0132	0.1233	2	3	110	0.88	2.97	7.79	0.01	0.28	0.25	1080.61	0.08	0.74
Manlift	DIESEL	75	0.0509	0.2400	0.3531	0.0004	0.0272	0.024239	38.1	0.0046	0.0335	4	6	110	1.22	5.76	8.47	0.01	0.65	0.58	913.72	0.11	0.80
Air Compressor	DIESEL	45	0.0831	0.2446	0.2134	0.0003	0.0201	0.0179101	22.3	0.0075	0.0203	3	8	110	1.99	5.87	5.12	0.01	0.48	0.43	534.51	0.18	0.49
Subtotal															**4.36**	**15.35**	**23.59**	**0.03**	**1.49**	**1.33**	**2861.93**	**0.39**	**2.24**
Trans: Talega Hub to Talega Substatio	2014																						
Manlift	DIESEL	75	0.0509	0.2400	0.3531	0.0004	0.0272	0.024239	38.1	0.0046	0.0335	2	6	66	0.61	2.88	4.24	0.01	0.33	0.29	456.86	0.06	0.40
Puller and Tensioner	DIESEL	300	0.1379	0.5080	1.3457	0.0025	0.0441	0.0392193	254.2	0.0124	0.1278	2	6	66	1.65	6.10	16.15	0.03	0.53	0.47	3050.86	0.15	1.53
Reel Trailer	DIESEL	300	0.1379	0.5080	1.3457	0.0025	0.0441	0.0392193	254.2	0.0124	0.1278	2	6	66	1.65	6.10	16.15	0.03	0.53	0.47	3050.86	0.15	1.53
Splice Trailer	DIESEL	300	0.1379	0.5080	1.3457	0.0025	0.0441	0.0392193	254.2	0.0124	0.1278	1	6	66	0.83	3.05	8.07	0.01	0.26	0.24	1525.43	0.07	0.77
Subtotal															**4.75**	**18.12**	**44.61**	**0.08**	**1.65**	**1.47**	**8084.02**	**0.43**	**4.24**
Trans: Talega Hub to Talega Substatio	2014																						
2-ton Flatbed Truck	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	2	88	0.27	0.75	2.21	0.00	0.07	0.07	333.09	0.02	0.21
Manlift	DIESEL	75	0.0509	0.2400	0.3531	0.0004	0.0272	0.024239	38.1	0.0046	0.0335	2	3	88	0.31	1.44	2.12	0.00	0.16	0.15	228.43	0.03	0.20
Chainsaw	DIESEL	25	0.0199	0.0678	0.1256	0.0002	0.0048	0.0042461	16.5	0.0018	0.0119	2	1	88	0.04	0.14	0.25	0.00	0.01	0.01	32.96	0.00	0.02
Loader	DIESEL	200	0.1186	0.3553	1.0966	0.0017	0.0375	0.0333776	149.0	0.0107	0.1042	1	2	88	0.24	0.71	2.19	0.00	0.08	0.07	297.95	0.02	0.21
Crane	DIESEL	399	0.1468	0.4948	1.2979	0.0018	0.0470	0.041826	180.1	0.0132	0.1233	1	2	88	0.29	0.99	2.60	0.00	0.09	0.08	360.20	0.03	0.25
Subtotal															**1.14**	**4.03**	**9.37**	**0.01**	**0.42**	**0.37**	**1252.63**	**0.10**	**0.89**
Total															**34.90**	**129.10**	**289.54**	**0.42**	**12.13**	**10.79**	**39806.10**	**3.15**	**27.51**

Table A-1
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Segment 4: Talega Hub to Talega Substation 69kV/138kV

			Emission, tons (total)								
Equipment/Phase	**FUEL**	**HP**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Trans: Talega Hub to Talega Substation - Site Grading											
Bulldozer			0.064	0.282	0.541	0.001	0.022	0.020	52.445	0.006	0.051
Road Grader/Blade			0.016	0.055	0.148	0.000	0.005	0.005	20.195	0.001	0.014
Scraper			0.021	0.080	0.187	0.000	0.007	0.006	21.214	0.002	0.018
Compactor			0.017	0.051	0.173	0.000	0.006	0.005	20.208	0.002	0.016
Loader			0.022	0.065	0.213	0.000	0.007	0.007	26.220	0.002	0.020
Water Truck			0.046	0.127	0.408	0.001	0.014	0.012	54.960	0.004	0.039
Dump/Haul Truck			0.074	0.203	0.653	0.001	0.022	0.019	87.936	0.007	0.062
Excavator			0.046	0.139	0.390	0.001	0.014	0.012	61.706	0.004	0.037
Drill Rig			0.008	0.083	0.081	0.000	0.005	0.004	13.573	0.001	0.008
Small Crane			0.016	0.064	0.097	0.000	0.009	0.008	8.826	0.001	0.009
Concrete Trucks			0.025	0.068	0.218	0.000	0.007	0.006	29.312	0.002	0.021
Subtotal			**0.354**	**1.215**	**3.109**	**0.004**	**0.118**	**0.105**	**396.595**	**0.032**	**0.295**
Trans: Talega Hub to Talega Substation - Foundation Installations											
Concrete Trucks			0.009	0.025	0.073	0.000	0.002	0.002	10.992	0.001	0.007
Drill Rig			0.016	0.185	0.168	0.000	0.008	0.007	30.540	0.001	0.016
CAT 416 Rubber Tire Backhoe			0.024	0.109	0.149	0.000	0.013	0.011	15.553	0.002	0.014
Dump Trucks			0.035	0.099	0.292	0.000	0.010	0.009	43.968	0.003	0.028
Subtotal			**0.084**	**0.418**	**0.682**	**0.001**	**0.033**	**0.029**	**101.053**	**0.008**	**0.065**
Trans: Talega Hub to Talega Substation - Underground Trench/Conduit/Substructure											
Dump Trucks			0.044	0.124	0.365	0.001	0.012	0.011	54.960	0.004	0.035
Crane			0.010	0.033	0.086	0.000	0.003	0.003	11.887	0.001	0.008
CAT 416 Rubber Tire Backhoe			0.020	0.091	0.124	0.000	0.010	0.009	12.961	0.002	0.012
Concrete Trucks			0.006	0.017	0.049	0.000	0.002	0.001	7.328	0.001	0.005
Compactor			0.010	0.033	0.106	0.000	0.004	0.003	13.472	0.001	0.010
Subtotal			**0.089**	**0.297**	**0.729**	**0.001**	**0.031**	**0.028**	**100.608**	**0.008**	**0.069**
Trans: Talega Hub to Talega Substation - Steel Structure Installations											
2-ton Flatbed Truck			0.015	0.041	0.122	0.000	0.004	0.004	18.320	0.001	0.012
Crane			0.048	0.163	0.428	0.001	0.016	0.014	59.433	0.004	0.041
Manlift			0.067	0.317	0.466	0.001	0.036	0.032	50.255	0.006	0.044
Air Compressor			0.110	0.323	0.282	0.000	0.027	0.024	29.398	0.010	0.027
Subtotal			**0.240**	**0.844**	**1.298**	**0.002**	**0.082**	**0.073**	**157.406**	**0.022**	**0.123**
Trans: Talega Hub to Talega Substation - Cable/Conductor Pulling and Tensioning											
Manlift			0.020	0.095	0.140	0.000	0.011	0.010	15.076	0.002	0.013
Puller and Tensioner			0.055	0.201	0.533	0.001	0.017	0.016	100.678	0.005	0.051
Reel Trailer			0.055	0.201	0.533	0.001	0.017	0.016	100.678	0.005	0.051
Splice Trailer			0.027	0.101	0.266	0.000	0.009	0.008	50.339	0.002	0.025
Subtotal			**0.157**	**0.598**	**1.472**	**0.003**	**0.054**	**0.048**	**266.773**	**0.014**	**0.140**
Trans: Talega Hub to Talega Substation - Removal of Wood Pole Structures											
2-ton Flatbed Truck			0.012	0.033	0.097	0.000	0.003	0.003	14.656	0.001	0.009
Manlift			0.013	0.063	0.093	0.000	0.007	0.006	10.051	0.001	0.009
Chainsaw			0.002	0.006	0.011	0.000	0.000	0.000	1.450	0.000	0.001
Loader			0.010	0.031	0.097	0.000	0.003	0.003	13.110	0.001	0.009
Crane			0.013	0.044	0.114	0.000	0.004	0.004	15.849	0.001	0.011
Subtotal			**0.050**	**0.177**	**0.412**	**0.001**	**0.018**	**0.016**	**55.116**	**0.005**	**0.039**
Total			**0.97**	**3.55**	**7.70**	**0.01**	**0.34**	**0.30**	**1077.55**	**0.09**	**0.73**

Table A-2
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Transmission Segment 1: Capistrano Substation Getaways

Segment 1: Capistrano Substation Getaways 138kV

			Emission Factors												Emissions								
Equipment/Phase	FUEL	HP	ROG (lb/hr)	CO (lb/hr)	NOX (lb/hr)	SOX (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO2 (lb/hr)	CH4 (lb/hr)	N2O (lb/hr)	No of Equipment	Hrs Per Day	Days in Service	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day
Trans: Capistrano Substation Getaway	2013																						
Bulldozer	DIESEL	350	0.3211	1.4228	2.7305	0.0026	0.1133	0.1008544	264.8725	0.0290	0.2594	1	6	11	1.93	8.54	16.38	0.02	0.68	0.61	1589.23	0.17	1.56
Compactor	DIESEL	250	0.1262	0.3887	1.3124	0.0017	0.0451	0.0401412	153.0898	0.0114	0.1247	1	4	44	0.50	1.55	5.25	0.01	0.18	0.16	612.36	0.05	0.50
Loader	DIESEL	200	0.1259	0.3685	1.2125	0.0017	0.0417	0.0371039	149.0	0.0114	0.1152	1	4	88	0.50	1.47	4.85	0.01	0.17	0.15	595.91	0.05	0.46
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.1281	0.4684	0.7862	0.0008	0.0669	0.0594977	64.9	0.0116	0.0747	1	4	88	0.51	1.87	3.14	0.00	0.27	0.24	259.58	0.05	0.30
Water Truck	DIESEL	175	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	1	5	88	0.70	1.92	6.19	0.01	0.21	0.18	832.73	0.06	0.59
Dump/Haul Truck	DIESEL	235	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	1	3	88	0.42	1.15	3.71	0.01	0.12	0.11	499.64	0.04	0.35
Subtotal															**4.57**	**16.51**	**39.53**	**0.05**	**1.62**	**1.45**	**4389.44**	**0.41**	**3.76**
Trans: Capistrano Substation Getaway	2013																						
Excavator	DIESEL	300	0.1735	0.5271	1.4763	0.0023	0.0516	0.0459342	234	0.0157	0.1402	1	6	22	1.04	3.16	8.86	0.01	0.31	0.28	1402.41	0.09	0.84
Crane	DIESEL	399	0.1551	0.5292	1.4230	0.0018	0.0518	0.0461327	180.1	0.0140	0.1352	1	3	22	0.47	1.59	4.27	0.01	0.16	0.14	540.30	0.04	0.41
Jack-n-Bore Machine	DIESEL	300	0.1452	0.5234	1.5187	0.0025	0.0491	0.0437136	254.2	0.0131	0.1443	1	4	22	0.58	2.09	6.07	0.01	0.20	0.17	1016.95	0.05	0.58
Subtotal															**2.09**	**6.84**	**19.20**	**0.03**	**0.66**	**0.59**	**2959.67**	**0.19**	**1.82**
Trans: Capistrano Substation Getaway	2014																						
Concrete Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	3	22	0.40	1.13	3.31	0.01	0.11	0.10	499.64	0.04	0.31
Drill Rig	DIESEL	82	0.0409	0.4684	0.4254	0.0009	0.0204	0.0181324	77.1	0.0037	0.0404	1	8	22	0.33	3.75	3.40	0.01	0.16	0.15	616.97	0.03	0.32
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0902	0.4119	0.5654	0.0007	0.0477	0.0424203	58.9	0.0081	0.0537	1	3	22	0.27	1.24	1.70	0.00	0.14	0.13	176.74	0.02	0.16
Dump Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	2	22	0.27	0.75	2.21	0.00	0.07	0.07	333.09	0.02	0.21
Subtotal															**1.26**	**6.86**	**10.62**	**0.02**	**0.49**	**0.44**	**1626.44**	**0.11**	**1.01**
Trans: Capistrano Substation Getaway	2014																						
Dump Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	3	66	0.40	1.13	3.31	0.01	0.11	0.10	499.64	0.04	0.31
Crane	DIESEL	399	0.1468	0.4948	1.2979	0.0018	0.0470	0.041826	180.1	0.0132	0.1233	1	4	22	0.59	1.98	5.19	0.01	0.19	0.17	720.41	0.05	0.49
Excavator	DIESEL	300	0.1657	0.5102	1.3127	0.0023	0.0463	0.0412169	234	0.0149	0.1247	2	8	66	2.65	8.16	21.00	0.04	0.74	0.66	3739.77	0.24	2.00
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0902	0.4119	0.5654	0.0007	0.0477	0.0424203	58.9	0.0081	0.0537	2	8	88	1.44	6.59	9.05	0.01	0.76	0.68	942.62	0.13	0.86
Concrete Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	2	66	0.27	0.75	2.21	0.00	0.07	0.07	333.09	0.02	0.21
Compactor	DIESEL	250	0.1180	0.3717	1.2002	0.0017	0.0407	0.036263	153.0898	0.0106	0.1140	1	4	22	0.47	1.49	4.80	0.01	0.16	0.15	612.36	0.04	0.46
Subtotal															**5.82**	**20.10**	**45.57**	**0.07**	**2.04**	**1.81**	**6847.87**	**0.52**	**4.33**
Trans: Capistrano Substation Getaway	2015																						
2-ton Flatbed Truck	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	4	22	0.50	1.48	3.93	0.01	0.13	0.12	666.18	0.05	0.37
Crane	DIESEL	399	0.1393	0.4663	1.1812	0.0018	0.0426	0.0379443	180.1	0.0126	0.1122	1	4	22	0.56	1.87	4.72	0.01	0.17	0.15	720.41	0.05	0.45
Manlift	DIESEL	75	0.0460	0.2377	0.3272	0.0004	0.0246	0.0218611	38.1	0.0042	0.0311	2	8	44	0.74	3.80	5.24	0.01	0.39	0.35	609.15	0.07	0.50
Air Compressor	DIESEL	45	0.0747	0.2360	0.2056	0.0003	0.0183	0.0162811	22.3	0.0067	0.0195	3	8	44	1.79	5.66	4.93	0.01	0.44	0.39	534.51	0.16	0.47
Subtotal															**3.59**	**12.81**	**18.82**	**0.03**	**1.13**	**1.01**	**2530.25**	**0.32**	**1.79**
Trans: Capistrano Substation Getaway	2015																						
Manlift	DIESEL	75	0.0460	0.2377	0.3272	0.0004	0.0246	0.0218611	38.1	0.0042	0.0311	2	6	66	0.55	2.85	3.93	0.01	0.29	0.26	456.86	0.05	0.37
Puller and Tensioner	DIESEL	300	0.1310	0.4963	1.1867	0.0025	0.0394	0.0350431	254.2	0.0118	0.1127	1	4	66	0.52	1.99	4.75	0.01	0.16	0.14	1016.95	0.05	0.45
Reel Trailer	DIESEL	300	0.1310	0.4963	1.1867	0.0025	0.0394	0.0350431	254.2	0.0118	0.1127	1	4	66	0.52	1.99	4.75	0.01	0.16	0.14	1016.95	0.05	0.45
Splice Trailer	DIESEL	300	0.1310	0.4963	1.1867	0.0025	0.0394	0.0350431	254.2	0.0118	0.1127	1	4	44	0.52	1.99	4.75	0.01	0.16	0.14	1016.95	0.05	0.45
Subtotal															**2.12**	**8.81**	**18.17**	**0.04**	**0.77**	**0.68**	**3507.72**	**0.19**	**1.73**
Trans: Capistrano Substation Getaway	2015																						
2-ton Flatbed Truck	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	3	22	0.38	1.11	2.95	0.01	0.10	0.09	499.64	0.03	0.28
Manlift	DIESEL	75	0.0460	0.2377	0.3272	0.0004	0.0246	0.0218611	38.1	0.0042	0.0311	2	6	22	0.55	2.85	3.93	0.01	0.29	0.26	456.86	0.05	0.37
Manlift	DIESEL	75	0.0460	0.2377	0.3272	0.0004	0.0246	0.0218611	38.1	0.0042	0.0311	1	4	22	0.18	0.95	1.31	0.00	0.10	0.09	152.29	0.02	0.12
Jackhammer	DIESEL	25	0.0159	0.0544	0.1008	0.0002	0.0039	0.0034382	13.2	0.0014	0.0096	1	4	22	0.06	0.22	0.40	0.00	0.02	0.01	52.87	0.01	0.04
Dump Trucks	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	3	22	0.38	1.11	2.95	0.01	0.10	0.09	499.64	0.03	0.28
Crane	DIESEL	399	0.1393	0.4663	1.1812	0.0018	0.0426	0.0379443	180.1	0.0126	0.1122	1	4	6	0.56	1.87	4.72	0.01	0.17	0.15	720.41	0.05	0.45
Subtotal															**2.11**	**8.11**	**16.25**	**0.03**	**0.78**	**0.69**	**2381.70**	**0.19**	**1.54**
Total															**21.55**	**80.05**	**168.16**	**0.26**	**7.49**	**6.67**	**24243.10**	**1.94**	**15.97**

Table A-2
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Transmission Segment 1: Capistrano Substation Getaways

			Emission, tons (total)								
Equipment/Phase	**FUEL**	**HP**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Trans: Capistrano Substation Getaways - Site Development											
Bulldozer			0.011	0.047	0.090	0.000	0.004	0.003	8.741	0.001	0.009
Compactor			0.011	0.034	0.115	0.000	0.004	0.004	13.472	0.001	0.011
Loader			0.022	0.065	0.213	0.000	0.007	0.007	26.220	0.002	0.020
CAT 416 Rubber Tire Backhoe			0.023	0.082	0.138	0.000	0.012	0.010	11.422	0.002	0.013
Water Truck			0.031	0.084	0.272	0.000	0.009	0.008	36.640	0.003	0.026
Dump/Haul Truck			0.018	0.051	0.163	0.000	0.005	0.005	21.984	0.002	0.016
Subtotal			**0.116**	**0.363**	**0.993**	**0.001**	**0.041**	**0.037**	**118.478**	**0.010**	**0.094**
Trans: Capistrano Substation Getaways - Bore Pits											
Excavator			0.011	0.035	0.097	0.000	0.003	0.003	15.427	0.001	0.009
Crane			0.005	0.017	0.047	0.000	0.002	0.002	5.943	0.000	0.004
Jack-n-Bore Machine			0.006	0.023	0.067	0.000	0.002	0.002	11.186	0.001	0.006
Subtotal			**0.023**	**0.075**	**0.211**	**0.000**	**0.007**	**0.006**	**32.556**	**0.002**	**0.020**
0											
Trans: Capistrano Substation Getaways - Foundation Installations											
Concrete Trucks			0.004	0.012	0.036	0.000	0.001	0.001	5.496	0.000	0.003
Drill Rig			0.004	0.041	0.037	0.000	0.002	0.002	6.787	0.000	0.004
CAT 416 Rubber Tire Backhoe			0.003	0.014	0.019	0.000	0.002	0.001	1.944	0.000	0.002
Dump Trucks			0.003	0.008	0.024	0.000	0.001	0.001	3.664	0.000	0.002
Subtotal			**0.014**	**0.076**	**0.117**	**0.000**	**0.005**	**0.005**	**17.891**	**0.001**	**0.011**
Trans: Capistrano Substation Getaways - Underground Trench/Conduit/Substructure											
Dump Trucks			0.013	0.037	0.109	0.000	0.004	0.003	16.488	0.001	0.010
Crane			0.006	0.022	0.057	0.000	0.002	0.002	7.924	0.001	0.005
Excavator			0.087	0.269	0.693	0.001	0.024	0.022	123.412	0.008	0.066
CAT 416 Rubber Tire Backhoe			0.063	0.290	0.398	0.000	0.034	0.030	41.475	0.006	0.038
Concrete Trucks			0.009	0.025	0.073	0.000	0.002	0.002	10.992	0.001	0.007
Compactor			0.005	0.016	0.053	0.000	0.002	0.002	6.736	0.000	0.005
Subtotal			**0.184**	**0.660**	**1.383**	**0.002**	**0.068**	**0.060**	**207.028**	**0.017**	**0.131**
Trans: Capistrano Substation Getaways - Steel Structure Installations											
2-ton Flatbed Truck			0.006	0.016	0.043	0.000	0.001	0.001	7.328	0.000	0.004
Crane			0.006	0.021	0.052	0.000	0.002	0.002	7.924	0.001	0.005
Manlift			0.016	0.084	0.115	0.000	0.009	0.008	13.401	0.001	0.011
Air Compressor			0.039	0.125	0.109	0.000	0.010	0.009	11.759	0.004	0.010
Subtotal			**0.067**	**0.245**	**0.319**	**0.000**	**0.022**	**0.019**	**40.413**	**0.006**	**0.030**
Trans: Capistrano Substation Getaways - Cable/Conductor Pulling and Tensioning											
Manlift			0.018	0.094	0.130	0.000	0.010	0.009	15.076	0.002	0.012
Puller and Tensioner			0.017	0.066	0.157	0.000	0.005	0.005	33.559	0.002	0.015
Reel Trailer			0.017	0.066	0.157	0.000	0.005	0.005	33.559	0.002	0.015
Splice Trailer			0.012	0.044	0.104	0.000	0.003	0.003	22.373	0.001	0.010
Subtotal			**0.064**	**0.269**	**0.547**	**0.001**	**0.024**	**0.021**	**104.568**	**0.006**	**0.052**
Trans: Capistrano Substation Getaways - Removal of Structures											
2-ton Flatbed Truck			0.004	0.012	0.032	0.000	0.001	0.001	5.496	0.000	0.003
Manlift			0.006	0.031	0.043	0.000	0.003	0.003	5.025	0.001	0.004
Manlift			0.002	0.010	0.014	0.000	0.001	0.001	1.675	0.000	0.001
Jackhammer			0.001	0.002	0.004	0.000	0.000	0.000	0.582	0.000	0.000
Dump Trucks			0.004	0.012	0.032	0.000	0.001	0.001	5.496	0.000	0.003
Crane			0.002	0.006	0.014	0.000	0.001	0.000	2.161	0.000	0.001
Subtotal			**0.019**	**0.074**	**0.141**	**0.000**	**0.007**	**0.006**	**20.435**	**0.002**	**0.013**
Total			**0.49**	**1.76**	**3.71**	**0.01**	**0.17**	**0.16**	**541.37**	**0.04**	**0.35**

Table A-3
Construction Heavy Equipment Emissions
South Orange County Transmission Project
Segment 3: Talega to Rancho San Juan 230kV

Segment 3: Talega to Rancho San Juan 230 kV

			Emission Factors												Emissions								
Equipment/Phase	FUEL	HP	ROG (lb/hr)	CO (lb/hr)	NOX (lb/hr)	SOX (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO2 (lb/hr)	CH4 (lb/hr)	N2O (lb/hr)	No of Equipment	Hrs Per Day	Days in Service	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day
Trans: Talega to Rancho San Juan - Si	2014																						
Bulldozer	DIESEL	350	0.3072	1.3307	2.5592	0.0026	0.1058	0.0941749	264.8725	0.0277	0.2431	1	6	44	1.84	7.98	15.36	0.02	0.63	0.57	1589.23	0.17	1.46
Road Grader/Blade	DIESEL	350	0.1759	0.5992	1.5242	0.0023	0.0550	0.0489226	229	0.0159	0.1448	1	8	22	1.41	4.79	12.19	0.02	0.44	0.39	1835.87	0.13	1.16
Scraper	DIESEL	350	0.3033	1.1355	2.6139	0.0032	0.1012	0.0901001	321.4284	0.0274	0.2483	1	8	22	2.43	9.08	20.91	0.03	0.81	0.72	2571.43	0.22	1.99
Compactor	DIESEL	250	0.1180	0.3717	1.2002	0.0017	0.0407	0.036263	153.0898	0.0106	0.1140	1	6	44	0.71	2.23	7.20	0.01	0.24	0.22	918.54	0.06	0.68
Loader	DIESEL	200	0.1186	0.3553	1.0966	0.0017	0.0375	0.0333776	149.0	0.0107	0.1042	2	6	66	1.42	4.26	13.16	0.02	0.45	0.40	1787.72	0.13	1.25
Water Truck	DIESEL	175	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	2	5	66	1.33	3.76	11.05	0.02	0.37	0.33	1665.45	0.12	1.05
Dump/Haul Truck	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	2	4	44	1.06	3.01	8.84	0.01	0.29	0.26	1332.36	0.10	0.84
Excavator	DIESEL	300	0.1657	0.5102	1.3127	0.0023	0.0463	0.0412169	234	0.0149	0.1247	2	6	44	1.99	6.12	15.75	0.03	0.56	0.49	2804.82	0.18	1.50
Drill Rig	DIESEL	82	0.0409	0.4684	0.4254	0.0009	0.0204	0.0181324	77.1	0.0037	0.0404	1	8	22	0.33	3.75	3.40	0.01	0.16	0.15	616.97	0.03	0.32
Small Crane	DIESEL	75	0.0859	0.3587	0.5189	0.0006	0.0453	0.0403555	50.1	0.0078	0.0493	1	4	44	0.34	1.43	2.08	0.00	0.18	0.16	200.59	0.03	0.20
Concrete Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	4	22	0.53	1.50	4.42	0.01	0.15	0.13	666.18	0.05	0.42
Subtotal															**13.38**	**47.93**	**114.36**	**0.17**	**4.29**	**3.82**	**15989.19**	**1.21**	**10.86**
Trans: Talega to Rancho San Juan - Fo	2015																						
Concrete Trucks	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	2	2	132	0.50	1.48	3.93	0.01	0.13	0.12	666.18	0.05	0.37
Drill Rig	DIESEL	82	0.0376	0.4676	0.3736	0.0009	0.0160	0.0142836	77.1	0.0034	0.0355	2	4	132	0.30	3.74	2.99	0.01	0.13	0.11	616.97	0.03	0.28
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0835	0.4090	0.5226	0.0007	0.0431	0.0383212	58.9	0.0075	0.0496	2	6	132	1.00	4.91	6.27	0.01	0.52	0.46	706.96	0.09	0.60
Dump Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	2	3	132	0.80	2.26	6.63	0.01	0.22	0.20	999.27	0.07	0.63
Subtotal															**2.60**	**12.39**	**19.82**	**0.03**	**1.00**	**0.89**	**2989.39**	**0.23**	**1.88**
Trans: Talega to Rancho San Juan - Si	2015																						
2-ton Flatbed Truck	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	2	2	132	0.50	1.48	3.93	0.01	0.13	0.12	666.18	0.05	0.37
Crane	DIESEL	399	0.1393	0.4663	1.1812	0.0018	0.0426	0.0379443	180.1	0.0126	0.1122	2	3	132	0.84	2.80	7.09	0.01	0.26	0.23	1080.61	0.08	0.67
Manlift	DIESEL	75	0.0460	0.2377	0.3272	0.0004	0.0246	0.0218611	38.1	0.0042	0.0311	4	4	132	0.74	3.80	5.24	0.01	0.39	0.35	609.15	0.07	0.50
Air Compressor	DIESEL	45	0.0747	0.2360	0.2056	0.0003	0.0183	0.0162811	22.3	0.0067	0.0195	3	8	132	1.79	5.66	4.93	0.01	0.44	0.39	534.51	0.16	0.47
Subtotal															**3.87**	**13.75**	**21.18**	**0.03**	**1.22**	**1.08**	**2890.45**	**0.35**	**2.01**
Trans: Talega to Rancho San Juan - Ca	2015																						
Manlift	DIESEL	75	0.0460	0.2377	0.3272	0.0004	0.0246	0.0218611	38.1	0.0042	0.0311	4	4	66	0.74	3.80	5.24	0.01	0.39	0.35	609.15	0.07	0.50
Puller and Tensioner	DIESEL	300	0.1310	0.4963	1.1867	0.0025	0.0394	0.0350431	254.2	0.0118	0.1127	2	6	66	1.57	5.96	14.24	0.03	0.47	0.42	3050.86	0.14	1.35
Reel Trailer	DIESEL	300	0.1310	0.4963	1.1867	0.0025	0.0394	0.0350431	254.2	0.0118	0.1127	2	6	66	1.57	5.96	14.24	0.03	0.47	0.42	3050.86	0.14	1.35
Subtotal															**3.88**	**15.71**	**33.71**	**0.07**	**1.34**	**1.19**	**6710.87**	**0.35**	**3.20**
Trans: Talega to Rancho San Juan - Re	2015																						
2-ton Flatbed Truck	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	2	2	132	0.50	1.48	3.93	0.01	0.13	0.12	666.18	0.05	0.37
Manlift	DIESEL	75	0.0460	0.2377	0.3272	0.0004	0.0246	0.0218611	38.1	0.0042	0.0311	4	4	132	0.74	3.80	5.24	0.01	0.39	0.35	609.15	0.07	0.50
Loader	DIESEL	200	0.1118	0.3444	0.9890	0.0017	0.0337	0.0299803	149.0	0.0101	0.0940	2	3	132	0.67	2.07	5.93	0.01	0.20	0.18	893.86	0.06	0.56
Jackhammer	DIESEL	25	0.0159	0.0544	0.1008	0.0002	0.0039	0.0034382	13.2	0.0014	0.0096	1	3	132	0.05	0.16	0.30	0.00	0.01	0.01	39.65	0.00	0.03
Dump/Haul Truck	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	2	132	0.25	0.74	1.96	0.00	0.07	0.06	333.09	0.02	0.19
Small Crane	DIESEL	75	0.1393	0.4663	1.1812	0.0018	0.0426	0.0379443	180.1	0.0126	0.1122	1	3	132	0.42	1.40	3.54	0.01	0.13	0.11	540.30	0.04	0.34
Subtotal															**2.62**	**9.65**	**20.91**	**0.03**	**0.93**	**0.83**	**3082.24**	**0.24**	**1.99**
Total															**26.35**	**99.44**	**209.98**	**0.34**	**8.78**	**7.81**	**31662.14**	**2.38**	**19.95**

Table A-3
Construction Heavy Equipment Emissions
South Orange County Transmission Project
Segment 3: Talega to Rancho San Juan 230kV

			Emission, tons (total)								
Equipment/Phase	**FUEL**	**HP**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Trans: Talega to Rancho San Juan - Site Grading											
Bulldozer			0.041	0.176	0.338	0.000	0.014	0.012	34.963	0.004	0.032
Road Grader/Blade			0.015	0.053	0.134	0.000	0.005	0.004	20.195	0.001	0.013
Scraper			0.027	0.100	0.230	0.000	0.009	0.008	28.286	0.002	0.022
Compactor			0.016	0.049	0.158	0.000	0.005	0.005	20.208	0.001	0.015
Loader			0.047	0.141	0.434	0.001	0.015	0.013	58.995	0.004	0.041
Water Truck			0.044	0.124	0.365	0.001	0.012	0.011	54.960	0.004	0.035
Dump/Haul Truck			0.023	0.066	0.194	0.000	0.006	0.006	29.312	0.002	0.018
Excavator			0.044	0.135	0.347	0.001	0.012	0.011	61.706	0.004	0.033
Drill Rig			0.004	0.041	0.037	0.000	0.002	0.002	6.787	0.000	0.004
Small Crane			0.008	0.032	0.046	0.000	0.004	0.004	4.413	0.001	0.004
Concrete Trucks			0.006	0.017	0.049	0.000	0.002	0.001	7.328	0.001	0.005
Subtotal			**0.273**	**0.932**	**2.332**	**0.003**	**0.086**	**0.077**	**327.152**	**0.025**	**0.222**
Trans: Talega to Rancho San Juan - Foundation Installations											
Concrete Trucks			0.033	0.098	0.259	0.000	0.009	0.008	43.968	0.003	0.025
Drill Rig			0.020	0.247	0.197	0.000	0.008	0.008	40.720	0.002	0.019
CAT 416 Rubber Tire Backhoe			0.066	0.324	0.414	0.001	0.034	0.030	46.660	0.006	0.039
Dump Trucks			0.052	0.149	0.438	0.001	0.015	0.013	65.952	0.005	0.042
Subtotal			**0.171**	**0.817**	**1.308**	**0.002**	**0.066**	**0.059**	**197.300**	**0.015**	**0.124**
Trans: Talega to Rancho San Juan - Steel Structure Installations											
2-ton Flatbed Truck			0.033	0.098	0.259	0.000	0.009	0.008	43.968	0.003	0.025
Crane			0.055	0.185	0.468	0.001	0.017	0.015	71.320	0.005	0.044
Manlift			0.049	0.251	0.346	0.000	0.026	0.023	40.204	0.004	0.033
Air Compressor			0.118	0.374	0.326	0.000	0.029	0.026	35.278	0.011	0.031
Subtotal			**0.255**	**0.907**	**1.398**	**0.002**	**0.080**	**0.072**	**190.770**	**0.023**	**0.133**
Trans: Talega to Rancho San Juan - Cable/Conductor Pulling and Tensioning											
Manlift			0.024	0.126	0.173	0.000	0.013	0.012	20.102	0.002	0.016
Puller and Tensioner			0.052	0.197	0.470	0.001	0.016	0.014	100.678	0.005	0.045
Reel Trailer			0.052	0.197	0.470	0.001	0.016	0.014	100.678	0.005	0.045
Subtotal			**0.128**	**0.519**	**1.113**	**0.002**	**0.044**	**0.039**	**221.459**	**0.012**	**0.106**
Trans: Talega to Rancho San Juan - Removal of Wood Pole Structures											
2-ton Flatbed Truck			0.033	0.098	0.259	0.000	0.009	0.008	43.968	0.003	0.025
Manlift			0.049	0.251	0.346	0.000	0.026	0.023	40.204	0.004	0.033
Loader			0.044	0.136	0.392	0.001	0.013	0.012	58.995	0.004	0.037
Jackhammer			0.003	0.011	0.020	0.000	0.001	0.001	2.617	0.000	0.002
Dump/Haul Truck			0.017	0.049	0.130	0.000	0.004	0.004	21.984	0.001	0.012
Small Crane			0.028	0.092	0.234	0.000	0.008	0.008	35.660	0.002	0.022
Subtotal			**0.173**	**0.637**	**1.380**	**0.002**	**0.061**	**0.055**	**203.428**	**0.016**	**0.131**
Total			**1.00**	**3.81**	**7.53**	**0.01**	**0.34**	**0.30**	**1140.11**	**0.09**	**0.72**

Table A-4
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Segment 2: Rancho San Juan 230kV

Segment 2: Rancho San Juan 230 kV

			Emission Factors												Emissions								
Equipment/Phase	**FUEL**	**HP**	**ROG (lb/hr)**	**CO (lb/hr)**	**NOX (lb/hr)**	**SOX (lb/hr)**	**PM10 (lb/hr)**	**PM2.5 (lb/hr)**	**CO2 (lb/hr)**	**CH4 (lb/hr)**	**N2O (lb/hr)**	**No of Equipment**	**Hrs Per Day**	**Days in Service**	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**
Trans: Rancho San Juan - Site Grading	2015																						
Bulldozer	DIESEL	350	0.2932	1.2456	2.3951	0.0026	0.0985	0.0876814	264.8726	0.0265	0.2275	1	4	22	1.17	4.98	9.58	0.01	0.39	0.35	1059.49	0.11	0.91
Compactor	DIESEL	250	0.1107	0.3575	1.0948	0.0017	0.0368	0.0327659	153.0898	0.0100	0.1040	1	4	22	0.44	1.43	4.38	0.01	0.15	0.13	612.36	0.04	0.42
Loader	DIESEL	200	0.1118	0.3444	0.9890	0.0017	0.0337	0.0299803	149.0	0.0101	0.0940	1	8	22	0.89	2.76	7.91	0.01	0.27	0.24	1191.81	0.08	0.75
Water Truck	DIESEL	175	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	8	22	1.00	2.96	7.85	0.01	0.26	0.23	1332.36	0.09	0.75
Dump/Haul Truck	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	4	22	0.50	1.48	3.93	0.01	0.13	0.12	666.18	0.05	0.37
Excavator	DIESEL	300	0.1577	0.4964	1.1619	0.0023	0.0413	0.0367837	234	0.0142	0.1104	1	4	22	0.63	1.99	4.65	0.01	0.17	0.15	934.94	0.06	0.44
Subtotal															**4.64**	**15.60**	**38.30**	**0.06**	**1.37**	**1.22**	**5797.15**	**0.42**	**3.64**
Trans: Rancho San Juan - Foundation	2015																						
Concrete Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	2	44	0.27	0.75	2.21	0.00	0.07	0.07	333.09	0.02	0.21
Drill Rig	DIESEL	82	0.0376	0.4676	0.3736	0.0009	0.0160	0.0142836	77.1	0.0034	0.0355	1	3	66	0.11	1.40	1.12	0.00	0.05	0.04	231.37	0.01	0.11
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0835	0.4090	0.5226	0.0007	0.0431	0.0383212	58.9	0.0075	0.0496	1	3	66	0.25	1.23	1.57	0.00	0.13	0.11	176.74	0.02	0.15
Dump Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	2	44	0.27	0.75	2.21	0.00	0.07	0.07	333.09	0.02	0.21
Subtotal															**0.89**	**4.13**	**7.11**	**0.01**	**0.32**	**0.29**	**1074.29**	**0.08**	**0.68**
Trans: Rancho San Juan - Undergroun	2016																						
Excavator	DIESEL	300	0.1496	0.4851	1.0236	0.0023	0.0366	0.032587	234	0.0135	0.0972	2	8	44	2.39	7.76	16.38	0.04	0.59	0.52	3739.77	0.22	1.56
Dump Trucks	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	2	5	44	1.18	3.65	8.68	0.02	0.29	0.26	1665.45	0.11	0.82
Small Crane	DIESEL	75	0.0744	0.3533	0.4476	0.0006	0.0378	0.0336101	50.1	0.0067	0.0425	1	2	44	0.15	0.71	0.90	0.00	0.08	0.07	100.30	0.01	0.09
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0773	0.4063	0.4828	0.0007	0.0387	0.034432	58.9	0.0070	0.0459	2	8	44	1.24	6.50	7.72	0.01	0.62	0.55	942.62	0.11	0.73
Concrete Trucks	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	2	2	44	0.47	1.46	3.47	0.01	0.12	0.10	666.18	0.04	0.33
Compactor	DIESEL	250	0.1042	0.3463	0.9961	0.0017	0.0333	0.0296601	153.0899	0.0094	0.0946	1	2	44	0.21	0.69	1.99	0.00	0.07	0.06	306.18	0.02	0.19
Subtotal															**3.24**	**13.01**	**22.76**	**0.04**	**1.17**	**1.04**	**3680.73**	**0.29**	**2.16**
Trans: Rancho San Juan - Steel Struct	2016																						
2-ton Flatbed Truck	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	1	2	11	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Crane	DIESEL	399	0.1325	0.4431	1.0723	0.0018	0.0387	0.0344466	180.1	0.0120	0.1019	1	4	11	0.53	1.77	4.29	0.01	0.15	0.14	720.41	0.05	0.41
Manlift	DIESEL	75	0.0413	0.2355	0.3021	0.0004	0.0219	0.0194919	38.1	0.0037	0.0287	2	8	11	0.66	3.77	4.83	0.01	0.35	0.31	609.15	0.06	0.46
Air Compressor	DIESEL	45	0.0667	0.2281	0.1982	0.0003	0.0165	0.0146739	22.3	0.0060	0.0188	3	8	11	1.60	5.47	4.76	0.01	0.40	0.35	534.51	0.14	0.45
Subtotal															**3.03**	**11.75**	**15.62**	**0.02**	**0.96**	**0.85**	**2197.16**	**0.27**	**1.48**
Trans: Rancho San Juan - Cable/Cond	2016																						
Manlift	DIESEL	75	0.0413	0.2355	0.3021	0.0004	0.0219	0.0194919	38.1	0.0037	0.0287	4	6	44	0.99	5.65	7.25	0.01	0.53	0.47	913.72	0.09	0.69
Puller and Tensioner	DIESEL	300	0.1243	0.4868	1.0415	0.0025	0.0350	0.0311603	254.2	0.0112	0.0989	2	4	44	0.99	3.89	8.33	0.02	0.28	0.25	2033.91	0.09	0.79
Reel Trailer	DIESEL	300	0.1243	0.4868	1.0415	0.0025	0.0350	0.0311603	254.2	0.0112	0.0989	2	4	44	0.99	3.89	8.33	0.02	0.28	0.25	2033.91	0.09	0.79
Splice Trailer	DIESEL	300	0.1243	0.4868	1.0415	0.0025	0.0350	0.0311603	254.2	0.0112	0.0989	2	4	44	0.99	3.89	8.33	0.02	0.28	0.25	2033.91	0.09	0.79
Subtotal															**3.97**	**17.34**	**32.25**	**0.07**	**1.37**	**1.22**	**7015.45**	**0.36**	**3.06**
Trans: Rancho San Juan - Removal of	2016																						
2-ton Flatbed Truck	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	1	4	11	0.47	1.46	3.47	0.01	0.12	0.10	666.18	0.04	0.33
Manlift	DIESEL	75	0.0413	0.2355	0.3021	0.0004	0.0219	0.0194919	38.1	0.0037	0.0287	2	8	11	0.66	3.77	4.83	0.01	0.35	0.31	609.15	0.06	0.46
Jackhammer	DIESEL	25	0.0159	0.0544	0.1008	0.0002	0.0038	0.003396	13.2	0.0014	0.0096	2	6	11	0.19	0.65	1.21	0.00	0.05	0.04	158.61	0.02	0.11
Loader	DIESEL	200	0.1056	0.3357	0.8897	0.0017	0.0302	0.0269188	149.0	0.0095	0.0845	1	4	11	0.42	1.34	3.56	0.01	0.12	0.11	595.91	0.04	0.34
Dump Trucks	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	1	2	11	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Crane	DIESEL	399	0.1325	0.4431	1.0723	0.0018	0.0387	0.0344466	180.1	0.0120	0.1019	1	2	11	0.26	0.89	2.14	0.00	0.08	0.07	360.20	0.02	0.20
Subtotal															**2.25**	**8.84**	**16.95**	**0.03**	**0.77**	**0.68**	**2723.14**	**0.20**	**1.61**
Total															**18.03**	**70.67**	**132.99**	**0.24**	**5.96**	**5.30**	**22487.91**	**1.63**	**12.63**

Table A-4
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Segment 2: Rancho San Juan 230kV

			Emission, tons (total)								
Equipment/Phase	**FUEL**	**HP**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Trans: Rancho San Juan - Site Grading											
Bulldozer			0.013	0.055	0.105	0.000	0.004	0.004	11.654	0.001	0.010
Compactor			0.005	0.016	0.048	0.000	0.002	0.001	6.736	0.000	0.005
Loader			0.010	0.030	0.087	0.000	0.003	0.003	13.110	0.001	0.008
Water Truck			0.011	0.033	0.086	0.000	0.003	0.003	14.656	0.001	0.008
Dump/Haul Truck			0.006	0.016	0.043	0.000	0.001	0.001	7.328	0.000	0.004
Excavator			0.007	0.022	0.051	0.000	0.002	0.002	10.284	0.001	0.005
Subtotal			**0.051**	**0.172**	**0.421**	**0.001**	**0.015**	**0.013**	**63.769**	**0.005**	**0.040**
Trans: Rancho San Juan - Foundation Installations											
Concrete Trucks			0.006	0.017	0.049	0.000	0.002	0.001	7.328	0.001	0.005
Drill Rig			0.004	0.046	0.037	0.000	0.002	0.001	7.635	0.000	0.004
CAT 416 Rubber Tire Backhoe			0.008	0.040	0.052	0.000	0.004	0.004	5.832	0.001	0.005
Dump Trucks			0.006	0.017	0.049	0.000	0.002	0.001	7.328	0.001	0.005
Subtotal			**0.024**	**0.120**	**0.186**	**0.000**	**0.009**	**0.008**	**28.123**	**0.002**	**0.018**
Trans: Rancho San Juan - Underground Trench/Conduit/Substructure											
Dump Trucks			0.026	0.080	0.191	0.000	0.006	0.006	36.640	0.002	0.018
Small Crane			0.003	0.016	0.020	0.000	0.002	0.001	2.207	0.000	0.002
CAT 416 Rubber Tire Backhoe			0.027	0.143	0.170	0.000	0.014	0.012	20.738	0.002	0.016
Concrete Trucks			0.010	0.032	0.076	0.000	0.003	0.002	14.656	0.001	0.007
Compactor			0.005	0.015	0.044	0.000	0.001	0.001	6.736	0.000	0.004
Subtotal			**0.071**	**0.286**	**0.501**	**0.001**	**0.026**	**0.023**	**80.976**	**0.006**	**0.048**
Trans: Rancho San Juan - Steel Structure Installations											
2-ton Flatbed Truck			0.001	0.004	0.010	0.000	0.000	0.000	1.832	0.000	0.001
Crane			0.003	0.010	0.024	0.000	0.001	0.001	3.962	0.000	0.002
Manlift			0.004	0.021	0.027	0.000	0.002	0.002	3.350	0.000	0.003
Air Compressor			0.009	0.030	0.026	0.000	0.002	0.002	2.940	0.001	0.002
Subtotal			**0.017**	**0.065**	**0.086**	**0.000**	**0.005**	**0.005**	**12.084**	**0.002**	**0.008**
Trans: Rancho San Juan - Cable/Conductor Pulling and Tensioning											
Manlift			0.022	0.124	0.160	0.000	0.012	0.010	20.102	0.002	0.015
Puller and Tensioner			0.022	0.086	0.183	0.000	0.006	0.005	44.746	0.002	0.017
Reel Trailer			0.022	0.086	0.183	0.000	0.006	0.005	44.746	0.002	0.017
Splice Trailer			0.022	0.086	0.183	0.000	0.006	0.005	44.746	0.002	0.017
Subtotal			**0.087**	**0.381**	**0.709**	**0.002**	**0.030**	**0.027**	**154.340**	**0.008**	**0.067**
Trans: Rancho San Juan - Removal of Steel Riser Structures											
2-ton Flatbed Truck			0.003	0.008	0.019	0.000	0.001	0.001	3.664	0.000	0.002
Manlift			0.004	0.021	0.027	0.000	0.002	0.002	3.350	0.000	0.003
Jackhammer			0.001	0.004	0.007	0.000	0.000	0.000	0.872	0.000	0.001
Loader			0.002	0.007	0.020	0.000	0.001	0.001	3.277	0.000	0.002
Dump Trucks			0.001	0.004	0.010	0.000	0.000	0.000	1.832	0.000	0.001
Crane			0.001	0.005	0.012	0.000	0.000	0.000	1.981	0.000	0.001
Subtotal			**0.012**	**0.049**	**0.093**	**0.000**	**0.004**	**0.004**	**14.977**	**0.001**	**0.009**
Total			**0.26**	**1.07**	**2.00**	**0.00**	**0.09**	**0.08**	**354.27**	**0.02**	**0.19**

Table A-5
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Transmission Segment 1: Rancho San Juan to San Juan Capistrano

Segment 1: Rancho San Juan to San Juan Capistrano

			Emission Factors												Emissions								
Equipment/Phase	**FUEL**	**HP**	**ROG (lb/hr)**	**CO (lb/hr)**	**NOX (lb/hr)**	**SOX (lb/hr)**	**PM10 (lb/hr)**	**PM2.5 (lb/hr)**	**CO2 (lb/hr)**	**CH4 (lb/hr)**	**N2O (lb/hr)**	**No of Equipment**	**Hrs Per Day**	**Days in Service**	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**
Trans: Rancho San Juan to San Juan (	2014																						
Bulldozer	DIESEL	350	0.3072	1.3307	2.5592	0.0026	0.1058	0.0941749	264.8725	0.0277	0.2431	1	6	44	1.84	7.98	15.36	0.02	0.63	0.57	1589.23	0.17	1.46
Road Grader/Blade	DIESEL	350	0.1759	0.5992	1.5242	0.0023	0.0550	0.0489226	229	0.0159	0.1448	1	8	22	1.41	4.79	12.19	0.02	0.44	0.39	1835.87	0.13	1.16
Scraper	DIESEL	350	0.3033	1.1355	2.6139	0.0032	0.1012	0.0901001	321.4284	0.0274	0.2483	1	8	22	2.43	9.08	20.91	0.03	0.81	0.72	2571.43	0.22	1.99
Compactor	DIESEL	250	0.1180	0.3717	1.2002	0.0017	0.0407	0.036263	153.0898	0.0106	0.1140	1	6	44	0.71	2.23	7.20	0.01	0.24	0.22	918.54	0.06	0.68
Loader	DIESEL	200	0.1186	0.3553	1.0966	0.0017	0.0375	0.0333776	149.0	0.0107	0.1042	2	6	66	1.42	4.26	13.16	0.02	0.45	0.40	1787.72	0.13	1.25
Water Truck	DIESEL	175	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	6	66	0.80	2.26	6.63	0.01	0.22	0.20	999.27	0.07	0.63
Dump/Haul Truck	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	2	4	44	1.06	3.01	8.84	0.01	0.29	0.26	1332.36	0.10	0.84
Excavator	DIESEL	300	0.1657	0.5102	1.3127	0.0023	0.0463	0.0412169	234	0.0149	0.1247	2	6	44	1.99	6.12	15.75	0.03	0.56	0.49	2804.82	0.18	1.50
Drill Rig	DIESEL	82	0.0409	0.4684	0.4254	0.0009	0.0204	0.0181324	77.1	0.0037	0.0404	1	8	22	0.33	3.75	3.40	0.01	0.16	0.15	616.97	0.03	0.32
Small Crane	DIESEL	75	0.0859	0.3587	0.5189	0.0006	0.0453	0.0403555	50.1	0.0078	0.0493	1	4	44	0.34	1.43	2.08	0.00	0.18	0.16	200.59	0.03	0.20
Concrete Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	4	22	0.53	1.50	4.42	0.01	0.15	0.13	666.18	0.05	0.42
Subtotal															**12.85**	**46.43**	**109.94**	**0.16**	**4.14**	**3.69**	**15323.00**	**1.16**	**10.44**
Trans: Rancho San Juan to San Juan (	2015																						
Concrete Trucks	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	2	66	0.25	0.74	1.96	0.00	0.07	0.06	333.09	0.02	0.19
Drill Rig	DIESEL	82	0.0376	0.4676	0.3736	0.0009	0.0160	0.0142836	77.1	0.0034	0.0355	1	4	66	0.15	1.87	1.49	0.00	0.06	0.06	308.49	0.01	0.14
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0835	0.4090	0.5226	0.0007	0.0431	0.0383212	58.9	0.0075	0.0496	1	6	66	0.50	2.45	3.14	0.00	0.26	0.23	353.48	0.05	0.30
Dump Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	3	66	0.40	1.13	3.31	0.01	0.11	0.10	499.64	0.04	0.31
Subtotal															**1.30**	**6.19**	**9.91**	**0.02**	**0.50**	**0.44**	**1494.70**	**0.12**	**0.94**
Trans: Rancho San Juan to San Juan (	2016																						
2-ton Flatbed Truck	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	2	2	132	0.47	1.46	3.47	0.01	0.12	0.10	666.18	0.04	0.33
Crane	DIESEL	399	0.1325	0.4431	1.0723	0.0018	0.0387	0.0344466	180.1	0.0120	0.1019	2	3	132	0.79	2.66	6.43	0.01	0.23	0.21	1080.61	0.07	0.61
Manlift	DIESEL	75	0.0413	0.2355	0.3021	0.0004	0.0219	0.0194919	38.1	0.0037	0.0287	4	4	132	0.66	3.77	4.83	0.01	0.35	0.31	609.15	0.06	0.46
Air Compressor	DIESEL	45	0.0667	0.2281	0.1982	0.0003	0.0165	0.0146739	22.3	0.0060	0.0188	3	8	132	1.60	5.47	4.76	0.01	0.40	0.35	534.51	0.14	0.45
Subtotal															**3.53**	**13.36**	**19.50**	**0.03**	**1.09**	**0.97**	**2890.45**	**0.32**	**1.85**
Trans: Rancho San Juan to San Juan (	2016																						
Manlift	DIESEL	75	0.0413	0.2355	0.3021	0.0004	0.0219	0.0194919	38.1	0.0037	0.0287	4	4	66	0.66	3.77	4.83	0.01	0.35	0.31	609.15	0.06	0.46
Puller and Tensioner	DIESEL	300	0.1243	0.4868	1.0415	0.0025	0.0350	0.0311603	254.2	0.0112	0.0989	2	6	66	1.49	5.84	12.50	0.03	0.42	0.37	3050.86	0.13	1.19
Reel Trailer	DIESEL	300	0.1243	0.4868	1.0415	0.0025	0.0350	0.0311603	254.2	0.0112	0.0989	2	6	66	1.49	5.84	12.50	0.03	0.42	0.37	3050.86	0.13	1.19
Subtotal															**3.64**	**15.45**	**29.83**	**0.07**	**1.19**	**1.06**	**6710.87**	**0.33**	**2.83**
Trans: Rancho San Juan to San Juan (	2016																						
2-ton Flatbed Truck	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	1	2	132	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Manlift	DIESEL	75	0.0413	0.2355	0.3021	0.0004	0.0219	0.0194919	38.1	0.0037	0.0287	2	4	132	0.33	1.88	2.42	0.00	0.18	0.16	304.57	0.03	0.23
Jackhammer	DIESEL	25	0.0159	0.0544	0.1008	0.0002	0.0038	0.003396	13.2	0.0014	0.0096	1	3	132	0.05	0.16	0.30	0.00	0.01	0.01	39.65	0.00	0.03
Loader	DIESEL	200	0.1056	0.3357	0.8897	0.0017	0.0302	0.0269188	149.0	0.0095	0.0845	1	3	132	0.32	1.01	2.67	0.01	0.09	0.08	446.93	0.03	0.25
Dump Trucks	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	1	2	132	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Crane	DIESEL	399	0.1325	0.4431	1.0723	0.0018	0.0387	0.0344466	180.1	0.0120	0.1019	1	3	132	0.40	1.33	3.22	0.01	0.12	0.10	540.30	0.04	0.31
Subtotal															**1.56**	**5.84**	**12.08**	**0.02**	**0.51**	**0.45**	**1997.64**	**0.14**	**1.15**
Total															**22.89**	**87.28**	**181.25**	**0.30**	**7.44**	**6.62**	**28416.66**	**2.07**	**17.22**

Table A-5
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Transmission Segment 1: Rancho San Juan to San Juan Capistrano

			Emission, tons (total)								
Equipment/Phase	**FUEL**	**HP**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Trans: Rancho San Juan to San Juan Capistrano - Site Grading											
Bulldozer			0.041	0.176	0.338	0.000	0.014	0.012	34.963	0.004	0.032
Road Grader/Blade			0.015	0.053	0.134	0.000	0.005	0.004	20.195	0.001	0.013
Scraper			0.027	0.100	0.230	0.000	0.009	0.008	28.286	0.002	0.022
Compactor			0.016	0.049	0.158	0.000	0.005	0.005	20.208	0.001	0.015
Loader			0.047	0.141	0.434	0.001	0.015	0.013	58.995	0.004	0.041
Water Truck			0.026	0.074	0.219	0.000	0.007	0.006	32.976	0.002	0.021
Dump/Haul Truck			0.023	0.066	0.194	0.000	0.006	0.006	29.312	0.002	0.018
Excavator			0.044	0.135	0.347	0.001	0.012	0.011	61.706	0.004	0.033
Drill Rig			0.004	0.041	0.037	0.000	0.002	0.002	6.787	0.000	0.004
Small Crane			0.008	0.032	0.046	0.000	0.004	0.004	4.413	0.001	0.004
Concrete Trucks			0.006	0.017	0.049	0.000	0.002	0.001	7.328	0.001	0.005
Subtotal			**0.256**	**0.883**	**2.186**	**0.003**	**0.081**	**0.072**	**305.168**	**0.023**	**0.208**
Trans: Rancho San Juan to San Juan Capistrano - Foundation Installations											
Concrete Trucks			0.008	0.024	0.065	0.000	0.002	0.002	10.992	0.001	0.006
Drill Rig			0.005	0.062	0.049	0.000	0.002	0.002	10.180	0.000	0.005
CAT 416 Rubber Tire Backhoe			0.017	0.081	0.103	0.000	0.009	0.008	11.665	0.001	0.010
Dump Trucks			0.013	0.037	0.109	0.000	0.004	0.003	16.488	0.001	0.010
Subtotal			**0.043**	**0.204**	**0.327**	**0.001**	**0.016**	**0.015**	**49.325**	**0.004**	**0.031**
Trans: Rancho San Juan to San Juan Capistrano - Steel Structure Installations											
2-ton Flatbed Truck			0.031	0.096	0.229	0.000	0.008	0.007	43.968	0.003	0.022
Crane			0.052	0.175	0.425	0.001	0.015	0.014	71.320	0.005	0.040
Manlift			0.044	0.249	0.319	0.000	0.023	0.021	40.204	0.004	0.030
Air Compressor			0.106	0.361	0.314	0.000	0.026	0.023	35.278	0.010	0.030
Subtotal			**0.233**	**0.882**	**1.287**	**0.002**	**0.072**	**0.064**	**190.770**	**0.021**	**0.122**
Trans: Rancho San Juan to San Juan Capistrano - Cable/Conductor Pulling and Tensioning											
Manlift			0.022	0.124	0.160	0.000	0.012	0.010	20.102	0.002	0.015
Puller and Tensioner			0.049	0.193	0.412	0.001	0.014	0.012	100.678	0.004	0.039
Reel Trailer			0.049	0.193	0.412	0.001	0.014	0.012	100.678	0.004	0.039
Subtotal			**0.120**	**0.510**	**0.984**	**0.002**	**0.039**	**0.035**	**221.459**	**0.011**	**0.094**
Trans: Rancho San Juan to San Juan Capistrano - Removal of Wood Pole Structures											
2-ton Flatbed Truck			0.016	0.048	0.115	0.000	0.004	0.003	21.984	0.001	0.011
Manlift			0.022	0.124	0.160	0.000	0.012	0.010	20.102	0.002	0.015
Jackhammer			0.003	0.011	0.020	0.000	0.001	0.001	2.617	0.000	0.002
Loader			0.021	0.066	0.176	0.000	0.006	0.005	29.497	0.002	0.017
Dump Trucks			0.016	0.048	0.115	0.000	0.004	0.003	21.984	0.001	0.011
Crane			0.026	0.088	0.212	0.000	0.008	0.007	35.660	0.002	0.020
Subtotal			**0.103**	**0.386**	**0.797**	**0.001**	**0.034**	**0.030**	**131.844**	**0.009**	**0.076**
Total			**0.75**	**2.86**	**5.58**	**0.01**	**0.24**	**0.22**	**898.57**	**0.07**	**0.53**

Table A-6
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Transmission Segment 4: Talega Hub to Talega Substation 230kV

Segment 4: Talega Hub to Talega Substation 230 kV 230kV

			Emission Factors													Emissions								
Equipment/Phase	**FUEL**	**HP**	**ROG (lb/hr)**	**CO (lb/hr)**	**NOX (lb/hr)**	**SOX (lb/hr)**	**PM10 (lb/hr)**	**PM2.5 (lb/hr)**	**CO2 (lb/hr)**	**CH4 (lb/hr)**	**N2O (lb/hr)**	**No of Equipment**	**Hrs Per Day**	**Days in Service**	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**
Trans: Talega Hub to Talega Substatio	2014																						
Bulldozer	DIESEL	350	0.3072	1.3307	2.5592	0.0026	0.1058	0.0941749	264.8725	0.0277	0.2431	1	6	11	1.84	7.98	15.36	0.02	0.63	0.57	1589.23	0.17	1.46
Road Grader/Blade	DIESEL	350	0.1759	0.5992	1.5242	0.0023	0.0550	0.0489226	229	0.0159	0.1448	1	8	11	1.41	4.79	12.19	0.02	0.44	0.39	1835.87	0.13	1.16
Scraper	DIESEL	350	0.3033	1.1355	2.6139	0.0032	0.1012	0.0901001	321.4284	0.0274	0.2483	1	3	11	0.91	3.41	7.84	0.01	0.30	0.27	964.29	0.08	0.74
Compactor	DIESEL	250	0.1180	0.3717	1.2002	0.0017	0.0407	0.036263	153.0898	0.0106	0.1140	1	2	44	0.24	0.74	2.40	0.00	0.08	0.07	306.18	0.02	0.23
Loader	DIESEL	200	0.1186	0.3553	1.0966	0.0017	0.0375	0.0333776	149.0	0.0107	0.1042	2	4	44	0.95	2.84	8.77	0.01	0.30	0.27	1191.81	0.09	0.83
Water Truck	DIESEL	175	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	2	5	44	1.33	3.76	11.05	0.02	0.37	0.33	1665.45	0.12	1.05
Dump/Haul Truck	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	2	3	44	0.80	2.26	6.63	0.01	0.22	0.20	999.27	0.07	0.63
Excavator	DIESEL	300	0.1657	0.5102	1.3127	0.0023	0.0463	0.0412169	234	0.0149	0.1247	1	6	44	0.99	3.06	7.88	0.01	0.28	0.25	1402.41	0.09	0.75
Drill Rig	DIESEL	82	0.0409	0.4684	0.4254	0.0009	0.0204	0.0181324	77.1	0.0037	0.0404	1	6	22	0.25	2.81	2.55	0.01	0.12	0.11	462.73	0.02	0.24
Small Crane	DIESEL	75	0.0859	0.3587	0.5189	0.0006	0.0453	0.0403555	50.1	0.0078	0.0493	1	6	22	0.52	2.15	3.11	0.00	0.27	0.24	300.89	0.05	0.30
Concrete Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	3	44	0.40	1.13	3.31	0.01	0.11	0.10	499.64	0.04	0.31
Subtotal															**9.62**	**34.94**	**81.10**	**0.12**	**3.13**	**2.79**	**11217.78**	**0.87**	**7.70**
Trans: Talega Hub to Talega Substatio	2015																						
Concrete Trucks	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	3	44	0.38	1.11	2.95	0.01	0.10	0.09	499.64	0.03	0.28
Drill Rig	DIESEL	82	0.0376	0.4676	0.3736	0.0009	0.0160	0.0142836	77.1	0.0034	0.0355	2	6	44	0.45	5.61	4.48	0.01	0.19	0.17	925.46	0.04	0.43
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0835	0.4090	0.5226	0.0007	0.0431	0.0383212	58.9	0.0075	0.0496	1	4	44	0.33	1.64	2.09	0.00	0.17	0.15	235.65	0.03	0.20
Dump Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	2	3	44	0.80	2.26	6.63	0.01	0.22	0.20	999.27	0.07	0.63
Subtotal															**1.96**	**10.61**	**16.15**	**0.03**	**0.68**	**0.61**	**2660.02**	**0.18**	**1.53**
Trans: Talega Hub to Talega Substatio	2015																						
2-ton Flatbed Truck	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	2	110	0.25	0.74	1.96	0.00	0.07	0.06	333.09	0.02	0.19
Crane	DIESEL	399	0.1393	0.4663	1.1812	0.0018	0.0426	0.0379443	180.1	0.0126	0.1122	1	3	110	0.42	1.40	3.54	0.01	0.13	0.11	540.30	0.04	0.34
Manlift	DIESEL	75	0.0460	0.2377	0.3272	0.0004	0.0246	0.0218611	38.1	0.0042	0.0311	2	6	110	0.55	2.85	3.93	0.01	0.29	0.26	456.86	0.05	0.37
Air Compressor	DIESEL	45	0.0747	0.2360	0.2056	0.0003	0.0183	0.0162811	22.3	0.0067	0.0195	3	8	110	1.79	5.66	4.93	0.01	0.44	0.39	534.51	0.16	0.47
Subtotal															**3.01**	**10.66**	**14.37**	**0.02**	**0.93**	**0.83**	**1864.77**	**0.27**	**1.36**
Trans: Talega Hub to Talega Substatio	2016																						
Manlift	DIESEL	75	0.0413	0.2355	0.3021	0.0004	0.0219	0.0194919	38.1	0.0037	0.0287	2	6	66	0.50	2.83	3.63	0.01	0.26	0.23	456.86	0.04	0.34
Puller and Tensioner	DIESEL	300	0.1243	0.4868	1.0415	0.0025	0.0350	0.0311603	254.2	0.0112	0.0989	2	6	66	1.49	5.84	12.50	0.03	0.42	0.37	3050.86	0.13	1.19
Reel Trailer	DIESEL	300	0.1243	0.4868	1.0415	0.0025	0.0350	0.0311603	254.2	0.0112	0.0989	2	6	66	1.49	5.84	12.50	0.03	0.42	0.37	3050.86	0.13	1.19
Subtotal															**3.48**	**14.51**	**28.62**	**0.07**	**1.10**	**0.98**	**6558.59**	**0.31**	**2.72**
Trans: Talega Hub to Talega Substatio	2016																						
2-ton Flatbed Truck	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	1	2	88	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Manlift	DIESEL	75	0.0413	0.2355	0.3021	0.0004	0.0219	0.0194919	38.1	0.0037	0.0287	2	3	88	0.25	1.41	1.81	0.00	0.13	0.12	228.43	0.02	0.17
Chainsaw	DIESEL	25	0.0199	0.0678	0.1256	0.0002	0.0047	0.0041716	16.5	0.0018	0.0119	2	1	88	0.04	0.14	0.25	0.00	0.01	0.01	32.96	0.00	0.02
Loader	DIESEL	200	0.1056	0.3357	0.8897	0.0017	0.0302	0.0269188	149.0	0.0095	0.0845	1	2	88	0.21	0.67	1.78	0.00	0.06	0.05	297.95	0.02	0.17
Crane	DIESEL	399	0.1325	0.4431	1.0723	0.0018	0.0387	0.0344466	180.1	0.0120	0.1019	1	2	88	0.26	0.89	2.14	0.00	0.08	0.07	360.20	0.02	0.20
Subtotal															**1.00**	**3.84**	**7.72**	**0.01**	**0.34**	**0.30**	**1252.63**	**0.09**	**0.73**
Total															**19.07**	**74.56**	**147.96**	**0.25**	**6.18**	**5.50**	**23553.79**	**1.72**	**14.06**

Table A-6
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Transmission Segment 4: Talega Hub to Talega Substation 230kV

			Emission, tons (total)								
Equipment/Phase	**FUEL**	**HP**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Trans: Talega Hub to Talega Substation 230 kV - Site Grading											
Bulldozer			0.010	0.044	0.084	0.000	0.003	0.003	8.741	0.001	0.008
Road Grader/Blade			0.008	0.026	0.067	0.000	0.002	0.002	10.097	0.001	0.006
Scraper			0.005	0.019	0.043	0.000	0.002	0.001	5.304	0.000	0.004
Compactor			0.005	0.016	0.053	0.000	0.002	0.002	6.736	0.000	0.005
Loader			0.021	0.063	0.193	0.000	0.007	0.006	26.220	0.002	0.018
Water Truck			0.029	0.083	0.243	0.000	0.008	0.007	36.640	0.003	0.023
Dump/Haul Truck			0.017	0.050	0.146	0.000	0.005	0.004	21.984	0.002	0.014
Excavator			0.022	0.067	0.173	0.000	0.006	0.005	30.853	0.002	0.016
Drill Rig			0.003	0.031	0.028	0.000	0.001	0.001	5.090	0.000	0.003
Small Crane			0.006	0.024	0.034	0.000	0.003	0.003	3.310	0.001	0.003
Concrete Trucks			0.009	0.025	0.073	0.000	0.002	0.002	10.992	0.001	0.007
Subtotal			**0.135**	**0.447**	**1.138**	**0.002**	**0.042**	**0.037**	**165.966**	**0.012**	**0.108**
Trans: Talega Hub to Talega Substation 230 kV - Foundation Installations											
Concrete Trucks			0.008	0.024	0.065	0.000	0.002	0.002	10.992	0.001	0.006
Drill Rig			0.010	0.123	0.099	0.000	0.004	0.004	20.360	0.001	0.009
CAT 416 Rubber Tire Backhoe			0.007	0.036	0.046	0.000	0.004	0.003	5.184	0.001	0.004
Dump Trucks			0.017	0.050	0.146	0.000	0.005	0.004	21.984	0.002	0.014
Subtotal			**0.043**	**0.234**	**0.355**	**0.001**	**0.015**	**0.013**	**58.521**	**0.004**	**0.034**
Trans: Talega Hub to Talega Substation 230 kV - Steel Structure Installations											
2-ton Flatbed Truck			0.014	0.041	0.108	0.000	0.004	0.003	18.320	0.001	0.010
Crane			0.023	0.077	0.195	0.000	0.007	0.006	29.717	0.002	0.019
Manlift			0.030	0.157	0.216	0.000	0.016	0.014	25.127	0.003	0.021
Air Compressor			0.099	0.312	0.271	0.000	0.024	0.021	29.398	0.009	0.026
Subtotal			**0.166**	**0.586**	**0.790**	**0.001**	**0.051**	**0.045**	**102.562**	**0.015**	**0.075**
Trans: Talega Hub to Talega Substation 230 kV - Cable/Conductor Pulling and Tensioning											
Manlift			0.016	0.093	0.120	0.000	0.009	0.008	15.076	0.001	0.011
Puller and Tensioner			0.049	0.193	0.412	0.001	0.014	0.012	100.678	0.004	0.039
Reel Trailer			0.049	0.193	0.412	0.001	0.014	0.012	100.678	0.004	0.039
Subtotal			**0.115**	**0.479**	**0.945**	**0.002**	**0.036**	**0.032**	**216.433**	**0.010**	**0.090**
Trans: Talega Hub to Talega Substation 230 kV - Removal of Wood Pole Structures											
2-ton Flatbed Truck			0.010	0.032	0.076	0.000	0.003	0.002	14.656	0.001	0.007
Manlift			0.011	0.062	0.080	0.000	0.006	0.005	10.051	0.001	0.008
Chainsaw			0.002	0.006	0.011	0.000	0.000	0.000	1.450	0.000	0.001
Loader			0.009	0.030	0.078	0.000	0.003	0.002	13.110	0.001	0.007
Crane			0.012	0.039	0.094	0.000	0.003	0.003	15.849	0.001	0.009
Subtotal			**0.044**	**0.169**	**0.340**	**0.001**	**0.015**	**0.013**	**55.116**	**0.004**	**0.032**
Total			**0.50**	**1.91**	**3.57**	**0.01**	**0.16**	**0.14**	**598.60**	**0.05**	**0.34**

Table A-7
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Tranmission Segment 2: Rancho San Juan 138/230kV North Runs

Segment 2: Rancho San Juan 138/230kV North Runs

			Emission Factors												Emissions								
Equipment/Phase	FUEL	HP	ROG (lb/hr)	CO (lb/hr)	NOX (lb/hr)	SOX (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO2 (lb/hr)	CH4 (lb/hr)	N2O (lb/hr)	No of Equipment	Hrs Per Day	Days in Service	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day
Trans: Rancho San Juan 138/230 kV - S	2016																						
Excavator	DIESEL	300	0.1496	0.4851	1.0236	0.0023	0.0366	0.032587	234	0.0135	0.0972	1	4	22	0.60	1.94	4.09	0.01	0.15	0.13	934.94	0.05	0.39
Compactor	DIESEL	250	0.1042	0.3463	0.9961	0.0017	0.0333	0.0296601	153.0899	0.0094	0.0946	1	4	22	0.42	1.39	3.98	0.01	0.13	0.12	612.36	0.04	0.38
Loader	DIESEL	200	0.1056	0.3357	0.8897	0.0017	0.0302	0.0269188	149.0	0.0095	0.0845	1	8	22	0.85	2.69	7.12	0.01	0.24	0.22	1191.81	0.08	0.68
Water Truck	DIESEL	175	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	1	5	22	0.59	1.83	4.34	0.01	0.15	0.13	832.73	0.05	0.41
Dump/Haul Truck	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	1	8	22	0.94	2.92	6.94	0.01	0.23	0.21	1332.36	0.09	0.66
Subtotal															**3.39**	**10.76**	**26.48**	**0.05**	**0.90**	**0.80**	**4904.20**	**0.31**	**2.52**
Trans: Rancho San Juan 138/230 kV - U	2017																						
Dump Trucks	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	2	4	66	0.89	2.89	6.10	0.01	0.21	0.18	1332.36	0.08	0.58
Crane	DIESEL	399	0.1262	0.4243	0.9704	0.0018	0.0351	0.03124	180.1	0.0114	0.0922	1	2	66	0.25	0.85	1.94	0.00	0.07	0.06	360.20	0.02	0.18
Excavator	DIESEL	300	0.1415	0.4762	0.8988	0.0023	0.0323	0.0287329	234	0.0128	0.0854	2	8	66	2.26	7.62	14.38	0.04	0.52	0.46	3739.77	0.20	1.37
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0714	0.4038	0.4460	0.0007	0.0346	0.0307584	58.9	0.0064	0.0424	2	8	66	1.14	6.46	7.14	0.01	0.55	0.49	942.62	0.10	0.68
Concrete Trucks	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	2	2	66	0.44	1.44	3.05	0.01	0.10	0.09	666.18	0.04	0.29
Compactor	DIESEL	250	0.0985	0.3375	0.9035	0.0017	0.0302	0.0268756	153.0898	0.0089	0.0858	1	2	66	0.20	0.68	1.81	0.00	0.06	0.05	306.18	0.02	0.17
Subtotal															**5.19**	**19.93**	**34.41**	**0.08**	**1.51**	**1.34**	**7347.31**	**0.47**	**3.27**
Trans: Rancho San Juan 138/230 kV - S	2017																						
2-ton Flatbed Truck	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	1	4	11	0.44	1.44	3.05	0.01	0.10	0.09	666.18	0.04	0.29
Crane	DIESEL	399	0.1262	0.4243	0.9704	0.0018	0.0351	0.03124	180.1	0.0114	0.0922	2	8	11	2.02	6.79	15.53	0.03	0.56	0.50	2881.62	0.18	1.47
Manlift	DIESEL	75	0.0368	0.2336	0.2787	0.0004	0.0194	0.0172398	38.1	0.0033	0.0265	2	8	11	0.59	3.74	4.46	0.01	0.31	0.28	609.15	0.05	0.42
Air Compressor	DIESEL	45	0.0591	0.2209	0.1914	0.0003	0.0148	0.0131279	22.3	0.0053	0.0182	3	8	11	1.42	5.30	4.59	0.01	0.35	0.32	534.51	0.13	0.44
Subtotal															**4.47**	**17.27**	**27.63**	**0.05**	**1.33**	**1.18**	**4691.46**	**0.40**	**2.62**
Trans: Rancho San Juan 138/230 kV - C	2017																						
Manlift	DIESEL	75	0.0368	0.2336	0.2787	0.0004	0.0194	0.0172398	38.1	0.0033	0.0265	4	6	66	0.88	5.61	6.69	0.01	0.46	0.41	913.72	0.08	0.64
Puller and Tensioner	DIESEL	300	0.1181	0.4796	0.9136	0.0025	0.0311	0.0276647	254.2	0.0107	0.0868	2	4	66	0.94	3.84	7.31	0.02	0.25	0.22	2033.91	0.09	0.69
Reel Trailer	DIESEL	300	0.1181	0.4796	0.9136	0.0025	0.0311	0.0276647	254.2	0.0107	0.0868	2	4	66	0.94	3.84	7.31	0.02	0.25	0.22	2033.91	0.09	0.69
Splice Trailer	DIESEL	300	0.1181	0.4796	0.9136	0.0025	0.0311	0.0276647	254.2	0.0107	0.0868	2	4	66	0.94	3.84	7.31	0.02	0.25	0.22	2033.91	0.09	0.69
Subtotal															**3.72**	**17.12**	**28.62**	**0.07**	**1.21**	**1.08**	**7015.45**	**0.34**	**2.72**
Trans: Rancho San Juan 138/230 kV - R	2017																						
2-ton Flatbed Truck	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	1	4	11	0.44	1.44	3.05	0.01	0.10	0.09	666.18	0.04	0.29
Manlift	DIESEL	75	0.0368	0.2336	0.2787	0.0004	0.0194	0.0172398	38.1	0.0033	0.0265	2	8	11	0.59	3.74	4.46	0.01	0.31	0.28	609.15	0.05	0.42
Excavator	DIESEL	300	0.1415	0.4762	0.8988	0.0023	0.0323	0.0287329	234	0.0128	0.0854	1	4	11	0.57	1.90	3.60	0.01	0.13	0.11	934.94	0.05	0.34
Jackhammer	DIESEL	25	0.0159	0.0544	0.1008	0.0002	0.0038	0.0033628	13.2	0.0014	0.0096	2	6	11	0.19	0.65	1.21	0.00	0.05	0.04	158.61	0.02	0.11
Dump Trucks	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	1	2	11	0.22	0.72	1.53	0.00	0.05	0.05	333.09	0.02	0.14
Crane	DIESEL	399	0.1262	0.4243	0.9704	0.0018	0.0351	0.03124	180.1	0.0114	0.0922	1	2	11	0.25	0.85	1.94	0.00	0.07	0.06	360.20	0.02	0.18
Subtotal															**2.26**	**9.31**	**15.78**	**0.03**	**0.71**	**0.63**	**3062.17**	**0.20**	**1.50**
Total															**19.03**	**74.39**	**132.92**	**0.28**	**5.65**	**5.03**	**27020.59**	**1.72**	**12.63**

			Emission, tons (total)								
Equipment/Phase	FUEL	HP	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Trans: Rancho San Juan 138/230 kV - Site Development											
Excavator			0.007	0.021	0.045	0.000	0.002	0.001	10.284	0.001	0.004
Compactor			0.005	0.015	0.044	0.000	0.001	0.001	6.736	0.000	0.004
Loader			0.009	0.030	0.078	0.000	0.003	0.002	13.110	0.001	0.007
Water Truck			0.006	0.020	0.048	0.000	0.002	0.001	9.160	0.001	0.005
Dump/Haul Truck			0.010	0.032	0.076	0.000	0.003	0.002	14.656	0.001	0.007
Subtotal			**0.037**	**0.118**	**0.291**	**0.001**	**0.010**	**0.009**	**53.946**	**0.003**	**0.028**
Trans: Rancho San Juan 138/230 kV - Underground Trench/Conduit/Substructure											
Dump Trucks			0.029	0.095	0.201	0.000	0.007	0.006	43.968	0.003	0.019
Crane			0.008	0.028	0.064	0.000	0.002	0.002	11.887	0.001	0.006
Excavator			0.075	0.251	0.475	0.001	0.017	0.015	123.412	0.007	0.045
CAT 416 Rubber Tire Backhoe			0.038	0.213	0.235	0.000	0.018	0.016	31.106	0.003	0.022
Concrete Trucks			0.015	0.048	0.101	0.000	0.003	0.003	21.984	0.001	0.010
Compactor			0.007	0.022	0.060	0.000	0.002	0.002	10.104	0.001	0.006
Subtotal			**0.171**	**0.658**	**1.136**	**0.003**	**0.050**	**0.044**	**242.461**	**0.015**	**0.108**
Trans: Rancho San Juan 138/230 kV - Steel Structure Installations											
2-ton Flatbed Truck			0.002	0.008	0.017	0.000	0.001	0.001	3.664	0.000	0.002
Crane			0.011	0.037	0.085	0.000	0.003	0.003	15.849	0.001	0.008
Manlift			0.003	0.021	0.025	0.000	0.002	0.002	3.350	0.000	0.002
Air Compressor			0.008	0.029	0.025	0.000	0.002	0.002	2.940	0.001	0.002
Subtotal			**0.025**	**0.095**	**0.152**	**0.000**	**0.007**	**0.007**	**25.803**	**0.002**	**0.014**
Trans: Rancho San Juan 138/230 kV - Cable/Conductor Pulling and Tensioning											
Manlift			0.029	0.185	0.221	0.000	0.015	0.014	30.153	0.003	0.021
Puller and Tensioner			0.031	0.127	0.241	0.001	0.008	0.007	67.119	0.003	0.023
Reel Trailer			0.031	0.127	0.241	0.001	0.008	0.007	67.119	0.003	0.023
Splice Trailer			0.031	0.127	0.241	0.001	0.008	0.007	67.119	0.003	0.023
Subtotal			**0.123**	**0.565**	**0.944**	**0.002**	**0.040**	**0.036**	**231.510**	**0.011**	**0.090**
Trans: Rancho San Juan 138/230 kV - Removal of Structures											
2-ton Flatbed Truck			0.002	0.008	0.017	0.000	0.001	0.001	3.664	0.000	0.002
Manlift			0.003	0.021	0.025	0.000	0.002	0.002	3.350	0.000	0.002
Excavator			0.003	0.010	0.020	0.000	0.001	0.001	5.142	0.000	0.002
Jackhammer			0.001	0.004	0.007	0.000	0.000	0.000	0.872	0.000	0.001
Dump Trucks			0.001	0.004	0.008	0.000	0.000	0.000	1.832	0.000	0.001
Crane			0.001	0.005	0.011	0.000	0.000	0.000	1.981	0.000	0.001
Subtotal			**0.012**	**0.051**	**0.087**	**0.000**	**0.004**	**0.003**	**16.842**	**0.001**	**0.008**
Total			**0.37**	**1.49**	**2.61**	**0.01**	**0.11**	**0.10**	**570.56**	**0.03**	**0.25**

Table A-8
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Talega Substation

			Emission Factors												Emissions								
Equipment/Phase	FUEL	HP	ROG (lb/hr)	CO (lb/hr)	NOX (lb/hr)	SOX (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO2 (lb/hr)	CH4 (lb/hr)	N2O (lb/hr)	No of Equipment	Hrs Per Day	Days in Service	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day
Talega Substation Site Developmen	2013																						
Bulldozer	DIESEL	350	0.3211	1.4228	2.7305	0.0026	0.1133	0.1008544	264.8725	0.0290	0.2594				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Grader/Blade	DIESEL	350	0.1855	0.6289	1.6842	0.0023	0.0608	0.0541153	229	0.0167	0.1600				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Scraper	DIESEL	350	0.3186	1.2113	2.8288	0.0032	0.1099	0.0978252	321.4286	0.0287	0.2687				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Compactor	DIESEL	250	0.1262	0.3887	1.3124	0.0017	0.0451	0.0401412	153.0898	0.0114	0.1247				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Loader	DIESEL	200	0.1259	0.3685	1.2125	0.0017	0.0417	0.0371039	149.0	0.0114	0.1152				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Backhoe	DIESEL	85	0.0694	0.3529	0.4565	0.0006	0.0383	0.0340819	51.7280	0.0063	0.0434				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Truck	DIESEL	175	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dump/Haul Truck	DIESEL	235	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Excavator	DIESEL	300	0.1735	0.5271	1.4763	0.0023	0.0516	0.0459342	234	0.0157	0.1402				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal															**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Talega Substation Below Grade	2013																						
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.1281	0.4684	0.7862	0.0008	0.0669	0.0594977	64.9	0.0116	0.0747	1	6	11	0.77	2.81	4.72	0.00	0.40	0.36	389.37	0.07	0.45
Drill Rig	DIESEL	82	0.0447	0.4698	0.4583	0.0009	0.0257	0.0228866	77.1	0.0040	0.0435	1	6	11	0.27	2.82	2.75	0.01	0.15	0.14	462.73	0.02	0.26
Front Loader	DIESEL	200	0.1259	0.3685	1.2125	0.0017	0.0417	0.0371039	149.0	0.0114	0.1152	1	6	44	0.76	2.21	7.27	0.01	0.25	0.22	893.86	0.07	0.69
Dump Trucks	DIESEL	235	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	5	1	22	0.70	1.92	6.19	0.01	0.21	0.18	832.73	0.06	0.59
Skid Steer Loaders	DIESEL	37	0.0429	0.2748	0.3267	0.0005	0.0245	0.0217659	42.8	0.0039	0.0310	1	4	66	0.17	1.10	1.31	0.00	0.10	0.09	171.05	0.02	0.12
4000 Gallon Water Truck	DIESEL	175	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	1	1	66	0.14	0.38	1.24	0.00	0.04	0.04	166.55	0.01	0.12
Concrete Trucks	DIESEL	235	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	5	1	22	0.70	1.92	6.19	0.01	0.21	0.18	832.73	0.06	0.59
Ditch Witch	DIESEL	165	0.1208	0.6668	0.8932	0.0013	0.0512	0.0455905	112.2	0.0109	0.0848	1	6	66	0.72	4.00	5.36	0.01	0.31	0.27	673.33	0.07	0.51
Handheld Compactor	DIESEL	8	0.0050	0.0263	0.0314	0.0001	0.0012	0.0010963	4.3	0.0005	0.0030	2	4	44	0.04	0.21	0.25	0.00	0.01	0.01	34.51	0.00	0.02
Subtotal															**4.27**	**17.37**	**35.27**	**0.05**	**1.67**	**1.49**	**4456.85**	**0.39**	**3.35**
Talega Substation Constructior	2014																						
Boom Truck	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	6	66	0.80	2.26	6.63	0.01	0.22	0.20	999.27	0.07	0.63
Skid Steer Loaders	DIESEL	37	0.0443	0.2196	0.2161	0.0003	0.0134	0.0119526	25.5	0.0040	0.0205	1	2	6.6	0.09	0.44	0.43	0.00	0.03	0.02	51.04	0.01	0.04
Crane	DIESEL	399	0.1468	0.4948	1.2979	0.0018	0.0470	0.041826	180.1	0.0132	0.1233	1	2	132	0.29	0.99	2.60	0.00	0.09	0.08	360.20	0.03	0.25
Manlift	DIESEL	75	0.0509	0.2400	0.3531	0.0004	0.0272	0.024239	38.1	0.0046	0.0335	1	6	132	0.31	1.44	2.12	0.00	0.16	0.15	228.43	0.03	0.20
Cable Dolly	DIESEL	525	0.1379	0.5080	1.3457	0.0025	0.0441	0.0392193	254.2	0.0124	0.1278	1	1	22	0.14	0.51	1.35	0.00	0.04	0.04	254.24	0.01	0.13
Stringing Rigs	DIESEL	300	0.1379	0.5080	1.3457	0.0025	0.0441	0.0392193	254.2	0.0124	0.1278	1	1	22	0.14	0.51	1.35	0.00	0.04	0.04	254.24	0.01	0.13
Line Truck	DIESEL	175	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	2	1	132	0.27	0.75	2.21	0.00	0.07	0.07	333.09	0.02	0.21
Air Compressor	DIESEL	45	0.0534	0.1694	0.1765	0.0003	0.0142	0.0126297	19.6	0.0048	0.0168	1	8	132	0.43	1.36	1.41	0.00	0.11	0.10	156.90	0.04	0.13
Subtotal															**2.45**	**8.25**	**18.09**	**0.03**	**0.78**	**0.69**	**2637.41**	**0.22**	**1.72**

Emission, tons (total)

Equipment/Phase	FUEL	HP	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Talega Substation Site Developmen											
Bulldozer			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Road Grader/Blade			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Scraper			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Compactor			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Loader			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Backhoe			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Water Truck			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dump/Haul Truck			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Excavator			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Subtotal			**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Talega Substation Below Grade											
CAT 416 Rubber Tire Backhoe			0.004	0.015	0.026	0.000	0.002	0.002	2.142	0.000	0.002
Drill Rig			0.001	0.016	0.015	0.000	0.001	0.001	2.545	0.000	0.001
Front Loader			0.017	0.049	0.160	0.000	0.006	0.005	19.665	0.001	0.015
Dump Trucks			0.008	0.021	0.068	0.000	0.002	0.002	9.160	0.001	0.006
Skid Steer Loaders			0.006	0.036	0.043	0.000	0.003	0.003	5.645	0.001	0.004
4000 Gallon Water Truck			0.005	0.013	0.041	0.000	0.001	0.001	5.496	0.000	0.004
Concrete Trucks			0.008	0.021	0.068	0.000	0.002	0.002	9.160	0.001	0.006
Ditch Witch			0.024	0.132	0.177	0.000	0.010	0.009	22.220	0.002	0.017
Handheld Compactor			0.001	0.005	0.006	0.000	0.000	0.000	0.759	0.000	0.001
Subtotal			**0.073**	**0.307**	**0.604**	**0.001**	**0.028**	**0.025**	**76.791**	**0.007**	**0.057**
Talega Substation Constructior			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Boom Truck			0.026	0.074	0.219	0.000	0.007	0.006	32.976	0.002	0.021
Skid Steer Loaders			0.000	0.001	0.001	0.000	0.000	0.000	0.168	0.000	0.000
Crane			0.019	0.065	0.171	0.000	0.006	0.006	23.773	0.002	0.016
Manlift			0.020	0.095	0.140	0.000	0.011	0.010	15.076	0.002	0.013
Cable Dolly			0.002	0.006	0.015	0.000	0.000	0.000	2.797	0.000	0.001
Stringing Rigs			0.002	0.006	0.015	0.000	0.000	0.000	2.797	0.000	0.001
Air Compressor			0.028	0.089	0.093	0.000	0.007	0.007	10.356	0.003	0.009
Subtotal			**0.097**	**0.337**	**0.654**	**0.001**	**0.033**	**0.029**	**87.943**	**0.009**	**0.062**

Table A-9
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Capistrano Substation - Lower Yard

			Emission Factors												Emissions								
Equipment/Phase	FUEL	HP	ROG (lb/hr)	CO (lb/hr)	NOX (lb/hr)	SOX (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO2 (lb/hr)	CH4 (lb/hr)	N2O (lb/hr)	No of Equipment	Hrs Per Day	Days in Service	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day
Capistrano Substation Building Remov	2013	2013																					
2-ton Flatbed Truck	DIESEL	235	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	1	1	44	0.14	0.38	1.24	0.00	0.04	0.04	166.55	0.01	0.12
Manlift	DIESEL	75	0.0558	0.2425	0.3758	0.0004	0.0299	0.0265879	38.1	0.0050	0.0357	1	6	44	0.33	1.46	2.25	0.00	0.18	0.16	228.43	0.03	0.21
Excavator	DIESEL	300	0.1735	0.5271	1.4763	0.0023	0.0516	0.0459342	234	0.0157	0.1402	1	6	44	1.04	3.16	8.86	0.01	0.31	0.28	1402.41	0.09	0.84
Jackhammer	DIESEL	25	0.0160	0.0544	0.1013	0.0002	0.0041	0.0036114	13.2	0.0014	0.0096	2	6	44	0.19	0.65	1.22	0.00	0.05	0.04	158.61	0.02	0.12
Dump Trucks	DIESEL	235	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	8	1	44	1.12	3.07	9.90	0.01	0.33	0.29	1332.36	0.10	0.94
Crane	DIESEL	399	0.1551	0.5292	1.4230	0.0018	0.0518	0.0461327	180.1	0.0140	0.1352	1	6	22	0.93	3.18	8.54	0.01	0.31	0.28	1080.61	0.08	0.81
Subtotal															**3.76**	**11.90**	**32.00**	**0.05**	**1.22**	**1.09**	**4368.97**	**0.34**	**3.04**
Capistrano Substation Site Developme	2013																						
Bulldozer	DIESEL	350	0.3211	1.4228	2.7305	0.0026	0.1133	0.1008544	264.8725	0.0290	0.2594	2	8	88	5.14	22.77	43.69	0.04	1.81	1.61	4237.96	0.46	4.15
Road Grader/Blade	DIESEL	350	0.1855	0.6289	1.6842	0.0023	0.0608	0.0541153	229	0.0167	0.1600	2	8	88	2.97	10.06	26.95	0.04	0.97	0.87	3671.75	0.27	2.56
Scraper	DIESEL	350	0.3186	1.2113	2.8288	0.0032	0.1099	0.0978252	321.4286	0.0287	0.2687	2	8	88	5.10	19.38	45.26	0.05	1.76	1.57	5142.86	0.46	4.30
Compactor	DIESEL	250	0.1262	0.3887	1.3124	0.0017	0.0451	0.0401412	153.0898	0.0114	0.1247	1	8	132	1.01	3.11	10.50	0.01	0.36	0.32	1224.72	0.09	1.00
Loader	DIESEL	200	0.1259	0.3685	1.2125	0.0017	0.0417	0.0371039	149.0	0.0114	0.1152	1	6	132	0.76	2.21	7.27	0.01	0.25	0.22	893.86	0.07	0.69
Backhoe	DIESEL	85	0.0694	0.3529	0.4565	0.0006	0.0383	0.0340819	51.7280	0.0063	0.0434	1	4	132	0.28	1.41	1.83	0.00	0.15	0.14	206.91	0.03	0.17
Water Truck	DIESEL	175	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	1	1	132	0.14	0.38	1.24	0.00	0.04	0.04	166.55	0.01	0.12
Dump/Haul Truck	DIESEL	235	0.1400	0.3837	1.2373	0.0019	0.0412	0.0367012	166.5	0.0126	0.1175	30	6	132	25.20	69.06	222.72	0.34	7.42	6.61	29978.17	2.27	21.16
Excavator	DIESEL	300	0.1735	0.5271	1.4763	0.0023	0.0516	0.0459342	234	0.0157	0.1402	1	1	44	0.17	0.53	1.48	0.00	0.05	0.05	233.74	0.02	0.14
Subtotal															**40.76**	**128.91**	**360.93**	**0.50**	**12.82**	**11.41**	**45756.51**	**3.68**	**34.29**
Capistrano Substation Below Grade - I	2014																						
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.1281	0.4684	0.7862	0.0008	0.0669	0.0594977	64.9	0.0116	0.0747	1	8	176	1.02	3.75	6.29	0.01	0.53	0.48	519.16	0.09	0.60
Drill Rig	DIESEL	82	0.0409	0.4684	0.4254	0.0009	0.0204	0.0181324	77.1	0.0037	0.0404	1	8	22	0.33	3.75	3.40	0.01	0.16	0.15	616.97	0.03	0.32
Front Loader	DIESEL	200	0.1186	0.3553	1.0966	0.0017	0.0375	0.0333776	149.0	0.0107	0.1042	1	6	110	0.71	2.13	6.58	0.01	0.23	0.20	893.86	0.06	0.63
Dump Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	40	1	132	5.30	15.05	44.19	0.07	1.47	1.31	6661.82	0.48	4.20
Skid Steer Loaders	DIESEL	37	0.0443	0.2196	0.2161	0.0003	0.0134	0.0119526	25.5	0.0040	0.0205	1	5	176	0.22	1.10	1.08	0.00	0.07	0.06	127.60	0.02	0.10
4000 Gallon Water Truck	DIESEL	175	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	1	2	176	0.27	0.75	2.21	0.00	0.07	0.07	333.09	0.02	0.21
Concrete Trucks	DIESEL	235	0.1326	0.3761	1.1048	0.0019	0.0368	0.0327961	166.5	0.0120	0.1050	60	0.5	22	3.98	11.28	33.14	0.06	1.11	0.98	4996.36	0.36	3.15
Ditch Witch	DIESEL	165	0.0868	0.5867	0.7476	0.0012	0.0374	0.0333234	106.5	0.0078	0.0710	1	8	176	0.69	4.69	5.98	0.01	0.30	0.27	852.13	0.06	0.57
Handheld Compactor	DIESEL	8	0.0050	0.0263	0.0314	0.0001	0.0012	0.0010907	4.3	0.0005	0.0030	1	6	110	0.03	0.16	0.19	0.00	0.01	0.01	25.88	0.00	0.02
Subtotal															**12.55**	**42.66**	**103.07**	**0.17**	**3.95**	**3.52**	**15026.87**	**1.13**	**9.79**
Capistrano Substation Construction -	2015																						
Boom Truck	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	2	5	220	1.25	3.70	9.82	0.02	0.33	0.29	1665.45	0.11	0.93
Crane	DIESEL	399	0.1393	0.4663	1.1812	0.0018	0.0426	0.0379443	180.1	0.0126	0.1122	1	8	66	1.11	3.73	9.45	0.01	0.34	0.30	1440.81	0.10	0.90
Manlift	DIESEL	75	0.0460	0.2377	0.3272	0.0004	0.0246	0.0218611	38.1	0.0042	0.0311	2	8	286	0.74	3.80	5.24	0.01	0.39	0.35	609.15	0.07	0.50
Rough Terrain Forklifts	DIESEL	180	0.1168	0.3650	1.0385	0.0019	0.0338	0.0301061	170.8	0.0105	0.0987	2	8	264	1.87	5.84	16.62	0.03	0.54	0.48	2732.74	0.17	1.58
Line Truck	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	2	6	22	1.50	4.44	11.78	0.02	0.39	0.35	1998.54	0.14	1.12
Cable Dolly	DIESEL	525	0.1310	0.4963	1.1867	0.0025	0.0394	0.0350431	254.2	0.0118	0.1127	1	2	66	0.26	0.99	2.37	0.00	0.08	0.07	508.48	0.02	0.23
Stringing Rigs	DIESEL	300	0.1310	0.4963	1.1867	0.0025	0.0394	0.0350431	254.2	0.0118	0.1127				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oil Rig	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	24	11	3.00	8.88	23.56	0.04	0.79	0.70	3997.09	0.27	2.24
SF6 Trailer	DIESEL	235	0.1252	0.3702	0.9818	0.0019	0.0328	0.0291649	166.5	0.0113	0.0933	1	24	22	3.00	8.88	23.56	0.04	0.79	0.70	3997.09	0.27	2.24
Subtotal															**12.74**	**40.28**	**102.40**	**0.19**	**3.65**	**3.25**	**16949.36**	**1.15**	**9.73**
Capistrano Substation Relay Testing -	2016																						
Relay/Telecommunication Van	DIESEL	175	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	2	1	132	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Subtotal															**0.24**	**0.73**	**1.74**	**0.00**	**0.06**	**0.05**	**333**	**0.02**	**0.16**
Capistrano Substation Energization - U	2016																						
Relay/Telecommunication Van	DIESEL	175	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	2	1	22	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Line Truck	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	2	1	22	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Subtotal															**0.47**	**1.46**	**3.47**	**0.01**	**0.12**	**0.10**	**666**	**0.04**	**0.33**
Capistrano Substation Energize Temp	2016																						
Relay/Telecommunication Van	DIESEL	175	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	2	1	22	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Line Truck	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	2	1	22	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Manlift	DIESEL	75	0.0413	0.2355	0.3021	0.0004	0.0219	0.0194919	38.1	0.0037	0.0287	2	8	22	0.66	3.77	4.83	0.01	0.35	0.31	609.15	0.06	0.46
Subtotal															**1.13**	**5.23**	**8.31**	**0.01**	**0.47**	**0.42**	**1275**	**0.10**	**0.79**

Table A-9
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Capistrano Substation - Lower Yard

			Emission, tons (total)								
Equipment/Phase	**FUEL**	**HP**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Capistrano Substation Building Removal - Lower Yard											
2-ton Flatbed Truck			0.003	0.008	0.027	0.000	0.001	0.001	3.664	0.000	0.003
Manlift			0.007	0.032	0.050	0.000	0.004	0.004	5.025	0.001	0.005
Excavator			0.023	0.070	0.195	0.000	0.007	0.006	30.853	0.002	0.019
Jackhammer			0.004	0.014	0.027	0.000	0.001	0.001	3.489	0.000	0.003
Dump Trucks			0.025	0.068	0.218	0.000	0.007	0.006	29.312	0.002	0.021
Crane			0.010	0.035	0.094	0.000	0.003	0.003	11.887	0.001	0.009
Subtotal			**0.072**	**0.227**	**0.610**	**0.001**	**0.023**	**0.021**	**84.231**	**0.007**	**0.058**
Capistrano Substation Site Development - Lower Yard											
Bulldozer			0.226	1.002	1.922	0.002	0.080	0.071	186.470	0.020	0.183
Road Grader/Blade			0.131	0.443	1.186	0.002	0.043	0.038	161.557	0.012	0.113
Scraper			0.224	0.853	1.991	0.002	0.077	0.069	226.286	0.020	0.189
Compactor			0.067	0.205	0.693	0.001	0.024	0.021	80.831	0.006	0.066
Loader			0.050	0.146	0.480	0.001	0.017	0.015	58.995	0.004	0.046
Backhoe			0.018	0.093	0.121	0.000	0.010	0.009	13.656	0.002	0.011
Water Truck			0.009	0.025	0.082	0.000	0.003	0.002	10.992	0.001	0.008
Dump/Haul Truck			1.663	4.558	14.699	0.022	0.490	0.436	1978.559	0.150	1.396
Excavator			0.004	0.012	0.032	0.000	0.001	0.001	5.142	0.000	0.003
Subtotal			**2.392**	**7.336**	**21.206**	**0.030**	**0.744**	**0.662**	**2722.489**	**0.216**	**2.015**
Capistrano Substation Below Grade - Lower Yard											
CAT 416 Rubber Tire Backhoe			0.090	0.330	0.554	0.001	0.047	0.042	45.686	0.008	0.053
Drill Rig			0.004	0.041	0.037	0.000	0.002	0.002	6.787	0.000	0.004
Front Loader			0.039	0.117	0.362	0.001	0.012	0.011	49.162	0.004	0.034
Dump Trucks			0.350	0.993	2.917	0.005	0.097	0.087	439.680	0.032	0.277
Skid Steer Loaders			0.019	0.097	0.095	0.000	0.006	0.005	11.228	0.002	0.009
4000 Gallon Water Truck			0.023	0.066	0.194	0.000	0.006	0.006	29.312	0.002	0.018
Concrete Trucks			0.044	0.124	0.365	0.001	0.012	0.011	54.960	0.004	0.035
Ditch Witch			0.061	0.413	0.526	0.001	0.026	0.023	74.987	0.006	0.050
Handheld Compactor			0.002	0.009	0.010	0.000	0.000	0.000	1.424	0.000	0.001
Subtotal			**0.632**	**2.190**	**5.060**	**0.008**	**0.210**	**0.187**	**713.226**	**0.057**	**0.481**
Capistrano Substation Construction - Lower Yard											
Boom Truck			0.138	0.407	1.080	0.002	0.036	0.032	183.200	0.012	0.103
Crane			0.037	0.123	0.312	0.000	0.011	0.010	47.547	0.003	0.030
Manlift			0.105	0.544	0.749	0.001	0.056	0.050	87.108	0.010	0.071
Rough Terrain Forklifts			0.247	0.771	2.193	0.004	0.071	0.064	360.722	0.022	0.208
Line Truck			0.017	0.049	0.130	0.000	0.004	0.004	21.984	0.001	0.012
Cable Dolly			0.009	0.033	0.078	0.000	0.003	0.002	16.780	0.001	0.007
Stringing Rigs			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oil Rig			0.017	0.049	0.130	0.000	0.004	0.004	21.984	0.001	0.012
SF6 Trailer			0.033	0.098	0.259	0.000	0.009	0.008	43.968	0.003	0.025
Subtotal			**0.601**	**2.073**	**4.931**	**0.009**	**0.195**	**0.173**	**783.293**	**0.054**	**0.468**
Capistrano Substation Relay Testing - Lower Yard											
Relay/Telecommunication Van			0.016	0.048	0.115	0.000	0.004	0.003	21.984	0.001	0.011
Subtotal			**0.016**	**0.048**	**0.115**	**0.000**	**0.004**	**0.003**	**21.984**	**0.001**	**0.011**
Capistrano Substation Energization - Lower Yard											
Relay/Telecommunication Van			0.003	0.008	0.019	0.000	0.001	0.001	3.664	0.000	0.002
Line Truck			0.003	0.008	0.019	0.000	0.001	0.001	3.664	0.000	0.002
Subtotal			**0.005**	**0.016**	**0.038**	**0.000**	**0.001**	**0.001**	**7.328**	**0.000**	**0.004**
Capistrano Substation Energize Temporary TL 13835 - Lower Yard											
Relay/Telecommunication Van			0.003	0.008	0.019	0.000	0.001	0.001	3.664	0.000	0.002
Line Truck			0.003	0.008	0.019	0.000	0.001	0.001	3.664	0.000	0.002
Manlift			0.007	0.041	0.053	0.000	0.004	0.003	6.701	0.001	0.005
Subtotal			**0.012**	**0.058**	**0.091**	**0.000**	**0.005**	**0.005**	**14.029**	**0.001**	**0.009**

Table A-10
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Capistrano Substation - Upper Yard

			Emission Factors													Emissions								
Equipment/Phase	**FUEL**	**HP**	**ROG (lb/hr)**	**CO (lb/hr)**	**NOX (lb/hr)**	**SOX (lb/hr)**	**PM10 (lb/hr)**	**PM2.5 (lb/hr)**	**CO2 (lb/hr)**	**CH4 (lb/hr)**	**N2O (lb/hr)**	**No of Equipment**	**Hrs Per Day**	**Days in Service**	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**
Capistrano Substation Remove RFS 1	2016																						
Manlift	DIESEL	75	0.0413	0.2355	0.3021	0.0004	0.0219	0.0194919	38.1	0.0037	0.0287	2	6	44	0.50	2.83	3.63	0.01	0.26	0.23	456.86	0.04	0.34
Flatbed Truck	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	5	3	22	1.77	5.48	13.02	0.03	0.44	0.39	2498.18	0.16	1.24
Dump Trucks	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	5	1	22	0.59	1.83	4.34	0.01	0.15	0.13	832.73	0.05	0.41
Crane	DIESEL	399	0.1325	0.4431	1.0723	0.0018	0.0387	0.0344466	180.1	0.0120	0.1019	1	8	11	1.06	3.54	8.58	0.01	0.31	0.28	1440.81	0.10	0.81
Subtotal															**3.91**	**13.67**	**29.56**	**0.06**	**1.15**	**1.03**	**5228.58**	**0.35**	**2.81**
Capistrano Substation Site Developme	2016																						
Bulldozer	DIESEL	350	0.2794	1.1678	2.2384	0.0026	0.0915	0.0814523	264.8726	0.0252	0.2126	2	8	66	4.47	18.69	35.81	0.04	1.46	1.30	4237.96	0.40	3.40
Road Grader/Blade	DIESEL	350	0.1579	0.5525	1.2394	0.0023	0.0446	0.0396852	229	0.0142	0.1177	2	8	66	2.53	8.84	19.83	0.04	0.71	0.63	3671.75	0.23	1.88
Scraper	DIESEL	350	0.2736	1.0107	2.2183	0.0032	0.0851	0.0757367	321.4285	0.0247	0.2107	2	8	66	4.38	16.17	35.49	0.05	1.36	1.21	5142.86	0.40	3.37
Compactor	DIESEL	250	0.1042	0.3463	0.9961	0.0017	0.0333	0.0296601	153.0899	0.0094	0.0946	1	8	66	0.83	2.77	7.97	0.01	0.27	0.24	1224.72	0.08	0.76
Loader	DIESEL	200	0.1056	0.3357	0.8897	0.0017	0.0302	0.0269188	149.0	0.0095	0.0845	1	8	66	0.85	2.69	7.12	0.01	0.24	0.22	1191.81	0.08	0.68
Backhoe	DIESEL	85	0.0524	0.3460	0.3526	0.0006	0.0253	0.0225345	51.7280	0.0047	0.0335	1	8	66	0.42	2.77	2.82	0.00	0.20	0.18	413.82	0.04	0.27
Water Truck	DIESEL	175	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	1	2	66	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Dump/Haul Truck	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	8	1	66	0.94	2.92	6.94	0.01	0.23	0.21	1332.36	0.09	0.66
Excavator	DIESEL	300	0.1496	0.4851	1.0236	0.0023	0.0366	0.032587	234	0.0135	0.0972	1	6	66	0.90	2.91	6.14	0.01	0.22	0.20	1402.41	0.08	0.58
Subtotal															**15.55**	**58.48**	**123.87**	**0.19**	**4.76**	**4.24**	**18950.79**	**1.40**	**11.77**
Capistrano Substation Below Grade - 2	2016																						
CAT 416 Rubber Tire Backhoe	DIESEL	85	0.0773	0.4063	0.4828	0.0007	0.0387	0.034432	58.9	0.0070	0.0459	1	8	132	0.62	3.25	3.86	0.01	0.31	0.28	471.31	0.06	0.37
Drill Rig	DIESEL	82	0.0349	0.4671	0.3308	0.0009	0.0125	0.0111113	77.1	0.0031	0.0314	1	8	11	0.28	3.74	2.65	0.01	0.10	0.09	616.97	0.03	0.25
Front Loader	DIESEL	200	0.1056	0.3357	0.8897	0.0017	0.0302	0.0269188	149.0	0.0095	0.0845	1	6	88	0.63	2.01	5.34	0.01	0.18	0.16	893.86	0.06	0.51
Dump Trucks	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	30	1	88	3.54	10.95	26.03	0.06	0.87	0.78	4996.36	0.32	2.47
Skid Steer Loaders	DIESEL	37	0.0323	0.2089	0.1953	0.0003	0.0094	0.0083978	25.5	0.0029	0.0186	1	4	132	0.13	0.84	0.78	0.00	0.04	0.03	102.08	0.01	0.07
Crane	DIESEL	399	0.1325	0.4431	1.0723	0.0018	0.0387	0.0344466	180.1	0.0120	0.1019	1	2	132	0.26	0.89	2.14	0.00	0.08	0.07	360.20	0.02	0.20
4000 Gallon Water Truck	DIESEL	175	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	1	2	132	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16
Concrete Trucks	DIESEL	235	0.1179	0.3651	0.8678	0.0019	0.0290	0.0258471	166.5	0.0106	0.0824	45	1	132	5.31	16.43	39.05	0.08	1.31	1.16	7494.54	0.48	3.71
Ditch Witch	DIESEL	165	0.0729	0.5862	0.5856	0.0012	0.0291	0.0258634	106.5	0.0066	0.0556	1	8	132	0.58	4.69	4.68	0.01	0.23	0.21	852.13	0.05	0.45
Handheld Compactor	DIESEL	8	0.0050	0.0263	0.0314	0.0001	0.0012	0.0010963	4.3	0.0005	0.0030	1	8	88	0.04	0.21	0.25	0.00	0.01	0.01	34.51	0.00	0.02
Subtotal															**11.63**	**43.74**	**86.53**	**0.18**	**3.18**	**2.83**	**16155.06**	**1.05**	**8.22**
Capistrano Substation Construction - 1	2017																						
Boom Truck	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	2	6	198	1.33	4.33	9.15	0.02	0.31	0.27	1998.54	0.12	0.87
Manlift	DIESEL	75	0.0368	0.2336	0.2787	0.0004	0.0194	0.0172398	38.1	0.0033	0.0265	2	8	220	0.59	3.74	4.46	0.01	0.31	0.28	609.15	0.05	0.42
Crane	DIESEL	399	0.1262	0.4243	0.9704	0.0018	0.0351	0.03124	180.1	0.0114	0.0922	1	6	66	0.76	2.55	5.82	0.01	0.21	0.19	1080.61	0.07	0.55
Skid Steer Loaders	DIESEL	37	0.0288	0.2057	0.1865	0.0003	0.0079	0.0069937	25.5	0.0026	0.0177	2	6	220	0.35	2.47	2.24	0.00	0.09	0.08	306.23	0.03	0.21
Line Truck	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	2	8	44	1.77	5.77	12.20	0.03	0.41	0.37	2664.73	0.16	1.16
Cable Dolly	DIESEL	525	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1	2	44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stringing Rigs	DIESEL	300	0.1181	0.4796	0.9136	0.0025	0.0311	0.0276647	254.2	0.0107	0.0868	2	4	22	0.94	3.84	7.31	0.02	0.25	0.22	2033.91	0.09	0.69
Oil Rig	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	1	8	22	0.89	2.89	6.10	0.01	0.21	0.18	1332.36	0.08	0.58
Oil Rig	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	1	24	11	2.66	8.66	18.30	0.04	0.62	0.55	3997.09	0.24	1.74
SF6 Trailer	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	1	24	16.5	2.66	8.66	18.30	0.04	0.62	0.55	3997.09	0.24	1.74
Subtotal															**11.95**	**42.90**	**83.88**	**0.20**	**3.02**	**2.69**	**18019.71**	**1.08**	**7.97**
Capistrano Substation Relay Testing -	2017																						
Relay/Telecommunication Van	DIESEL	175	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	2	1	110	0.22	0.72	1.53	0.00	0.05	0.05	333.09	0.02	0.14
Subtotal															**0.22**	**0.72**	**1.53**	**0.00**	**0.05**	**0.05**	**333**	**0.02**	**0.14**
Capistrano Substation DeEnergize Ter	2017																						
Relay/Telecommunication Van	DIESEL	175	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	1	1	10	0.11	0.36	0.76	0.00	0.03	0.02	166.55	0.01	0.07
Line Truck	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	2	8	10	1.77	5.77	12.20	0.03	0.41	0.37	2664.73	0.16	1.16
Cable Dolly	DIESEL	525	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1	2	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boom Truck	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	1	8	11	0.89	2.89	6.10	0.01	0.21	0.18	1332.36	0.08	0.58
Subtotal															**2.77**	**9.02**	**19.06**	**0.05**	**0.64**	**0.57**	**4164**	**0.25**	**1.81**
Capistrano Substation Energization - 2	2017																						
Relay/Telecommunication Van	DIESEL	175	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	2	1	22	0.22	0.72	1.53	0.00	0.05	0.05	333.09	0.02	0.14
Line Truck	DIESEL	235	0.1109	0.3608	0.7625	0.0019	0.0256	0.0228191	166.5	0.0100	0.0724	2	1	22	0.22	0.72	1.53	0.00	0.05	0.05	333.09	0.02	0.14
Subtotal															**0.44**	**1.44**	**3.05**	**0.01**	**0.10**	**0.09**	**666**	**0.04**	**0.29**

Table A-10
Construction Heavy Equipment Emissions
South Orange County Reliability Project
Capistrano Substation - Upper Yard

			Emission, tons (total)								
Equipment/Phase	**FUEL**	**HP**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Capistrano Substation Remove RFS 138/12kV Equipment - 230 kV											
Manlift			0.011	0.062	0.080	0.000	0.006	0.005	10.051	0.001	0.008
Flatbed Truck			0.019	0.060	0.143	0.000	0.005	0.004	27.480	0.002	0.014
Dump Trucks			0.006	0.020	0.048	0.000	0.002	0.001	9.160	0.001	0.005
Crane			0.006	0.019	0.047	0.000	0.002	0.002	7.924	0.001	0.004
Subtotal			**0.043**	**0.162**	**0.318**	**0.001**	**0.014**	**0.012**	**54.615**	**0.004**	**0.030**
Capistrano Substation Site Development - 230 kV											
Bulldozer			0.148	0.617	1.182	0.001	0.048	0.043	139.853	0.013	0.112
Road Grader/Blade			0.083	0.292	0.654	0.001	0.024	0.021	121.168	0.008	0.062
Scraper			0.144	0.534	1.171	0.002	0.045	0.040	169.714	0.013	0.111
Compactor			0.028	0.091	0.263	0.000	0.009	0.008	40.416	0.002	0.025
Loader			0.028	0.089	0.235	0.000	0.008	0.007	39.330	0.003	0.022
Backhoe			0.014	0.091	0.093	0.000	0.007	0.006	13.656	0.001	0.009
Water Truck			0.008	0.024	0.057	0.000	0.002	0.002	10.992	0.001	0.005
Dump/Haul Truck			0.031	0.096	0.229	0.000	0.008	0.007	43.968	0.003	0.022
Excavator			0.030	0.096	0.203	0.000	0.007	0.006	46.280	0.003	0.019
Subtotal			**0.513**	**1.930**	**4.088**	**0.006**	**0.157**	**0.140**	**625.376**	**0.046**	**0.388**
Capistrano Substation Below Grade - 230 kV											
CAT 416 Rubber Tire Backhoe			0.041	0.215	0.255	0.000	0.020	0.018	31.106	0.004	0.024
Drill Rig			0.002	0.021	0.015	0.000	0.001	0.000	3.393	0.000	0.001
Front Loader			0.028	0.089	0.235	0.000	0.008	0.007	39.330	0.003	0.022
Dump Trucks			0.156	0.482	1.146	0.002	0.038	0.034	219.840	0.014	0.109
Skid Steer Loaders			0.009	0.055	0.052	0.000	0.002	0.002	6.737	0.001	0.005
Crane			0.017	0.058	0.142	0.000	0.005	0.005	23.773	0.002	0.013
4000 Gallon Water Truck			0.016	0.048	0.115	0.000	0.004	0.003	21.984	0.001	0.011
Concrete Trucks			0.350	1.084	2.577	0.006	0.086	0.077	494.640	0.032	0.245
Ditch Witch			0.038	0.309	0.309	0.001	0.015	0.014	56.240	0.003	0.029
Handheld Compactor			0.002	0.009	0.011	0.000	0.000	0.000	1.518	0.000	0.001
Subtotal			**0.658**	**2.371**	**4.855**	**0.010**	**0.181**	**0.161**	**898.563**	**0.059**	**0.461**
Capistrano Substation Construction - 230 kV											
Boom Truck			0.132	0.429	0.906	0.002	0.030	0.027	197.856	0.012	0.086
Manlift			0.065	0.411	0.491	0.001	0.034	0.030	67.006	0.006	0.047
Crane			0.025	0.084	0.192	0.000	0.007	0.006	35.660	0.002	0.018
Skid Steer Loaders			0.038	0.271	0.246	0.000	0.010	0.009	33.685	0.003	0.023
Line Truck			0.039	0.127	0.268	0.001	0.009	0.008	58.624	0.004	0.025
Cable Dolly			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Stringing Rigs			0.010	0.042	0.080	0.000	0.003	0.002	22.373	0.001	0.008
Oil Rig			0.010	0.032	0.067	0.000	0.002	0.002	14.656	0.001	0.006
Oil Rig			0.015	0.048	0.101	0.000	0.003	0.003	21.984	0.001	0.010
SF6 Trailer			0.022	0.071	0.151	0.000	0.005	0.005	32.976	0.002	0.014
Subtotal			**0.355**	**1.515**	**2.502**	**0.005**	**0.104**	**0.093**	**484.821**	**0.032**	**0.238**
Capistrano Substation Relay Testing - 230 kV											
Relay/Telecommunication Van			0.012	0.040	0.084	0.000	0.003	0.003	18.320	0.001	0.008
Subtotal			**0.012**	**0.040**	**0.084**	**0.000**	**0.003**	**0.003**	**18.320**	**0.001**	**0.008**
Capistrano Substation DeEnergize Temporary TL 13835 - 230 kV											
Relay/Telecommunication Van			0.001	0.002	0.004	0.000	0.000	0.000	0.833	0.000	0.000
Line Truck			0.009	0.029	0.061	0.000	0.002	0.002	13.324	0.001	0.006
Cable Dolly			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Boom Truck			0.005	0.016	0.034	0.000	0.001	0.001	7.328	0.000	0.003
Subtotal			**0.014**	**0.047**	**0.098**	**0.000**	**0.003**	**0.003**	**21.484**	**0.001**	**0.009**
Capistrano Substation Energization - 230 kV			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Relay/Telecommunication Van			0.002	0.008	0.017	0.000	0.001	0.001	3.664	0.000	0.002
Line Truck			0.002	0.008	0.017	0.000	0.001	0.001	3.664	0.000	0.002
Subtotal			**0.005**	**0.016**	**0.034**	**0.000**	**0.001**	**0.001**	**7.328**	**0.000**	**0.003**

Table A-11
Construction and Operations Worker Commute Emission Calculations
South Orange County Reliability Project

Construction Phase	Vehicle Class	No. of Daily Workers Per Construction Phase	Speed (mph)	VMT (mi/vehicle-day)	CO		NO_x		ROG						SOx		PM10				PM2.5				CO2		CH4		N2O	
					Running Exhaust (g/mi)	Start-Up (g/vehicle-day)	Running Exhaust (g/mi)	Start-Up (g/vehicle-day)	Running Exhaust (g/mi)	Start-Up (g/vehicle-day)	Hot-Soak (g/vehicle-day)	Resting Loss (g/vehicle-day)	Running Evaporative (g/mi)	Diurnal Evaporative (g/vehicle-day)	Running Exhaust (g/mi)	Start-Up (g/vehicle-day)	Running Exhaust (g/mi)	Start-Up (g/vehicle-day)	Tire Wear (g/mi)	Brake Wear (g/mi)	Running Exhaust (g/mi)	Start-Up (g/vehicle-day)	Tire Wear (g/mi)	Brake Wear (g/mi)	Running Exhaust (g/mi)	Start-Up (g/vehicle-day)	Running Exhaust (g/mi)	Start-Up (g/vehicle-day)	Running Exhaust (g/mi)	Start-Up (g/vehicle-day)
Transmission Segment 4 69kV and 138 kV	Light-Duty Truck, catalyst	36	35	80	3.0975	38.14685	0.301284	2.236171	0.094167	3.031413	1.876347	0.796436	0.20051	1.078687	0.004048	0.005841	0.004371	0.03404	0.008	0.03675	0.004	0.031111	0.002	0.01575	372.0084	488.7328	0.0177	0.02407547	0.03	0.01059328
Transmission Segment 1 138 kV	Light-Duty Truck, catalyst	16	35	80	3.0975	38.14685	0.301284	2.236171	0.094167	3.031413	1.876347	0.796436	0.20051	1.078687	0.004048	0.005841	0.004371	0.03404	0.008	0.03675	0.004	0.031111	0.002	0.01575	372.0084	488.7328	0.0177	0.02407547	0.03	0.01059328
Transmission Segment 3: Talega to Rancho San Juan 230 kB	Light-Duty Truck, catalyst	26	35	80	3.0975	38.14685	0.301284	2.236171	0.094167	3.031413	1.876347	0.796436	0.20051	1.078687	0.004048	0.005841	0.004371	0.03404	0.008	0.03675	0.004	0.031111	0.002	0.01575	372.0084	488.7328	0.0177	0.02407547	0.03	0.01059328
Transmission Segment 2: Rancho San Juan 230 kV	Light-Duty Truck, catalyst	20	35	80	3.0975	38.14685	0.301284	2.236171	0.094167	3.031413	1.876347	0.796436	0.20051	1.078687	0.004048	0.005841	0.004371	0.03404	0.008	0.03675	0.004	0.031111	0.002	0.01575	372.0084	488.7328	0.0177	0.02407547	0.03	0.01059328
Transmission Segment 1: 230 kV	Light-Duty Truck, catalyst	28	35	80	3.0975	38.14685	0.301284	2.236171	0.094167	3.031413	1.876347	0.796436	0.20051	1.078687	0.004048	0.005841	0.004371	0.03404	0.008	0.03675	0.004	0.031111	0.002	0.01575	372.0084	488.7328	0.0177	0.02407547	0.03	0.01059328
Transmission Segment 4: 230 kV	Light-Duty Truck, catalyst	24	35	80	3.0975	38.14685	0.301284	2.236171	0.094167	3.031413	1.876347	0.796436	0.20051	1.078687	0.004048	0.005841	0.004371	0.03404	0.008	0.03675	0.004	0.031111	0.002	0.01575	372.0084	488.7328	0.0177	0.02407547	0.03	0.01059328
Transmission Segment 2: 138/230 kV	Light-Duty Truck, catalyst	20	35	80	3.0975	38.14685	0.301284	2.236171	0.094167	3.031413	1.876347	0.796436	0.20051	1.078687	0.004048	0.005841	0.004371	0.03404	0.008	0.03675	0.004	0.031111	0.002	0.01575	372.0084	488.7328	0.0177	0.02407547	0.03	0.01059328
Talega Substation - Below Grade	Light-Duty Truck, catalyst	8	35	80	3.0975	38.14685	0.301284	2.236171	0.094167	3.031413	1.876347	0.796436	0.20051	1.078687	0.004048	0.005841	0.004371	0.03404	0.008	0.03675	0.004	0.031111	0.002	0.01575	372.0084	488.7328	0.0177	0.02407547	0.03	0.01059328
Talega Substation - Substation Construction	Light-Duty Truck, catalyst	6	35	80	2.808256	35.06012	0.274142	2.063512	0.081266	2.751298	1.816825	0.776334	0.189515	1.029591	0.004048	0.005781	0.004027	0.031825	0.008	0.03675	0.003695	0.029174	0.002	0.01575	362.6021	477.8171	0.0177	0.02353775	0.03	0.01035669
Capistrano Substation - Below Grade - Lower Yard	Light-Duty Truck, catalyst	15	35	80	2.808256	35.06012	0.274142	2.063512	0.081266	2.751298	1.816825	0.776334	0.189515	1.029591	0.004048	0.005781	0.004027	0.031825	0.008	0.03675	0.003695	0.029174	0.002	0.01575	362.6021	477.8171	0.0177	0.02353775	0.03	0.01035669
Capistrano Substation - Substation Construction - Lower Yard	Light-Duty Truck, catalyst	8	35	80	2.541377	32.18303	0.249617	1.900388	0.069493	2.492537	1.757791	0.756987	0.18078	0.982373	0.00404	0.005727	0.003731	0.030196	0.008	0.03675	0.003433	0.027764	0.002	0.01575	350.3236	463.963	0.0177	0.02285528	0.03	0.0100564
Capistrano Substation - Below Grade - Upper Yard	Light-Duty Truck, catalyst	15	35	80	2.315873	29.59808	0.228406	1.751224	0.059679	2.261624	1.700598	0.739637	0.172907	0.939511	0.004041	0.005678	0.003515	0.029018	0.008	0.03675	0.003242	0.026761	0.002	0.01575	338.8968	449.9828	0.0177	0.02216661	0.03	0.00975338
Capistrano Substation - Substation Construction - Upper Yard	Light-Duty Truck, catalyst	8	35	80	2.315873	29.59808	0.228406	1.751224	0.059679	2.261624	1.700598	0.739637	0.172907	0.939511	0.004041	0.005678	0.003515	0.029018	0.008	0.03675	0.003242	0.026761	0.002	0.01575	338.8968	449.9828	0.0177	0.02216661	0.03	0.00975338

EMFAC2011 emission factors for 2013 - 2017
Assume startup after 8 hours
Assume 45 minutes run time total

Construction Phase	Vehicle Class	No. of Daily Workers Per Construction Phase	Speed (mph)	VMT (mi/vehicle-day)	Emissions, lbs/day												Construction Days	Total Emissions, tons											
					CO	NOx	VOCs	SOx	PM10	PM2.5	Paved Road Fugitive Dust PM10	Paved Road Fugitive Dust PM2.5	CO2	CH4	N2O			CO	NOx	VOCs	SOx	PM10	PM2.5	Paved Road Fugitive Dust PM10	Paved Road Fugitive Dust PM2.5	CO2	CH4	N2O
Transmission Segment 4 69kV and 138 kV	Light-Duty Truck, catalyst	36	35	80	22.69	2.09	1.15	0.03	0.31	0.14	0.30	0.12	2400.80	0.11	0.21		132	0.75	0.07	0.03802	8.63E-04	0.01038	0.00464	0.01003	0.00411	79	0.00377	0.00686
Transmission Segment 1 138 kV	Light-Duty Truck, catalyst	16	35	80	10.09	0.93	0.51	0.01	0.14	0.06	0.14	0.06	1067.02	0.05	0.09		132	0.33	0.03	0.01690	3.84E-04	0.00461	0.00206	0.00446	0.00183	35	0.00168	0.00305
Transmission Segment 3: Talega to Rancho San Juan 230 kB	Light-Duty Truck, catalyst	26	35	80	16.39	1.51	0.83	0.02	0.23	0.10	0.22	0.09	1733.91	0.08	0.15		132	0.54	0.05	0.02746	6.24E-04	0.00750	0.00335	0.00724	0.00297	57	0.00272	0.00495
Transmission Segment 2: Rancho San Juan 230 kV	Light-Duty Truck, catalyst	20	35	80	12.61	1.16	0.64	0.01	0.17	0.08	0.17	0.07	1333.78	0.06	0.12		132	0.42	0.04	0.02112	4.80E-04	0.00577	0.00258	0.00557	0.00228	44	0.00210	0.00381
Transmission Segment 1: 230 kV	Light-Duty Truck, catalyst	28	35	80	17.65	1.63	0.90	0.02	0.24	0.11	0.24	0.10	1867.29	0.09	0.16		132	0.58	0.05	0.02957	6.72E-04	0.00807	0.00361	0.00780	0.00320	62	0.00293	0.00533
Transmission Segment 4: 230 kV	Light-Duty Truck, catalyst	24	35	80	15.13	1.39	0.77	0.02	0.21	0.09	0.20	0.08	1600.53	0.08	0.14		132	0.50	0.05	0.02535	5.76E-04	0.00692	0.00309	0.00668	0.00274	53	0.00251	0.00457
Transmission Segment 2: 138/230 kV	Light-Duty Truck, catalyst	20	35	80	12.61	1.16	0.64	0.01	0.17	0.08	0.17	0.07	1333.78	0.06	0.12		132	0.42	0.04	0.02112	4.80E-04	0.00577	0.00258	0.00557	0.00228	44	0.00210	0.00381
Talega Substation - Below Grade	Light-Duty Truck, catalyst	8	35	80	5.04	0.46	0.26	0.01	0.07	0.03	0.07	0.01	533.51	0.03	0.05		66	0.17	0.02	0.00845	1.92E-04	0.00231	0.00103	0.00223	0.00047	18	0.00084	0.00152
Talega Substation - Substation Construction	Light-Duty Truck, catalyst	6	35	80	3.44	0.32	0.17	0.00	0.05	0.02	0.05	0.01	390.03	0.02	0.03		66	0.11	0.01	0.00570	1.44E-04	0.00172	0.00076	0.00167	0.00035	13	0.00063	0.00114
Capistrano Substation - Below Grade - Lower Yard	Light-Duty Truck, catalyst	15	35	80	8.59	0.79	0.43	0.01	0.13	0.06	0.13	0.03	975.09	0.05	0.09		66	0.28	0.03	0.01426	3.60E-04	0.00429	0.00190	0.00418	0.00088	32	0.00157	0.00286
Capistrano Substation - Substation Construction - Lower Yard	Light-Duty Truck, catalyst	8	35	80	4.15	0.39	0.21	0.01	0.07	0.03	0.07	0.01	502.48	0.03	0.05		66	0.14	0.01	0.00683	1.91E-04	0.00227	0.00100	0.00223	0.00047	17	0.00084	0.00152
Capistrano Substation - Below Grade - Upper Yard	Light-Duty Truck, catalyst	15	35	80	7.11	0.66	0.35	0.01	0.13	0.06	0.13	0.03	911.45	0.05	0.09		66	0.23	0.02	0.01156	3.59E-04	0.00425	0.00186	0.00418	0.00088	30	0.00157	0.00286
Capistrano Substation - Substation Construction - Upper Yard	Light-Duty Truck, catalyst	8	35	80	3.79	0.35	0.19	0.01	0.07	0.03	0.07	0.01	486.11	0.03	0.05		66	0.13	0.01	0.00616	1.91E-04	0.00226	0.00099	0.00223	0.00047	16	0.00084	0.00152

Operations	Vehicle Class	No. of Daily Workers Per Construction Phase	Speed (mph)	VMT (mi/vehicle-day)	Emissions, lbs/day												Work Days	Total Emissions, tons											
					CO	NOx	VOCs	SOx	PM10	PM2.5	Paved Road Fugitive Dust PM10	Paved Road Fugitive Dust PM2.5	CO2	CH4	N2O			CO	NOx	VOCs	SOx	PM10	PM2.5	Paved Road Fugitive Dust PM10	Paved Road Fugitive Dust PM2.5	CO2	CH4	N2O
Inspection and Maintenance	Light-Duty Truck, catalyst	10	35	40	3.57	12.50	0.24	1.28	0.04	0.02	0.05	0.02	338.83	0.02	0.03		250	0.22	0.78	0.01481	7.98E-02	0.00275	0.00124	0.00282	0.00116	21	0.00101	0.00181

Table A-12
Construction and Operational Truck Trip Emissions
South Orange County Reliability Project

Vehicle	Vehicle Class	Peak No. of Trucks per day	Speed (mph)	VMT (mi/vehicle-day)	CO Running Exhaust (g/mi)	NO_x Running Exhaust (g/mi)	ROG Running Exhaust (g/mi)	SOx Running Exhaust (g/mi)	PM10 Running Exhaust (g/mi)	PM10 Tire Wear (g/mi)	PM10 Brake Wear (g/mi)	PM2.5 Running Exhaust (g/mi)	PM2.5 Tire Wear (g/mi)	PM2.5 Brake Wear (g/mi)	CO2 Running Exhaust (g/mi)	CH4 Running Exhaust (g/mi)	N2O Running Exhaust (g/mi)	Emissions, lbs/day CO	NOx	VOCs	SOx	PM10	PM2.5	Paved Road Fugitive Dust PM10	Paved Road Fugitive Dust PM2.5	CO2	CH4	N2O	Construction Days/Total Deliveries	Total Emissions, tons CO	NOx	VOCs	SOx	PM10	PM2.5	Paved Road Fugitive Dust PM10	Paved Road Fugitive Dust PM2.5	CO2	CH4	N2O
Transmission Segment 4 69kV and 138 kV																																							
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	7	15	60	0.271736729	0.610084	0.051753579	0.003186	0.040573	0.007999958	0.036749816	0.037327	0.00199999	0.01574992	295.2811	0.016873246	0.01	0.25	0.56	0.05	0.00	0.08	0.05	0.04	0.01	273.41	0.02	0.01	110	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	15.04	0.00	0.00
2-ton Flatbed Truck/Water Truck	Heavy Duty Truck, Diesel	3	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.59	4.14	0.16	0.01	0.19	0.14	0.02	0.00	588.13	0.03	0.02	110	0.03	0.23	0.01	0.00	0.01	0.01	0.00	0.00	32.35	0.00	0.00
Concrete Trucks	Heavy Duty Truck, Diesel	4	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.79	5.52	0.21	0.01	0.26	0.19	0.03	0.01	784.18	0.04	0.02	110	0.04	0.30	0.01	0.00	0.01	0.01	0.00	0.00	43.13	0.00	0.00
Haul Trucks	Heavy Duty Truck, Diesel	7	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	1.38	9.66	0.37	0.01	0.45	0.33	0.05	0.01	1372.31	0.08	0.04		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal																		**3.02**	**19.89**	**0.78**	**0.03**	**0.99**	**0.71**	**0.15**	**0.03**	**3018.04**	**0.17**	**0.08**		**0.09**	**0.56**	**0.02**	**0.00**	**0.03**	**0.02**	**0.01**	**0.00**	**90.52**	**0.01**	**0.00**
Transmission Segment 1 138 kV																																							
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	7	15	60	0.271736729	0.610084	0.051753579	0.003186	0.040573	0.007999958	0.036749816	0.037327	0.00199999	0.01574992	295.2811	0.016873246	0.01	0.25	0.56	0.05	0.00	0.08	0.05	0.04	0.01	273.41	0.02	0.01	132	0.02	0.04	0.00	0.00	0.01	0.00	0.00	0.00	18.05	0.00	0.00
2-ton Flatbed Truck/Water Truck	Heavy Duty Truck, Diesel	3	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.59	4.14	0.16	0.01	0.19	0.14	0.02	0.00	588.13	0.03	0.02	132	0.04	0.27	0.01	0.00	0.01	0.01	0.00	0.00	38.82	0.00	0.00
Concrete Trucks	Heavy Duty Truck, Diesel	2	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.39	2.76	0.10	0.00	0.13	0.09	0.02	0.00	392.09	0.02	0.01	132	0.03	0.18	0.01	0.00	0.01	0.01	0.00	0.00	25.88	0.00	0.00
Haul Trucks	Heavy Duty Truck, Diesel	4	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.79	5.52	0.21	0.01	0.26	0.19	0.03	0.01	784.18	0.04	0.02		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal																		**2.03**	**12.99**	**0.52**	**0.02**	**0.66**	**0.47**	**0.11**	**0.02**	**2037.82**	**0.12**	**0.05**		**0.08**	**0.49**	**0.02**	**0.00**	**0.03**	**0.02**	**0.01**	**0.00**	**82.74**	**0.00**	**0.00**
Transmission Segment 3: Talega to Rancho San Juan 230 kB																																							
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	4	15	60	0.271736729	0.610084	0.051753579	0.003186	0.040573	0.007999958	0.036749816	0.037327	0.00199999	0.01574992	295.2811	0.016873246	0.01	0.14	0.32	0.03	0.00	0.05	0.03	0.02	0.00	156.24	0.01	0.00	132	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	10.31	0.00	0.00
2-ton Flatbed Truck	Heavy Duty Truck, Diesel	5	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.99	6.90	0.26	0.01	0.32	0.23	0.04	0.01	980.22	0.06	0.03	132	0.07	0.46	0.02	0.00	0.02	0.02	0.00	0.00	64.69	0.00	0.00
Concrete Trucks	Heavy Duty Truck, Diesel	3	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.59	4.14	0.16	0.01	0.19	0.14	0.02	0.00	588.13	0.03	0.02	132	0.04	0.27	0.01	0.00	0.01	0.01	0.00	0.00	38.82	0.00	0.00
Haul Trucks	Heavy Duty Truck, Diesel	5	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.99	6.90	0.26	0.01	0.32	0.23	0.04	0.01	980.22	0.06	0.03		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal																		**2.71**	**18.27**	**0.71**	**0.03**	**0.89**	**0.64**	**0.13**	**0.03**	**2704.82**	**0.15**	**0.07**		**0.11**	**0.75**	**0.03**	**0.00**	**0.04**	**0.03**	**0.01**	**0.00**	**113.82**	**0.01**	**0.00**
Transmission Segment 2: Rancho San Juan 230 kV																																							
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	4	15	60	0.271736729	0.610084	0.051753579	0.003186	0.040573	0.007999958	0.036749816	0.037327	0.00199999	0.01574992	295.2811	0.016873246	0.01	0.14	0.32	0.03	0.00	0.05	0.03	0.02	0.00	156.24	0.01	0.00	44	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	3.44	0.00	0.00
2-ton Flatbed Truck	Heavy Duty Truck, Diesel	3	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.59	4.14	0.16	0.01	0.19	0.14	0.02	0.00	588.13	0.03	0.02	44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	12.94	0.00	0.00
Concrete Trucks	Heavy Duty Truck, Diesel	3	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.59	4.14	0.16	0.01	0.19	0.14	0.02	0.00	588.13	0.03	0.02	44	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	12.94	0.00	0.00
Haul Trucks	Heavy Duty Truck, Diesel	4	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.79	5.52	0.21	0.01	0.26	0.19	0.03	0.01	784.18	0.04	0.02		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal																		**2.12**	**14.13**	**0.55**	**0.02**	**0.69**	**0.50**	**0.10**	**0.02**	**2116.68**	**0.12**	**0.05**		**0.03**	**0.19**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**29.32**	**0.00**	**0.00**
Transmission Segment 1: 230 kV																																							
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	3	15	60	0.271736729	0.610084	0.051753579	0.003186	0.040573	0.007999958	0.036749816	0.037327	0.00199999	0.01574992	295.2811	0.016873246	0.01	0.11	0.24	0.02	0.00	0.03	0.02	0.02	0.00	117.18	0.01	0.00	132	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	7.73	0.00	0.00
2-ton Flatbed Truck	Heavy Duty Truck, Diesel	4	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.79	5.52	0.21	0.01	0.26	0.19	0.03	0.01	784.18	0.04	0.02	132	0.05	0.36	0.01	0.00	0.02	0.01	0.00	0.00	51.76	0.00	0.00
Concrete Trucks	Heavy Duty Truck, Diesel	2	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.39	2.76	0.10	0.00	0.13	0.09	0.02	0.00	392.09	0.02	0.01	132	0.03	0.18	0.01	0.00	0.01	0.01	0.00	0.00	25.88	0.00	0.00
Haul Trucks	Heavy Duty Truck, Diesel	4	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.79	5.52	0.21	0.01	0.26	0.19	0.03	0.01	784.18	0.04	0.02		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal																		**2.08**	**14.05**	**0.54**	**0.02**	**0.68**	**0.49**	**0.10**	**0.02**	**2077.63**	**0.12**	**0.05**		**0.09**	**0.56**	**0.02**	**0.00**	**0.03**	**0.02**	**0.00**	**0.00**	**85.37**	**0.00**	**0.00**
Transmission Segment 4: 230 kV																																							
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	4	15	60	0.271736729	0.610084	0.051753579	0.003186	0.040573	0.007999958	0.036749816	0.037327	0.00199999	0.01574992	295.2811	0.016873246	0.01	0.14	0.32	0.03	0.00	0.05	0.03	0.02	0.00	156.24	0.01	0.00	132	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	10.31	0.00	0.00
2-ton Flatbed Truck	Heavy Duty Truck, Diesel	4	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.79	5.52	0.21	0.01	0.26	0.19	0.03	0.01	784.18	0.04	0.02	132	0.05	0.36	0.01	0.00	0.02	0.01	0.00	0.00	51.76	0.00	0.00
Concrete Trucks	Heavy Duty Truck, Diesel	2	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.39	2.76	0.10	0.00	0.13	0.09	0.02	0.00	392.09	0.02	0.01	132	0.03	0.18	0.01	0.00	0.01	0.01	0.00	0.00	25.88	0.00	0.00
Haul Trucks	Heavy Duty Truck, Diesel	4	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.79	5.52	0.21	0.01	0.26	0.19	0.03	0.01	784.18	0.04	0.02		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal																		**2.12**	**14.13**	**0.55**	**0.02**	**0.69**	**0.50**	**0.10**	**0.02**	**2116.68**	**0.12**	**0.05**		**0.09**	**0.57**	**0.02**	**0.00**	**0.03**	**0.02**	**0.00**	**0.00**	**87.95**	**0.01**	**0.00**
Transmission Segment 2: 138/230 kV																																							
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	4	15	60	0.271736729	0.610084	0.051753579	0.003186	0.040573	0.007999958	0.036749816	0.037327	0.00199999	0.01574992	295.2811	0.016873246	0.01	0.14	0.32	0.03	0.00	0.05	0.03	0.02	0.00	156.24	0.01	0.00	66	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.00	0.00
2-ton Flatbed Truck	Heavy Duty Truck, Diesel	3	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.59	4.14	0.16	0.01	0.19	0.14	0.02	0.00	588.13	0.03	0.02	66	0.02	0.14	0.01	0.00	0.01	0.01	0.00	0.00	19.41	0.00	0.00
Concrete Trucks	Heavy Duty Truck, Diesel	2	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.39	2.76	0.10	0.00	0.13	0.09	0.02	0.00	392.09	0.02	0.01	66	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	12.94	0.00	0.00
Haul Trucks	Heavy Duty Truck, Diesel	4	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.79	5.52	0.21	0.01	0.26	0.19	0.03	0.01	784.18	0.04	0.02		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal																		**1.92**	**12.75**	**0.50**	**0.02**	**0.63**	**0.45**	**0.09**	**0.02**	**1920.64**	**0.11**	**0.05**		**0.04**	**0.24**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**37.50**	**0.00**	**0.00**
Talega Substation - Site Development																																							
Haul Trucks	Heavy Duty Truck, Diesel	1	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.20	1.38	0.05	0.00	0.06	0.05	0.01	0.00	196.04	0.01	0.01	66	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.00	6.47	0.00	0.00
Subtotal																		**0.20**	**1.38**	**0.05**	**0.00**	**0.06**	**0.05**	**0.01**	**0.00**	**196.04**	**0.01**	**0.01**		**0.01**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.47**	**0.00**	**0.00**
Talega Substation - Below Grade																																							
Haul Trucks	Heavy Duty Truck, Diesel	5	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.99	6.90	0.26	0.01	0.32	0.23	0.04	0.01	980.22	0.06	0.03	22	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	10.78	0.00	0.00
Concrete Trucks	Heavy Duty Truck, Diesel	5	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.99	6.90	0.26	0.01	0.32	0.23	0.04	0.01	980.22	0.06	0.03	22	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	10.78	0.00	0.00
Subtotal																		**1.97**	**13.81**	**0.52**	**0.02**	**0.65**	**0.47**	**0.08**	**0.02**	**1960.45**	**0.11**	**0.05**		**0.02172**	**0.15187**	**0.00576**	**0.00021**	**0.00712**	**0.00515**	**0.00086**	**0.00018**	**21.56492**	**0.00123**	**0.00055**
Talega Substation - Substation Construction																																							
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	3	15	60	0.271736729	0.610084	0.051753579	0.003186	0.040573	0.007999958	0.036749816	0.037327	0.00199999	0.01574992	295.2811	0.016873246	0.01	0.11	0.24	0.02	0.00	0.03	0.02	0.02	0.00	117.18	0.01	0.00	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00	0.00
Subtotal																		**0.11**	**0.24**	**0.02**	**0.00**	**0.03**	**0.02**	**0.02**	**0.00**	**117.18**	**0.01**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.29**	**0.00**	**0.00**
Capistrano Substation - Building Removal - Lower Yard																																							
2-ton Flatbed Truck	Heavy Duty Truck, Diesel	1	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.20	1.38	0.05	0.00	0.06	0.05	0.01	0.00	196.04	0.01	0.01	44	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	4.31	0.00	0.00
Haul Trucks	Heavy Duty Truck, Diesel	8	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	1.58	11.05	0.42	0.02	0.52	0.37	0.06	0.01	1568.36	0.09	0.04	44	0.03	0.24	0.01	0.00	0.01	0.01	0.00	0.00	34.50	0.00	0.00
Subtotal																		**1.78**	**12.43**	**0.47**	**0.02**	**0.58**	**0.42**	**0.07**	**0.01**	**1764.40**	**0.10**	**0.05**		**0.03910**	**0.27337**	**0.01036**	**0.00037**	**0.01282**	**0.00927**	**0.00155**	**0.00033**	**38.81686**	**0.00222**	**0.00099**
Capistrano Substation - Site Development - Lower Yard																																							
Haul Trucks	Heavy Duty Truck, Diesel	30	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	5.92	41.42	1.57	0.06	1.94	1.41	0.24	0.05	5881.34	0.34	0.15	132	0.39	2.73	0.10	0.00	0.13	0.09	0.02	0.00	388.17	0.02	0.01
Subtotal																		**5.92**	**41.42**	**1.57**	**0.06**	**1.94**	**1.41**	**0.24**	**0.05**	**5881.34**	**0.34**	**0.15**		**0.39**	**2.73**	**0.10**	**0.00**	**0.13**	**0.09**	**0.02**	**0.00**	**388.17**	**0.02**	**0.01**
Capistrano Substation - Below Grade - Lower Yard																																							
Haul Trucks	Heavy Duty Truck, Diesel	40	35	80	0.686273292	7.366718	0.182654971	0.010752	0.125648	0.011999937	0.130339319	0.115597	0.002999984	0.055859708	1110.091	0.06343393	0.03	4.84	51.97	1.29	0.08	1.89	1.23	0.31	0.07	7831.50	0.45	0.20	110	0.27	2.86	0.07	0.00	0.10	0.07	0.02	0.00	430.73	0.02	0.01
Concrete Trucks	Heavy Duty Truck, Diesel	60	35	80	0.686273292	7.366718	0.18265497	0.010752	0.125648	0.011999937	0.130339319	0.115597	0.002999984	0.055859708	1110.091	0.06343393	0.03	7.26	77.96	1.93	0.11	2.84	1.85	0.47	0.10	11747.25	0.67	0.30	132	0.48	5.15	0.13	0.01	0.19	0.12	0.03	0.01	775.32	0.04	0.02
Subtotal																		**12.10**	**129.93**	**3.22**	**0.19**	**4.73**	**3.08**	**0.78**	**0.16**	**19578.76**	**1.12**	**0.50**		**0.74560**	**8.00352**	**0.19844**	**0.01168**	**0.29115**	**0.18954**	**0.04836**	**0.01015**	**########**	**0.06892**	**0.03089**
Capistrano Substation - Substation Construction - Lower Yard																																							
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	4	15	60	0.248482951	0.577369	0.046237628	0.003179	0.036207	0.007999958	0.036749816	0.03331	0.00199999	0.01574992	287.8844	0.016450576	0.01	0.13	0.31	0.02	0.00	0.04	0.03	0.02	0.00	152.32	0.01	0.00	286	0.02	0.04	0.00	0.00	0.01	0.00	0.00	0.00	21.78	0.00	0.00
Subtotal																		**0.13**	**0.31**	**0.02**	**0.00**	**0.04**	**0.03**	**0.02**	**0.00**	**152.32**	**0.01**	**0.00**		**0.02**	**0.04**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**21.78**	**0.00**	**0.00**
Capistrano Substation - Relay Testing - Lower Yard																																							
Relay/Telecommunication Va	Light Duty Truck 1, Diesel	2	15	60	0.248482951	0.577369	0.046237628	0.003179	0.036207	0.007999958	0.036749816	0.03331	0.00199999	0.01574992	287.8844	0.016450576	0.01	0.07	0.15	0.01	0.00	0.02	0.01	0.01	0.00	76.16	0.00	0.00	132	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.00	0.00
Subtotal																		**0.07**	**0.15**	**0.01**	**0.00**	**0.02**	**0.01**	**0.01**	**0.00**	**76.16**	**0.00**	**0.00**		**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.03**	**0.00**	**0.00**
Capistrano Substation - Energization - Lower Yard																																							
Relay/Telecommunication Va	Light Duty Truck 1, Diesel	2	15	60	0.248482951	0.577369	0.046237628	0.003179	0.036207	0.007999958	0.036749816	0.03331	0.00199999	0.01574992	287.8844	0.016450576	0.01	0.07	0.15	0.01	0.00	0.02	0.01	0.01	0.00	76.16	0.00	0.00	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00
Subtotal																		**0.07**	**0.15**	**0.01**	**0.00**	**0.02**	**0.01**	**0.01**	**0.00**	**76.16**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.84**	**0.00**	**0.00**
Capistrano Substation - Energize Temporary TL13835 - Lower Yard																																							
Relay/Telecommunication Va	Light Duty Truck 1, Diesel	2	15	60	0.248482951	0.577369	0.046237628	0.003179	0.036207	0.007999958	0.036749816	0.03331	0.00199999	0.01574992	287.8844	0.016450576	0.01	0.07	0.15	0.01	0.00	0.02	0.01	0.01	0.00	76.16	0.00	0.00	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00
Subtotal																		**0.07**	**0.15**	**0.01**	**0.00**	**0.02**	**0.01**	**0.01**	**0.00**	**76.16**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.84**	**0.00**	**0.00**
Capistrano Substation - Remove RFS 138/12 kV Equipment - 230 kV																																							
Haul Trucks	Heavy Duty Truck, Diesel	5	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	0.99	6.90	0.26	0.01	0.32	0.23	0.04	0.01	980.22	0.06	0.03	22	0.01	0.08	0.00

Table A-12
Construction and Operational Truck Trip Emissions
South Orange County Reliability Project

Subtotal																		**2.04**	**13.96**	**0.54**	**0.02**	**0.67**	**0.48**	**0.09**	**0.02**	**2036.61**	**0.12**	**0.05**		**0.02**	**0.16**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**23.24**	**0.00**	**0.00**
Capistrano Substation - Site Development - 230 kV																																									
Haul Trucks	Heavy Duty Truck, Diesel	8	35	80	1.119564193	7.828027	0.296728351	0.010712	0.224693	0.011999937	0.130339319	0.206717	0.002999984	0.055859708	1111.549	0.06351726	0.03	1.58	11.05	0.42	0.02	0.52	0.37	0.06	0.01	1568.36	0.09	0.04	66	0.05	0.36	0.01	0.00	0.02	0.01	0.00	0.00	51.76	0.00	0.00
Subtotal																		**1.58**	**11.05**	**0.42**	**0.02**	**0.52**	**0.37**	**0.06**	**0.01**	**1568.36**	**0.09**	**0.04**		**0.05**	**0.36**	**0.01**	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**51.76**	**0.00**	**0.00**
Capistrano Substation - Below Grade - 230 kV																																									
Haul Trucks	Heavy Duty Truck, Diesel	30	35	80	0.686273292	7.366718	0.182654971	0.010752	0.125648	0.011999937	0.130339319	0.115597	0.002999984	0.055859708	1110.091	0.06343393	0.03	3.63	38.98	0.97	0.06	1.42	0.92	0.24	0.05	5873.63	0.34	0.15	88	0.16	1.72	0.04	0.00	0.06	0.04	0.01	0.00	258.44	0.01	0.01
Concrete Trucks	Heavy Duty Truck, Diesel	45	35	80	0.686273292	7.366718	0.182654971	0.010752	0.125648	0.011999937	0.130339319	0.115597	0.002999984	0.055859708	1110.091	0.06343393	0.03	5.45	58.47	1.45	0.09	2.13	1.38	0.35	0.07	8810.44	0.50	0.23	132	0.36	3.86	0.10	0.01	0.14	0.09	0.02	0.00	581.49	0.03	0.01
Subtotal																		**9.08**	**97.45**	**2.42**	**0.14**	**3.54**	**2.31**	**0.59**	**0.12**	**14684.07**	**0.84**	**0.38**		**0.51926**	**5.57388**	**0.13820**	**0.00814**	**0.20277**	**0.13200**	**0.03368**	**0.00707**	**839.92863**	**0.04800**	**0.02152**
Capistrano Substation - Substation Construction - 230 kV																																									
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	4	15	60	0.248482951	0.577369	0.046237628	0.003179	0.036207	0.007999958	0.036749816	0.03331	0.00199999	0.01574992	287.8844	0.016450576	0.01	0.13	0.31	0.02	0.00	0.04	0.03	0.02	0.00	152.32	0.01	0.00	220	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	16.76	0.00	0.00
Subtotal																		**0.13**	**0.31**	**0.02**	**0.00**	**0.04**	**0.03**	**0.02**	**0.00**	**152.32**	**0.01**	**0.00**		**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**16.76**	**0.00**	**0.00**
Capistrano Substation - Relay Testing - 230 kV																																									
Relay/Telecommunication Va	Light Duty Truck 1, Diesel	2	15	60	0.248482951	0.577369	0.046237628	0.003179	0.036207	0.007999958	0.036749816	0.03331	0.00199999	0.01574992	287.8844	0.016450576	0.01	0.07	0.15	0.01	0.00	0.02	0.01	0.01	0.00	76.16	0.00	0.00	110	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	4.19	0.00	0.00
Subtotal																		**0.07**	**0.15**	**0.01**	**0.00**	**0.02**	**0.01**	**0.01**	**0.00**	**76.16**	**0.00**	**0.00**		**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.19**	**0.00**	**0.00**
Capistrano Substation - De-energize Temporary TL 13835- 230 kV																																									
Relay/Telecommunication Va	Light Duty Truck 1, Diesel	2	15	60	0.248482951	0.577369	0.046237628	0.003179	0.036207	0.007999958	0.036749816	0.03331	0.00199999	0.01574992	287.8844	0.016450576	0.01	0.07	0.15	0.01	0.00	0.02	0.01	0.01	0.00	76.16	0.00	0.00	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.00
Subtotal																		**0.07**	**0.15**	**0.01**	**0.00**	**0.02**	**0.01**	**0.01**	**0.00**	**76.16**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.38**	**0.00**	**0.00**
Capistrano Substation - Energization - 230 kV																																									
Relay/Telecommunication Va	Light Duty Truck 1, Diesel	2	15	60	0.248482951	0.577369	0.046237628	0.003179	0.036207	0.007999958	0.036749816	0.03331	0.00199999	0.01574992	287.8844	0.016450576	0.01	0.07	0.15	0.01	0.00	0.02	0.01	0.01	0.00	76.16	0.00	0.00	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00
Subtotal																		**0.07**	**0.15**	**0.01**	**0.00**	**0.02**	**0.01**	**0.01**	**0.00**	**76.16**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.84**	**0.00**	**0.00**

			Speed	VMT	CO	NO_X	ROG	SOx	PM10			PM2.5			CO2	CH4	N2O	Emissions, lbs/day												Total Emissions, tons										
Operational Vehicles	**Vehicle Class**	**Peak No. of Trucks per day**	**(mph)**	**(mi/vehicle-day)**	**Running Exhaust (g/mi)**	**Running Exhaust (g/mi)**	**Running Exhaust (g/mi)**	**Running Exhaust (g/mi)**	**Running Exhaust (g/mi)**	**Tire Wear (g/mi)**	**Brake Wear (g/mi)**	**Running Exhaust (g/mi)**	**Tire Wear (g/mi)**	**Brake Wear (g/mi)**	**Running Exhaust (g/mi)**	**Running Exhaust (g/mi)**	**Running Exhaust (g/mi)**	**CO**	**NOx**	**VOCs**	**SOx**	**PM10**	**PM2.5**	**Paved Road Fugitive Dust PM10**	**Paved Road Fugitive Dust PM2.5**	**CO2**	**CH4**	**N2O**	**Support Days**	**CO**	**NOx**	**VOCs**	**SOx**	**PM10**	**PM2.5**	**Paved Road Fugitive Dust PM10**	**Paved Road Fugitive Dust PM2.5**	**CO2**	**CH4**	**N2O**
Support/Delivery Vehicles																																								
3/4 Ton Truck, Pick-Up	Light Duty Truck 1, Diesel	2	15	60	0.271736729	0.610084	0.051753579	0.003186	0.040573	0.007999958	0.036749816	0.037327	0.00199999	0.01574992	295.2811	0.016873246	0.01	0.07	0.16	0.01	0.00	0.02	0.01	0.01	0.00	78.12	0.00	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	0.0001	0.0000

2012 Emission Factors from EMFAC2007,
average temp 60F; SCAB

Paved Road Fugitive Dust
EPA's AP-42, Section 13.2.1, November 2006
E = k(sL/2)^0.65 x (W/3)^1.5 - C
For LDT assume 2 tons/vehicle, MDT assume 13 tons/vehicle, HDT assume 20 tons/vehicle
Assume silt loading for 10,000 ADT roadways = 0.03 g/m3
Assume k = 0.016 PM10
Assume 6 miles in addition for track-out for PM10
Emission Factors

PM10, LDT	9.81231E-05
PM10, MDT	0.008944829
PM10, HDT	0.017495628

Table A-13
Helicopter Emissions
South Orange County Reliability Enhancement Project

Helicopter Emissions Calculation

Assumptions

1 structure/day

- heavy lift helicopter: 2 hours per structure
- light lift helicopter: 10 hours per structure

NOX (lbs/day)	VOC/ROG (lbs/day)	PM (lbs/day)	CO (lbs/day)	SOX (lbs/day)	CO2 (lbs/day)	NOX (tons)	VOC/ROG (tons)	PM (tons)	CO (tons)	SOX (tons)	CO2 (tons)
66.8874	12.8308	22.1092	66.8874	12.3147	30084.6428	0.6689	0.1283	0.2211	0.6689	0.1231	300.8464

Transmission Line

Structures 5

Primary Equipment Description	HP Estimate	Fuel Type	Activity Schedule Estimate (Days)	Duration of Use (Hours/ Day)	Work Flight Cycles/ Day	Refuel Flight Cycles/ Day	Total Flight Cycles	NOX (lbs)	VOC/ROG (lbs)	PM (lbs)	CO (lbs)	SOX (lbs)	CO2 (lbs)	NOX (tons)	VOC/ROG (tons)	PM (tons)	CO (tons)	SOX (tons)	CO2 (tons)
							339												
Light Duty/Crew Helicopter	1200	Jet A	140	10	40	10	303	27.9230	6.8125	10.4579	27.9230	6.5795	16073.5950	0.2792	0.0681	0.1046	0.2792	0.0658	160.7360
Heavy Lift Helicopter	9000		140	2	5	2	37	38.9644	6.0183	11.6513	38.9644	5.7352	14011.0478	0.3896	0.0602	0.1165	0.3896	0.0574	140.1105

Table A-14
Helicopter Emission Factors
South Orange County Reliability Enhancement Project

Helicopter Emission Factors

CO, VOC, NOx, and Sox helicopter emissions are calculated using EDMS 5.1 emission factors.

PM helicopter emissions are calculated using factors provided in *Volume 4, Procedures for Emissions Inventory Preparation, EPA420R-92-009.*

CO2 helicopter emissions are calculated using CCAR reccomended factor 9.57 kg CO2/gallon jet fuel.

Flight cycles based on estimates from Sargent & Lundy and calculated to: 16.43 minutes for heavy lift, 16.43 minutes for medium lift, and 9.92 minutes for light lift helicopters.

Helicopter operating modes, as percentages of total engine run time, are estimated as follows:

Taxi Out	10%
Takeoff	5%
Climbout	10%
Approach/Cruising	65%
Taxi In	10%

Density Jet A .8 kg/L

CO2 emission factor 9.57 kg CO2/gal jet fuel 3156.33 g/kg jet fuel @ 15C

Helicopter Model	Actual Engine	Actual Engine HP	Model Engine	Model Engine HP	Operating Mode	Fuel Flow, kg/s	Time in Mode per Cycle, min	Emission Indices, g/kg fuel						Emissions Per Mode, lbs/engine-cycle						Emissions Per Mode, lbs/cycle					
								CO	VOC	NOx	SOx	PM	CO2	CO	VOC	NOx	SOx	PM	CO2	CO	VOC	NOx	SOx	PM	CO2
Heavy Lift Helicopter																									
Boeing 234 UT	Avro Lycoming AL5512	two 4200	T64-GE-413 /	3925	Taxi Out	0.03608	1.64	2.620	19.876	2.620	1.292	2.920	3156.332	0.021	0.156	0.021	0.010	0.023	24.748	0.041	0.312	0.041	0.020	0.046	49.496
Sikorsky S-64F	PW JFTD12A-5A	two 4800	T56-A7 (PM)	4050	Takeoff	0.207921	2.46	11.020	0.356	11.020	1.292	1.780	3156.332	0.747	0.024	0.747	0.088	0.121	213.924	1.494	0.048	1.494	0.175	0.241	427.848
Sikorsky S-64E	PW JFTD12A-4	two 4500			Approach /Worl	0.165387	10.68	8.540	0.403	8.540	1.292	2.850	3156.332	1.995	0.094	1.995	0.302	0.666	737.369	3.990	0.188	3.990	0.604	1.332	1474.739
					Taxi In	0.03608	1.64	2.620	19.876	2.620	1.292	2.920	3156.332	0.021	0.156	0.021	0.010	0.023	24.748	0.041	0.312	0.041	0.020	0.046	49.496
Total							16.43													**5.566**	**0.860**	**5.566**	**0.819**	**1.664**	**2001.578**
Light Duty/Crew Helicopter																									
Sikorsky S-58T	PW PT6T6	one 1875	PW PT6A-42 /	850	Taxi Out	0.012958	0.99	2.160	20.030	2.160	1.292	2.900	3156.332	0.004	0.034	0.004	0.002	0.005	5.365	0.007	0.068	0.007	0.004	0.010	10.730
Hughes 500E	Allison 250-C20B/R	one 450	TPE 331-3 (PM)	575	Takeoff	0.1193	0.50	7.299	0.000	7.299	1.292	1.750	3156.332	0.057	0.000	0.057	0.010	0.014	24.697	0.114	0.000	0.114	0.020	0.027	49.394
					Climbout	0.116844	0.99	7.330	0.000	7.330	1.292	1.470	3156.332	0.112	0.000	0.112	0.020	0.023	48.377	0.225	0.000	0.225	0.040	0.045	96.755
					Approach	0.028586	6.45	4.202	0.001	4.202	1.292	2.400	3156.332	0.102	0.000	0.102	0.031	0.058	76.931	0.205	0.000	0.205	0.063	0.117	153.863
					Taxi In	0.012958	0.99	2.160	20.030	2.160	1.292	2.900	3156.332	0.004	0.034	0.004	0.002	0.005	5.365	0.007	0.068	0.007	0.004	0.010	10.730
Total							9.92													**0.558**	**0.136**	**0.558**	**0.132**	**0.209**	**321.472**

Table A-15
Fugitive Dust Emission Calculations
South Orange County Reliability Project
Substation Construction

Activity Assumptions for Fugitive Dust Sources

Phase 1 Substation Below Grade

Amount total import fill material	9600	cubic yards total
Amount per day	1920	cubic yards/day

	PM10	PM2.5
Maximum Emission Factor, lbs/cubic yard	0.0045768	0.001438424
Emissions, lbs/day	26.362388	8.285321855
Average Emission Factor, lbs/cubic yard	0.0010405	0.000327026
Emissions, tons/year	0.0149837	0.00470917

Phase 2 Substation Below Grade

Amount total cut/fill material	11900	cubic yards total
Amount per day	2380	cubic yards/day

	PM10	PM2.5
Maximum Emission Factor, lbs/cubic yard	0.0045768	0.001438424
Emissions, lbs/day	32.678376	10.27034688
Average Emission Factor, lbs/cubic yard	0.0010405	0.000327026
Emissions, tons/year	0.0185736	0.005837409

Material Loading/Handling (AP-42, p. 13.2.4-3)

$E = (k)(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$
E = lb/ton
k = Particle Size Constant (0.35 for PM10 and 0.11 for PM2.5)
U = average wind speed = 25 MPH worst day, 8 MPH avg daytime (engineering assumption)
M = moisture content = 10% (mitigated)
Three separate drops are assumed
Assume 1.6 tons/cubic yard

Emission Factors and Emissions
Emission Factors

PM10 Daily	PM2.5 Daily
0.00286	0.00090

PM10 Annual Average	PM2.5 Annual Average
0.00065	0.00020

Substation Grading

Amount total disturbed	5	acres
Amount per day	5	Acres
Control - watering 3 x daily	0.61	

	PM10	PM2.5
Maximum Emission Factor, lbs/acre-day	20	4.2
Emissions, lbs/day	39	8.19
Average Emission Factor, lbs/acre-day	20	4.2
Emissions, tons/year	0.0195	0.004095

A) Dozing (AP-42 Section 11.9 for overburden)

$E = k \times (s)^{1.5} / (M)^{1.4}$ For PM10 and $k \times 5.7 \times (s)^{1.2} / (M)^{1.3}$ for PM2.5
E = lb/hr
k = Scaling Constant (0.75 for PM10 and 0.105 for PM2.5)
s = Silt Content (assumed to be 16% - SCAQMD Handbook for Farm Roads)
M = Moisture Content = 10% (assumes watering when necessary for mitigation)

PM10 Emission Factor
1.910914419 lb/hr

PM2.5 Emission Factor
0.835618668 lb/hr

Maximum Daily Dozer Use

	Hrs/day
	12

Dozer Emissions

Lbs/Day	PM10	PM2.5
	22.93	10.03

B) Grading

Amount total disturbed	5	acres
Amount per day	5	Acres
Control - watering 3 x daily	0.61	

	PM10	PM2.5
Maximum Emission Factor, lbs/acre-day	20	4.2
Emissions, lbs/day	39	8.19
Average Emission Factor, lbs/acre-day	20	4.2
Emissions, tons/year	0.0195	0.004095

Fugitive Dust Grading Emission Totals

	Maximum Day PM10 lb/day	Maximum Day PM2.5 lb/day
Dozer	22.93	10.03
Grading	39.00	8.19

Maximum Daily	Totals	61.93	18.22
Talega Substation	Ton/year	4.09	1.20
Capistrano Substation Lower Yard	Ton/year	8.17	2.40
Capistrano Substation Upper Yard	Ton/year	6.81	2.00

Table A-16
Fugitive Dust Emission Calculations
South Orange County Reliability Project
Transmission Line Construction

Fugitive Dust Emissions - Maximum Daily, Transmission Line Construction

Emission Categories
1) Earthmoving
2) Road Dust Paved/Unpaved

1) Earthmoving

Emission Types
A) Dozing
B) Grading
C) Material Loading/Handling

A) Dozing (AP-42 Section 11.9 for overburden)

$E = k \times (s)^{1.5} / (M)^{1.4}$ For PM10 and $k \times 5.7 \times (s)^{1.2} / (M)^{1.3}$ for PM2.5
E = lb/hr
k = Scaling Constant (0.75 for PM10 and 0.105 for PM2.5)
s = Silt Content (assumed to be 16% - SCAQMD Handbook for Farm Roads)
M = Moisture Content = 10% (assumes watering when necessary for mitigation)

PM10 Emission Factor
1.910914419 lb/hr

PM2.5 Emission Factor
0.835618668 lb/hr

Maximum Daily Dozer Use

	Hrs/day
	12

Dozer Emissions

Lbs/Day	PM10	PM2.5
	22.93	10.03

B) Grading

Transmission Grading
Amount total disturbed 3.43 acres
Amount per day 0.343 Acres
Control - watering 3 x daily 0.61

	PM10	PM2.5
Maximum Emission Factor, lbs/acre-day	20	4.2
Emissions, lbs/day	2.6754	0.561834
Average Emission Factor, lbs/acre-day	20	4.2
Emissions, tons/year	0.013377	0.00280917

A) Dozing (AP-42 Section 11.9 for overburden)

$E = k \times (s)^{1.5} / (M)^{1.4}$ For PM10 and $k \times 5.7 \times (s)^{1.2} / (M)^{1.3}$ for PM2.5
E = lb/hr
k = Scaling Constant (0.75 for PM10 and 0.105 for PM2.5)
s = Silt Content (assumed to be 16% - SCAQMD Handbook for Farm Roads)
M = Moisture Content = 10% (assumes watering when necessary for mitigation)
$E = k \times 0.051 \times (S)^{2.0}$ for PM10 and $k \times 0.040 \times (S)^{2.5}$ for PM2.5
E = lb/VMT
k = Scaling Constant (0.60 for PM10 and 0.031 for PM2.5)
S = Mean Vehicle Speed assumed to be 3 mph
Assumes VMT = 3 x hours in use

PM10 Emission Factor
0.2754 lb/VMT

PM2.5 Emission Factor
0.019329687 lb/VMT

Maximum Daily Grader VMT

	Hrs/day	VMT/day
	4	12

Grading Emissions

Lbs/Day	PM10	PM2.5
	3.30	0.23

C) Material Loading/Handling (AP-42, p. 13.2.4-3)

$E = (k)(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$
E = lb/ton
k = Particle Size Constant (0.35 for PM10 and 0.11 for PM2.5)
U = average wind speed = 26.5 MPH worst day, 6.4 MPH avg from Norco Met File
M = moisture content = 10% (mitigated)
Three separate drops are assumed

Max Daily 54 Maximum daily tons

Emission Factors and Emissions

Emission Factors		Emissions lbs/day	
PM10 Daily	PM2.5 Daily	PM10	PM2.5
0.00103	0.00032	0.06	0.02

Transmission Earthmoving		
Amount total import/export fill material	11655	cubic yards total
Amount per day	2330	cubic yards/day
	PM10	PM2.5
Maximum Emission Factor, lbs/cubic yard	0.004576803	0.001438424
Emissions, lbs/day	31.99185593	10.05458329
Average Emission Factor, lbs/cubic yard	0.001040536	0.000327026
Emissions, tons/year	0.018191176	0.005717227

Material Loading/Handling (AP-42, p. 13.2.4-3)

$E = (k)(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$
E = lb/ton
k = Particle Size Constant (0.35 for PM10 and 0.11 for PM2.5)
U = average wind speed = 25 MPH worst day, 8 MPH avg daytime (engineering assumption)
M = moisture content = 10% (mitigated)
Three separate drops are assumed
Assume 1.6 tons/cubic yard

Material Loading/Handling (AP-42, p. 13.2.4-3)

$E = (k)(0.0032)[(U/5)^{1.3}]/[(M/2)^{1.4}]$
E = lb/ton
k = Particle Size Constant (0.35 for PM10 and 0.11 for PM2.5)
U = average wind speed = 25 MPH worst day, 8 MPH avg daytime (engineering assumption)
M = moisture content = 10% (mitigated)
Three separate drops are assumed
Assume 1.6 tons/cubic yard

Emission Factors and Emissions
Emission Factors

PM10 Daily	**PM2.5 Daily**
0.00286	0.00090
PM10 Annual Average	**PM2.5 Annual Average**
0.00065	0.00020

2) Disturbed Area Windblown Emissions
Assumption

PM10	PM2.5
29	6

Fugitive Dust Emission Totals

		Maximum Day	
		PM10 lb/day	PM2.5 lb/day
Dozer		22.93	10.03
Grading		5.98	0.79
Soil Handling		31.99	10.05
Wind Blown Dust		28.87	5.91
	Totals	89.77	26.79
Total, tons/year			
Transmission Segment 4 69kV and 138 kV		6.91	2.06
Transmission Segment 1 138 kV		5.92	1.77
Transmission Segment 3: Talega to Rancho San Juan 230 kB		1.97	0.59
Transmission Segment 2: Rancho San Juan 230 kV		3.95	1.18
Transmission Segment 1: 230 kV		2.96	0.88
Transmission Segment 4: 230 kV		3.95	1.18
Transmission Segment 2: 138/230 kV		3.95	1.18

Table A-17
Construction Emission Summary
South Orange County Reliability Project
Substation Construction

Summary	Emissions									Emission, tons (total)								
Talega Substation Site Development	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0
Worker Vehicles	0.26	5.04	0.46	0.01	0.14	0.05	533.51	0.03	0.05	0.17	0.02	0.01	0.00	0.00	0.00	18	0.00	0.00
Construction Trucks	0.05	0.20	1.38	0.00	0.07	0.05	196.04	0.01	0.01	0.00	0.01	0.05	0.00	0.00	0.00	6	0.00	0.00
Fugitive Dust					61.93	18.22								4.09	1.20			
Total Daily	**0.31**	**5.24**	**1.85**	**0.01**	**62.14**	**18.31**	**729.56**	**0.04**	**0.05**	**0.17**	**0.02**	**0.05**	**0.00**	**4.09**	**1.21**	**24.08**	**0.00**	**0.00**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Talega Substation Below Grade	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	4.27	17.37	35.27	0.05	1.67	1.49	4456.85	0.39	3.35	0.072791	0.307398	0.603561	0.000872	0.028042	0.024958	76.79114	0.006568	0.057338
Worker Vehicles	0.26	5.04	0.46	0.01	0.14	0.05	533.51	0.03	0.05	0.17	0.02	0.01	0.00	0.00	0.00	18	0.00	0.00
Construction Trucks	0.52	1.97	13.81	0.02	0.73	0.48	1960.45	0.11	0.05	0.01	0.02	0.15	0.00	0.01	0.01	22	0.00	0.00
Fugitive Dust					26.36	8.29								0.01	0.00			
Total Daily	**5.05**	**24.39**	**49.54**	**0.08**	**28.90**	**10.31**	**6950.81**	**0.52**	**3.45**	**0.24**	**0.34**	**0.76**	**0.00**	**0.06**	**0.04**	**115.96**	**0.01**	**0.06**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Talega Substation Construction	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	2.45	8.25	18.09	0.03	0.78	0.69	2637.41	0.22	1.72	0.097274	0.336943	0.654107	0.000972	0.032835	0.029224	87.94302	0.008777	0.06214
Worker Vehicles	0.17	3.44	0.32	0.00	0.10	0.03	390.03	0.02	0.03	0.11	0.01	0.01	0.00	0.00	0.00	13	0.00	0.00
Construction Trucks	0.02	0.11	0.24	0.00	0.05	0.03	117.18	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00	0.00
Total Daily	**2.64**	**11.79**	**18.65**	**0.03**	**0.93**	**0.75**	**3144.63**	**0.25**	**1.76**	**0.21**	**0.35**	**0.66**	**0.00**	**0.04**	**0.03**	**102.10**	**0.01**	**0.06**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Building Removal - Lower Yard	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	3.76	11.90	32.00	0.05	1.22	1.09	4368.97	0.34	3.04	0.072434	0.226848	0.610133	0.000894	0.023413	0.020838	84.2306	0.006536	0.057963
Worker Vehicles	0.21	0.01	0.07	0.03	0.14	0.04	502.48	0.03	0.05	0.14	0.01	0.01	0.00	0.00	0.00	17	0.00	0.00
Construction Trucks	0.47	1.78	12.43	0.02	0.65	0.44	1764.40	0.10	0.05	0.01	0.04	0.27	0.00	0.01	0.01	39	0.00	0.00
Fugitive Dust					39.00	8.19								0.02	0.00			
Total Daily	**4.44**	**13.68**	**44.50**	**0.09**	**41.01**	**9.76**	**6635.85**	**0.47**	**3.13**	**0.22**	**0.28**	**0.89**	**0.00**	**0.06**	**0.04**	**139.63**	**0.01**	**0.06**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Site Development - Lower Yard	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	40.76	128.91	360.93	0.50	12.82	11.41	45756.51	3.68	34.29	2.391771	7.33631	21.20645	0.029807	0.744153	0.662296	2722.489	0.215806	2.014613
Worker Vehicles	0.43	8.59	0.79	0.01	0.26	0.08	975.09	0.05	0.09	0.28	0.03	0.01	0.00	0.01	0.00	32	0.00	0.00
Construction Trucks	1.57	5.92	41.42	0.06	2.18	1.45	5881.34	0.34	0.15	0.10	0.39	2.73	0.00	0.14	0.10	388	0.02	0.01
Fugitive Dust					61.93	18.22								8.17	2.40			
Total Daily	**42.76**	**143.42**	**403.14**	**0.56**	**77.19**	**31.17**	**52612.94**	**4.06**	**34.53**	**2.78**	**7.75**	**23.95**	**0.03**	**9.07**	**3.17**	**3142.84**	**0.24**	**2.03**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Below Grade - Lower Yard	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	12.55	42.66	103.07	0.17	3.95	3.52	15026.87	1.13	9.79	0.63224	2.189933	5.060315	0.008075	0.209834	0.186752	713.2262	0.057046	0.48073
Worker Vehicles	0.43	8.59	0.79	0.01	0.26	0.08	975.09	0.05	0.09	0.28	0.03	0.01	0.00	0.01	0.00	32	0.00	0.00
Construction Trucks	3.22	12.10	129.93	0.19	5.51	3.24	19578.76	1.12	0.50	0.20	0.75	8.00	0.01	0.34	0.20	1206	0.07	0.03
Fugitive Dust					26.36	8.29								0.01	0.00			
Total Daily	**16.21**	**63.35**	**233.79**	**0.37**	**36.08**	**15.13**	**35580.71**	**2.30**	**10.38**	**1.11**	**2.96**	**13.08**	**0.02**	**0.57**	**0.39**	**1951.46**	**0.13**	**0.51**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Construction - Lower Yard	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	12.74	40.28	102.40	0.19	3.65	3.25	16949.36	1.15	9.73	0.601196	2.073288	4.930517	0.008763	0.194846	0.173413	783.293	0.054245	0.468399
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04	502.48	0.03	0.05	0.14	0.01	0.01	0.00	0.00	0.00	17	0.00	0.00
Construction Trucks	0.02	0.13	0.31	0.00	0.07	0.03	152.32	0.01	0.00	0.00	0.02	0.04	0.00	0.01	0.00	22	0.00	0.00
Total Daily	**12.97**	**44.56**	**103.09**	**0.20**	**3.85**	**3.32**	**17604.16**	**1.18**	**9.78**	**0.74**	**2.10**	**4.98**	**0.01**	**0.21**	**0.18**	**821.66**	**0.06**	**0.47**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Relay Testing - Lower Yard	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	0.24	0.73	1.74	0.00	0.06	0.05	333.09	0.02	0.16	0.015566	0.048196	0.114552	0.000247	0.003834	0.003412	21.98399	0.001404	0.010882
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04	502.48	0.03	0.05	0.14	0.01	0.01	0.00	0.00	0.00	17	0.00	0.00
Construction Trucks	0.01	0.07	0.15	0.00	0.03	0.02	76.16	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	5	0.00	0.00
Total Daily	**0.45**	**4.95**	**2.27**	**0.01**	**0.23**	**0.11**	**911.73**	**0.05**	**0.21**	**0.15**	**0.07**	**0.13**	**0.00**	**0.01**	**0.01**	**43.59**	**0.00**	**0.01**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Energization - Lower Yard	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	0.47	1.46	3.47	0.01	0.12	0.10	666.18	0.04	0.33	0.005189	0.016065	0.038184	8.25E-05	0.001278	0.001137	7.327998	0.000468	0.003627
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04	502.48	0.03	0.05	0.14	0.01	0.01	0.00	0.00	0.00	17	0.00	0.00
Construction Trucks	0.01	0.07	0.15	0.00	0.03	0.02	76.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00	0.00
Total Daily	**0.69**	**5.68**	**4.01**	**0.01**	**0.29**	**0.16**	**1244.82**	**0.07**	**0.38**	**0.14**	**0.03**	**0.05**	**0.00**	**0.01**	**0.00**	**24.75**	**0.00**	**0.01**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Table A-17
Construction Emission Summary
South Orange County Reliability Project
Substation Construction

Capistrano Substation Energize Temporary TL 13835 - L	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Emissions, lbs/day																		
Heavy Construction Equipment	1.13	5.23	8.31	0.01	0.47	0.42	1275.33	0.10	0.79	0.01245	0.057522	0.091362	0.000161	0.005132	0.004568	14.02864	0.001123	0.008679
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04	502.48	0.03	0.05	0.14	0.01	0.01	0.00	0.00	0.00	17	0.00	0.00
Construction Trucks	0.01	0.07	0.15	0.00	0.03	0.02	76.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00	0.00
Total Daily	**1.35**	**9.45**	**8.84**	**0.02**	**0.64**	**0.48**	**1853.97**	**0.13**	**0.84**	**0.15**	**0.07**	**0.10**	**0.00**	**0.01**	**0.01**	**31.45**	**0.00**	**0.01**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Remove RFS 138/12kV Equipmen	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Emissions, lbs/day																		
Heavy Construction Equipment	3.91	13.67	29.56	0.06	1.15	1.03	5228.58	0.35	2.81	0.042664	0.162008	0.317869	0.000608	0.013874	0.012348	54.61541	0.00385	0.030198
Worker Vehicles	0.21	4.15	0.39	0.01	0.14	0.04	502.48	0.03	0.05	0.14	0.01	0.01	0.00	0.00	0.00	17	0.00	0.00
Construction Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
Total Daily	**4.12**	**17.83**	**29.95**	**0.06**	**1.29**	**1.07**	**5731.06**	**0.38**	**2.85**	**0.18**	**0.17**	**0.32**	**0.00**	**0.02**	**0.01**	**71.20**	**0.00**	**0.03**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Site Development - 230 kV	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Emissions, lbs/day																		
Heavy Construction Equipment	15.55	58.48	123.87	0.19	4.76	4.24	18950.79	1.40	11.77	0.513106	1.929862	4.087554	0.006358	0.157098	0.139817	625.376	0.046297	0.388318
Worker Vehicles	0.35	7.11	0.66	0.01	0.26	0.08	911.45	0.05	0.09	0.23	0.02	0.01	0.00	0.01	0.00	30	0.00	0.00
Construction Trucks	0.42	1.58	11.05	0.02	0.58	0.39	1568.36	0.09	0.04	0.01	0.05	0.36	0.00	0.02	0.01	52	0.00	0.00
Fugitive Dust					61.93	18.22								6.81	2.00			
Total Daily	**16.32**	**67.17**	**135.57**	**0.22**	**67.53**	**22.93**	**21430.60**	**1.54**	**11.89**	**0.76**	**2.00**	**4.46**	**0.01**	**7.00**	**2.16**	**707.21**	**0.05**	**0.39**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Below Grade - 230 kV	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Emissions, lbs/day																		
Heavy Construction Equipment	11.63	43.74	86.53	0.18	3.18	2.83	16155.06	1.05	8.22	0.657925	2.370653	4.855198	0.010111	0.180761	0.160877	898.5626	0.059363	0.461244
Worker Vehicles	0.35	7.11	0.66	0.01	0.26	0.08	911.45	0.05	0.09	0.23	0.02	0.01	0.00	0.01	0.00	30	0.00	0.00
Construction Trucks	2.42	9.08	97.45	0.14	4.13	2.43	14684.07	0.84	0.38	0.14	0.52	5.57	0.01	0.24	0.14	840	0.05	0.02
Fugitive Dust					32.68	10.27								0.02	0.01			
Total Daily	**14.39**	**59.92**	**184.64**	**0.34**	**40.25**	**15.62**	**31750.58**	**1.94**	**8.68**	**1.03**	**2.91**	**10.44**	**0.02**	**0.44**	**0.31**	**1768.57**	**0.11**	**0.49**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Construction - 230 kV	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Emissions, lbs/day																		
Heavy Construction Equipment	11.95	42.90	83.88	0.20	3.02	2.69	18019.71	1.08	7.97	0.35525	1.515376	2.502256	0.00546	0.104352	0.092874	484.8205	0.032054	0.237714
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04	486.11	0.03	0.05	0.13	0.01	0.01	0.00	0.00	0.00	16	0.00	0.00
Construction Trucks	0.02	0.13	0.31	0.00	0.07	0.03	152.32	0.01	0.00	0.00	0.01	0.03	0.00	0.01	0.00	17	0.00	0.00
Total Daily	**12.16**	**46.82**	**84.54**	**0.21**	**3.22**	**2.76**	**18658.14**	**1.11**	**8.02**	**0.48**	**1.54**	**2.54**	**0.01**	**0.12**	**0.10**	**517.62**	**0.03**	**0.24**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Relay Testing - 230 kV	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Emissions, lbs/day																		
Heavy Construction Equipment	0.22	0.72	1.53	0.00	0.05	0.05	333.09	0.02	0.14	0.012197	0.039692	0.083877	0.000206	0.00282	0.00251	18.31999	0.0011	0.007968
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04	486.11	0.03	0.05	0.13	0.01	0.01	0.00	0.00	0.00	16	0.00	0.00
Construction Trucks	0.01	0.07	0.15	0.00	0.03	0.02	76.16	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	4	0.00	0.00
Total Daily	**0.42**	**4.58**	**2.03**	**0.01**	**0.22**	**0.11**	**895.36**	**0.05**	**0.19**	**0.14**	**0.05**	**0.10**	**0.00**	**0.01**	**0.00**	**38.55**	**0.00**	**0.01**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation DeEnergize Temporary TL 13835 -	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Emissions, lbs/day																		
Heavy Construction Equipment	2.77	9.02	19.06	0.05	0.64	0.57	4163.63	0.25	1.81	0.014303	0.046548	0.098365	0.000242	0.003307	0.002944	21.48435	0.001291	0.009345
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04	486.11	0.03	0.05	0.13	0.01	0.01	0.00	0.00	0.00	16	0.00	0.00
Construction Trucks	0.01	0.07	0.15	0.00	0.03	0.02	76.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
Total Daily	**2.97**	**12.88**	**19.57**	**0.05**	**0.81**	**0.63**	**4725.90**	**0.28**	**1.86**	**0.14**	**0.06**	**0.11**	**0.00**	**0.01**	**0.00**	**37.91**	**0.00**	**0.01**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Capistrano Substation Energization - 230 kV	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Emissions, lbs/day																		
Heavy Construction Equipment	0.44	1.44	3.05	0.01	0.10	0.09	666.18	0.04	0.29	0.004879	0.015877	0.033551	8.25E-05	0.001128	0.001004	7.327996	0.00044	0.003187
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04	486.11	0.03	0.05	0.13	0.01	0.01	0.00	0.00	0.00	16	0.00	0.00
Construction Trucks	0.01	0.07	0.15	0.00	0.03	0.02	76.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1	0.00	0.00
Total Daily	**0.64**	**5.30**	**3.56**	**0.01**	**0.27**	**0.15**	**1228.45**	**0.07**	**0.34**	**0.13**	**0.03**	**0.04**	**0.00**	**0.01**	**0.00**	**24.21**	**0.00**	**0.00**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Total GHG Emissions, metric tons	**8675**	**0.60**	**3.99**
Metric tons CO2e	**8675**	**13**	**1237**
Total GHG Emissions, metric tons CO2e	**9925**		

Table A-18
Construction Emission Summary
South Orange County Reliability Project
Transmission Line Construction

Summary - Maximum Emissions	Emissions									Emission, tons (total)								
Segment 4: Talega Hub to Talega Substation 69kV and 138	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	34.90	129.10	289.54	0.42	12.13	10.79	39806.10	3.15	27.51	0.97	3.55	7.70	0.01	0.34	0.30	1077.55	0.09	0.73
Worker Vehicles	1.15	22.69	2.09	0.03	0.62	0.27	2400.80	0.11	0.21	0.75	0.07	0.04	0.00	0.02	0.01	79	0.00	0.01
Construction Trucks	0.78	3.02	19.89	0.03	1.14	0.74	3018.04	0.17	0.08	0.02	0.09	0.56	0.00	0.03	0.02	91	0.01	0.00
Fugitive Dust					89.77	26.79								6.91	2.06			
Total Daily	**36.83**	**154.81**	**311.53**	**0.48**	**103.65**	**38.58**	**45224.94**	**3.44**	**27.79**	**1.75**	**3.71**	**8.30**	**0.01**	**7.30**	**2.39**	**1247.29**	**0.10**	**0.74**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Segment 1: Capistrano Substation Getaways 138kV	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	21.55	80.05	168.16	0.26	7.49	6.67	24243.10	1.94	15.97	0.49	1.76	3.71	0.01	0.17	0.16	541.37	0.04	0.35
Worker Vehicles	0.51	10.09	0.93	0.01	0.27	0.12	1067.02	0.05	0.09	0.33	0.03	0.02	0.00	0.01	0.00	35	0.00	0.00
Construction Trucks	0.52	2.03	12.99	0.02	0.77	0.50	2037.82	0.12	0.05	0.02	0.08	0.49	0.00	0.03	0.02	83	0.00	0.00
Fugitive Dust					89.77	26.79								5.92	1.77			
Total Daily	**22.58**	**92.16**	**182.08**	**0.29**	**98.31**	**34.07**	**27347.94**	**2.11**	**16.12**	**0.84**	**1.87**	**4.22**	**0.01**	**6.14**	**1.95**	**659.32**	**0.05**	**0.36**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Segment 3: Talega to Rancho San Juan 230 kV	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	26.35	99.44	209.98	0.34	8.78	7.81	31662.14	2.38	19.95	1.00	3.81	7.53	0.01	0.34	0.30	1140.11	0.09	0.72
Worker Vehicles	0.83	16.39	1.51	0.02	0.45	0.19	1733.91	0.08	0.15	0.54	0.05	0.03	0.00	0.01	0.01	57	0.00	0.00
Construction Trucks	0.71	2.71	18.27	0.03	1.01	0.66	2704.82	0.15	0.07	0.03	0.11	0.75	0.00	0.04	0.03	114	0.01	0.00
Fugitive Dust					89.77	26.79								1.97	0.59			
Total Daily	**27.89**	**118.54**	**229.76**	**0.38**	**100.01**	**35.45**	**36100.87**	**2.61**	**20.17**	**1.57**	**3.98**	**8.31**	**0.01**	**2.37**	**0.92**	**1311.15**	**0.10**	**0.72**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Segment 2: Rancho San Juan 230 kV	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	18.03	70.67	132.99	0.24	5.96	5.30	22487.91	1.63	12.63	0.26	1.07	2.00	0.00	0.09	0.08	354.27	0.02	0.19
Worker Vehicles	0.64	12.61	1.16	0.01	0.34	0.15	1333.78	0.06	0.12	0.42	0.04	0.02	0.00	0.01	0.00	44	0.00	0.00
Construction Trucks	0.55	2.12	14.13	0.02	0.79	0.52	2116.68	0.12	0.05	0.01	0.03	0.19	0.00	0.01	0.01	29	0.00	0.00
Fugitive Dust					89.77	26.79								3.95	1.18			
Total Daily	**19.22**	**85.39**	**148.28**	**0.28**	**96.86**	**32.76**	**25938.37**	**1.81**	**12.80**	**0.69**	**1.14**	**2.21**	**0.00**	**4.06**	**1.27**	**427.60**	**0.03**	**0.19**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Segment 1: Rancho San Juan to San Juan Capistrano	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	22.89	87.28	181.25	0.30	7.44	6.62	28416.66	2.07	17.22	0.75	2.86	5.58	0.01	0.24	0.22	898.57	0.07	0.53
Worker Vehicles	0.90	17.65	1.63	0.02	0.48	0.21	1867.29	0.09	0.16	0.58	0.05	0.03	0.00	0.02	0.01	62	0.00	0.01
Construction Trucks	0.54	2.08	14.05	0.02	0.78	0.51	2077.63	0.12	0.05	0.02	0.09	0.56	0.00	0.03	0.02	85	0.00	0.00
Helicopters	12.83	66.89	66.89	12.31	22.11	22.11	30084.64	0.00	0.00	0.13	0.67	0.67	0.12	0.22	0.22	301	0.00	0.00
Fugitive Dust					89.77	26.79								2.96	0.88			
Total Daily	**37.16**	**173.90**	**263.81**	**12.65**	**120.57**	**56.23**	**62446.22**	**2.27**	**17.43**	**1.49**	**3.67**	**6.84**	**0.13**	**3.47**	**1.35**	**1346.40**	**0.08**	**0.54**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Segment 4: Talega Hub to Talega Substation 230 kV 230kV	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	19.07	74.56	147.96	0.25	6.18	5.50	23553.79	1.72	14.06	0.50	1.91	3.57	0.01	0.16	0.14	598.60	0.05	0.34
Worker Vehicles	0.77	15.13	1.39	0.02	0.41	0.18	1600.53	0.08	0.14	0.50	0.05	0.03	0.00	0.01	0.01	53	0.00	0.00
Construction Trucks	0.55	2.12	14.13	0.02	0.79	0.52	2116.68	0.12	0.05	0.02	0.09	0.57	0.00	0.03	0.02	88	0.01	0.00
Fugitive Dust					89.77	26.79								3.95	1.18			
Total Daily	**20.38**	**91.81**	**163.48**	**0.29**	**97.16**	**32.99**	**27271.01**	**1.92**	**14.25**	**1.02**	**2.05**	**4.16**	**0.01**	**4.16**	**1.35**	**739.36**	**0.05**	**0.35**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Segment 2: Rancho San Juan 138/230kV North Runs	**ROG lbs/day**	**CO lbs/day**	**NOX lbs/day**	**SOX lbs/day**	**PM10 lbs/day**	**PM2.5 lbs/day**	**CO2 lbs/day**	**CH4 lbs/day**	**N2O lbs/day**	**ROG tons (total)**	**CO tons (total)**	**NOX tons (total)**	**SOX tons (total)**	**PM10 tons (total)**	**PM2.5 tons (total)**	**CO2 tons (total)**	**CH4 tons (total)**	**N2O tons (total)**
Emissions, lbs/day																		
Heavy Construction Equipment	19.03	74.39	132.92	0.28	5.65	5.03	27020.59	1.72	12.63	0.37	1.49	2.61	0.01	0.11	0.10	570.56	0.03	0.25
Worker Vehicles	0.64	12.61	1.16	0.01	0.34	0.15	1333.78	0.06	0.12	0.42	0.04	0.02	0.00	0.01	0.00	44	0.00	0.00
Construction Trucks	0.50	1.92	12.75	0.02	0.72	0.47	1920.64	0.11	0.05	0.01	0.04	0.24	0.00	0.01	0.01	38	0.00	0.00
Fugitive Dust					89.77	26.79								3.95	1.18			
Total Daily	**20.17**	**88.92**	**146.83**	**0.32**	**96.49**	**32.44**	**30275.01**	**1.89**	**12.79**	**0.79**	**1.56**	**2.87**	**0.01**	**4.09**	**1.29**	**652.08**	**0.04**	**0.25**
Significance Threshold	*75*	*550*	*100*	*150*	*150*	*55*	*N/A*	*N/A*	*N/A*									
Above Threshold?	No	No	No	No	No	No	N/A	N/A	N/A									

Total GHG Emissions, metric tons	**5780**	**0.40**	**2.86**
Metric tons CO2e	**5780**	**8**	**887**
Total GHG Emissions, metric tons CO2e	**6675**		

Table A-19
Maximum Simultaneous Construction Emissions
South Orange County Reliability Project

Maximum Daily Emissions - Simultaneous Emission Calculations

San Juan Capistrano Substation	ROG lbs/day	CO lbs/day	NOX lbs/day	SOX lbs/day	PM10 lbs/day	PM2.5 lbs/day	CO2 lbs/day	CH4 lbs/day	N2O lbs/day	ROG tons (total)	CO tons (total)	NOX tons (total)	SOX tons (total)	PM10 tons (total)	PM2.5 tons (total)	CO2 tons (total)	CH4 tons (total)	N2O tons (total)
Emissions, lbs/day																		
Heavy Construction Equipment	11.95	42.90	83.88	0.20	3.02	2.69	18019.71	1.08	7.97	0.36	1.52	2.50	0.01	0.10	0.09	484.82	0.03	0.24
Worker Vehicles	0.19	3.79	0.35	0.01	0.14	0.04	486.11	0.03	0.05	0.13	0.01	0.01	0.00	0.00	0.00	16.04	0.00	0.00
Construction Trucks	0.02	0.13	0.31	0.00	0.07	0.03	152.32	0.01	0.00	0.00	0.01	0.03	0.00	0.01	0.00	16.76	0.00	0.00
Total Daily	**12.16**	**46.82**	**84.54**	**0.21**	**3.22**	**2.76**	**18658.14**	**1.11**	**8.02**	**0.48**	**1.54**	**2.54**	**0.01**	**0.12**	**0.10**	**517.62**	**0.03**	**0.24**
Transmission Segment 1																		
Emissions, lbs/day																		
Heavy Construction Equipment	7.82	29.73	53.24	0.09	2.68	2.38	8419.67	0.71	5.06	0.15	0.59	1.01	0.00	0.05	0.05	165.42	0.01	0.10
Worker Vehicles	0.51	10.09	0.93	0.01	0.27	0.12	1067.02	0.05	0.09	0.33	0.03	0.02	0.00	0.01	0.00	35.21	0.00	0.00
Construction Trucks	0.52	2.03	12.99	0.02	0.77	0.50	2037.82	0.12	0.05	0.02	0.08	0.49	0.00	0.03	0.02	82.74	0.00	0.00
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.92	1.77	0.00	0.00	0.00
Total Daily	**22.58**	**92.16**	**182.08**	**0.29**	**98.31**	**34.07**	**27347.94**	**2.11**	**16.12**	**0.84**	**1.87**	**4.22**	**0.01**	**6.14**	**1.95**	**659.32**	**0.05**	**0.36**
Transmission Segment 3																		
Emissions, lbs/day																		
Heavy Construction Equipment	9.09	35.79	61.90	0.10	3.15	2.80	8962.08	0.82	5.88	0.60	2.36	4.09	0.01	0.21	0.18	591.50	0.05	0.39
Worker Vehicles	0.83	16.39	1.51	0.02	0.45	0.19	1733.91	0.08	0.15	0.54	0.05	0.03	0.00	0.01	0.01	57.22	0.00	0.00
Construction Trucks	0.71	2.71	18.27	0.03	1.01	0.66	2704.82	0.15	0.07	0.03	0.11	0.75	0.00	0.04	0.03	113.82	0.01	0.00
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97	0.59	0.00	0.00	0.00
Total Daily	**27.89**	**118.54**	**229.76**	**0.38**	**100.01**	**35.45**	**36100.87**	**2.61**	**20.17**	**1.57**	**3.98**	**8.31**	**0.01**	**2.37**	**0.92**	**1311.15**	**0.10**	**0.72**
Transmission Segment 2																		
Emissions, lbs/day																		
Heavy Construction Equipment	5.54	19.73	45.41	0.07	1.69	1.51	6871.44	0.50	4.31	0.07	0.29	0.61	0.00	0.02	0.02	91.89	0.01	0.06
Worker Vehicles	0.64	12.61	1.16	0.01	0.34	0.15	1333.78	0.06	0.12	0.42	0.04	0.02	0.00	0.01	0.00	44.01	0.00	0.00
Construction Trucks	0.55	2.12	14.13	0.02	0.79	0.52	2116.68	0.12	0.05	0.01	0.03	0.19	0.00	0.01	0.01	29.32	0.00	0.00
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.95	1.18	0.00	0.00	0.00
Total Daily	**19.22**	**85.39**	**148.28**	**0.28**	**96.86**	**32.76**	**25938.37**	**1.81**	**12.80**	**0.69**	**1.14**	**2.21**	**0.00**	**4.06**	**1.27**	**427.60**	**0.03**	**0.19**
Transmission Segment 1 230 kV																		
Emissions, lbs/day																		
Heavy Construction Equipment	5.09	19.21	31.57	0.05	1.60	1.43	4888.09	0.46	3.00	0.34	1.27	2.08	0.00	0.11	0.09	322.61	0.03	0.20
Worker Vehicles	0.90	17.65	1.63	0.02	0.48	0.21	1867.29	0.09	0.16	0.58	0.05	0.03	0.00	0.02	0.01	61.62	0.00	0.01
Construction Trucks	0.54	2.08	14.05	0.02	0.78	0.51	2077.63	0.12	0.05	0.02	0.09	0.56	0.00	0.03	0.02	85.37	0.00	0.00
Helicopters	12.83	66.89	66.89	12.31	22.11	22.11	30084.64	0.00	0.00	0.13	0.67	0.67	0.12	0.22	0.22	300.85	0.00	0.00
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.96	0.88	0.00	0.00	0.00
Total Daily	**37.16**	**173.90**	**263.81**	**12.65**	**120.57**	**56.23**	**62446.22**	**2.27**	**17.43**	**1.49**	**3.67**	**6.84**	**0.13**	**3.47**	**1.35**	**1346.40**	**0.08**	**0.54**
Transmission Segment 4 230 kV																		
Emissions, lbs/day																		
Heavy Construction Equipment	4.97	21.27	30.51	0.05	1.61	1.43	4524.79	0.45	2.90	0.21	0.82	1.15	0.00	0.07	0.06	161.08	0.02	0.11
Worker Vehicles	0.77	15.13	1.39	0.02	0.41	0.18	1600.53	0.08	0.14	0.50	0.05	0.03	0.00	0.01	0.01	52.82	0.00	0.00
Construction Trucks	0.55	2.12	14.13	0.02	0.79	0.52	2116.68	0.12	0.05	0.02	0.09	0.57	0.00	0.03	0.02	87.95	0.01	0.00
Fugitive Dust	0.00	0.00	0.00	0.00	89.77	26.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.95	1.18	0.00	0.00	0.00
Total Daily	**20.38**	**91.81**	**163.48**	**0.29**	**97.16**	**32.99**	**27271.01**	**1.92**	**14.25**	**1.02**	**2.05**	**4.16**	**0.01**	**4.16**	**1.35**	**739.36**	**0.05**	**0.35**
Simultaneous Construction, December 2014	**139.39**	**608.62**	**1071.95**	**14.09**	**516.14**	**194.26**	**197762.53**	**11.84**	**88.79**	**6.09**	**14.25**	**28.28**	**0.17**	**20.32**	**6.94**	**5001.45**	**0.34**	**2.40**
Significance Thresholds	75	550	100	150	150	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Simultaneous On-site Construction, Decembe	**44.45**	**168.62**	**306.52**	**0.57**	**462.61**	**146.18**												

Biological Resources Assessment

San Diego Gas & Electric Company

South Orange County Reliability Enhancement Project

Orange County, California

USGS Cañada Gobernadora, San Juan Capistrano,

San Clemente, and Dana Point Quadrangles

May 2012

Prepared For:
San Diego Gas & Electric
8315 Century Park Court
San Diego, CA 92123

Prepared By:
123 Technology Drive West
Irvine, CA 92618

TABLE OF CONTENTS

Section **Page**

1.0 INTRODUCTION 1

2.0 PROPOSED PROJECT DESCRIPTION 2

2.1 CAPISTRANO SUBSTATION 2
2.2 TALEGA SUBSTATION 2
2.3 TRANSMISSION LINES 2
2.4 CONSTRUCTION AREAS AND TEMPORARY IMPACT AREAS 4

3.0 REGULATORY BACKGROUND 5

3.1 FEDERAL REGULATIONS 5
3.2 STATE REGULATIONS 7
3.3 LOCAL REGULATIONS 10

4.0 METHODS 13

4.1 LITERATURE REVIEW 13
4.2 FIELD SURVEYS 14

5.0 RESULTS 18

5.1 LITERATURE REVIEW 18
5.2 VEGETATION 20
5.3 WILDLIFE 26
5.4 SPECIAL STATUS VEGETATION COMMUNITIES 26
5.5 SPECIAL STATUS PLANTS 27
5.6 SPECIAL STATUS WILDLIFE 29
5.7 WILDLIFE CORRIDORS 36
5.8 JURISDICTIONAL DELINEATION OF WATERS AND WETLANDS 37

6.0 IMPACTS 39

6.1 CONSTRUCTION IMPACTS 39
6.2 OPERATIONS AND MAINTENANCE IMPACTS 46
6.3 SUMMARY OF IMPACTS 48

7.0 REFERENCES 49

LIST OF TABLES

Table 1: Vegetation Communities in Project Survey Area

Table 2: Potentially Jurisdictional Waters in Proposed Project Survey Area

Table 3: Vegetation Community Impacts

LIST OF FIGURES

Figure 1: Project Overview Map

Figure 2: Local Habitat Conservation Plan

Figure 3: CNDDB Special Status Flora Species

Figure 4: CNDDB Special Status Fauna Species

Figure 5: Critical Habitat Map

Figure 6: Soils Map

LIST OF APPENDICES

Appendix A: CNDDB and CNPS Special Status Species Table

Appendix B: Plants and Wildlife Observed On-site

Appendix C: Jurisdictional Waters and Wetland Delineation

Appendix D: 2008 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for San Diego Gas and Electric's Proposed Orange County Transmission Expansion Project

Appendix E: 2010 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for San Diego Gas and Electric's Proposed South Orange County Reliability Upgrade Project

Appendix F: 2010 Least Bell's Vireo (*Vireo bellii pusillus*) Survey Result for San Diego Gas and Electric's Proposed South Orange County Reliability Upgrade Project

Appendix G: Results of Protocol Surveys for Federally-Endangered Arroyo Toad (*Bufo californicus*) and Southwestern Willow Flycatcher (*Empidonax trailii extimus*) in Conjunction with San Diego Gas & Electric's Orange County Transmission Expansion Project located in Orange County, California

Appendix H: Vegetation and Sensitive Species Maps

Appendix I: Photo Exhibit

Appendix J: Impacts Maps

Acronyms List

APMs	Applicant Proposed Measures
ACOE	United States Army Corps of Engineers
BCC	Birds of Conservation Concern
Camp Pendleton	United States Marine Corps Base Camp Pendleton
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	California Fish and Game
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CPUC	California Public Utilities Commission
CSS	coastal sage scrub
CWA	Clean Water Act
FE	federally endangered
FESA	Federal Endangered Species Act
FT	federally threatened
FP	fully protected
FWCA	Fish and Wildlife Conservation Act of 1980
GIS	Geographic Information Systems
GPS	Global Positioning System
HCP	Habitat Conservation Plan
kV	kilovolt
LSAA	Lake or Streambed Alteration Agreement
Manual	1987 Wetland Delineation Manual
MBTA	Migratory Bird Treaty Act
msl	Mean Sea Level
NCCP	Natural Community Conservation Plan
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
PEA	Proponent's Environmental Assessment
Proposed Project	South Orange County Reliability Enhancement Project
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SDG&E	San Diego Gas & Electric
SE	state endangered
SSC	Species of Special Concern
ST	state threatened
SWS	southern willow scrub
TRC	TRC Solutions, Inc.
USDA	United States Department of Agriculture

USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WL	watch listed
WUS	Waters of the United States

1.0 INTRODUCTION

The San Diego Gas & Electric Company (SDG&E) is a regulated public utility that provides electric service to three and a half million customers within a 4,100 square mile service area, covering parts of southern Orange County and San Diego County. The South Orange County Reliability Enhancement Project (Proposed Project) is intended to meet the area load growth and service reliability for approximately 118,000 customers (462 megawatts) within southern Orange County.

The purpose of this Biological Resources Assessment report is to document the findings of reconnaissance-level focused and biological surveys, analyze Proposed Project impacts, and outline mitigation measures to compensate for unavoidable impacts. This report will be included as a supplement to SDG&E's Proponent's Environmental Assessment (PEA) for the Proposed Project, and filed as part of its application for a Certificate of Public Convenience and Necessity submitted to the California Public Utilities Commission (CPUC). TRC Solutions, Inc. (TRC) prepared this report on behalf of SDG&E.

The remainder of this page is intentionally left blank.

2.0 PROPOSED PROJECT DESCRIPTION

The Proposed Project will involve rebuilding the existing 138/12 kilovolt (kV) Capistrano Substation with a new 230/138/12kV substation, conducting minor alterations to the existing Talega Substation, and bringing two new 230kV transmission lines into the southern Orange County area by replacing an existing 138kV transmission line between the Talega and Capistrano Substations. The transmission line portion of the Proposed Project is approximately eight miles in length. As shown in Figure 1, Project Overview Map, the Proposed Project components are primarily located in portions of the cities of San Juan Capistrano and San Clemente, as well as unincorporated Orange County, and the United States Marine Corps Base Camp Pendleton (Camp Pendleton). This Proposed Project has an anticipated in-service date of November 2017. The following sections describe each segment in more detail.

2.1 CAPISTRANO SUBSTATION

The existing Capistrano Substation site is 6.4 acres and is located within an urbanized area in the City of San Juan Capistrano. The Proposed Project entails rebuilding the existing Capistrano Substation to a new combined bulk power transmission and distribution substation (230/138/12kV). The new substation will be named the San Juan Capistrano Substation.

This segment of the Proposed Project will involve:

- Replacement of the aging and obsolete 138/12kV substation that currently exists on the Capistrano Substation site;
- Addition of a new 230kV gas insulated substation; and
- Rebuilding and expanding the existing 12kV distribution substation and the 138kV transmission substation, utilizing gas insulated technology (138kV only).

2.2 TALEGA SUBSTATION

The existing facilities at the Talega Substation are located on a 6.1 acre property located on Camp Pendleton. The existing facility is a 230/138/69kV bulk transmission substation. This segment of the Proposed Project will involve:

- Connection of one new 138kV and two new 230kV transmission line to the existing substation;
- Rearranging the 138kV and 230kV transmission line configurations and eliminating two 230/138kV transformer banks; and
- Disconnection of one 230kV transmission line.

2.3 TRANSMISSION LINES

The Proposed Project will involve the installation of new 69kV, 138kV, and 230kV structures, overhead conductor and underground cable, and removal of existing transmission structures. All transmission line work will be completed within SDG&E's existing right-of-way (ROW) between the Capistrano Substation and the Talega Substation, as well as within small portions of acquired additional ROW near the Talega Substation and Rancho San Juan development. For the

purposes of this discussion, the transmission line work associated with the Proposed Project has been divided into four segments which are discussed in more detail below.

2.3.1 Segment 1 – San Juan Capistrano Substation to Rancho San Juan

The San Juan Capistrano Substation to Rancho San Juan segment of the Proposed Project will involve:

- Installation of 2.66 miles of new 230kV double circuit overhead transmission line;
- Removal of 20 138kV wood transmission structures, and 11 steel 138kV structures;
- Installation of 16 new 230 kV steel structures; and
- Installation of approximately 1,400 feet of 138kV underground transmission line.

2.3.2 Segment 2 – Rancho San Juan

The Rancho San Juan segment of the Proposed Project will involve:

- Installation of approximately 0.4 mile of two separate 230kV underground cable system in conduit packages;
- Installation of four new 230kV steel cable riser structure;
- Removal of two existing 138kV steel cable riser structures; and
- Replacement of one existing 138kV double-circuit steel cable riser structure.

2.3.3 Segment 3 – Rancho San Juan to Talega Hub

The Rancho San Juan to Talega Hub segment of the Proposed Project will involve:

- Installation of approximately 4.2 miles of new 230kV overhead transmission line;
- Removal of approximately 32 138kV wood structures; and
- Installation of 22 new 230kV double-circuit steel structures.

2.3.4 Segment 4 – Talega Hub to Talega Substation

The Talega Hub to Talega Substation segment of the Proposed Project will involve:

- Installation of approximately 3,230 feet of new 230kV overhead transmission lines;
- Relocation of 138kV and 69kV lines;
- Removal of 13 69kV wood structures and replaced with nine steel structures;
- Removal of 21 138kV wood structures, and two 138kV steel structures;
- Installation of 15 new 138kV steel structures; and
- Removal of one 230kV steel structure, and installation of eight 230kV steel structures.

2.4 CONSTRUCTION AREAS AND TEMPORARY IMPACT AREAS

2.4.1 Access Roads

Some new spur roads may be required to access the new structure sites. These roads would be graded and will generally be 14 feet wide for straight sections and up to 20 feet wide at curves. Since the Proposed Project will follow an existing transmission corridor, construction access to most new structure sites will be available by way of existing access roads.

2.4.2 Temporary Impact Areas

Temporarily disturbed areas include materials storage and staging areas, as well as pull and tension sites, and splice sites. SDG&E will make attempts to locate previously disturbed areas along the route to temporarily store materials and stage equipment. The staging areas will generally be approximately two acres in size and will only be used temporarily during construction. SDG&E will also utilize existing substations and other properties to store materials and equipment. Some of these areas may be outside of the SDG&E ROW.

The remainder of this page is intentionally left blank.

3.0 REGULATORY BACKGROUND

3.1 FEDERAL REGULATIONS

3.1.1 Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973. FESA protects plants and wildlife that are listed as "endangered" or "threatened" by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). It also requires the evaluation of effects to "proposed" and "candidate" species. Section 9 of FESA prohibits the "take" of endangered wildlife, where take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR Section 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging-up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 USC 1538). Under Section 7 of FESA, federal agencies are required to consult with the USFWS and/or NMFS if their actions, including permit approvals or funding, could adversely affect an endangered plant or wildlife species or its habitat, or could adversely affect designated critical habitat. Through consultation and the issuance of a biological opinion, the USFWS and/or NMFS may issue an "incidental take statement" allowing take of the species, provided the action will not jeopardize the continued existence of any federally listed species or result in the destruction or adverse modification of habitat of such species. Section 10 of FESA provides for issuance of incidental take permits to private parties without a federal nexus provided a Habitat Conservation Plan (HCP) is developed.

3.1.2 Federal Clean Water Act

The purpose of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the United States (WUS) without a permit from the United States Army Corps of Engineers (ACOE). In addition, Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into WUS, to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. A Water Quality Certification or waiver pursuant to Section 401 is required for Section 404 permit actions, and is issued by the Regional Water Quality Control Board (RWQCB).

"Discharges of fill material" are defined as the addition of fill material into WUS including, but not limited to, the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; or fill for intake and outfall pipes and subaqueous utility lines (33 CFR Section 328.2[f]). The definition of WUS includes rivers, streams, estuaries, the territorial seas, ponds, lakes, mudflats, sandflats, sloughs, wet meadows, and wetlands. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of water is present. A brief overview of methods for delineating wetlands and non-tidal waters are described below.

Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR Section 328.3[b]). The methodology set forth in the 1987 Wetlands Delineation Manual (Manual) (ACOE, 1987) and the Arid West Supplement (ACOE, 2006, 2008) generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics, often referred to as a 'three-parameter wetland.'

The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) (33 CFR Section 328.4(c) (1)). The OHWM is defined by the ACOE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]).

3.1.3 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), first enacted in 1916, prohibits any person, unless permitted by regulation, to:

> *…pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatsoever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird (16 USC 703).*

As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal.

The list of migratory birds includes nearly all bird species native to the United States. The Migratory Bird Treaty Reform Act of 2004 further defined species protected under the act and excluded all non-native species. The statute was extended in 1974 to include parts of birds, as well as eggs and nests. Thus, it is illegal under the MBTA to directly kill, or destroy a nest of, nearly any bird species, not just endangered species. Activities that result in removal or destruction of an active nest (a nest with eggs or young being attended by one or more adults) would violate the MBTA.

3.1.4 Birds of Conservation Concern

Birds of Conservation Concern (BCC) is a USFWS list of bird species identified to have the highest conservation priority, and with the potential for becoming candidates for listing as federally threatened or endangered. The chief legal authority for BCC is the Fish and Wildlife Conservation Act of 1980 (FWCA). Other authorities include the FESA, the Fish and Wildlife Act of 1956, and the Department of the Interior U.S Code (16 U.S.C. § 701). The 1988 amendment to the FWCA (Public Law 100-653, Title VIII) requires the Secretary of the Interior,

through the USFWS, to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973" (USFWS, 2008a).

3.2 STATE REGULATIONS

3.2.1 California Environmental Quality Act Significance Criteria

Section 15064.7 of the *California Environmental Quality Act (CEQA) Guidelines* encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the Initial Study checklist contained in Appendix G of the *CEQA Guidelines*. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if a project would result in any of the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan (NCCP), or other approved local, regional or state HCP.

An evaluation of whether or not an impact on biological resources would be significant must consider both the resource itself and how that resource fits into a regional or local context. Significant impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. This is necessary because although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

3.2.2 California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA directs agencies to consult with CDFG on projects or actions that could affect listed species, directs CDFG to determine whether jeopardy would occur, and allows CDFG to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA generally parallels the main provisions of FESA, but unlike its federal counterpart, CESA applies the "take" prohibitions to species proposed for listing (called "candidates" by the State). "Take" is defined in Section 86 of the California Fish and Game (CFG) Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Section 2080 of the CFG Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Under CFG Code Section 2081, CESA allows CDFG to authorize exceptions to the state's prohibition against "take" of a listed species (except for designated "fully protected species") if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA. Section 2080.1 of the CFG Code allows for "take" once an applicant obtains a Federal Incidental Take Statement, submits it to the CDFG Director in writing, and receives a confirmed determination that the federal statement is "consistent" with CESA (a Consistency Determination letter). There is a 30-day window for issuance of a Consistency Determination letter. If, however, the Federal Incidental Take Statement is not determined to be consistent with CESA, then a State Incidental Take Permit under Section 2081(b) of the CFG Code must be applied for. Both sections 2081 and 2080.1 require that take be minimized and fully mitigated.

3.2.3 California Fully Protected Species

The State of California first began to designate "fully protected" (FP) species prior to the creation of CESA and FESA. Lists of FP species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most FP species have since been listed as threatened or endangered under CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CFG Code Section 4700) state that FP species may not be taken or possessed at any time. Furthermore, CDFG prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

In September 2011, the California Legislature sent the Governor legislation authorizing CDFG to permit the incidental take of 36 fully protected species pursuant to an NCCP approved by CDFG (Senate Bill 618 [Wolk]). The legislation gives FP species the same level of protection as is provided under the NCCP Act for endangered and threatened species (CFC Code § 2835). The NCCP Act, enacted in the 1990s, authorizes the incidental take of species "whose conservation and management" is provided for in a conservation plan approved by CDFG.

3.2.4 California Species of Special Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by CDFG and lead agencies during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern" (SSC) developed by CDFG. The list tracks species in California whose numbers, reproductive success, or habitat may be in decline.

3.2.5 California Fish and Game Code for Birds of Prey

Section 3503.5 of the CFG Code states that it is:

> *…unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.*

Disturbance activities that result in abandonment of an active bird-of-prey nest in areas adjacent to the disturbance may also be considered a violation of the CFG Code.

3.2.6 California Native Plant Protection Act and California Native Plant Society

The California Native Plant Protection Act of 1977 (CFG Code Sections 1900-1913) affords the CFG Commission the authority to designate native plants as endangered or rare and protects such endangered or rare plants from take. In addition, plants that are not state-listed, but meet the standards for listing, are also protected under CEQA (*CEQA Guidelines, Section 15380*). The California Native Plant Society (CNPS) maintains a list of plant species native to California with low population numbers, limited distribution, or that are otherwise threatened with extinction. Potential impacts to populations of CNPS listed plants receive consideration under CEQA review. Typically, special status plants are considered those on lists 1A, 1B, and 2. The definitions for each of the CNPS listings are below:

- List 1A: Plants presumed Extinct in California
- List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- List 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- List 3: Plants about which we need more information — A Review List
- List 4: Plants of limited distribution — A Watch List

3.2.7 California Lake and Streambed Alteration Program

Sections 1600 through 1616 of the CFG Code require that a Lake and Streambed Alteration Agreement (LSAA) Program Notification Package be submitted to CDFG for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFG reviews the proposed actions and, if necessary, provides the applicant with a proposal for measures to protect affected fish and wildlife resources. The final proposal on which CDFG and the applicant agree is an LSAA signed by both parties. Often, projects that require an LSAA also require a permit from the ACOE under Section 404 of the CWA and the RWQCB under Section 401 of the CWA. In these instances, the conditions of the Section 404/401 permits and the LSAA may overlap.

3.3 LOCAL REGULATIONS

3.3.1 SDG&E Subregional Natural Community Conservation Plan

In December 1995, the USFWS and the CDFG approved *SDG&E's Subregional Natural Community Conservation Plan* (*SDG&E Subregional NCCP*), developed in coordination with such agencies, that addresses potential impacts to sensitive resources associated with SDG&E's ongoing installation, use, maintenance, and repair of its gas and electric systems, and typical expansion to those systems throughout much of SDG&E's existing service territory (SDG&E Subregional NCCP, 1995a). As a part of the *SDG&E Subregional NCCP*, SDG&E has been issued incidental take permits (Permit PRT-809637) by the USFWS and the CDFG for 110 Covered Species. The *SDG&E Subregional NCCP* was developed by following the multiple species and habitat conservation planning approach. Even with the *SDG&E Subregional NCCP*, SDG&E's goal is to avoid "take" of Covered Species whenever possible and to implement measures to minimize and mitigate any take to the maximum extent possible. The *SDG&E Subregional NCCP* includes mitigation measures and operational protocols designed to avoid potential impacts and to provide appropriate mitigation where such impacts are unavoidable, to ensure the protection and conservation of federal and state listed species and Covered Species. The Proposed Project falls within the area in which SDG&E's utility operations are governed by *SDG&E's Subregional NCCP*. For this Proposed Project, SDG&E has adopted the mitigation measures and operational protocols contained in the *SDG&E Subregional NCCP* and project-specific Applicant Proposed Measures (APMs).

SDG&E is a public utility whose public activities are regulated by the CPUC. As described in the *SDG&E Subregional NCCP Memorandum of Understanding*, local governments are precluded from regulating public utilities through their zoning laws, land use laws, ordinances and other police powers (including other NCCPs or HCPs) by the exclusive jurisdiction of the CPUC. Therefore, the *SDG&E Subregional NCCP* is independent of other NCCP/HCPs and the Covered Species for which Incidental Take is authorized under the Take Authorizations is not dependent upon the implementation of such plans (SDG&E, 1995b)."

3.3.2 Southern Orange County Subregional Natural Community Conservation Plan

The Southern Orange County Subregional Natural Community Conservation Plan *(Southern Orange County Subregional NCCP*) is a comprehensive, long-term HCP developed to provide conservation for multiple species and the preservation of natural vegetation communities in

southern Orange County (County of Orange, 2006). The *Southern Orange County Subregional NCCP* serves as an NCCP under the NCCP Act of 2001, a Master Services Alteration Agreement under Sections 1600 through 1616 of the CFG Code, and as well as a HCP pursuant to Section 10(a)(1)(B) of the FESA of 1973. The *Southern Orange County Subregional NCCP* involves three Participating Landowners: the County of Orange, Rancho Mission Viejo, and Santa Margarita Water District. The *Southern Orange County Subregional NCCP* area encompasses approximately 132,000 acres, including Rancho Mission Viejo land, as well as the Orange County property in the vicinity of Cleveland National Forest, the cities of Mission Viejo, San Juan Capistrano, and San Clemente.

The *Southern Orange County Subregional NCCP* creates a preservation area totaling 32,818 acres, including 16,536 acres of newly dedicated conservation lands. The entire preservation area will be managed to promote wildlife species. In exchange for the creation and management of the preserve area, USFWS and CDFG granted "Take Authorization" for otherwise lawful actions, such as public and private development, that may incidentally take or harm individual species or their habitat inside of the preservation area. The *Southern Orange County Subregional NCCP* covers 32 special status animal species and 10 vegetation communities, including seven federally listed species. In addition, the *Southern Orange County Subregional NCCP* has negotiated with CDFG for the permanent impacts of approximately 186 acres and temporary impacts of 80 acres of CDFG Jurisdiction.

The Proposed Project traverses through areas within the *Southern Orange County Subregional NCCP*, as shown in Figure 2, Local Habitat Conservation Plan. The Proposed Project is will occur within and follow the requirements of the *SDG&E Subregional NCCP*; therefore, no conflicts are expected with the *Southern Orange County Subregional NCCP*. If potential conflicts occur with the *Southern Orange County Subregional NCCP*, the Proposed Project will follow the requirements of the *SDG&E Subregional NCCP*. The *SDG&E Subregional NCCP* is independent of other NCCP/HCPs; and therefore is not dependent upon the implementation of such plans and is not superseded by other plans (SDG&E, 1995b). SDG&E will coordinate with the appropriate authorities during the Proposed Project approval process to ensure that the impacts, mitigation measures, and operational protocols are implemented for the Proposed Project under the *SDG&E Subregional NCCP*.

3.3.3 Other Conservation Plans

The Proposed Project traverses through areas with other adopted conservation plans and associated mitigation or preservation areas, including the Talega and Rancho San Juan developments. The Proposed Project is anticipated to occur within SDG&E's ROW; therefore no conflicts should occur with any other conservation plans or mitigation/preservation areas. . If potential conflicts occur with mitigation or preservation areas, the *SDG&E Subregional NCCP* is independent of other NCCP/HCPs; and therefore is not dependent upon the implementation of such plans and is not superseded by theirs (SDG&E, 1995b). SDG&E will coordinate with the appropriate authorities during the Proposed Project approval process to ensure that the impacts, mitigation measures, and operational protocols are implemented for the Proposed Project under the *SDG&E Subregional NCCP*.

3.3.4 City of San Juan Capistrano Tree Ordinance

The city of San Juan Capistrano's Municipal Code (Section 9-2.349) establishes regulations for removal of trees within their boundaries. The ordinance regulates the removal of trees over six inches in diameter measured three feet above grade. Tree removal permits are required for new development projects, utility easements, common landscape areas, nonresidential projects, city of San Juan Capistrano facilities and ROW, individual residential lots, and heritage trees.

Tree removals requiring city of San Juan Capistrano Community Development Department review and action take approximately one to three weeks. Trees requiring Planning Commission review will require one to three months for final action. Approved tree removal permits expire six months from the date of approval. If the permit expires and trees covered by the permit have not been removed, a new tree removal permit application is required

3.3.5 City of San Clemente Tree Ordinance

The city of San Clemente ordinance, City Owned Trees: Protection and Administration (Policy 301-2-1), provides the mechanism for protecting the community's urban forest and establishes a policy for managing trees owned by the city of San Clemente. The ordinance protects street trees and all trees planted on city of San Clemente land. This includes all trees at beaches, parks, golf courses, and conditionally those along public streets. This definition extends to trees that exist on any developed or undeveloped property owned and maintained by the city of San Clemente. Replacement of any trees removed will be considered and is at the discretion of the San Clemente Director of Beaches, Parks and Recreation.

4.0 METHODS

4.1 LITERATURE REVIEW

Prior to performing the biological field surveys, documentation relevant to the Proposed Project and surrounding area was reviewed, and a special status species list was prepared for the Proposed Project.

4.1.1 Special Status Species

A special status species list was prepared from record searches for the United States Geological Survey (USGS) 7.5-minute Cañada Gobernadora, San Juan Capistrano, San Clemente, and Dana Point quadrangles within three miles of the Proposed Project. Special status species include all federally and state listed endangered and threatened species, candidates for listing, species proposed for listing, FP species, SSC species), species listed as rare or endangered by CNPS, and special status species that are identified under the *SDG&E Subregional NCCP* that had ranges within Orange County and suitable habitat was present along the Proposed Project alignment, including Covered Species. A sensitive species was considered a potential inhabitant of the Proposed Project, if its known geographical distribution either encompassed part of the Proposed Project or was within the vicinity of the Proposed Project (within approximately three miles), and its general habitat requirements (e.g., roosting, nesting, or foraging habitat, specific soil type, permanent water source) were within the boundaries of the Proposed Project. Sources of information that were used to compile the species list included the CDFG California Natural Diversity Data Base (CNDDB, 2011), the CNPS online inventory (CNPS, 2011), and the *SDG&E Subregional NCCP Covered Species List* (SDG&E, 1995; Pages 43-45 and Table 3.1). A complete list of species assessed in included as Appendix A, CNDDB and CNPS Special Status Species Table.

4.1.2 Critical Habitat

The USFWS critical habitat areas for listed species were searched using Geographic Information Systems (GIS) shapefiles provided by the USFWS within three miles of the Proposed Project alignment.

4.1.3 Drainages and Other Water Features

The potential presence of drainages and other water resources was assessed by reviewing USGS topographic maps to identify any blue line streams (USGS, 1975,1981,1995, 1997), searching the USFWS National Wetlands Inventory (NWI) (USFWS, 2011), and by reviewing recent aerial images of the Proposed Project (Google, 2011).

4.1.4 Soils

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) online Soil Survey (NRCS, 2011) was used to assess soils mapped along the Proposed Project alignment, and GIS data was used to create a map.

4.2 FIELD SURVEYS

Field surveys were conducted in appropriate habitat within a 500-foot corridor, including approximately 250 feet on either side of the proposed transmission line alignment and substation boundaries (herein referred to as the Proposed Project survey area). The Proposed Project alignment will follow an existing SDG&E ROW, and substation activities will take place within the existing Capistrano and Talega Substation facilities. Some Proposed Project activities, such as staging areas or pull/tension sites, may occur outside of the existing ROW or facilities. The following sections describe the methods used for reconnaissance-level and habitat assessment surveys, rare plant surveys, and focused species surveys. In all instances, resources were mapped in the field using a Trimble handheld Global Positioning System (GPS) and/or drawn on a 200 scale color aerial photograph.

4.2.1 Reconnaissance-level and Habitat Assessment Surveys

Reconnaissance-level surveys and a general habitat assessment were conducted within the Proposed Project survey area by TRC Biologists Matthew Willis and Paula Potenza on February 26 through February 28, 2008 and March 25, 2008 to map existing vegetation communities and assess the potential for sensitive or listed plant and wildlife species, including species covered under the *SDG&E's Subregional NCCP*. Additional habitat assessments were conducted By TRC Biologist Ceri Williams-Dodd on September 28 through 30, October 11 through 12, and November 2, 2011. In addition TRC Biologist Travis Kegel conducted surveys on December 28 and 29, 2011, and February 16 and 28, 2012. Surveys were conducted using vehicles and on foot along access roads and around proposed tower locations. Meandering transects were also conducted on foot through the surrounding habitat within the 500-foot survey corridor. A meandering transect is a type of survey search pattern that minimizes overlap and maximizes survey coverage in a given area.

Suitable habitat for special status species was determined by the presence of diagnostic habitat elements, including but not limited to appropriate vegetation communities. The habitat assessment surveys were conducted along the Proposed Project in areas supporting vegetation. Therefore, in some case, the survey corridor was less than 500 feet (and sometime more due to staging areas outside) wide due to the presence of residential and commercial development. The assessment surveys determined which wildlife or plant species were present, had the potential to occur, or would require USFWS or CDFG protocol-level surveys. Animal species were either observed directly, with the aid of binoculars, or detected from calls, tracks, scat, or other sign.

Vegetation communities were recorded on aerial photographs and GPS, and were further refined during rare plant surveys. Mapped data was then digitized or downloaded in GIS. The vegetation mapping was based upon descriptions provided by Sawyer and Keeler-Wolf (1995 and 2009), *SDG&E's Subregional NCCP* Section 3.1 and Holland (1986).

4.2.2 Sensitive Status Plant Species and Vegetation Communities

Field surveys for sensitive plants were conducted in accordance with the standardized guidelines issued by the USFWS (2000), CDFG (2009), and the CNPS (2001). The surveys were intended to determine the presence/absence of listed and special status plant species within the Proposed Project survey area. Surveys for sensitive plant species were conducted on April 15, 17, and 18,

2008 by TRC biologist Marc Doalson and on April 19, 20, 21, 24, and 25, 2010 by TRC Biologists Darren Burton and Ken McDonald. The Proposed Project survey area was walked on foot, except in developed or residential areas. Meandering transects were performed, and all plants encountered were identified to a level necessary to ensure detection of sensitive species. The plant nomenclature used follows *The Jepson Manual: Higher Plants of California* (Hickman, 1993). A complete list of plant species observed during the surveys is provided as Appendix B.

4.2.3 Drainages and Other Water Features

Suspected jurisdictional areas identified during the literature review from aerial and USGS topographic maps were field checked for the presence of definable channels and/or wetland vegetation, soils and hydrology. Field checks were not limited to suspected jurisdictional areas identified during the literature review; the entire Proposed Project survey area was assessed for the presence of drainages, wetlands, and vernal pools. This involved physically identifying hydrologic, vegetative, and geomorphic characteristics within the Proposed Project survey area in order to delineate potentially jurisdictional waters and wetlands.

WUS were identified pursuant to criteria outlined in Section 401 and Section 404 of the CWA, including but not limited to the presence of an OHWM and connection to a downstream jurisdictional water body. The OHWM was determined by observing signs of flow including but not limited to shelving, drift lines, and disturbed vegetation. "Waters of the State" regulated by CDFG were identified pursuant to criteria outlined in Section 1600 of the CFG Code, including the presence of a defined bed and bank and any associated vegetation. Drainages that appeared to meet the criteria for "Waters of the State" were considered potentially jurisdictional, as any determination is subject to verification by the regulatory agencies.

Potential wetland habitats on the site were evaluated using the methodology set forth in the ACOE Manual (ACOE, 1987) and the *Regional Supplement to the Wetland Delineation Manual for the Arid West Region* (ACOE, 2006 and 2008). This involved digging pits to inspect soils in suspected wetland areas. Soil pits were generally at locations where hydrophytic vegetation was observed, or if other wetland indicators were observed or suspected. Soils were assessed for hydric indicators, texture, consistency, and color. The color was assessed using a Munsell chart and then cross-referenced with hydric soil lists. The locations of the soil pits were recorded using a handheld GPS unit. Hydrological and vegetation conditions were recorded for each soil pit using ACOE wetland delineation data forms. The wetland indicator status of the plants was determined using *The National List of Plant Species that Occur in Wetlands* (USFWS, 1998a).

Fieldwork for the delineation was conducted in May and July 2010 and December 2011 by TRC biologists Darren Burton, Ken McDonald, Travis Kegel, and Lauralyn K. Jensen. While in the field, the jurisdictional areas (lengths and widths) were recorded onto a 200-scale color aerial photograph using visible landmarks and/or were mapped with a Garmin e-trex GPS hand-held unit. Field data was then digitized using GIS to determine acreages. Additional details on the methodology are provided in the Jurisdictional Waters and Wetlands Delineation prepared for the Proposed Project included as Appendix C of this report.

4.2.4 Wildlife Surveys

Some of the vegetation communities within the Proposed Project survey area provide habitat for one or more of the special status species known to occur or with the potential to occur in the Proposed Project area. The region provides habitat for a number of federally endangered (FE), federally threatened (FT), state endangered (SE), and state threatened (ST) species. Appropriate habitat for the coastal California gnatcatcher (FT, SSC), least Bell's vireo (*Vireo bellii pusillus*, FE, SE) and southwestern willow flycatcher (*Empidonax traillii extimus*, FE, SE) was identified within the Proposed Project survey area. USFWS protocol-level surveys were therefore conducted in 2008 and 2010. Focused surveys for the Arroyo toad (*Bufo californicus*) (FE, SSC) were also conducted in 2010 to determine whether suitable breeding or upland habitat for the species was present in the Proposed Project survey area. Additional details on these surveys are provided below.

4.2.4.1 Coastal California Gnatcatcher

TRC conducted surveys for the coastal California gnatcatcher in 2008 and 2010. Permitted TRC biologists Paula Potenza (Permit No. TE-037508-1) and Vanessa Tisdale (Permit No. TE-163994-0) conducted surveys in 2008 with the aid of additional biologists under the direct supervision of an authorized biologist. The additional biologists are also listed under Permit No. TE-037508-1. Paula Potenza and supervised biologists repeated the surveys in 2010. Surveys for the coastal California gnatcatcher were conducted according to the *USFWS Coastal California Gnatcatcher Presence/Absence Survey Guidelines* for NCCPs (USFWS, 1997). Following this protocol, a minimum of three surveys were conducted at least one week apart. Only suitable coastal California gnatcatcher habitat, consisting of coastal sage scrub (CSS) and disturbed CSS, was surveyed. All focused surveys occurred within the coastal California gnatcatcher breeding season (March 15 through June 30). Surveys were often spread over more than one day to cover all suitable habitats, and each area surveyed had a different survey window due to staggered start times.

All surveys were conducted between approximately 6:00 a.m. and 12:35 p.m. Weather conditions during the surveys consisted of temperatures from 43 to 74 degrees Fahrenheit, winds from 0 to 10 miles per hour, and cloud cover from 0 to 100 percent. During periods of excessive heat, wind, rain, fog, or other inclement weather, surveys were either halted or postponed. Taped vocalizations and "pishing" sounds were used to initially locate gnatcatchers. Taped calls were not used to elicit or prompt further behaviors from birds once identified. Surveys were conducted by slowly walking survey routes and no more than 100 acres of suitable coastal California gnatcatcher habitat were surveyed per biologist per day. A detailed description of the methodology is included in the 2008 and 2010 survey reports provided as Appendices D (2008 Coastal California Gnatcatcher Survey Report) and E (2010 Coastal California Gnatcatcher Survey Report).

4.2.4.2 Least Bell's Vireo

TRC conducted protocol surveys for the least Bell's vireo in 2008 and 2010. TRC biologists Paula Potenza and Vanessa Tisdale conducted surveys in 2008, and Paula Potenza conducted surveys in 2010. The surveys were conducted according to the USFWS *Least Bell's Vireo Presence/Absence Survey Protocol* (USFWS, 1992) with modifications pursuant to the *SDG&E*

Subregional NCCP. The *SDG&E Subregional NCCP* states that "in situations where more than one visit may be necessary to identify a given species, such as certain birds, no more than three site visits shall be required" (*SDG&E's Subregional NCCP*, Section 7.1.3). As such, three surveys for least Bell's vireo occurred per habitat area. The surveys occurred within the least Bell's vireo breeding season (April 10 through July 31). Surveys were conducted in appropriate habitat for the species which included all riparian habitats within the Proposed Project survey area. Least bell's vireos were identified by calls/songs and by sight, and were watched and followed only if identification and location needed to be confirmed.

All surveys were conducted between approximately 6:45 a.m. and 11:35 a.m. Weather conditions during the surveys consisted of temperatures from 48 to 86 degrees Fahrenheit, winds from 0 to 6 miles per hour, and cloud cover from 0 to 100 percent. During periods of excessive heat, wind, rain, fog, or other inclement weather, surveys were halted or postponed. Surveys were conducted by slowly walking survey routes along the edges and through riparian vegetation. No more than 3 linear kilometers or 125 acres of least Bell's vireo habitat were surveyed per biologist per day. A detailed description of the methodology is included in the survey report provided as Appendix F, 2010 Least Bell's Vireo (*Vireo bellii pusillus*) Survey Result.

4.2.4.3 Southwestern Willow Flycatcher

Protocol surveys for southwestern willow flycatcher were conducted by TRC biologist Paula Potenza in 2008, and by Peter Bloom (Bloom Biological, Inc., Permit No. TE787376) in 2010. The most recent surveys were conducted on May 15 and June 5, 11, 17, and 25, 2010 in three locations (see Appendix G, Results of Protocol Surveys for Federally-Endangered Arroyo Toad and Southwestern Willow Flycatcher) that contained potential breeding habitat. The surveys were conducted according to the USFWS standard protocol as outlined within Sogge, *et. al.* (2010). Surveys included the use of taped southwestern willow flycatcher songs to simulate a territorial intrusion by another southwestern willow flycatcher, which generally will elicit a defensive response by the territorial bird, increasing its detectability. Taped calls were not used to elicit or prompt further behaviors from birds once individuals were identified. A detailed description of the methodology is included in the survey report provided as Appendix G.

4.2.4.4 Arroyo Toad

Protocol surveys for Arroyo toad were conducted by Peter Bloom on April 30, May 7, 15, 23, and 29, and June 5, 2010 in three locations that contained potential breeding habitat. The surveys were conducted according to the USFWS standard protocol as outlined within the USFWS *Survey Protocol for the Arroyo Toad* (USFWS, 1999a) and included both daytime and nighttime surveys. Daytime surveys were conducted by walking slowly along stream margins and in adjacent riparian habitat, visually searching for eggs, larvae, and juveniles. Nighttime surveys were conducted by walking slowly and carefully on stream banks. Surveyors would stop periodically and remain still and silent for approximately 15 minutes at appropriate sites to wait for Arroyo toads to begin calling. A detailed description of the methodology is included in the survey report provided as Appendix G.

5.0 RESULTS

5.1 LITERATURE REVIEW

5.1.1 Special Status Species

Special status species were identified as having a potential to occur in the Proposed Project survey area based on the database searches and known occurrences of species in the area. CNDDB maps within three miles of the Proposed Project are provided for flora, as Figure 3, CNDDB Special Status Flora Species and for fauna as Figure 4, CNDDB Special Status Fauna Species. A list of potential special status wildlife and plant species is also provided as a table in Appendix A of this report. The map and table were used during the field surveys to consider the presence, or potential presence, of the identified species.

5.1.2 Critical Habitat

The Proposed Project survey area covers areas of USFWS critical habitat for the coastal California gnatcatcher, Arroyo toad, San Diego fairy shrimp (*Branchinecta sandiegonensis*) and thread-leaved brodiaea (*Brodiaea filifolia*). Habitat for the coastal California gnatcatcher owned by SDG&E and covered under the *SDG&E Subregional NCCP* is specifically excluded the designation of critical habitat (Federal Register, 2007). A critical habitat map within three miles of the Proposed Project is provided as Figure 5, Critical Habitat Map.

5.1.3 Drainages and Other Water Features

Potential drainages were identified based on the review of aerial and USGS maps. These maps were considered during the field surveys to ensure the identified drainages were studied, in addition to any drainage not mapped by USGS or visible on aerials. Five named blue-line drainages were identified on USGS topographic maps. The named drainages include Horno Creek, San Juan Creek, Prima Deshecha Cañada, Segunda Deshecha Cañada, and Christianitos Creek.

5.1.4 Soils

Fourteen soil series are mapped within the Proposed Project survey area: Alo Clay, Bosanko Clay, Botella Clay Loam, Callegus Clay Loam, Cieneba Sandy Loam, Corralitos Loamy Sand, Cropley Clay, Huerhuero Loam, Myford Sandy Loam, Riverwash, Soboba Cobbly Loamy Sand, Sorrento Loam, and Yorba Gravelly Sandy Loam. A map is provided as Figure 6, Soils Map, and a summary of each soil series is provided below.

5.1.4.1 Alo Clay

The Alo Clay series are well drained and composed of clay and weathered bedrock. The parent materials consist of residuum weathered from sedimentary rock. At 25 to 29 inches in depth, weathered bedrock is found. These soils occur on hills at 200 to 3,250 feet above mean sea level (msl).

5.1.4.2 Bosanko Clay

The Bosanko Clay series are well drained and composed of clay, clay loam, silty clay and weathered bedrock. The parent material consists of residuum weathered from granite. At 22 to 36 inches in depth, weathered paralithic bedrock is found. These soils occur on the back slopes of hills at 300 to 2,500 feet msl.

5.1.4.3 Botella Clay Loam

Botella Clay Loam is well drained and composed of clay loam, silty and sandy clay loam. The parent material is alluvium derived from sedimentary rock. At more than 80 inches in depth a restrictive feature is found. These soils occur at alluvial fans at 500 to 800 feet msl.

5.1.4.4 Callegus Clay Loam

Callegus Clay Loam is well drained and composed of clay loam and weathered bedrock. The parent material is residuum weathered from calcareous shale. At 15 to 19 inches in depth, paralithic bedrock is found. These soils occur on the back slopes of hills at 200 to 2,500 feet msl.

5.1.4.5 Cieneba Sandy Loam

The Cieneba Sandy Loam series are somewhat excessively drained and are composed of coarse sandy loam and weathered bedrock. The parent material is a residuum of weathered granite. At 4 to 20 inches in depth, paralithic bedrock is found. These soils occur on hillsides at 500 to 4,000 feet msl.

5.1.4.6 Corralitos Loamy Sand

The Corralitos Loamy Sand series are somewhat excessively well drained and are composed of loamy sand and stratified sand. The parent material is alluvium derived from mixed sources. At more than 80 inches in depth a restrictive feature is found. These soils occur on alluvial fans at 30 to 1,000 feet msl.

5.1.4.7 Cropley Clay

Cropley Clay is well drained and composed of clay, silty clay and clay loam. At more than 80 inches depth a restrictive feature is found. These soils occur on alluvial fans at 50 to 1,500 feet msl.

5.1.4.8 Huerhuero Loam

Huerhuero Loam is moderately well drained and composed of loam, clay loam, clay, stratified sand, and sandy loam. The parent material is calcareous alluvium derived from sedimentary rock. At more than 80 inches depth a restrictive feature is found. These soils occur on marine terraces at 1,000 feet msl.

5.1.4.9 Myford Sandy Loam

The Myford Sandy Loam series are moderately well drained and composed of sandy loam, sandy clay and sandy clay loam. The parent material is alluvium derived from mix sources. At more than 80 inches in depth a restrictive feature is found. These soils occur on landform terraces at 1,500 feet msl.

5.1.4.10 Riverwash

Riverwash is not well drained and composed of sand and stratified course sand to sandy loam. The parent material is sandy and gravelly alluvium. These soils occur on fans at diverse elevations.

5.1.4.11 Soboba Cobbly Loamy Sand

Soboba Cobbly Loamy Sand is excessively drained and composed of very cobbly loamy sand. The parent material is sandy and gravelly alluvium derived from mixed sources. At more than 80 inches depth a restrictive feature is found. These soils occur on alluvial fans at 30 to 4,200 feet msl.

5.1.4.12 Sorrento Loam

The Sorrento Loam series are well drained and composed of loam, silty clay loam, clay loam, and stratified loamy fine sand to silt loam. The parent material is alluvium derived from sedimentary rock. At more than 80 inches depth a restrictive feature is found. These soils occur on alluvial fans at 80 to 1,800 feet msl.

5.1.4.13 Yorba Gravelly Sandy Loam

The Yorba Gravelly Sandy Loam series are well drained and composed of gravelly sandy loam, very gravelly sandy clay loam, and very gravelly sandy loam. The parent material is sandy and gravelly alluvium derived from mixed sources. At more than 80 inches depth a restrictive feature is found. These soils occur on landform terraces at 100 to 2,500 feet. Both Yorba Gravelly Sandy Loam 15 to 30 percent slope and Yorba Gravelly Sandy Loam 30 to 65 percent slope is mapped within the Proposed Project survey area msl.

5.2 VEGETATION

Eleven vegetation communities were observed in the Proposed Project survey area as mapped on the figures provided in Appendix H, Vegetation and Sensitive Species Maps, of this report, including CSS habitats, willow and riparian habitats, disturbed areas, ornamental, dirt roads, and developed areas with ornamental landscaping. Representative photographs depicting general conditions are included as Appendix I of this report. Table 1 below summarizes acreages of each vegetation community found within the Proposed Project survey area.

Table 1

Vegetation Communities in Proposed Project Survey Area

Vegetation Community	Acres
Coastal Sage Scrub	121.16
Disturbed Coastal Sage Scrub	61.19
Coastal Freshwater Marsh	0.20
Southern Willow Scrub	9.18
Disturbed Southern Willow Scrub	0.78
Riparian Scrub	2.65
Ruderal	139.55
Disturbed	28.89
Ornamental	63.34
Dirt Roads	20.42
Developed	121.13
Total	**568.49**

5.2.1 Coastal Sage Scrub (Holland Code 32000)

CSS is comprised of low, soft-woody subshrubs approximately one meter in height, many of which are facultatively drought-deciduous. This association is typically found on dry sites, such as steep, south-facing slopes or clay-rich soils that are slow to release stored water (Holland, 1986). Dominant shrub species in this vegetation type may vary, depending on local site factors and levels of disturbance. Plant species commonly observed within this community include coyote bush (*Baccharis pilularis*), California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), and laurel sumac (*Malosma laurina*).

CSS is the dominant native vegetation community within the Proposed Project survey area, comprising a total of 121.16 acres of CSS (see Appendix H). Plant species commonly observed within this community in the Proposed Project survey area included coyote bush, California sagebrush, California buckwheat, white sage, black sage (*Salvia mellifera*), California encelia

(*Encelia californica*), toyon (*Heteromeles arbutifolia*), prickly pear cactus (*Opuntia littoralis*), goldenbush (*Isocoma menziesii*), Mexican elderberry (*Sambucus mexicana*), lemonade berry (*Rhus integrifolia*), laurel sumac, coyote gourd (*Cucurbita palmata*), ragweed (*Ambrosia psilostachya*), giant wild rye (*Leymus condensatus*), orange bush monkeyflower (*Mimulus aurantiacus*), deerweed (*Lotus scoparius*), and oaks (*Quercus* spp., including coast live oak/*Q. agrifolia*). Much of the CSS along the Proposed Project's survey area is found in scattered patches surrounded by disturbed and ruderal habitats, and often in close proximity to residential areas. Several patches are located in the vicinity of the Prima Deshecha Landfill and one moderate-sized patch is located approximately 0.5 mile south of the landfill. The largest area of this vegetation community is found along the easternmost 1.5 miles of the Proposed Project where the transmission line connects to the Talega Substation. Most of this area is comprised of CSS, bordered by a commercial area to the north and a golf course to the south. Small areas of CSS located in the vicinity of the golf course near the Talega substation are dominated by broom baccharis (*Baccharis sarothroides*). Some areas of CSS also appear to have been planted based on the presence of surface irrigation lines, possibly as mitigation, primarily in the Rancho San Juan and Talega areas.

5.2.2 Disturbed CSS (Holland Code 32000)

Disturbed CSS has similar characteristics to CSS with more areas of human disturbance and/or invasion of non-native plant species. This vegetation community tends to have a lower amount of native species cover and a higher amount of non-native plant species. Non-native species prevalent in disturbed CSS include black mustard (*Brassica nigra*), thistle (*Silybum* spp.), and non-native grasses (e.g., *Bromus* spp.).

A total of 61.19 acres of disturbed CSS occur in the Proposed Project survey area (refer to Appendix H), most often bordering or adjacent to intact areas of CSS. The disturbed CSS is similar in species composition and structure to intact CSS; however, the disturbed CSS has a higher cover of non-native plant species. Non-native species observed in the disturbed CSS include black mustard, artichoke thistle (*Cynara cardunculus*), brome grasses, fennel (*Foeniculum vulgare*), and other species also observed in adjacent ruderal areas.

5.2.3 Coastal Freshwater Marsh (Holland 52410)

Freshwater marsh plant communities are dominated by perennial, emergent monocots, up to three meters tall. Bulrush (*Scirpus* spp.) and cattails (*Typha* spp.) are often dominant, typically forming completely closed canopies. Freshwater marsh plant communities are found in sites lacking significant flow, that are permanently flooded by fresh water, and in areas where there is prolonged saturation with the accumulation of deep, peaty soils (Holland, 1986).

A total of 0.20 acre of Coastal Freshwater Marsh areas occur within the Proposed Project survey area (refer to Appendix H, Sheets 14 and 16). These areas are found in association with drainage systems in the south of the Proposed Project survey area, namely in Tributary to Segunda Deshecha Cañada 3, and Tributary to Christianitos Creek 1. These areas are monocultures of cattails and bulrushes within permanently saturated areas fed by urban run-off. Both areas of Coastal Freshwater Marsh were determined to be ACOE wetlands and are described further in Appendix C. Additionally, in both areas of Coastal Freshwater Marsh, it appears as if the area has been revegetated to create this vegetation community.

5.2.4 Southern Willow Scrub (Holland Code 63320)

Southern willow scrub (SWS) communities are generally composed of dense, winter-deciduous broadleaf species, dominated by a variety of willow species (*Salix* spp.). Often present are occasional Fremont cottonwood (*Populus freemontii*) and California sycamore (*Platanus racemosa*). Tree stands are generally too dense for development of an understory. These communities are found on loose, fine or sandy gravelly alluvium near stream channels and experience repeated flooding (Holland, 1986).

A total of 9.18 acres of SWS occur in the Proposed Project survey area (refer to Appendix H), just east of the I-5 freeway at San Juan Creek, Segunda Deshecha Cañada, and near the southern terminus of the alignment in Tributary to Christianitos Creek 1. Smaller patches of SWS are also found where the Proposed Project survey area crosses smaller creeks and tributaries. Dominant species observed in this vegetation community included various willows (*Salix* sp.), mulefat (*Baccharis salicifolia*), giant reed (*Arundo donax*), and cattails (*Typha latifolia*).

5.2.5 Disturbed Southern Willow Scrub (Holland Code 63320)

Disturbed SWS has similar characteristics to SWS with more areas of human disturbance and/or invasion of non-native plant species. This vegetation community tends to have a lower amount of native species cover and a higher amount of non-native plant species.

A total of 0.78 acre of disturbed SWS occur in the Proposed Project survey area (refer to Appendix H), generally bordering intact areas of SWS. The disturbed SWS are similar in species composition and structure to intact SWS; however, the disturbed SWS have a higher cover of non-native plant species. Examples of non-native species observed in disturbed SWS include black mustard, artichoke thistle, brome grasses, and giant reed (*Arundo donax*).

5.2.6 Riparian Scrub (Holland Code 63000)

Riparian scrub is found on or adjacent to the banks of rivers or streams, typically in drier areas that experience flooding. Riparian plants can include a variety of species such as mulefat, cottonwood trees, coast live oak, and willows.

A total of 2.65 acres of Riparian scrub occur in the Proposed Project survey area (refer to Appendix H), predominately within and adjacent to Tributary to Prima Deshecha Cañada and Tributary to Christianitos Creek 1. Prevalent species in the Proposed Project's survey area included mulefat, willow species (including arroyo willow/*Salix lasiolepis*), coast live oak, horseweed (*Conyza canadiensis*), stinging nettle (*Urtica dioica*), ragweed, and a few scattered CSS species such as California sagebush, prickly pear cactus, lemonadeberry, poison oak (*Toxicodendron diversilobum*), and California buckwheat.

5.2.7 Ruderal (No Holland Code)

Ruderal vegetation is dominated by non-native weedy species in areas that have been significantly disturbed by agriculture, construction, or other land-clearing activities. Ruderal communities generally occupy waste areas, often on roadsides with heavily compacted soils with little available oxygen. These areas may be maintained but not typically on a regular basis,

therefore allowing the establishment of a more dense cover of vegetation. Typical species can vary depending on the site and level of disturbance, but are often dominated by herbaceous annuals and grasses. Species can include black mustard, radish (*Raphinus sativus*), wild oat (*Avena* spp.), ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), Australian saltbush (*Atriplex semibaccata*), tocalote (*Centaurea melitensis*), fennel, telegraph weed (*Heterotheca grandiflora*), crown daisy (*Chrysanthemum coronarium*), castor bean (*Ricinus communis*), pineapple-weed (*Chamomilla suaveloens*), common knotweed (*Polygonum arenastrum*), sowthistle (*Sonchus oleraceus*), horseweed, common fiddleneck (*Amsinckia menziesii*), Russian thistle (*Salsola tragus*), tree tobacco (*Nicotiana glauca*), bristly ox-tongue (*Lactuca serriola*), and goosefoot (*Chenopodium* spp.). Ornamental species may also colonize and proliferate in ruderal communities (Holland and Keil, 1995).

A total of 139.55acres of Ruderal vegetation occur throughout the Proposed Project survey area in areas of historical disturbance (refer to Appendix H). Weedy and disturbance-loving plants were identified in these areas included species such as artichoke thistle, brome grasses, short pod mustard, wild oats, curly dock (*Rumex crispus*), telegraph weed, Russian thistle, tree tobacco, bristly ox-tongue, doveweed (*Croton setigerus*), castor bean (*Ricinus communis*), red-stem filaree (*Erodium cicutarium*), fennel, various thistle and sunflower species (these species were dead at the time of the survey and could not be positively identified), and cheeseweed (*Malva parviflora*). Some scattered native species were also observed including, but not limited to, species such as coyote bush, goldenbush, common fiddleneck, and coast live oak. Only one ruderal area, directly north of San Juan Creek, contained coast live oak and appeared associated with a revegetation project.

5.2.8 Disturbed (Holland Code 11300)

Disturbed areas are composed entirely, or predominately, of unvegetated ground due to ongoing maintenance, and may support only a few isolated individuals of non-native and/or native species. These species are generally composed of the same plants found in ruderal vegetation communities.

A total of 28.89 acres of Disturbed areas occur in the Proposed Project survey area, primarily comprised of regularly maintained sites around the transmission poles (refer to Appendix H). The areas were predominately bare, with a few weedy and disturbance-loving species such as mustard, doveweed (*Croton setigerus*), red-stem filaree, and cheeseweed, in addition to scattered individuals of CSS species.

5.2.9 Ornamental (Holland Code 11100)

Ornamental consists of landscaped areas most commonly associated with developments (residential or commercial) and open areas such as parks, which have been planted with either a variety of non-native trees and shrubs, or monocultures of one species. These non-native plants can include many different species including, but not limited to, pines (*Pinus* sp.) and eucalyptus (*Eucalyptus* sp.). Whilst ornamental more typically comprises non-native plants it may also include native species such as oaks (*Quercus* spp.), sycamores (*Platanus racemosa*), and cottonwoods (*Populus fremontii*). Generally ornamental areas are planted as a windbreak, or for aesthetic and horticultural purposes around houses and other developed areas. The understory of ornamental areas are typically lacking due to maintenance or, in the case of eucalyptus trees,

chemicals in the leaves. These chemicals build up in the soil from debris and leaf-litter and prevent the establishment of most other plants. Eucalyptus trees are not native, but many species of eucalyptus have become naturalized and have invaded natural riparian areas. Ornamental vegetation can provide nesting habitat for several bird and raptor species.

A total of 63.34 acres of Ornamental vegetation occur throughout the Proposed Project survey area (refer to Appendix H). These areas comprise predominately non-native species, including a small eucalyptus grove that borders the Proposed Project survey area just west of the San Juan Creek crossing that is dominated by several species of eucalyptus. Native ornamental areas were also observed, including coast live oaks and sycamores within Arroyo Park in San Juan Capistrano, and areas of CSS associated with the Talega development appeared to have been planted as landscaping. Some Ornamental areas were observed to include a mix of native and non-native species, including a park west of the Capistrano Substation that was planted with non-native pines and both native cottonwoods and sycamores. Additional species observed in Serra Park and Marbella Golf and Country Club in San Juan Capistrano included alder (*Alnus rhombifolia*), pepper trees (*Schinus terebinthifolius* and *S. molle*), bougainvillea (*Bougainvillea spectabilis*), bottlebrush (*Callistemon* spp.), and palm trees (*Washingtonia robusta* and *Phoenix* sp.).

5.2.10 Dirt Roads (No Holland Code)

Dirt roads are unpaved roads that are typically used for access only.

A total of 20.42 acres of Dirt roads occur throughout the Proposed Project survey area (refer to Appendix H), consisting of cleared, maintained access roads to the structure sites.

5.2.11 Developed (Holland Code 12000)

Developed areas typically include paved roads, structures, and associated infrastructure, and may also include ornamental landscaping.

A total of 121.13 acres of Developed areas occur throughout the Proposed Project survey area (refer to Appendix H), primarily including paved roads, and commercial or residential structures with associated landscaping.

5.3 WILDLIFE

During the field surveys, numerous common and special status wildlife species, both native and non-native, were observed within the Proposed Project survey area. A complete list of species observed is included as Appendix B of this report. Species commonly observed include the following (for special status wildlife see Section 5.6 of this report):

- Avifauna commonly observed included red-tailed hawk (*Buteo jamaicensis*), house finch (*Carpodacus cassinii*), lesser goldfinch (*Carduelis psaltria*), common raven (*Corvus corax*), house sparrow (*Passer domesticus*), northern mockingbird (*Mimus polyglottos*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), European starling (*Sturnus vulgaris*), California thrasher (*Toxostoma redivivum*), Bewick's wren (*Thryomanes bewickii*), and western kingbird (*Tyrannus verticalis*).
- Reptiles commonly observed included side-blotched lizard (*Uta stansburiana*) and western fence lizard (*Sceloporus occidentalis*).
- Mammals commonly observed or deduced through diagnostic sign, included coyote (*Canis latrans*), California ground squirrel (*Spermophilus beecheyi*), and Audubon's cottontail (*Sylvilagus audubonii*).

5.4 SPECIAL STATUS VEGETATION COMMUNITIES

Some of the vegetation communities occurring within the Proposed Project's survey area are considered sensitive or have special status due to their natural rarity and their decline as a result of development, and/or due to the number of sensitive plant or animal species dependent upon them. Sensitive habitats also include those regulated by the federal government under the CWA (i.e., jurisdictional wetlands) or the FESA (i.e., site-specific designated critical habitat areas for federally listed wildlife species). Special status vegetation communities in the survey area include CSS, disturbed CSS, and riparian communities (SWS, Emergent Freshwater Marsh, and Riparian Scrub) which include jurisdictional areas (see Section 5.8 of the report).

CSS is considered a sensitive habitat type by both federal and state resource agencies, local jurisdictions, and conservation organizations throughout southern California. Losses of up to 85

percent have been estimated for CSS in southern California, largely attributable to residential development and agricultural activities. The trend for continued losses has resulted in the selection of this community as the focus of the state of California's first habitat-based conservation planning program, the NCCP Act. CSS provides habitat for the coastal California gnatcatcher, a federally threatened species, as well as a variety of other animal and plant species which are candidates for federal listing, state species of special concern, or considered sensitive by local jurisdictions.

All riparian communities in southern California, including SWS, are considered sensitive by federal and state resource agencies. Estimated losses of riparian habitat in southern California range as high as 95 to 97 percent. Habitat destruction and degradation has resulted from wetland conversion for agricultural purposes, urban development, and flood control projects. Riparian vegetation provides shelter, food, and breeding habitat for numerous plant and wildlife species.

5.5 SPECIAL STATUS PLANTS

Seventy four sensitive plant species were identified from the literature review as having the potential to occur within three miles of the Proposed Project survey area. Appendix A provides a list of these species, as well as their status and potential to occur in the Proposed Project area. This list was derived from CNDDB and CNPS records searches, *SDG&E Subregional NCCP* species, and suitable habitat identified during the rare plant and habitat assessment surveys (see Section 4.2.1 and 4.2.2 of this report). With the exception of three species, cliff spurge (*Euphorbia misera*), white rabbit-tobacco (*Pseudognaphalium leucocephalum*), and chaparral ragwort (*Senecio aphanactis*), all plant species were surveyed for during the appropriate blooming season. Of the three species surveyed outside their blooming period, one is an obvious shrub and the other two are unlikely to occur within or adjacent to the ROW due to habitat requirements that do not exist within the Proposed Project survey area. No special status plants were observed during the focused plant surveys. A complete list of all plant species observed during the focused surveys can be found in Appendix B.

Five of the plant species: big-leaved crownbeard (*Verbesina dissita*), Encinitas baccharis (*Baccharis vanessae*), Laguna Beach dudleya (*Dudleya stolonifera*), Santa Monica dudleya (*Dudleya cymosa* ssp. *ovatifolia*), and thread-leaved brodiaea (*Brodiaea filifolia*) are federal or state-listed species. These species are discussed in more detail below.

5.5.1 Big-leaved crownbeard (*Verbesina dissita*; FT, ST)

Big-leaved crownbeard occurs in maritime chaparral and coastal scrub habitats at an elevation range of 45 and 205 meters. The blooming period is April to July. There are only four known occurrences which are near southern Laguna Beach (CNPS, 2011). CNDDB records indicate that there are no documented occurrences within a three-mile radius of the Proposed Project survey area. This species were not observed during the focused plant surveys or any other surveys conducted for the Proposed Project. Therefore, this species is unlikely to occur in the Proposed Project survey area.

5.5.2 Encinitas baccharis (*Baccharis vanessae*; FT, SE)

Encinitas baccharis occurs in maritime chaparral and cismontane woodland at an elevation range of 60 and 720 meters. This species is commonly found in sandstone substrate. The blooming period is August to November. CNDDB records indicate that there are documented occurrences within a three-mile radius of the Proposed Project survey area. This species was not observed during the focused plant surveys or any other surveys conducted for the Proposed Project. Therefore, this species is unlikely to occur in the Proposed Project survey area.

5.5.3 Laguna Beach dudleya (*Dudleya stolonifera*; FT, ST)

Laguna Beach dudleya occurs in chaparral cistmontane woodland, coastal scrub, valley and foothill grasslands at an elevation range of 10 and 260 meters. This species is commonly found in rocky substrate. The blooming period is May to July. Threats to Laguna Beach dudleya include development, recreation, and non-native plants, and possibly by horticultural collecting (CNPS, 2011). CNDDB records indicate that there are no documented occurrences within a three-mile radius of the Proposed Project survey area. No species were observed during the focused plant surveys or any other surveys conducted for the Proposed Project. Therefore, this species is unlikely to occur in the Proposed Project survey area.

5.5.4 Santa Monica dudleya (*Dudleya cymosa* ssp. *ovatifolia*; FT)

Santa Monica dudleya occurs in chaparral and coastal scrub at an elevation range of 150 and 1,675 meters. This species is commonly found in volcanic or sedimentary, rocky substrate. The blooming period is May to July. CNDDB records indicate that there are no documented occurrences within a three-mile radius of the Proposed Project survey area. This species was not observed during the focused plant surveys or any other surveys conducted for the Proposed Project. Therefore, this species is unlikely to occur in the Proposed Project survey area.

5.5.5 Thread-leaved brodiaea (*Brodiaea filifolia*; FT, SE, Covered Species)

Thread-leaved brodiaea occurs in chaparral, cismontane woodland, CSS, playas, valley and foothill grasslands, and vernal pools and at an elevation range between 25 to 1,219 meters. This species is commonly found in clay substrate. The blooming period is from March to June. Threats to thread-leaved brodiaea include residential development, agriculture, foot traffic, grazing, illegal dumping, non-native plants, and vehicles. The species is known to hybridize with Orcutt's brodiaea (*B. orcuttii*) and dwarf brodiaea (*B. terrestris* ssp. *kernensis*), which is facilitated by European honeybees (CNPS, 2011).

Ten CNDDB records dated from 1995 to 2007 exist for the species within three miles of the Proposed Project area. Some of these records indicate hundreds to thousands of plants observed, with the nearest CNDDB record for this species occurring within 0.5 mile of the Proposed Project alignment. Although suitable habitat is present this species was not observed during the focused plant surveys or any other surveys conducted for the Proposed Project. Therefore, this species is unlikely to occur in the Proposed Project survey area.

5.6 SPECIAL STATUS WILDLIFE

Some of the vegetation communities and waterways within the Proposed Project survey area provide habitat for one or more sensitive or *SDG&E Subregional NCCP* Covered Species known to occur or with potential to occur in the Proposed Project survey area. Based on the literature search, reconnaissance and habitat assessment surveys, and additional focused biological surveys, 36 special status wildlife species are known to occur or have the potential to occur in the Proposed Project survey area. These species, their status, documented occurrence, and the potential for their presence within the Proposed Project survey area are summarized in Appendix A. A list of common and scientific names of wildlife species observed during the surveys can be found in Appendix B. The locations of any sensitive wildlife species that were seen during the field surveys were noted and are mapped in Appendix H.

In addition to the species identified in Appendix A, raptor species such as the red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*) have the potential to nest within the Proposed Project survey area. During habitat assessment and focused surveys conducted for this Proposed Project between February and June 2008, several stick nests, including two active red-tailed hawk nests, were identified on various tower structures within the Proposed Project survey area. Locations of these nests can also be found in Appendix H.

Of the 36 wildlife outlined in Appendix A, 20 species are discussed in more detail in the following sections because of their state, federal and/or local status, presence in the survey area, presence of critical habitat, and/or a moderate or high potential to occur within the Proposed Project survey area due to presence of suitable habitat.

5.6.1 Special Status Wildlife Found Onsite

Six special status wildlife species were observed in the Proposed Project survey area, including the following:

- American peregrine falcon (*Falco peregrinus anatum*, FP)
- coastal California gnatcatcher (FT, SSC)
- Cooper's hawk (*Accipiter cooperii*, watch listed [WL])
- least Bell's vireo (FE , SE, SSC)
- southwestern willow flycatcher (FE, SE)
- white tailed kite (*Elanus leucurus*, FP)

5.6.1.1 American peregrine falcon (*Falco peregrinus anatum*; BCC, FP, Covered Species)

The American peregrine falcon is widespread throughout California but prefers open habitat, coastlines, lake edges and mountain chains. This species nests on cliff sides or uses abandoned nests made from large birds, it is not known to build its own nest (Harlow, 1978).

One American peregrine falcon nest was observed within the Proposed Project survey area in 2008 near the southernmost portion of the alignment, approximately 2,500 feet west of the Talega Substation (Appendix H, Sheet 14). This nest was not found again during the December 2011 surveys; therefore, it is presumed that the nest location has changed since the initial observation. No peregrine falcons or peregrine falcon nests were identified in the most recent round of surveys in 2011. This species is FP under the CFG Code, prohibiting "take" of the species even when the activities have received take permits under the CESA and FESA.

5.6.1.2 Coastal California Gnatcatcher (*Polioptila californica californica*; FT, SSC, Covered Species)

This species is a local, uncommon, obligate resident of arid coastal scrub below sea level to approximately 500 meters from eastern Orange and southwestern Riverside counties south through the coastal foothills. Like other species that rely on CSS, the decline of the California gnatcatcher has been instigated by cumulative loss of CSS vegetation to urban and agricultural development (Atwood, 1992). The California gnatcatcher requires California sagebrush (*Artemisia californica*) and CSS for feeding; this species is known to glean insects from the foliage of shrubs in these habitat types (Atwood, 1993).

The designation of critical habitat for the coastal California gnatcatcher specifically excluded areas within functioning HCPs, such as SDG&E's *SDG&E Subregional NCCP*. Specifically, essential coastal California gnatcatcher habitat owned by SDG&E and covered under the *SDG&E Subregional NCCP* was determined to have greater benefits to coastal California gnatcatcher than from lands designated as critical habitat (Federal Register, 2007). Habitat for the coastal California gnatcatcher is located in several locations along the Proposed Project route as well as designated critical habitat. The CNDDB documents numerous sightings of coastal California gnatcatcher along the Proposed Project survey area.

Coastal California gnatcatchers were observed during protocol-level surveys in 2008 and 2010 in suitable habitat within the Proposed Project survey area. Sightings included breeding pairs, family groups, and individuals, and were observed in CSS from the Talega Substation on the south end of the survey area to south of San Juan Creek Road (refer to Appendices D and E).

In 2008, biologists made 19 coastal California gnatcatcher observations, totaling a minimum of 14 different individuals in the Proposed Project survey area. Separate individuals were determined by simultaneous sightings, proximity to previous sightings, and time lapse between consecutive sightings. Observations made in close temporal and spatial proximity were considered the same individual; therefore, the total minimum number of coastal California gnatcatchers is conservative. Four nesting pairs of coastal California gnatcatchers were confirmed. In addition, a minimum of five single males were identified. For further details refer to the survey report in Appendix D.

In 2010, biologists made 21 coastal California gnatcatcher observations, for a minimum estimation of 20 individuals (including adults and juveniles) in the survey area. Similarly to the 2008 surveys, the total minimum number of coastal California gnatcatchers may be conservative. Six pairs were confirmed with two of the pairs observed as part of a family group. Both of the family groups had at least two juveniles with the pair. In addition, a minimum of three single males were identified. For further details refer to the survey report in Appendices D and E.

5.6.1.3 Cooper's hawk (*Accipiter cooperii*, WL)

Cooper's hawk is an uncommon resident within the wooded portion of the state. Its general distribution ranges from sea level to above 2,700 meters (0 to 9,000 feet). Dense stands of live oak, riparian deciduous or other forest habitats near water are used most frequently by this species (Zeiner, *et. al.*1990).

This species was observed in riparian habitat and eucalyptus trees in the Proposed Project survey area where suitable nesting habitat is present, particularly in the vicinity of San Juan Creek.

5.6.1.4 Least Bell's Vireo (*Vireo bellii pusillus*; FE, SE, Covered Species)

Least Bell's vireo is a subspecies of the North American song bird Bell's vireo (*Vireo bellii*). Least Bell's vireo is a migratory species that spends its winters in Mexico and returns to southern California as a summer resident. Least Bell's vireo can be found in the region during breeding season which is from March to August. The decline of this species is predominately due to brood parasitism by brown-headed cowbirds (*Molothrus ater*) (Kus, 2002). They breed locally in willow riparian thickets with good over and understory vegetation.

Riparian vegetation suitable for Least Bell's vireo occupation can be found in many of the creeks and drainages scattered along the Proposed Project survey area. No portion of the Proposed Project survey area falls within critical habitat for the species. The CNDDB documents several occurrences of the species within three miles of the Proposed Project, including the nearest record which is within the Proposed Project survey area west of the Talega Substation.

Least bell's vireo was observed in numerous small, unnamed drainages crossed by the Proposed Project survey area during protocol-level surveys in 2008 and 2010. Refer to Appendix F for locations of least Bell's vireo sightings during project surveys.

5.6.1.5 Southwestern Willow Flycatcher (*Empidonax traillii extimus*; FE, SE, Covered Species)

Southwestern willow flycatcher is a migratory species which breeds in North America and winters in South and Central America. The species can be typically found in the region from early May to early to mid-September, individuals migrating further north may be seen earlier or later in the year. Southwestern willow flycatchers nest in dense riparian areas. Threats to the species include loss, fragmentation and modification of riparian habitat required for breeding, as well as brood parasitism by brown-headed cowbirds. The CNDDB documents two occurrences of southwestern willow flycatcher approximately two miles northeast of the Rancho San Juan Segment of the Proposed Project survey area, in riparian habitat along San Juan Creek.

Surveys for the southwestern willow flycatcher were conducted in 2008 and 2010 by Peter Bloom (Bloom, 2008 and 2010). In the 2008 focused surveys, this species was observed at two separate locations, approximately 0.5 mile southwest and one mile west of the Talega Substation. In both instances southwestern willow flycatcher was observed during only one survey within the bird's migratory period. Due to the timing and number of observations it is assumed that these birds were migratory and were only briefly within the Proposed Project survey area. No

southwestern willow flycatchers were identified during the 2010 surveys. The 2010 survey report is included as Appendix G.

5.6.1.6 White-tailed kite (*Elanus leucurus*, FP)

White-tailed kites are annual residents of lowland terrestrial habitats, particularly, riparian woodland and oak or sycamore groves near grasslands and are uncommonly found away from agricultural fields (Eisenmann, 1971). This species makes nests out of sticks and can be found near the tops of dense trees such as dense willow or oak approximately 20 to 100 feet above ground (Dixon, *et. al*., 1957).

The white-tailed kite was observed uncommonly throughout the Proposed Project survey area foraging over CSS and ruderal vegetation, particularly in the areas between San Juan Creek and the Talega community. The white tailed kite is a fully protected species, meaning that no take of this species can occur.

5.6.2 Special Status Wildlife with Potential to Be On-Site

5.6.2.1 Arroyo Chub (*Gila orcuttii*; SSC)

The Arroyo chub is a small fish species native to coastal streams of southern California. The species is now scarce within its native range due to the disappearance of low-gradient streams (Moyle, *et. al.*, 1995). The species prefers slow-moving or backwater sections of warm to cool streams with sandy or muddy substrates. Spawning typically occurs in pools or quiet edge water. The species is omnivorous and feeds heavily on aquatic vegetation and associated invertebrates such as insects and small crustaceans.

The Arroyo chub is native to San Juan Creek (Moyle, *et. al*., 1995) and CNDDB records document the species upstream, downstream, and directly within the portion of the creek spanned by the Proposed Project. Suitable habitat exists in the Proposed Project survey area and occurrences have been documented by CNDDB within the northern Proposed Project survey area in San Juan Capistrano. Specifically, species may occur in San Juan Creek where the survey area crosses the creek, as well as upstream and downstream of the area and in nearby tributaries. There is a high potential for occurrence of this species within San Juan Creek.

5.6.2.2 Arroyo Toad (*Bufo californicus*; FE, SSC, Covered Species)

The Arroyo toad is a small, light greenish-gray or tan toad restricted to rivers with shallow, gravelly pools with adjacent sand bars or terraces. During the breeding season, from late March to mid-June, they can be found in large streams or rivers containing shallow pools with minimal current and sand or pea-gravel bottom. The Arroyo toad is of particular concern because it is difficult to detect during certain times in its life cycle. The Arroyo toad breeds in stream habitats, but migrates through and hibernates in upland habitats up to 1 kilometer (0.6 mile) from known breeding sites, where it remains underground for much of the winter (Stebbins, 1954; 1972; 1985). Records from the CNDDB document the species within San Juan Creek, San Mateo Creek and Canyon, Cristianitos Creek, Talega Canyon, and Gabino Canyon. Suitable upland foraging habitat exists in the Proposed Project survey area.

Protocol surveys for the Arroyo toad were conducted during the summer of 2010. The Arroyo toad was absent from all the survey areas. It was determined that areas within 0.9 mile of Cristianitos and Gabino Creeks would be considered suitable upland habitat for the species, but not suitable for breeding. No individuals or sign were found during focused surveys, although potential suitable upland foraging habitat was identified within the Proposed Project survey area. For further details refer to Appendix G.

5.6.2.3 Burrowing Owl (*Athene cunicularia*; SSC, Covered Species)

Burrowing owls are crepuscular small ground-dwelling owls with a round head and no ear tufts. Typical habitat for this species includes open, dry grasslands, agricultural fields, sparse shrub lands, as well as developed areas with sufficient food sources. Common burrowing mammals that are associated with burrowing owls are ground squirrels, prairie dogs and badgers.

This species was not observed during habitat assessment surveys; however suitable grassland habitat was noted to be present in the vicinity of the Prima Deshecha Landfill. Recent CNDDB records document the presence of the species in the immediate vicinity of the Proposed Project survey area in the Prima Deshecha Landfill. Thus, the potential for this species to be within the Proposed Project survey area is high.

5.6.2.4 Coast horned lizard (*Phrynosoma coronatum blainvillei*; SSC, Covered Species)

The coast horned lizard inhabits valley-foothill hardwood, conifer, riparian and annual grasslands (Pianka and Parker, 1975). This species occurs from the Sierra Nevada foothills, throughout central California and the southern California coast. This species prefers open terrain, sandy substrates and washes often found near ant mounds (Stebbins, 1954).

Suitable habitat exists in the Proposed Project survey area and occurrences have been documented within 0.2 mile of the Proposed Project survey area by CNDDB. The species may be present in CSS habitat within the Proposed Project survey area. There is a moderate potential for occurrence of this species based on its habitat requirements.

5.6.2.5 Mountain lion (*Felis concolor*; Covered Species)

Mountain lions inhabit many different types of habitat throughout a large range. This carnivorous species requires extensive riparian vegetation, bushy stages of various habitats along with irregular terrain such as rocky outcrops and tree edges. Typically habitats remote mountainous areas near reliable water sources but are capable of abstaining from drinking water for long periods (Williams, 1986). 60 to 80 percent of this species diet comprises of mule deer (Currier, 1983). The home range of a male is usually a minimum of 15 square miles and a female is between three and 12 square miles (Russell, 1978) while young adult cougars establish home ranges as vacancies as occur (Seidensticker *et al*., 1973).

Marginal habitat exists in the less disturbed areas of the Proposed Project survey area and in the vicinity of Camp Pendleton. There is a high potential for occurrence based on its habitat requirements.

5.6.2.6 Northern red-diamond rattlesnake (*Crotalus ruber ruber*; SSC, Covered Species)

The red-diamond rattlesnake is found in chaparral, woodland, grassland, and desert habitat areas from coastal San Diego County to the eastern slopes of the mountains. Prefers rocky areas and dense vegetation and requires rodent burrows, cracks in rocks or other surface cover objects (Klauber, 1972).

This species may be present in CSS habitats within the Proposed Project survey area; although it's preferred habitat of rocky areas and dense habitat is not present. The nearest CNDDB record is 1.3 miles northeast of the Rancho San Juan segment, in CSS. There is a moderate potential for occurrence of this species based on its habitat requirements.

5.6.2.7 Orange-throated whiptail (*Aspidoscelis hyperythra*; SSC, Covered Species)

Orange-throated whiptail lizards are uncommon to fairly common over much of its range in Orange, Riverside, and San Diego counties, especially in areas with summer morning fog. It inhabits low-elevation coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats (Bostic, 1965).

Suitable habitat exists in the Proposed Project survey area in CSS habitats, and occurrences have been documented within 0.3 mile by CNDDB. Therefore, there is a moderate potential for occurrence of this species based on its habitat requirements and CNDDB observations.

5.6.2.8 Riverside Fairy Shrimp (*Streptocephalus woottoni*; FE, Covered Species)

The Riverside Fairy Shrimp is a small freshwater crustacean typically found in deep, cool vernal pools that retain water through late spring. Their range extends from southwestern Riverside County, to northwestern Baja California. Threats to the Riverside fairy shrimp include habitat loss and degradation due to urban and agricultural development, off-road vehicle use, cattle trampling, human trampling, livestock grazing, trash dumping, invasion from weedy non-native plants, drainage or watershed alterations, road development, military activities, fire and fire suppression activities, and drought. Two CNDDB occurrences document the species in vernal pools located approximately 1.5 miles northeast of the Rancho San Juan segment and one mile south the Talega Substation.

No suitable habitat (vernal pools, ponded areas, or road ruts) were identified within the Proposed Project survey area, therefore there is no potential for this species to occur.

5.6.2.9 San Diego Fairy Shrimp (*Branchinecta sandiegonensis*; FE, Covered Species)

The San Diego fairy shrimp is a small freshwater crustacean found in small, shallow vernal pools. They may also occur in ditches and road ruts that can support suitable conditions (USFWS, 1994). The species is primarily found in vernal pools within San Diego County, however small populations also occur in Orange County. The San Diego fairy shrimp is known to occur on Camp Pendleton. Two recent CNDDB occurrences document the species in vernal pools located approximately one and 1.2 mile northeast of the Rancho San Juan segment of the Proposed Project.

No suitable habitat (vernal pools, ponded areas, or road ruts) was identified within the Proposed Project survey area; therefore, there is no potential for this species to occur.

5.6.2.10 Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*, WL, Covered Species)

The Southern California rufous-crowned sparrow exhibits a distinct preference for rocky hillsides and steep slopes in open grass and CSS in areas ranging from roughly 200 to 4,500 feet in elevation. They also thrive in areas that have recently been burned and sometimes remain in these grassy, successional habitats for a number of years. In general, pairs nest on the ground in rock hollows or under clumps of grass or low brush (Pemberton, 1910). This species is tolerant of edge effects, small habitat patches, low shrub volume, and short-term habitat disturbance.

Due to the suitable CSS habitat within the Proposed Project survey area and CNDDB records within the Proposed Project survey area near Talega, there is a moderate potential for occurrence.

5.6.2.11 Stephen's kangaroo rat (*Dipodomys stephensi*; FE. ST)

Stephen's kangaroo rats inhabit annual and perennial grasslands, coastal scrub and sagebrush with sparse canopy cover (Thomas, 1973). Stephens' kangaroo rat will burrow into firm soil and has been observed to occupy gopher burrows. This moderate-sized granivore species prefers buckwheat, chamise, brome grass and filaree vegetation (Thomas, 1975). Suitable habitat exists in the Proposed Project survey area and occurrences have been documented 2.5 miles west of the Proposed Project survey area within San Diego County by CNDDB.

There is a moderate potential for occurrence based on its habitat requirements, however there are no CNDDB records for Stephen's kangaroo rats within three miles of the Proposed Project in Orange County. The *SDG&E Subregional NCCP* does not cover impacts to this species in Orange County; take is only authorized in northern San Diego County.

5.6.2.12 Tidewater Goby (*Eucyclogobius newberryi*; FE, SSC)

The tidewater goby is a small fish species which is endemic to California and found primarily in the brackish waters of coastal lagoons, estuaries, and marshes. The historic range of the species is from Tillas Slough in Del Norte County, near the Oregon border, south to Agua Hedionda Lagoon in northern San Diego County (USFWS, 2008b). The species is currently found throughout this historic range, but resides in fewer localities than historically occurred, having been extirpated from some sites as a result of drainage, water quality changes, introduced predators, and drought. It is uncertain if the species still occurs at approximately 50 percent of its 134 documented localities (USFWS, 2005). Threats to the tidewater goby include loss and modification of habitat, water diversions, introduction of non-native predators and fish species, habitat channelization, and degraded water quality (Eschmeyer and Herald, 1983).

The tidewater goby often migrates up to 0.5 mile upstream into tributaries; however the species has been documented up to five miles upstream at locations in Mendocino and Santa Barbara Counties (USFWS, 2005). Tidewater gobies were last seen in San Juan Creek in 1968, up to 2.5 miles upstream from the coast, and were not found during a sampling conducted in 1992

(CNDDB, 2011; USFWS, 2005). Therefore, there is low potential for the species to occur in the Proposed Project survey area.

5.6.2.13 Two-striped garter snake (*Thamnphis hammondii*; SSC, Covered Species)

Two-striped garter snake inhabits the coastal region of southern California to 2,135 meters elevation. This species can be found in or near permanent fresh water. Prefers streams with rocky beds and riparian growth (Jennings and Hayes, 1994).

There is suitable habitat for this species and CNDDB records have been found within San Juan Creek. Therefore is a moderate potential for occurrence of this species within the perennially wet creeks and drainages crossing the Proposed Project survey area, specifically in Horno Creek, San Juan Creek, Segunda Deshecha Cañada, Tributary to Segunda Deshecha Cañada 3, and Tributary to Christianitos Creek 1.

5.6.2.14 Western pond turtle (*Emys marmorata*; SSC)

Western pond turtles inhabit ponds, lakes, rivers, streams, creeks, marshes and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. Inside streams this species prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for sun basking. This species is known to enter brackish water and even seawater.

There is suitable foraging habitat for this species and CNDDB records have been found within San Clemente Creek. Therefore is a moderate potential for occurrence of this species within the perennially wet creeks and drainages crossing the Proposed Project survey area, specifically in Horno Creek, San Juan Creek, Segunda Deshecha Cañada, Tributary to Segunda Deshecha Cañada 3, and Tributary to Christianitos Creek 1.

5.6.2.15 Western spadefoot (*Spea hammondii*; SSC, Covered Species)

Western spadefoot toad occurs primarily in grassland habitats, although can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.

Suitable habitat exists in the Proposed Project survey area and occurrences have been documented within 2.25 miles by CNDDB. Species may forage in CSS within the Proposed Project survey area. There is a moderate potential for occurrence of this species based on its habitat requirements.

5.7 WILDLIFE CORRIDORS

It is not anticipated that the Proposed Project will have a significant effect on wildlife movement corridors. The Proposed Project will be located within an existing ROW, primarily within urbanized areas, where transmission lines are already present. The Proposed Project would not significantly impact or restrict general wildlife movement due to the intermittent locations of construction activity and its temporary nature. Wildlife would not be physically prevented from moving around project equipment in the transmission corridor. During operation of the Proposed

Project, the widely spaced towers and/or poles would not physically obstruct wildlife movement; wildlife could move under and around the towers and poles.

5.8 JURISDICTIONAL DELINEATION OF WATERS AND WETLANDS

The Proposed Project survey area supports twelve different drainages. These drainages include eight relatively permanent waters, known as Horno Creek, San Juan Creek, Segunda Deshecha Cañada, Tributary to Segunda Deshecha Cañada 1, 2, and 3, and Tributary to Christianitos Creek 1 and 3. The remaining four drainages are non-relatively permanent waters known as the Tributary to Prima Deshecha Cañada, Tributary to San Juan Creek, the Rancho San Juan Drainage, and Tributary to Christianitos Creek 2. All drainages within the Proposed Project survey area total approximately 6.69 acres of WUS of which 3.43 acres are wetland, and 13.83 acres of "Waters of the State," of which 13.52 acres are riparian. The locations and boundaries of these jurisdictional waters are depicted in the attached Appendix C, Figures 2-7. A summary of jurisdiction by acreage is provided below in Table 2: Potentially Jurisdictional Waters in Proposed Project Survey Area.

The remainder of this page is intentionally left blank.

Table 2: Potentially Jurisdictional Waters in Proposed Project Survey Area

Drainage Name	ACOE Wetland	Total ACOE[1]	CDFG Riparian	Total CDFG[2]	Linear Feet
Horno Creek	0.05	**0.19**	1.08	**1.08**	540
San Juan Creek	2.00	**3.86**	4.86	**4.86**	665
Tributary to San Juan Creek	0.00	**0.05**	0.00	**0.05**	1,630
Whispering Hills Drainage	0.00	**0.94**	2.55	**2.55**	960
Tributary to Prima Deshecha Cañada	0.00	**0.22**	0.59	**0.72**	3,880
Segunda Deshecha Cañada	0.68	**0.68**	1.38	**1.38**	1,040
Tributary to Segunda Deshecha Cañada 1	0.01	**0.04**	0.01	**0.04**	155
Tributary to Segunda Deshecha Cañada 2	0.00	**0.03**	0.00	**0.03**	715
Tributary to Segunda Deshecha Cañada 3	0.26	**0.28**	0.55	**0.56**	515
Tributary to Christianitos Creek 1	0.26	**0.34**	2.24	**2.25**	1,040
Tributary to Christianitos Creek 2	0.00	**0.04**	0.00	**0.04**	610
Tributary to Christianitos Creek 3	0.00	**0.02**	0.26	**0.27**	630
Totals	***3.26***	***6.69***	***13.52***	***13.83***	***12,380***

[1] Includes all wetlands and waters (RPW and non-RPW).
[2] Includes bed and bank and associated riparian habitat, where present.

6.0 IMPACTS

The following section discusses the potential impacts to biological resources as a result of construction, operation and maintenance of the Proposed Project, and analyses the significance of those impacts. Impacts, whether or not they are significant, can be direct or indirect, and permanent or temporary. Direct permanent impacts are those effects that take a biological resource which cannot be replaced on-site, such as removing native vegetation to construct a building. Direct, temporary impacts include effects, such as those from construction staging, that are only temporary and can be restored to similar conditions prior to the impact. Indirect permanent impacts result from permanent surrounding influence, such as noise, light, or invasive species from a permanent source, such as a road, an airport, or a lighted sports facility. Indirect temporary effects are surrounding effects such as construction noise that will only last temporarily during construction activities of a project.

The operational protocols, habitat enhancement measures and mitigation set forth in Sections 7.1, 7.2 and 7.4, respectively, of the *SDG&E Subregional NCCP* were determined sufficient to reduce any impacts to special status species from the Proposed Project (including those species not covered under the *SDG&E Subregional NCCP*) to a less-than-significant level. Therefore, no additional APMs were determined required to avoid or minimize potential impacts to biological resources. Maps displaying the location of temporary and permanent construction impacts are provided in Appendix J. Details on the potential impacts and avoidance, minimization and mitigation measures are provided below.

6.1 CONSTRUCTION IMPACTS

The following discussion describes the Proposed Project's potential to impact sensitive species and habitats during construction of the Proposed Project. SDG&E would be operating under *SDG&E Subregional NCCP* which was established according to the FESA and CESA and the state's NCCP Act. This would include compliance with Section 7.1, *Operation Protocols* and Section 7.2, *Habitat Enhancement Measures* of the *SDG&E Subregional NCCP*.

Construction of the Proposed Project could result in temporary disturbance to and/or permanent loss of sensitive vegetation communities, rare plant communities, and sensitive plant species. Temporary disturbance includes short-term impacts during construction for new pole structures and removal of existing towers and work at staging/laydown areas. Permanent loss involves long-term impacts associated with permanent Proposed Project features such as new transmission towers and substation modifications, or any new access roads or improvements to existing access roads.

6.1.1 Impacts to Vegetation Communities

Impacts to vegetation communities could result in impacts to habitats for special status species, including Covered Species. Impacts could result from blading, scraping, excavation, and erosion, along with fragmentation and human access to restricted areas. Modification of habitat may reduce the prey base or other biological resources for special status species and thereby affect their ability to survive. The *SDG&E Subregional NCCP* allows for impacts to habitats when incidental to otherwise lawful activities and when conducted in full compliance with the *SDG&E Subregional* NCCP. Compliance with the *SDG&E Subregional NCCP* intends to avoid impacts

whenever possible and to implement measures to minimize and mitigate any take to the maximum extent possible.

The Proposed Project would permanently impact approximately 0.85 acre of CSS, 0.72 acre of Disturbed CSS, 2.38 acres of Ruderal vegetation, 2.83 acres of Disturbed habitat, 2.34 acres of Ornamental vegetation, 1.23 acres of existing Dirt roads and 10.05 acres of Developed land. The Proposed Project would also temporarily impact 0.44 acre of CSS, 0.86 acre of Disturbed CSS, 8.69 acres of Ruderal vegetation, 5.3 acres of Disturbed habitat, 1.16 acres of Ornamental vegetation, 1.41 acres of Dirt roads, and 4.84 acres of Developed areas. There would be no permanent or temporary impacts to Coastal Freshwater Marsh, SWS, Disturbed SWS, or Riparian Scrub habitat. Minimal impacts to sensitive habitats are expected due to the Proposed Project and are limited to CSS and Disturbed CSS. A map of temporary and permanent construction impacts to vegetation communities is provided in Appendix J. These impacts are also summarized in Table 3: Vegetation Community Impacts.

Consistent with the *SDG&E Subregional NCCP*, the Proposed Project has been designed to avoid sensitive habitat areas when possible, including not placing poles in drainage areas, using existing access roads to the greatest extent possible, and placing any new facilities, staging areas, or access roads outside habitats when feasible. Where avoidance of sensitive habitat areas (CSS and Disturbed CSS) is not possible, or where sensitive habitat areas exist adjacent to Proposed Project work areas, implementation of the measures in Section 7.1 and 7.2 of the *SDG&E Subregional NCCP* will reduce these impacts to less-than-significant, including but not limited to those listed below. The relevant *SDG&E Subregional NCCP* section is provided in brackets and can be used to reference the *SDG&E Subregional NCCP* for additional details.

The remainder of this page is intentionally left blank.

Table 3: Vegetation Community Impacts

Vegetation Community	Permanent Impacts (Acres)	Temporary Impacts (Acres)
Sensitive Habitats		
Coastal Sage Scrub	0.85	0.44
Disturbed Coastal Sage Scrub	0.72	0.86
Coastal Freshwater Marsh	0	0
Southern Willow Scrub	0	0
Disturbed Southern Willow Scrub	0	0
Riparian Scrub	0	0
Subtotal	*1.57*	*1.30*
Non-sensitive Habitats		
Ruderal	2.38	8.69
Disturbed	2.83	5.30
Ornamental	2.34	1.16
Dirt Roads	1.23	1.41
Developed	10.05	4.84
Subtotal	*18.83*	*21.4*
Total	***20.4***	***22.7***

***SDG&E Subregional NCCP* Operation Protocols, Habitat Enhancement Measures and Mitigation**

- Vehicles will be kept on access roads and limited to 15 miles per hour (Section 7.1.1, 1.).
- No plants will be collected (Section 7.1.1, 2.).
- Measures to prevent or minimize wild fires will be implemented, including exercising care when driving and not parking vehicles where catalytic converters can ignite dry vegetation (Section 7.1.1, 9.).
- Field crews will refer all environmental issues, including questions regarding environmental impacts, to the Environmental Surveyor (Section 7.1.1, 10.).
- All SDG&E personnel will participate in an environmental training program conducted by SDG&E, with annual updates (Section 7.1.2, 11.).
- The Environmental Surveyor will conduct pre-activity studies for all activities occurring in natural areas, and will complete a pre-activity study form including recommendations for review by a biologist and construction monitoring, if appropriate. The form will be provided to CDFG and USFWS but does not require their approval (Section 7.1.3, 13.).
- The Environmental Surveyor will flag boundaries of habitats to be avoided and, if necessary, the construction work boundaries (Section 7.1.3, 14.).
- The Environmental Surveyor will conduct monitoring as recommended in the pre-activity study form (Section 7.1.4, 35.).
- Fugitive dust will be controlled by regular watering and speed limits (Section 7.1.4, 39.).
- New access roads will be designed and constructed according to the SDG&E *Guide for Encroachment on Transmission Rights-of-Way (4/91)* (Section 7.1.6, 46.)
- Impacts to CSS and Disturbed CSS habitat for new facilities will be mitigated for permanent impacts at a 2:1 ratio in preserve areas and at a 1:1 ratio outside preserve areas (Section 7.2). SDG&E Mitigation Credits will be used for the Proposed Project.
- Impacts to CSS and Disturbed CSS habitat for new facilities will be mitigated for temporary impacts through basic site remediation, including hydro seeding for erosion control, if necessary. For areas greater than 500 square feet, any acreage not meeting the success criteria shall be deducted from SDG&E Mitigation Credits at a 1:1 ratio. For areas of less than 500 square feet, success criteria will not be required to be met (Sections 7.2 and 7.4). Vegetation restoration methods and success criteria are outlined in Section 7.2.1. Habitat reclamation, involving the removal of exotic vegetation, will be considered when re-seeding would be an ineffective habitat enhancement method (Section 7.2.2).

6.1.2 Impacts to Sensitive Plant Species

The *SDG&E Subregional NCCP* allows for the take of Covered Species and impacts to their habitats when incidental to otherwise lawful activities and when conducted in full compliance with the *SDG&E Subregional* NCCP. Compliance with the *SDG&E Subregional NCCP* intends to avoid take of Covered Species whenever possible and to implement measures to minimize and

mitigate any take to the maximum extent possible. Take of Narrow Endemic Covered Species, including certain plant species, is to be avoided except for emergencies and unavoidable impacts from repairs to existing facilities.

All sensitive plant species identified in the literature search are unlikely to occur within the Proposed Project survey area based on focused field surveys and observations. Based on the results of the field survey, the potential for occurrence was determined for each plant species and is included as Appendix A of this report. No sensitive plant species were found during habitat assessments or rare plant surveys conducted in 2008 and 2010.

Since special status plant species were not observed in the Proposed Project survey area and determined to have an unlikely potential to occur, no impacts to these species are expected. Pre-activity surveys required pursuant to the *SDG&E Subregional NCCP* will confirm absence of special status plants. If any are found, compliance with Sections 7.1 and 7.2 of the *SDG&E Subregional NCCP* will reduce any impacts to a less-than-significant level. These include measures outlined in Section 6.1.1 of this report.

6.1.3 Impacts to Sensitive Wildlife Species

Take can occur from impacts to individual animals, such as harassment, death or displacement, or impacts to habitats (see discussion in Section 6.1.1 of this report). Harassment is the most common impact to individual animals and can occur as an unavoidable and unintentional consequence of factors such as human activity, operation of machinery or equipment, and associated noise. Harassment can also result in the disruption of normal behaviors and abandonment of nests. Direct killing or injury to individuals may result from being struck by vehicles or equipment, or being crushed or trapped in their burrows. Displacement may occur when individual animals move away from the work area to surrounding areas, either temporarily or permanently, either due to noise or removal of nests or nesting/foraging habitat. Some wildlife may be temporarily displaced during construction of the Proposed Project, at least during daylight hours. However, once the work ends, no lasting effects are anticipated that would preclude wildlife from returning to their normal routines. Permanent displacement results in animals being forced to compete with other animals in new areas for food and living space. The Proposed Project will result in a temporary loss of approximately 10.01 acres of suitable foraging and cover habitat, and the permanent loss of approximately 3.95 acres of suitable foraging and cover habitat. Suitable habitat within the Proposed Project area includes native and non-native vegetation classified as CSS, Disturbed CSS, or Ruderal areas. Other potential impacts include wildlife falling into and becoming trapped within transmission pole excavation areas or inside equipment/supplies.

The *SDG&E Subregional NCCP* allows for the take of Covered Species and impacts to their habitats when incidental to otherwise lawful activities and when conducted in full compliance with the *SDG&E Subregional* NCCP. Compliance with the *SDG&E Subregional NCCP* intends to avoid take of Covered Species whenever possible and to implement measures to minimize and mitigate any take to the maximum extent possible. Take of Narrow Endemic Covered Species, including certain animal species, is to be avoided except for emergencies and unavoidable impacts from repairs to existing facilities.

As summarized in Section 5.6 of this document, 34 sensitive wildlife species have a potential to occur (30 of which are Covered Species) and six are found within and in the vicinity of the Proposed Project survey area (of which only one, white-tailed kite, is not a Covered Species). The potential presence of species is based on their known or recorded occurrence within the region, and/or appropriate habitat being present in the project area.

While no impacts to riparian vegetation communities are included within the Proposed Project, impacts to areas adjacent to riparian habitat may indirectly affect special status riparian species. Specifically, potential impacts to arroyo toad, least Bell's vireo, and southwestern willow flycatcher will be assessed through pre-construction and clearance surveys pursuant to the *SDG&E Subregional NCCP*.

Consistent with the *SDG&E Subregional NCCP*, the Proposed Project has been designed to avoid sensitive habitat areas that may support special status wildlife species when possible, including not placing poles in drainage areas, using existing access roads to the greatest extent possible, and placing any new facilities, staging areas, or access roads outside habitats when feasible. Due to the small permanent footprint of the Proposed Project, and the presence of potential foraging adjacent to the Proposed Project, wildlife habitat is not expected to be adversely affected. Where avoidance of sensitive habitat areas supporting special status wildlife is not possible, or where sensitive habitat areas exist adjacent to Proposed Project work areas, implementation of the measures in Section 7.1 and 7.2 of the *SDG&E Subregional NCCP* will reduce these impacts to less-than-significant, including but not limited to those listed in Section 6.1.1 and additional measures below. The applicable *SDG&E Subregional NCCP* section is provided in brackets and can be used to reference the *SDG&E Subregional NCCP* for additional details. Compliance with the *SDG&E Subregional NCCP* would reduce impacts to Covered Species to a less-than-significant level, including mitigation for loss of habitat. Pre-activity surveys required pursuant to the *SDG&E Subregional NCCP* will also confirm the absence of any other special status species not covered under the *SDG&E Subregional NCCP*. If any non-Covered Species special status species are found or suspected, compliance with Sections 7.1 and 7.2 of the *SDG&E Subregional NCCP* will allow avoidance, minimization and mitigation of impacts, as applicable. CDFG and/or USFWS will be consulted if impacts to non-Covered Species cannot be avoided. Based on Section 5.6.2 of this report, presence or potential presence of non-Covered Species is expected to be limited to white-tailed kite, arroyo chub, and Stephen's kangaroo rat. No impacts will occur to arroyo chub habitat as result of the Proposed Project, and avoidance of any impacts to white tailed kite and Stephen's kangaroo rat (if present) is expected through compliance measures in the *SDG&E Subregional NCCP*.

SDG&E Subregional NCCP Operation Protocols and Habitat Enhancement Measures

- No wildlife, including rattlesnakes, will be collected or harmed, except to protect life and limb (Section 7.1.1, 2. and 7.).
- Feeding of wildlife is not allowed (Section 7.1.1, 4.).
- No pets are allowed within the right-of-way (Section 7.1.1, 5.).
- Littering is not allowed, and no food or waste will be left on the right-of-way or adjacent properties (Section 7.1.1, 8.).

- Field crews will refer all environmental issues, including wildlife relocation, dead or sick wildlife, or questions regarding environmental impacts to the Environmental Surveyor. Biologists or experts in wildlife handling may be necessary to assist with wildlife relocations (Section 7.1.1, 10.).
- Supplies, equipment, or construction excavations where wildlife could hide (e.g., pipes, culverts, pole holes, trenches) will be inspected prior to moving or working on/in them (Section 7.1.4, 37. and 38.).
- During the nesting season, the presence or absence of nesting species shall be determined by a biologist who will recommend appropriate avoidance and minimization measures (Section 7.1.6, 50.).

6.1.4 Raptors and Other Nesting Bird Species

Construction activities could potentially impact nesting raptors, passerines, and other sensitive bird species such as migratory birds protected under the MBTA. Impacts may include the removal of potential nesting habitat and the disruption of nesting behavior due to a temporary increase in noise from construction equipment and vehicles. SDG&E would comply with Sections 7.1 and 7.2 of the *SDG&E Subregional NCCP*, including pre-activity surveys (see Section 6.1.1 of this report), determining the presence or absence of nesting species (see Section 6.1.3 of this report), and implementing avoidance and minimization measures (see Section 6.1.3 of this report). These measures will also comply with the MBTA. Through compliance with the *SDG&E Subregional NCCP*, impacts to breeding and nesting birds are expected to be less-than-significant.

Transmission lines and other structures provide potential perching opportunities for raptor species, which can increase the potential for predation of wildlife by raptors. Since the Proposed Project is within an existing transmission ROW, the extent of predation on sensitive and common wildlife species is not anticipated to change from existing conditions.

Concerns regarding potential electrocution impacts from transmission lines to wildlife species are primarily focused on avian species. Electrocution with avian species can occur from wing contact as avian species perch, land, or take off from a utility pole by contact with two conductors to complete the electrical circuit, simultaneous contact with energized phase conductors and other equipment, and simultaneous contact with energized wire and a grounded wire. Electrocution of avian species is more of a potential hazard to larger birds, such as raptors, because their body size and wing span are large enough to span the distance between the conductor wires and, thus, complete the electrical circuit. As part of the Proposed Project, SDG&E will be utilizing underground transmission lines in certain portions of the alignment in place of existing overhead transmission lines, which will reduce the possibility of avian electrocution. Where overhead transmission lines are required, design and construction will occur in compliance with the Avian Power Line Interaction Committee's Suggested Practices for Avian Protection on Power Lines. As outlined in Section 2.0, VIII of the *SDG&E Subregional NCCP*, SDG&E may also coordinate with wildlife agencies and consider the installation of bird guards on the poles and towers to prevent perching/nesting activities. The type of bird guards will be considered on a case by case basis. The *SDG&E Subregional NCCP* also requires that if nests interfere with the safe operation of a transmission system, that removal of the nest be

avoided during the months of January through June. With compliance of the *SDG&E Subregional NCCP*, impacts to birds as a result of electrocution are expected to be less-than-significant.

6.1.5 Wildlife Movement Corridors

It is not anticipated that the Proposed Project will have a significant effect on wildlife movement corridors. The Proposed Project will be located within an existing ROW where transmission lines are currently present. Placement of pole and tower structures for the new overhead transmission line will occur in the vicinity of existing structures within the ROW, and due to their small footprint will maintain wide natural areas to allow the continued movement of wildlife species. The Proposed Project will also avoid or span existing drainages that often serve as wildlife movement corridors. Some local wildlife movement may be temporarily disrupted during construction, at least during daylight hours. However, once construction is completed, no lasting effects are expected that would preclude wildlife from returning. Therefore, impacts to wildlife movement corridors are anticipated to be less-than-significant.

Since the Proposed Project will be located in an existing utility ROW, currently occupied by numerous structures and circuits, the addition of new circuits and structures will not significantly impact migrating birds. Furthermore, the measures outlined in Section 6.1.3 of this report will avoid or minimize impacts associated with construction. Therefore, impacts to migrating birds are anticipated to be less-than-significant.

Based on the above and Sections 6.1.1 and 6.1.3 of this report, it is expected that regional wildlife movement will not be significantly impacted by the Proposed Project due to minimal loss of protective cover (vegetation), roosts, forage habitat, or movement corridors. Therefore, the potential impacts to wildlife movement corridors are anticipated to be less-than-significant.

6.1.6 Impacts to Jurisdictional Waters

Construction of the Proposed Project would result in no permanent impacts to waters under the jurisdiction of the ACOE, RWQCB, and CDFG. A total of approximately 0.0006 acre of ephemeral jurisdictional waters would be temporarily impacted. The temporary impacts are to a 25-foot linear ephemeral drainage with a one-foot width located within Tributary to Prima Deshecha Cañada. This water has a low biological value and has no associated riparian vegetation. Nevertheless, SDG&E would avoid this drainage to the greatest extent possible, obtain permits from the regulatory agencies, and mitigate for impacts as described in the *SDG&E Subregional NCCP* (Sections 7.1 and 7.2) and as required by the permitting process. Through compliance of the *SDG&E Subregional NCCP* and permits to be obtained from the regulatory agencies, direct impacts to jurisdictional waters will be less-than-significant. Indirect impacts to jurisdictional drainages will be avoided through the use of state-of-the art technical design and construction techniques to minimize avoid erosion and siltation into any creeks, streams, rivers, or bodies of water by use of BMPs (*SDG&E Subregional NCCP* Section 7.1.4, 20.).

6.2 OPERATIONS AND MAINTENANCE IMPACTS

Standard operational and maintenance activities, such as road grading, tree trimming, structure installation, and replacement and repairs, could potentially impact special status species,

including *SDG&E Subregional NCCP* Covered Species, if present in the Proposed Project area. Potential impacts from SDG&E's standard operations and maintenance activities are already accounted for in the *SDG&E Subregional NCCP*. Through compliance of measures outlined in the *SDG&E Subregional NCCP*, the potential impacts to special status species as a result of operation and maintenance of the Proposed Project is expected to be less-than-significant.

6.2.1 Wildlife Electrocution

Concerns regarding potential electrocution impacts to wildlife are primarily focused on avian species. An electric circuit (and resultant electrocution) is created when a bird simultaneously touches an energized conductor and the neutral wire or grounded hardware. Most bird electrocutions occur on distribution systems at the relatively lower voltages. This is due primarily to the spacing of the electrical conductors. On transmission towers the wires are separated by seven to 30 feet. In distribution systems the spacing is two to six feet. The closer spacing is more of a potential hazard to raptors and other large birds because their body size and wingspan are big enough to span the distance between the conductor wires, completing an electrical circuit. A second shock hazard exists from a neutral wire and metal hardware that is connected to a ground wire. Through implementation of the Avian Power Line Interaction Committee's Suggested Practices for Avian Protection on Power Lines, and Section 2.0, VIII of the *SDG&E Subregional NCCP* (also discussion in Section 6.1.3 of this report), impacts from avian electrocution is considered less-than-significant.

Electrocution of non-avian species is rare. When it occurs, it is generally caused by climbing animals that come into contact with energized components at substations rather than on transmission lines. Typical non-avian electrocution impacts could occur to non-sensitive wildlife species such as squirrels (*Spermophilus* sp.), raccoons (*Procyon lotor*), and domestic cats (*Felis domesticus*). Infrequent electrocution of non-sensitive wildlife species is not considered a significant impact.

6.2.2 Collision

Collision impacts of avian species with existing transmission facilities can be a significant impact. Collision impacts typically occur to migratory bird species and are generally due to poor visibility of electrical lines. Factors leading to avian collisions with existing transmission lines include a lack of visual cues that make the lines stand out against the surrounding environment. Disorientation of avian species can be caused by "light dazzle" from city/industrial light sources during evening hours, by spatial configuration of the electrical lines, and proximity to heavily used major avian flyways.

The Proposed Project's overhead transmission line crosses open fields that provide foraging habitat for generally solitary raptors, as well as riparian areas, which could be utilized by migratory birds. Since the Proposed Project's overhead facilities are within an existing SDG&E ROW, these added facilities are not expected to result in a significant increase in avian collision. Therefore, the potential impacts of increased avian collisions are anticipated to be less-than-significant.

6.3 SUMMARY OF IMPACTS

Direct and indirect impacts to special status habitats, plant and wildlife species, including Covered Species, will be avoided, minimized, or mitigated through compliance with measures outlined in the *SDG&E Subregional NCCP*, implementation of the Avian Power Line Interaction Committee's Suggested Practices for Avian Protection on Power Lines, and regulatory permitting for jurisdictional waters, thereby reducing impacts to a less-than-significant level. Details on those compliance measures are provided in Section 6.1 and 6.2 of this report. Since compliance with the existing *SDG&E Subregional NCCP* and regulatory permitting is considered adequate to address impacts to sensitive biological resources, no additional APMs are necessary.

7.0 REFERENCES

ACOE (U.S. Army Corps of Engineers). 1987. Corps of Engineers Wetlands Delineation Manual. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.

ACOE (U.S. Army Corps of Engineers). 2006. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

ACOE (U.S. Army Corps of Engineers). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Atwood, H. L. 1992. *A Maximum Estimate of the California Gnatcatcher's Population Size in the United States.* Western Birds 23:1-9.

Atwood, J. L. 1993. *California Gnatcatchers and Coastal Sage Scrub: The Biological Basis for Endangered Species Listing*. Pages 149-169 in J. E. Keeley, ed. Interface between ecology and land development in California. Southern Calif. Acad. Sci., Los Angeles.

Bloom, Peter, Bloom Biological Inc. Email communication with P. Potenza, TRC. June 16, 2008.

Bloom Biological, Inc. 2010. *Results of Protocol Surveys for Federally-endangered Arroyo Toad (Bufo californicas) and Southwestern Willow Flycatcher (Empidonax traillii extimus) in Conjunction with San Diego Gas & Electric's Orange County Transmission Expansion Project located in Orange County, California.*

Bostic, D. L. 1965. *Home Range of the Teiid Lizard, Cnemidophorus hyperythrus beldingi*. Southwest. Nat. 10:278-281.

CDFG (California Department of Fish and Game). 2000. *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities.*

CDFG (California Department of Fish and Game). 2009. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. Online. http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf

California Herps.com. *Plestiodon skiltonianus interparietalis* - Coronado Skink. Online: http://www.californiaherps.com/lizards/pages/e.s.interparietalis.html. Site visited November 10, 2008.

CNPS (California Native Plant Society). 2001. *CNPS Botanical Survey Guidelines*. Pages 38-40 in California Native Plant Society's inventory of rare and endangered vascular plants of California (D.P. Tibor, editor). Sixth edition.

CNPS (California Native Plant Society). 2011. Inventory of Rare and Endangered Plants (online edition, v7-08d). California Native Plant Society. Sacramento, CA. Online: http://www.cnps.org/inventory. Site visited October 17, 2011.

CNDDB (California Natural Diversity Data Base). 2011. California Department of Fish and Game. Search for the County of Orange and the following 7.5-minute USGS quadrangles: Cañada Gobernadora, Dana Point, San Clemente, and San Juan Capistrano.

Coulombe, J. N. 1971. *Behavior and Population Ecology of the Burrowing Owl (Athene cunicularia) in the Imperial Valley of California*. Condor 73:162-176.

County of Orange. 2006. *Southern Orange County Subregional NCCP. September 25, 2006*

Currior, M. J. P. 1983. *Felis concolor*. Mammal. Species No. 200. 7pp.

Dixon, K. L., R. E. Dixon, and J. E. Dixon. 1957. *Natural History of the White-tailed Kite in San Diego County,* California. Condor 59:156-165.

Eisenmann, E. 1971. *Range Expansion and Population Increase in North and Middle America of the White-tailed Kite (Elanus leucurus).* Amer. Birds 25:529-536.

Eschmeyer, W. N., and E.S. Herald. 1983. *A Field Guide to Pacific Coast Fishes of North America*. Peterson Field Guide Series. Field Guide Pac. Coast Fishes No. 28.

Federal Register. 2007. *Federal Register Vol. 72, No. 243.* Rules and Regulations Pg 72058-72059

Google, 2011. Aerials available at www.earth.google.com.

Harlow, D. L. 1978. *The Reproductive Success and Protective Effort of Peregrine Falcons in California*. 1978. U.S. Dep. Inter., Fish and Wildl. Serv., Portland OR. Tech. Rep. 18pp.

Hickman, J.C. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley and Los Angeles, California.

Holland, R. F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game.

Holland, V. L. and D. J. Keil. 1995. *California Vegetation.* Kendall/Hunt Publishing Company. Dubuque, Iowa.

Jennings, M. R., and M. P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California*. California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California. Online at:

http://www.dfg.ca.gov/wildlife/species/publications/docs/herp_ssc.pdf. Site visited October 17, 2011.

Klauber, L. M. 1972. *Rattlesnakes: Their Habits, Life Histories, and Influence on Mankind*. 2nd ed. Univ. California Press, Berkeley. 1533 pp.

Kus, B. 2002. Least Bell's Vireo (*Vireo bellii pusillus*). In *The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-associated Birds in California*. California Partners in Flight. Online: http://www.prbo.org/calpif/htmldocs/riparian_v-2.html.Site visited October 17, 2011.

Moyle, P.B., R.M. Yoshiyama, J.E. Williams, and E.D. Wikramanayake. 1995. *Fish Species of Special Concern in California.* Second edition. Final report prepared for the State of California, the Resource Agency, Department of Fish and Game, Inland Fisheries Division. Online at: http://www.dfg.ca.gov/wildlife/species/ssc/fish.html. Site visited October 17, 2011.

NRCS (Natural Resources Conservation Service). 2011. Web Soil Survey. Online. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Pemberton, J. R. 1910. *Notes on the Rufous-crowned Sparrow*. Condor 12:123-125.

Pianka, E. R., and W. S. Parker. 1975. *Ecology of Horned Lizards: A Review with Special Reference to Phrynosoma platyrhinos*. Copeia 1975:141-162.

Russell, K. R. 1978. *Mountain Lion*. Pages 207-225 in J. L. Schmidt and D. L. Gilbert, eds. Big Game of North America. Stackpole Books, Harrisburg, PA. 494pp.

Sawyer, J.O., Jr. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento.

Sawyer, J. O., and T. Keeler-Wolf. 2009. *A Manual of California Vegetation*. Second Edition. California Native Plant Society. Sacramento, California.

SDG&E (San Diego Gas & Electric). 1995a. *Subregional Natural Community Conservation Plan*. December 15, 1995.

SDG&E (San Diego Gas & Electric). 1995b. *San Diego Gas & Electric Subregional Natural Community Conservation Plan Implementing Agreement/CESA Memorandum of Understanding*. December 18, 1995. Pg 21; 7.2

Seidensticker, J. C. IV, M. G. Hornocker, W. V. Wiles, and J. P. Messick. 1973. *Mountain Lion Social Organization in the Idaho Primitive Area*. Wildl. Monogr. No. 35. 60pp.

Sogge, M.K., Ahlers, D., and Sferra, S.J. 2010. *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher*: USGS Survey Techniques and Methods 2A-10.

Sogge, M.K, 2011. *Southwestern Willow Flycatcher Site.* USGS, Colorado Plateau Research Station. Online: http://sbsc.wr.usgs.gov/cprs/research/projects/swwf/cprsmain.asp. Site visited October 17, 2011.

Stebbins, R. C. 1954. *Amphibians and Reptiles of Western North America*. McGraw-Hill, New York. 536pp.

Stebbins, R. C. 1972. *California Amphibians and Reptiles*. Univ. California Press, Berkeley. 152 pp.

Stebbins, R. C. 1985. *A Field Guide to Western Reptiles and Amphibians.* 2nd ed., revised. Houghton Mifflin, Boston. 336pp.

Thomas, J. R., Jr. 1973. *Stephens' Kangaroo Rat Survey*, 1972-1973. California Department Fish and Game, Spec. Wildl. Invest., Sacramento. Final Rep. Job II-5.6. 10pp.

Thomas, J. R., Jr. 1975. *Distribution, Population Densities, and Home Range Requirements of the Stephens' Kangaroo Rat (Dipodomys stephensi).* M.S. Thesis, California State Polytechnic Univ., Ponoma. 64pp.TRC. 2008. *Least Bell's Vireo (Vireo bellii pusillus) Survey Report for San Diego Gas & Electric's Proposed Orange County Transmission Expansion Project*. August 2008.

TRC. 2008. *Coastal California Gnatcatcher (Polioptila californica californica) Survey Report for San Diego Gas & Electric's Proposed Orange County Transmission Expansion Project*. October 2008.

TRC. 2010a. *Coastal California Gnatcatcher (Polioptila californica californica) Survey Report for San Diego Gas & Electric's Proposed South Orange County Reliability Upgrade Project*.

TRC. 2010b. *Least Bell's Vireo (Vireo bellii pusillus) Survey Report for San Diego Gas & Electric's Proposed South Orange County Reliability Upgrade Project.*

USFWS (U.S. Fish and Wildlife Service). 1992. *Least Bell's Vireo Presence/Absence Survey Protocol.*

USFWS (U.S. Fish and Wildlife Service). 1994. *Endangered and Threatened Wildlife and Plants; Proposed Rule to List the San Diego Fairy Shrimp as Endangered*. Federal Register 59: 39874-39878.

USFWS (U.S. Fish and Wildlife Service). 1997. *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Guidelines.*

USFWS (U.S. Fish and Wildlife Service). 1998a. *The National List of Plant Species that Occur in Wetlands.*

USFWS (U.S. Fish and Wildlife Service). 1998b. *Vernal Pools of Southern California Recovery Plan.*

USFWS (U.S. Fish and Wildlife Service). 1999a. *Arroyo Southwestern Toad (Bufo microscaphus californicus) Recovery Plan.* U.S. Fish and Wildlife Service, Portland, Oregon.

USFWS (U.S. Fish and Wildlife Service). 1999b. *Survey Protocol for the Arroyo Toad.*

USFWS (U.S. Fish and Wildlife Service). 2000. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants.*

USFWS (U.S. Fish and Wildlife Service). 2005. *Recovery Plan for the Tidewater Goby (Eucyclogobius newberryi).* U.S. Fish and Wildlife Service, Portland, Oregon. vi 199 pp.

USFWS (U.S. Fish and Wildlife Service). 2008a. *Birds of Conservation Concern 2008.* United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. Online version available at: http://www.fws.gov/migratorybirds/

USFWS (U.S. Fish and Wildlife Service). 2008b. Arcata Fish and Wildlife Office Website. Tidewater Goby http://www.fws.gov/arcata/es/fish/Goby/goby.html. Site visited November 11, 2008.

USFWS (United States Fish and Wildlife Service). 2011a. National Wetlands Inventory Mapper Application. Online. Accessed August 2011

USFWS (U.S. Fish and Wildlife Service). 2011b. *Species Profile: San Diego Fairy Shrimp (Branchecta sandiegonensis).* Online http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K049. Site visited October 17, 2011.

USGS (United States Geological Survey). 1975. San Clemente, California 7.5-minute series topographic quadrangle. United States Department of Interior.

USGS (United States Geological Survey). 1981. Cañada Gobernadora, California 7.5-minute series topographic quadrangle. United States Department of Interior.

USGS (United States Geological Survey). 1995. Dana Point, California 7.5-minute series topographic quadrangle. United States Department of Interior.

USGS (United States Geological Survey). 1997. San Juan Capistrano, California 7.5-minute series topographic quadrangle. United States Department of Interior.

Williams, D. F. 1986. *Mammalian Species of Special Concern in California*. Calif. Dept. Fish and Game, Sacramento. Admin. Rep. 86-1. 112pp.

Zeiner, D.C., W.R. Laudenslayer Jr., K.E. Mayer, and M. White, eds. 1990. *California's Wildlife Volume II: Birds.* State of California: The Resource Agency, Department of Fish and Game, Sacramento, California.

Appendix A
CNDDB and CNPS Special Status Species Table

APPENDIX A CNDDB and CNPS Special Status Species Table

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Plants					
Allen's daisy	*Pentachaeta aurea* ssp. *allesnii*	Federal: None State: None CNPS:1B.1 NCCP: None	Coastal scrub, valley and foothill grasslands. Prefers sandy substrate and openings. Occurs between 75 and 520 m.	March to June Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Aphanisma	*Aphanisma blitoides*	Federal: None State: None CNPS: 1B.2 NCCP: CS	Coastal bluff scrub, Coastal dunes, Coastal scrub. Prefers sandy substrate. Occurs between 1 and 305 m.	March to June Annual	**Unlikely.** No suitable habitat identified in the Proposed Project survey area also, no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Big-leaved crownbeard	*Verbesina dissita*	Federal:FT State: ST CNPS: 1B.1 NCCP: None	Chaparral (maritime) and coastal scrub. Occurs at 45 and 205 m.	April to July Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Blochman's dudleya	*Dudleya blochmaniae* ssp. *blochmaniae*	Federal: None State: None CNPS:1B.1 NCCP: None	Coastal bluff scrub, Chaparral, Coastal scrub, Valley and foothill grassland. Perfers rocky, often clay or serpentinite soils. Occurs between 5 and 450 m.	April to June Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record for this species is within 3.0 miles of the survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
California satintail	*Imperata brevifolia*	Federal: None State: None CNPS: 2.1 NCCP: None	Chaparral, Coastal scrub, Mojavean desert scrub, Meadows and seeps often alkali, Riparian scrub. Prefers mesic soils. Occurs between 0 and 500 m.	September to May Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record is within 2.5 miles of the survey area.
Chaparral nolina	*Nolina cismontana*	Federal: None State: None CNPS: 1B.2 NCCP: None	Chaparral, coastal scrub. Prefers sandstone or gabbro soils. Occurs between 140 and 1,275 m.	May to July Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Chaparral ragwort	*Senecio aphanactis*	Federal: None State: None CNPS: 2.2 NCCP: None	Chaparral, cismontane woodland, coastal scrub. Occurs between 15 and 800 m.	January to April Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	Federal: None State: None CNPS: 1B.1 NCCP: None	Chaparral, coastal scrub, desert dunes/sandy soils. Occurs between 80 and 1,600 m.	January to September Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. No CNDDB records within 3.0 miles of survey area.
Cliff spurge	*Euphorbia misera*	Federal: None State: None CNPS: 2.2 NCCP: None	Coastal bluff scrub, coastal scrub, and mojavean desert scrub. Occurs between 10 and 500 m.	December to August Evergreen	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Coulter's matilija poppy	*Romneya coulteri*	Federal: None State: None CNPS: 4.2 NCCP: None	Chaparral and coastal scrub. Occurs between 20 and 1,200 m.	March to July Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Coulter's saltbush	*Atriplex coulteri*	Federal: None State: None CNPS: 1B.2 NCCP: None	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Occurs between 3 and 460 m.	March to October Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record for this species is within 0.1 mile of the survey area.
Engelmann oak	*Quercus engelmannii*	Federal: None State: None CNPS: 4.2 NCCP: None	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Occurs between 120 and 1,300 m.	March to May Evergreen	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Estuary seablite	*Suaeda esteroa*	Federal: None State: None CNPS: 1B.2 NCCP: None	Marshes and swamps (coastal salt) Occurs between 0 and 5 m.	May to January Perennial	**Unlikely.** No **s**uitable habitat identified in the Proposed Project survey area also, no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Felt-leaved monardella	*Monardella hypoleuca* ssp. *lanata*	Federal: None State: None CNPS: 1B.2 NCCP: CS	Chaparral, cismontane woodland. Occurs between 300 and 1,190 m.	June to August Perennial	**Unlikely.** No suitable habitat identified in the Proposed Project survey area also, no occurrences were identified during focused surveys and outside of known elevation range. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Hall's monardella	*Monardella macrantha* ssp. *hallii*	Federal: None State: None CNPS: 1B.3 NCCP: None	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Occurs between 730 and 2,195 m elevation.	June to October Perennial	**Unlikely.** No suitable habitat identified in the Proposed Project survey area also, no occurrences were identified during focused surveys and outside of known elevation range. No CNDDB records within 3.0 miles of survey area.
Intermediate mariposa lily	*Calochortus weedii* var. *intermedius*	Federal: None State: None CNPS: 1B.2 NCCP: None	Rocky and calcareous substrate. Chaparral, coastal scrub, valley and foothill grassland. Occurs between 105 and 855 m.	May to July Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record for this species is within 0.75 mile of the survey area.
Laguna beach dudleya	*Dudleya stolonifera*	Federal: FT State: ST CNPS: 1B.1 NCCP: None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Prefers rocky substrate. Occurs between 10 and 260 m.	May to July Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Little mousetail	*Myosurus minimus* ssp. *apus*	Federal: None State: None CNPS: 3.1 NCCP: CS	Valley and foothill grassland, vernal pools (alkaline). Occurs between 20 and 640 m.	March to June Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Long-spined spineflower	*Chorizanthe polygonoides* var. *longispina*	Federal: None State: None CNPS: 1B.2 NCCP: None	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland. Often prefers clay soils. Occurs between 30 and 1,530 m.	April to July Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Many-stemmed dudleya	*Dudleya multicaulis*	Federal: None State: None CNPS: 1B.2 NCCP: CS	Chaparral, coastal scrub, valley and foothill grassland. Prefers clay soils. Occurs between 15 and 790 m.	April to July Perennial	**Unlikely**. Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record for this species is within 0.43 mile of the survey area..
Mesa horkelia	*Horkelia cuneata* ssp. *puberula*	Federal: None State: None CNPS: 1B.1 NCCP: None	Chaparral, cismontane woodland, coastal scrub. Prefers sandy or gravelly soil. Occurs between 70 and 810 m.	February to September Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Mud nama	*Nama stenocarpum*	Federal: None State: None CNPS: 2.2 NCCP: None	Marshes and swamps (lake margins, riverbanks). Occurs between 5 and 500 m.	January to July Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Nuttall's scrub oak	*Quercus dumosa*	Federal: None State: None CNPS: 1B.1 NCCP: None	Closed-con coniferous forest, chaparral, and coastal scrub. Prefers sandy, clay loam substrate. Occurs between 15 and 400 m.	February to August Evergreen	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record for this species is within 0.75 mile of the survey area.
Orcutt's pincushion	*Chaenactis glabriuscula* var. *orcuttiana*	Federal: None State: None CNPS: 1B.1 NCCP: None	Coastal bluff scrub (sandy), coastal dunes. Occurs between 3 and 100 m.	January to August Annual	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Palmer's grapplinghook	*Harpagonella palmeri*	Federal: None State: None CNPS: 4.2 NCCP: CS	Chaparral, coastal scrub, valley and foothill grassland. Occurs between 20 and 955 m.	March to May Annual	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record for this species is within 1.0 mile of the survey area.
Parry's tetracoccus	*Tetracoccus dioicus*	Federal: None State: None CNPS: 1B.2 NCCP: CS	Chaparral, coastal scrub. Occurs between 165 and 1,000 m.	April to May Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record for this species is within 1.0 mile of the survey area.
Peninsular nolina	*Nolina cismontana*	Federal: None State: None CNPS: 1B.2 NCCP: None	Chaparral, coastal scrub. Prefers sandstone or gabbro soils. Occurs between 140 and 1,275 m.	May to July Evergreen	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Plummer's mariposa lily	*Calochortus plummerae*	Federal: None State: None CNPS: 1B.2 NCCP: None	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Prefers granitic or rocky substrate. Occurs between 100 and 1,700 m.	May to July Evergreen	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Prostrate vernal pool navarretia	*Navarretia prostrata*	Federal: None State :None CNPS:1B.1 NCCP: None	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools. Prefers mesic soils. Occurs between 15 and 1,210 m.	April to July Annual	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Robinson's pepper-grass	*Lepidium virginicum* var. *robinsonii*	Federal :None State: None CNPS: 1B.2 NCCP: None	Chaparral and coastal scrub. Occurs between 1 and 885 m elevation.	January to July Annual	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Salt spring checkered bloom	*Sidalcea neomexicana*	Federal: None State: None CNPS: 2.2 NCCP: None	Chaparral, coastal scrub, lower montane coniferous forest, mojavean desert scrub, playas. Prefers alkaline and mesic soils. Occurs between 15 and 1,530 m.	March to June Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record for this species is within 2.5 miles of the survey area.
San Bernardino aster	*Symphyotrichum defoliatum*	Federal :None State: None CNPS: 1B.2 NCCP: None	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic). Prefers ditches, streams and springs. Occurs between 2 and 2,040 m.	July to November Perennial	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
San Miguel savory	*Satureja chandleri*	Federal: None State: None CNPS: 1B.2 NCCP: CS	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Prefers rocky, gabbroic or metavolcanic soils. Occurs between 120 and 1,075 m elevation.	March to July	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Santa Catalina Island desert-thorn	*Lycium brevipes* var. *hassei*	Federal: None State: None CNPS: 1B.1 NCCP: None	Coastal bluff scrub, coastal scrub. Occurs between 10 to 300 m.	June	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Santa Monica dudleya	*Dudleya cymosa* ssp. *ovatifolia*	Federal: FT State: None CNPS: 1B.2 NCCP: None	Chaparral, coastal scrub. Prefers volcanic or sedimentary, rocky substrate. Occurs between 150 and 1,675 m.	March to June	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Smooth tarplant	*Centromadia pungens*	Federal: None State: None CNPS: 1B.1 NCCP: None	Chenopod scrub, meadows and seeps, playas, riparian woodland and valley and foothill grassland. Prefers alkaline soils. Occurs between 0 and 640 m.	April to September	**Unlikely.** No suitable habitat identified in the Proposed Project survey area also, no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
South coast saltscale	*Artiplex pacifica*	Federal: None State: None CNPS: 1B.2 NCCP: None	Coastal bluff scrub, coastal dunes, coastal scrub, playas. Occurs between 0 and 140 m.	March to August	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Southern tarplant	*Centromadia parryi* ssp. *australis*	Federal: None State: None CNPS: 1B.1 NCCP: None	Marshes, swamps, valley and foothill grassland (vernally mesic), vernal pools. Occurs between 0 and 425 m.	March to August	**Unlikely.** No suitable habitat identified in the Proposed Project survey area, also no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Sticky dudleya	*Dudleya viscida*	Federal: None State: None CNPS: 1B.2 NCCP: CS	Coastal bluff scrub, chaparral, coastal scrub. Occurs between 10 and 550 m.	April to June Evergreen shrub	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Summer holly	*Comarostaphylis diversifolia* ssp. *diversifolia*	Federal: None State: None CNPS: 1B.2 NCCP: None	Chaparral, cismontane woodland. Occurs between 30 and 550 m.	May to June Evergreen shrub	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Tecate cypress	*Hesperocyparis forbesii*	Federal: None State: None CNPS: 1B.1 NCCP: CS	Clay, gabbroic or metavolcanic, closed-cone coniferous forest, chaparral. Occurs 80 to 1500 m.	April to June Evergreen shrub	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.
Thread-leaved brodiaea	*Brodiaea filifolia*	Federal: FT State: SE CNPS: 1B.1 NCCP: CS	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools. Prefers clay substrate. Occurs between 25 to 1,219 m.	March to June Perennial herb	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record for this species is within 0.5 mile of the survey area.
White rabbit-tobacco	*Pseudognaphalium leucocephalum*	Federal: None State: None CNPS: 2.2 NCCP: None	Chaparral, cismontane woodland, coastal scrub, riparian woodland. Prefers sandy or gravelly. Occurs between 0 to 2,100 m.	July to December Perennial herb	**Unlikely.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Invertebrates					
Riverside fairy shrimp	*Streptocephalus woottoni*	Federal: FE State: None NCCP: CS	Coastal scrub, valley and foothill grassland, vernal pool, wetland.		**None.** No suitable habitat identified in the Proposed Project survey area. The nearest CNDDB record for this species is within 1.25 miles of the survey area.
San Diego fairy shrimp	*Branchinecta sandiegonensis*	Federal: FE State: None NCCP: CS	Found in small, shallow vernal pools, and occasionally in ditches and road cuts with suitable conditions.		**None.** No suitable habitat identified in the Proposed Project survey area. The nearest CNDDB record for this species is within 1.25 miles of the survey area.
Amphibians/Fish					
Arroyo chub	*Gila orcuttii*	Federal: None State: SSC NCCP: None	Found in slow-moving or backwater sections of southern California coastal streams with muddy or sandy substrates.		**High.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. CNDDB records document the species occurring in San Juan Creek where the Proposed Project survey area crosses the creek, as well as upstream and downstream of the area and in nearby tributaries.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Arroyo toad	*Bufo californicus*	Federal: FE State: SSC NCCP: CS	Occurs in washes or intermittent streams, including valley-foothill and desert washes. Prefers rivers with sandy banks, willows, cottonwoods, and sycamores and loose, gravelly areas of streams in the drier parts of its range. Breeds in open sandy and gravelly streams.		**Moderate.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused field surveys. The nearest CNDDB record for this species is within 0.1 mile of the survey area. Specifically, along San Juan Creek, as well as along Cristianitos Canyon and Gabino Creeks.
Southern steelhead southern California DPS	*Oncorhynchus mykiss irideus*	Federal: FE State: SSC NCCP: None	Historically found in major southern California coastal streams.		**Low.** The species is not documented to occur along creeks within the Proposed Project survey area. The nearest CNDDB record for this species is within 1.5 miles of the survey area in San Mateo Creek; the stream will not be crossed by the Proposed Project.
Tidewater goby	*Eucyclogobius newberryi*	Federal: FE State: SSC NCCP: None	Found primarily in brackish waters of coastal lagoons, estuaries, and marshes.		**None.** No suitable habitat identified in the Proposed Project survey area. The nearest CNDDB record for this species is within 1.5 miles of the survey area in Aliso Creek;
Western spadefoot	*Spea hammondii*	Federal: None State: SSC NCCP: CS	Occurs in grasslands, scrub, chaparral, and oak woodlands where soil is suitable for burrowing. Vernal pools are required for breeding and egg-laying. Species is nocturnal and spends most of the year underground.		**Moderate.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during focused surveys. The nearest CNDDB record for this species is within 2.25 miles of the survey area in Horno Creek.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Reptiles					
Coast horned lizard	*Phrynosoma coronatum blainvillei*	Federal: None State: SSC NCCP: CS	Low Occurs in a variety of habitats including grasslands, coastal sage scrub, chaparral, oak woodland, riparian woodland, pinyon-juniper woodland, and coniferous forest. Prefers friable, rocky, or shallow sandy soils.		**Moderate.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species is within 0.2 mile of the survey area. Species may be present in coastal sage scrub habitat along Proposed Project survey area.
Coastal rosy boa	*Lichanura trivirgata*	Federal: None State: None NCCP: CS	Occurs in desert and chaparral habitats from the coast of southern California to the Mojave and Colorado deserts. Prefers moderate to dense vegetation and rocky cover. Has been observed in diverse locations such as hillsides, desert canyons, washes and mountains. Little is known of seasonality, but most commonly found in late spring/early summer.		**Low.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. No CNDDB records are present within 3.0 miles of the survey area.
Belding's orange-throated whiptail	*Aspidoscelis hyperythra*	Federal: None State: SSC NCCP: CS	Coastal sage scrub, chaparral, and valley-foothill hardwood habitats. Prefers sandy areas with patches of brush and rocks.		**Moderate.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species is within 0.3 mile of the survey area. species

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Northern red-diamond rattlesnake	*Crotalus ruber ruber*	Federal: None State: SSC NCCP: CS	Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains. Prefers rocky areas and dense vegetation and requires rodent burrows, cracks in rocks or other surface cover objects.		**Moderate.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species within 1.25 miles of the survey area.
Two-striped garter snake	*Thamnophis hammondii*	Federal: None State: SSC NCCP: CS	Found in permanent or semi-permanent waterways, prefers streams with rocky beds and riparian growth.		**Moderate.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species within 1.25 miles of the survey area. Specifically, species there is potential for this species within the perennially wet creeks and drainages crossing the Proposed Project survey area.
Western pond turtle	*Emys marmorata*	Federal: None State: SSC NCCP: CS	Ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.		**Moderate.** Suitable habitat identified in the Proposed Project survey area, also no occurrences were identified during field surveys. The nearest CNDDB record for this species within 0.3 mile of the survey area. Specifically, there is potential for this species within the perennially wet creeks and drainages crossing the Proposed Project survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Birds					
American peregrine falcon	*Falco peregrinus anatum*	Federal: BCC State: FP NCCP: CS	Widespread throughout California, prefers open habitat, coastlines, lake edges and mountain chains. Nests on cliff sides or utilized abandoned nests made by large birds but does not build its own nest.		**Present.** Suitable nesting and foraging habitat identified in the Proposed Project survey area; occurrences were identified during field surveys. No CNDDB records within 3.0 miles of survey area.
Burrowing owl	*Athene cunicularia*	Federal: BCC State: SSC NCCP: CS	Habitat includes arid and semi-arid environments with mammal burrows and low vegetation, such as grasslands, pasturelands, scrublands, and agricultural fields.		**High.** Suitable nesting and foraging habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species is located within the Proposed Project survey area near the Prima Desecha Landfill. species
Coastal (San Diego) cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	Federal: None State: SSC NCCP: CS	Foraging and breeding habitat is coastal sage scrub with patches of tall prickly pear and coastal cholla (*Opuntia littoralis* and *O. oricola*). Nests almost exclusively in prickly pear and coastal cholla.		**Low.** Suitable foraging habitat identified in the Proposed Project survey area; however, Proposed Project survey area lacks cacti and succulents typically associated with this species and required for nesting. No occurrences were identified during field surveys. The nearest CNDDB record for this species is within 0.10 mile of the survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Coastal California gnatcatcher	*Polioptila californica californica*	Federal: FT State: SSC NCCP: CS	Obligate, permanent resident of coastal sage scrub below 2,500 feet in southern California. This species is known to occur in low, coastal sage scrub in arid washes, on mesas and slopes. Suitable coastal sage scrub vegetation exists throughout the Proposed Project's Proposed Project survey area.		**Present.** Suitable nesting and foraging habitat identified in the Proposed Project survey area; numerous occurrences were identified during focused surveys. Observed and documented in both 2008 and 2010 during habitat assessment and focused surveys..
Cooper's hawk	*Accipiter cooperii*	Federal: None State: WL NCCP: CS	Inhabits broken woodlands, woodland edges and streamside groves. Nests in open woodlands or in deciduous trees in riparian areas. The riparian habitat and eucalyptus grove located along the Proposed Project survey area provides suitable nesting habitat.		**Present.** Suitable nesting and foraging habitat identified in the Proposed Project survey area. This species was observed in riparian habitat and eucalyptus trees along the Proposed Project survey area.
Golden eagle	*Aquila chrysaetos*	Federal: BCC State: FP NCCP: CS	Usually in mountainous areas, rare in grasslands, desert and open country. Nests on cliffs or tall trees.		**Low.** Low quality foraging habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. Marginally suitable nesting habitat present on towers or tall trees. No CNDDB records within 3.0 miles of survey area.
Grasshopper sparrow	*Ammodramus savannarum*	Federal: None State: None NCCP: CS	Grassland habitat - ground-nesting species.		**Low.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Least Bell's vireo	*Vireo bellii pusillus*	Federal: FE State: SE NCCP: CS	Typically found foraging and nesting in low riparian areas in the vicinity of water or in dry river bottoms. Nests often found in willow, baccharis or mesquite. Occurs below 610 meters elevation.		**Present.** Suitable nesting and foraging habitat identified in the Proposed Project survey area. The species was observed and documented during focused surveys at four drainage locations spanned or paralleled by the Proposed Project survey area.
Northern harrier	*Circus cyaneus hudsonius*	Federal: None State: SSC NCCP: CS	Coastal salt and freshwater marsh. Will nest and forage in grasslands, from salt grass in desert sinks to mountain cienegas. Nests on ground in shrubby vegetation, usually at marsh edge.		**Low.** Suitable nesting and foraging habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. Appropriate foraging habitat is present in the more open grassland and sage scrub habitat within the Proposed Project survey area. No CNDDB records within 3.0 miles of survey area.
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	Federal: None State: WL NCCP: CS	Coastal sage scrub and sparse mixed chaparral, often on rocky hillsides with patches of grass and herbaceous vegetation.		**Moderate.** Suitable nesting and foraging habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species is within 2.5 miles of the survey area

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Southwestern willow flycatcher	*Empidonax traillii extimus*	Federal: FE State: SE NCCP: CS	Cottonwood-willow and tamarisk riparian forest.		**Present.** Suitable habitat identified in the Proposed Project survey area. Focused surveys conducted in 2008 observed species migratory individuals in the riparian habitat west of the Talega Substation. No observations during the 2010 focused surveys for the species. The nearest CNDDB record for this species is within 0.25 mile of the survey area. species
Tricolored blackbird	*Agelaius tricolor*	Federal: BCC State: SSC NCCP: CS	Occurs in grassland, riparian, and marsh habitats. Requires thick vegetation for nesting purposes and often nests near water sources. They require a relatively small foraging area that includes surrounding agricultural fields and grasslands.		**Low.** Small patches of suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species is within 2.4 miles of the survey area.
White-tailed kite	*Elanus leucurus*	Federal: None State: FP NCCP: None	Lowland terrestrial habitats, in particular, riparian woodlands, and oak or sycamore groves near grasslands.		**Present.** Suitable nesting and foraging habitat identified in the Proposed Project survey area; occurrences were identified during field surveys. The nearest CNDDB record for this species is within 0.25 mile of the survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Mammals					
Dulzura pocket mouse	*Chaetodipus californicus femoralis*	Federal: None State: SSC NCCP: CS	Coastal sage scrub, chaparral, and grassland and is attracted to grass/chaparral edges.		**Low.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species is within 2.5 miles of the survey area.
Mexican long-tongued bat	*Choeronycteris mexicana*	Federal: None State: SSC NCCP: None	Desert, montane, riparian, to pinyon-juniper habitats. Most frequently found roosting in desert canyons, deep caves, mines, or rock crevices. In urban environments, use abandoned buildings for day roosts.		**Low.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species is within 2.0 miles of the survey area.
Mountain lion	*Puma concolor browni*	Federal: None State: SSC NCCP: CS	Many different habitats within a large range. It typically inhabits remote mountainous areas near reliable water sources.		**High.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. Marginal habitat exists in the less disturbed areas of the Proposed Project Proposed Project survey area and in the vicinity of Camp Pendleton. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Pallid bat	*Antrozous pallidus*	Federal: None State: SSC NCCP: None	Occurs in low elevations throughout California. Deserts, grasslands, shrublands, woodlands, and forests. Most commonly found in open, dry habitats with rocky areas for roosting.		**Low.** Low quality habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species is within 1.75 miles of the survey area.
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	Federal: None State: None NCCP: CS	Intermediate canopy stages of shrub habitats and in open shrub/herbaceous and tree/herbaceous edges in Southern California west of the .		**Moderate.** Suitable habitat identified in the Proposed Project survey area also, no occurrences were identified during field surveys. Suitable habitat within areas of disturbed and intact coastal sage scrub vegetation found within Proposed Project survey area. No CNDDB records within 3.0 miles of survey area.
San Diego desert woodrat	*Neotoma lepida intermedia*	Federal: None State: SSC NCCP: CS	Occurs in Joshua tree woodlands, pinyon-juniper woodlands, mixed chaparral, sagebrush, and desert habitats. Particularly abundant in areas of rocky outcrops, cliffs, and slopes.		**Low.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. No CNDDB records within 3.0 miles of survey area.
Southern mule deer	*Odocoileus hemionus*	Federal: None State: None NCCP: CS	Coniferous forest, desert shrubs, chaparral, and grassland with shrubs.		**High.** Suitable habitat identified in the Proposed Project survey area in the vicinity of Camp Pendleton; no occurrences were identified during field surveys. No CNDDB records within 3.0 miles of survey area.

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS	HABITAT REQUIREMENTS	FLOWERING/ PHENOLOGY	POTENTIAL FOR OCCURRENCE
Stephen's kangaroo rat	*Dipodomys stephensi*	Federal: FE State: None NCCP: CS	Annual and perennial grasslands, coastal scrub and sagebrush with sparse canopy cover. Prefers buckwheat, chamise, brome grass, and filaree. This species will burrow into firm soil.		**Moderate.** Suitable habitat identified in the Proposed Project survey area, also no occurrences were identified during field surveys. The nearest CNDDB record for this species is within 2.5 miles of the survey area within highly disturbed non-native grassland habitat on Camp Pendleton. .
Western mastiff bat	*Eumops perotis californicus*	Federal: None State: SSC NCCP: CS	Open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices, cliff faces, high buildings, trees, and tunnels.		**Low.** Suitable habitat identified in the Proposed Project survey area; no occurrences were identified during field surveys. The nearest CNDDB record for this species is within 3.0 miles of the Site.
Yuma myotis	*Myotis yumanensis*	Federal: None State: None NCCP: CS	Woodland and grassland habitats; require caves or other undisturbed areas to roost.		**Low.** Foraging habitat may be present but the Proposed Project survey area lacks suitable roosting areas; no occurrences were identified during field surveys. The nearest CNDDB record for this species is within 1.5 miles of the survey area.

Legend

Federal (U.S. Fish and Wildlife Service)

FE Federally listed, endangered: species in danger of extinction throughout a significant portion of its range

FT Federally listed, threatened: species likely to become endangered within the foreseeable future

State (California Department of Fish and Game)

SE State listed, endangered

ST State listed, threatened

FP Fully Protected

SSC California Species of Special Concern: administrative designation for vertebrate species that appear vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats

WL Watch List

CNPS (California Native Plant Society)

1B Rare, threatened, or endangered in California and elsewhere

2 Rare, threatened, or endangered in California, but more common elsewhere

3 Need more information - a review list

4 Limited distribution - a watch list

.1 Seriously threatened in California

.2 Fairly threatened in California

.3 Not very threatened in California

Appendix B:
Plants and Wildlife Observed On-site

PLANTS

Aceraceae - Maple Family
**Acer* sp. - maple

Adoxaceae - Elderberry Family
Sambucus mexicana - Mexican elderberry

Aizoaceae - Ice Plant Family
**Aptenia cordifolia* - baby sun rose
**Carpobrotus edulis* - hottentot-fig
**Lampranthus spectabilis* - trailing iceplant
**Mesembryanthemum crystallinum* - crystalline iceplant

Alliaceae - Onion Family
Dichelostemma capitatum - blue dicks/wild hyacinth

Amaranthaceae - Amaranth family
**Amaranthus albus* - tumbling pigweed

Anacardiaceae - Sumac Family
Malosma laurina - laurel sumac
Rhus integrifolia - lemonade berry
Rhus ovata - sugar bush
**Schinus molle* - Peruvian pepper tree/California pepper tree
**Schinus terebinthifolius* - Brazilian pepper tree
Toxicodendron diversilobum - poison oak

Apiaceae - Carrot Family
Apiastrum angustifolium - mock-parsley
**Apium graveolens* - celery
Bowlesia incana - bowlesia
Conium maculatum - poison hemlock
Daucus pusillus - wild carrot/ rattlesnake weed
**Foeniculum vulgare* - fennel
Sanicula bipinnata - poison sanicle
**Sanicula crassicaulis* - Pacific sanicle

Apocynaceae - Dogbane Family
** Nerium oleander* - oleander

Asclepiadaceae - Dogbane Family
Asclepias fascicularis - narrow-leaf milkweed

Araliaceae - Ginseng Family
***Hedera helix* - English ivy**

Arecaceae - Palm Tree Family
**Washingtonia robusta* - Mexican fan palm*
**Phoenix dactylifera* - date palm

Asteraceae - Sunflower Family
Achyrachaena mollis - blow-wives
Achillea millefoliu - common yarrow
Artemisia californica - California sagebrush
Artemisia douglasiana - mugwort
Ambrosia psilostachya - western ragweed
Baccharis pilularis - coyote bush
Baccharis salicifolia - mulefat
Baccharis sarothroides - broom baccharis
**Carduus pycnocephalus* - Italian thistle
**Centaurea melitensis* - tocalote/malta star thistle
**Cirsium vulgare* - bull thistle
**Chamomilla suaveolens* - pineapple weed
**Chrysanthemum coronarium* - garland chrysanthemum
Conyza sp. - horseweed
Corethrogyne filaginifolia - common sandaster
**Cynara cardunculus* - artichoke thistle
**Dimorphotheca sinuate* - African daisy
Encelia farinose - brittlebush
Encelia californica - California encelia
Eriophyllum confertiflorum - golden yarrow
Eriophyllum confertiflorum var. *confertiflorum* - Long-stem golden yarrow
**Filago gallica* - narrow-leaved filago
**Gazania linearis* - treasure flower
Gnaphalium bicolor - bicolored cudweed
Gnaphalium californicum - California everlasting
Grindelia camporum var. *bracteosa* - rayless gumplant
Gutierrezia californica – matchweed
Gutierrezia sarothrae – common snakeweed
Hazardia squarrosa – saw toothed goldenbush
**Hedypnois cretica* – Crete weed
Helianthus annuus - common sunflower
Heterotheca grandiflora - telegraph weed
**Hypochaeris glabra* - smooth cat's ear
Isocoma menziesii - white flowered goldenbush
Isocoma menziesii var. *menziesii* - Menzies' goldenbush
**Lactuca serriola* - prickly-lettuce

Malacothrix saxatilis - cliff malacothrix
Picris echioides - bristly ox-tongue
Pseudognaphalium bicolor – twocolor cudweed
Pseudognaphalium canescens - Wright's cudweed
Rafinesquia californica - California chicory
**Senecio vulgaris* - old man of spring
**Silybum marianum* - milk thistle
Stephanomeria exigua ssp. *exigua* - small wreath plant
**Sonchus asper* ssp. *asper* - prickly sow-thistle
**Sonchus oleraceus* - sow thistle
**Taraxacum officinale* - common dandelion
**Uropappus lindleyi* - silver puffs
Xanthium spinosum - spiny cocklebur
Xanthium strumarium - cocklebur

Berberidaceae - Barberry Family
**Nandima domestica* - sacred bamboo

Betulaceae - Birch Family
Alnus rhombifolia - white alder

Bignoniaceae - Bignonia Family
**Jacaranda mimosifolia* - jacaranda

Boraginaceae - Borage Family
**Echium candicans* - pride of Madeira

Brassicaceae - Mustard Family
**Brassica nigra* - black mustard
**Capsella bursa-pastoris* - Shepherd's purse
**Coronopus didymus* - lesser wart-cress
**Hirschfeldia incana* - shortpod mustard
**Raphanus sativus* - wild radish

Boraginaceae - Borage Family
Amsinckia menziesii var. *intermedia* - common fiddleneck
Amsinckia menziesii var. *menziesii* - rigid fiddleneck
Cryptantha intermedia - popcorn flower

Cactaceae - Cactus Family
Opuntia littoralis - coast prickly-pear
**Opuntia ficus-indica* - Indian fig

Capparaceae - Caper Family
Isomeris arborea - bladderpod

Caryophyllaceae - Pink Family
**Cerastium glomeratum* - mouse-ear chickweed
**Silene gallica* - common catchfly
**Spergularia rubra* - ruby sand-spurry

Chenopodiaceae - Goosefoot Family
**Atriplex lentiformis* - quail brush
**Atriplex semibaccata* - Australian saltbush
**Chenopodium album* - lamb's quarters
**Chenopodium* sp. - goosefoot
**Salsola tragus* - Russian thistle

Convolvulaceae - Morning-glory family
**Convolvulus arvensis* - bindweed
***** *Convolvulus* sp. - bindweed
***** *Ipomoea purpurea* - common morning-glory

Crassulaceae – Orpine Family
Dudleya pulverulenta - chalk dudleya

Cucurbitaceae - Gourd Family
Cucurbita foetissima - coyote gourd/melon
Cucurbita foetidissima - calabazilla
Marah fabaceus - manroot/wild cucumber

Cupressaceae - Cypress Family
**Cupressus sempervirens* - Italian cypress

Ericaceae - Heath Family
Xylococcus bicolor - mission manzanita

Euphorbiaceae - Spurge Family
**Chamaesyce maculate* - spotted spurge
** Chamaesyce prostrata* - prostrate spurge
Croton setigerus - doveweed
**Ricinus communis* - castor bean

Fabaceae - Legume Family
Astragalus trichopodus - southern California locoweed
**Medicago lupulina* - black medick
**Medicago polymorpha* - bur-clover
**Melilotus alba* - white sweetclover
**Melilotus indica* - sourclover

**Melilotus officinalis* - yellow sweetclover
**Lathyrus* sp. - sweet pea
Lupinus biocolor - miniature lupine
Lupinus sp. - lupine
**Lupinus succulentus* - arroyo lupine
**Lotus hamatus* - grab lotus
Lotus scoparius - deerweed
**Spartium* sp. - broom
**Trifolium repens* - white clover
Trifolium willdenovii - tomcat clover

Fagaceae - Beech Family
Quercus agrifolia - coast live oak/ interior live oak
Quercus berberidifolia - scrub oak

Geraniaceae - Geranium Family
**Erodium cicutarium* - red-stem filaree/stork's bill
*Erodium botrys - long-beak filaree
**Geranium carolinianum* - Carolina geranium
**Geranium dissectum* - cut-leaf geranium

Grossulariaceae - Currant Family
Ribes speciosum - fushsia-flower gooseberry

Hydrophyllaceae - Waterleaf Family
Nemophila menziesii - baby blue-eyes
Phacelia cicutarium - caterpillar phacelia
Phacelia minor - California bluebells
Phacelia ramosissima - branching phacelia
Pholistoma auritum var. *auritum* - fiesta flower

Iridaceae - Iris Family
Sisyrinchium bellum - blue-eyed grass

Juncaceae - Rush Family
Juncus bufonius var. *bufonius* - common toad rush

Lamiaceae - Mint Family
**Lavandula stoechas* - French lavender
**Marrubium vulgare* - common horehound
Salvia apiana - white sage
Salvia columbariae - chia
Salvia mellifera - black sage

Stachys ajugoides var. *rigida* - hedge-nettle

Liliaceae - Lily Family
Bloomeria crocea var. *crocea*- Common goldenstar
Yucca schidigera - Mojave yucca
Yucca whipplei - our Lord's candle/chaparral yucca

Malvaceae - Mallow Family
Malacothamnus densiflorus - many-flowered mallow
Malacothamnus fasciculatus - Mendocino bushmallow
**Malva parviflora* - cheeseweed
Malva sp. - mallow
**Malva sylvestris* - high mallow

Moraceae - Mulberry Family
**Ficus carica* - edible fig
**Ficus macrophylla* - bay fig
**Ficus pumila* - creeping fig

Myoporaceae - Emu Bush Family
**Myoporum laetum* - ngaio tree/ lollypop tree

Myrtaceae - Myrtle family
**Callistemon* sp. - bottlebrush tree
**Eucalyptus globulus* - blue gum
**Eucalyptus polyanthemos* - silver dollar gum
**Medlaeuca* sp. - paperbark

Nyctaginaceae - Four-O'Clock Family
Mirabilis laevis var. *crassifolia* - California four o'clock
Mirabilis lavis – desert wishbone bush
Bougainvillea spectabilis - bougainvillea

Oleaceae - Olive Family
**Ligustrum* sp. - privet
**Olea europaea* - olive tree

Onagraceae - Evening Primrose Family
Camissonia bistorta - suncups
Camissonia californica - California evening primrose
Epilobium ciliatum ssp. *ciliatum* - willow herb
Oenothera elata ssp. *hirsutissima* – great marsh evening primrose

Orobanchaceae - Broomrape Family
Castilleja sp. - Indian paintbrush

Papaveraceae - Poppy Family
Eschscholzia californica - California poppy

Pinaceae - Pine Family
**Pinus* sp. - pine

Plantaginaceae - Plantain Family
Plantago erecta - California plantain
Plantago ovata - woolly plantain

Platanaceae - Plane-tree Family
Platanus racemosa - western sycamore

Plumbaginaceae - Leadwort Family
**Limonium perezii* - Perez's marsh-rosemary/Canarian sea lavender
**Limonium* sp. - statice

Poaceae - Grass Family
**Arundo donax* - giant reed
**Avena barbata* - slender wild oat
**Avena fatua* - wild oat
**Bromus diandrus* - ripgut
**Bromus hordeaceus* - soft chess
**Bromus madritensis* ssp. *rubens* - red brome/foxtail chess
**Bromus carinatus* var. *carinatus* - California brome
**Cortaderia* sp. - pampas grass
**Cortaderia selloana* - pampas grass
**Cynodon dactylon* - Bermuda grass
Distichlis spicata - saltgrass
**Hordeum murinum* - glaucous foxtail barely
**Hordeum murinum* ssp. *leporinum* - farmer's foxtail
Leymus condensatus - giant wildrye
**Lamarckia aurea* - goldentop
**Lolium multiflorum* - Italian rye grass
**Lolium perenne* - perennial ryegrass
**Lolium* sp. - ryegrass
Nassella pulchra - purple needle grass
**Pennisetum setaceum* - fountain grass

**Phalaris aquatica* - harding grass
Phalaris sp. - Canary grass
Poa secunda ssp. *secunda* - one-sided bluegrass
**Schismus barbatus* - common Mediterranean grass
Vulpia microstachys var. *pauciflora* – Pacific fescue
**Vulpia* sp. - fescue

Polemoniaceae - Phlox Family
Navarreita hamata - hooked navarretia

Polygonaceae - Buckwheat Family
Eriogonum fasciculatum var. *fasciculatum* - California buckwheat
**Polygonum arenastrum* - common knotweed
**Polypogon monspeliensis* - annual beard grass/ rabbits foot grass
**Rumex crispus* - curly dock

Portulacaceae - Purslane Family
Calandrinia ciliata - red maids
Calyptridium monandrum - common calyptridium
Claytonia parviflora ssp. *parviflora* - Utah miner's lettuce
Claytonia perfoliata ssp. *perfoliata* - miner's lettuce

Primulaceae - Primrose Family
**Anagallis arvensis* - scarlet pimpernel

Pteridaeae - Brake Family
Pentagramma triangularis ssp. *triangularis* - gold back fern

Ranunculaceae - Buttercup or Crowfoot family
Ranunculus californica - California buttercup

Rhamnaceae - Buckthorn Family
Rhamnus crocea - spiny redberry
Ceanothus spp. - ceanothus

Rosaceae - Family
Adenostoma fasciculatum - chamise
Adenostoma sparsifolium - redshank
**Eriobotrya japonica* - loquat
Heteromeles arbutifolia - toyon
Potentilla glandulosa ssp. *glandulosa* - sticky cinquefoil
Rosa californica - California wild rose

Rosa sp. - ornamental rose

Rubiaceae - Coffee or Madder Family
Galium angustifolium var. *angustifolium* - narrowleaf bedstraw
Galium aparine - common bedstraw

Salicaceae - Willow Family
Populus fremontii ssp. *fremontii* - Fremont's cottonwood
Salix exigua - Narrow-leaved willow
Salix gooddingii - Goodding's black willow
Salix lasiolepis - arroyo willow
Salix laevigata - red willow

Sapinoaceae - Soapberry Family
*Cupaniopsis anacardioides - carrotwood

Saururaceae - Lizard Tail Family
Anemopsis californica - yerba mansa

Scrophulariaceae - Figwort Family
Antirrhinum coulterianum - white snapdragon
**Kickxia elatine* - fluellin
Mimulus aurantiacus - bush monkey flower

Solanaceae-Night Shade Family
Datura wrightii - sacred datura
**Datura stramonium* - annual jimson weed
Nicotiana quadrivalvis - coyote tobacco
**Nicotiana glauca* - tree tobacco
Solanum douglasii - Douglas's nightshade

Tamaricaceae - Tamarisk
**Tamarix ramosissima* - tamarisk

Tropaeolaceae - Nasturtium Family
**Tropaeolum majus* - garden nasturtium

Typhaceae - Cattail Family
**Typha latifolia* - common cattail
**Typha* sp. - cattail

Urticaceae - Nettle Family
Urtica dioica ssp. *holosericea* - hoary nettle
**Urtica urens* - dwarf nettle

Verbenaceae - Verbena Family
Verbena lasiostachys - western verbena
Verbena sp. - verbena

Vitaceae - Grape Family
Vitis girdiana - desert wild grape

WILDLIFE

Invertebrates
Anthocharis sara - sara orangetip
Erynnis funeralis - funereal duskywing
Nymphalis antiopa - mourning cloak
Pieris rapae - cabbage white
Vanessa annabella - west coast lady
Vanessa cardui - painted lady

Amphibians
Hyla regilla - Pacific treefrog
Hyla cadaverina - California tree frog
Bufo boreas - western toad
Rana catesbeiana - bullfrogs

Reptiles
Crotalus viridis helleri - southern pacific rattlesnake
Lampropeltis getula - common kingsnake
Pituophis catenifer - gopher snake
Sceloporus occidentalis - western fence lizard
Uta stansburiana- side-blotched lizard

Birds
Accipiter cooperii - Cooper's hawk (WL)
Agelaius phoeniceus - red-winged blackbird
Aphelocoma californica - western scrub-jay
Ardea alba - great egret
Buteo jamaicensis - red-tailed hawk
Buteo lineatus - red-shouldered hawk

Callipepla californica - California quail
Calypte anna - Anna's hummingbird
Carduelis psaltria - lesser goldfinch
Carduelis tristis - American goldfinch
Carpodacus mexicanus - house finch
Cathartes aura - turkey vulture
Chamaea fasciata - wrentit
Charadrius vociferous - killdeer
Columba livia - rock dove
Corvus brachyrhynchos - American crow
Corvus corax - common raven
Dendroica cornata - yellow-rumped warbler
Elanus leucurus - white-tailed kite (FP)
Empidonax traillii extimus - southwestern willow flycatcher (FE, SE)
Falco peregrines - peregrine falcon (FP)
Falco sparverius - American kestrel
Geococcyx californianus - greater roadrunner
Geothlypis trichas - common yellowthroat
Icterus bullockii - Bullock's oriole
Icterus cucullatus - hooded oriole
Melanerpes formicivorus - acorn woodpecker
Melospiza melodia - song sparrow
Mimus polyglottos - northern mockingbird
Molothrus ater - brown-headed cowbirds
Passerina caerulea - blue grosbeak
Petrochelidon pyrrhonota - cliff swallow
Phainopepla nitens - phainopepla
Picoides nuttallii - Nuttall's woodpecker
Pipilo crissalis - California towhee
Pipilo maculates - spotted towhee
Polioptila californica californica - California gnatcatcher (FT, SSC)
Psaltriparus minimus - bushtit
Sayornis nigricans - Black phoebe
Sayornis saya - Say's phoebe
Selasphorus sasin - Allen's hummingbbird
Sialia mexicana - western bluebird
Stelgidopteryx serripennis - northern rough-winged swallow
Sturnella neglecta - western meadowlark
Sturnus vulgaris - European starling
Thryomanes bewickii - Bewick's wren

Toxostoma redivivum - California thrasher
Troglodytes aedon - house wren
Tyrannus verticalis - western kingbird
Vireo bellii pusillus - least Bell's vireo (FE, SE)
Zenaida macroura - mourning dove
Zonotrichia leucophrys - white-crowned sparrow

Mammals
Canis latrans - coyote
Lynx rufus - bobcat
Spermophilus beecheyi nudipes - California ground squirrel
Sylvilagus audubonii - Audubon's cottontail
Thomomys bottae - botta pocket gopher
Odocoileus hemionus - mule deer

Legend
* = Non-native species
FP - California Department of Fish and Game, Fully Protected Species
FT - California Department of Fish and Game, Federally Threatened
FE - California Department of Fish and Game, Federally Endangered
SE - State Endangered
SCC - California Department of Fish and Game, Species of Special Concern
WL - California Department of Fish and Game, Watch List

Appendix C: Jurisdictional Waters and Wetland Delineation

Jurisdictional Waters and Wetlands Delineation

South Orange County Reliability Enhancement Project

Orange County, California

May 2012

Prepared For:
San Diego Gas & Electric
8315 Century Park Court
San Diego, CA 92123

Prepared By:
123 Technology Drive West
Irvine, CA 92618

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
1.1 PROJECT OVERVIEW 1
1.2 REGULATORY BACKGROUND 1
1.2.1 United States Army Corps of Engineers 1
1.2.2 Regional Water Quality Control Board 6
1.2.3 California Department of Fish and Game 7
2.0 METHODS 8
3.0 RESULTS 9
3.1 TOPOGRAPHY AND HYDROLOGY 9
3.2 LAND USE 9
3.3 SOILS 9
3.4 UNITED STATES ARMY CORPS OF ENGINEERS JURISDICTION 11
3.4.1 Horno Creek 13
3.4.2 San Juan Creek 13
3.4.3 Tributary to San Juan Creek 14
3.4.4 Rancho San Juan Drainage 14
3.4.5 Tributary to Prima Deshecha Cañada 15
3.4.6 Segunda Deshecha Cañada 15
3.4.7 Tributary to Segunda Deshecha Cañada 1 16
3.4.8 Tributary to Segunda Deshecha Cañada 2 16
3.4.9 Tributary to Segunda Deshecha Cañada 3 16
3.4.10 Tributary to Christianitos Creek 1 17
3.4.11 Tributary to Christianitos Creek 2 17
3.4.12 Tributary to Christianitos Creek 3 18
3.5 REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION 18
3.6 CALIFORNIA DEPARTMENT OF FISH AND GAME JURISDICTION 18
3.6.1 Horno Creek 20
3.6.2 San Juan Creek 20
3.6.3 Tributary to San Juan Creek 20
3.6.4 Rancho San Juan Drainage 20
3.6.5 Tributary to Prima Deshecha Cañada 20
3.6.6 Segunda Deshecha Cañada 20
3.6.7 Tributary to Segunda Deshecha Cañada 1 20
3.6.8 Tributary to Segunda Deshecha Cañada 2 21
3.6.9 Tributary to Segunda Deshecha Cañada 3 21
3.6.10 Tributary to Christianitos Creek 1 21
3.6.11 Tributary to Christianitos Creek 2 21
3.6.12 Tributary to Christianitos Creek 3 21
3.7 NON JURISDICTIONAL SWALES 21
4.0 POTENTIAL PERMTIT REQUIREMENTS FROM PROJECT IMPACTS TO JURISDICTIONAL FEATURES 21
5.0 REFERENCES 23

LIST OF FIGURES

Figure 1: Vicinity and Overview Map

Figure 2: Delineation Map, Sheets 1-12

LIST OF APPENDICES

Appendix A: Site Photographs

Appendix B: Wetland Determination Data Forms

Acronyms List

ACOE	United States Army Corps of Engineers
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFG	California Fish and Game Code
CFR	Code of Federal Register
CWA	Clean Water Act
FAC	Facultative
FACU	Facultative upland
FACW	Facultative wetland
GIS	Geographic Information Systems
GPS	Global Positioning System
kV	kilovolt
Manual	1987 Wetland Delineation Manual
msl	Mean Sea Level
NRCS	National Resource Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate wetland vegetation
OHWM	Ordinary High Water Mark
Proposed Project	South Orange County Reliability Enhancement Project
Rapanos	*Rapanos v. United States and Carabell v. United States*
RPW	Relatively Permanent Waters
RWQCB	Regional Water Quality Control Board
SDG&E	San Diego Gas & Electric

SWANCC	*Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, et. al.*
SWRCB	State Water Resources Control Board
TNW	Traditional Navigable Waters
TRC	TRC Solutions, Inc.
UPL	Upland vegetation
U.S.	United States
U.S. EPA	United States Environmental Protection Agency
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WDR	Waste Discharge Requirements

1.0 INTRODUCTION

On behalf of San Diego Gas & Electric (SDG&E), a delineation of jurisdictional waters and wetlands was conducted by TRC Solutions, Inc. (TRC) for the South Orange County Reliability Enhancement Project (Proposed Project), located in Orange County, California (Figure 1, *Vicinity and Overview Map*). The delineation included a review of United States Geological Survey (USGS) topographic maps, aerial imagery (Google, 2012), and the National Wetlands Inventory (NWI), in addition to field surveys.

This report summarizes our methodology and findings of jurisdictional waters and wetlands as regulated by the United States Army Corps of Engineers (ACOE), Regional Water Quality Board (RWQCB), and California Department of Fish and Game (CDFG) for the above-referenced Proposed Project. These findings are subject to confirmation by the regulatory agencies. [1]

1.1 PROJECT OVERVIEW

SDG&E is a regulated public utility that provides electric service to three and a half million customers within a 4,100 square mile service area, covering parts of southern Orange County and San Diego County. The Proposed Project is intended to meet the area load growth and service reliability for approximately 118,000 customers (462 megawatts) within southern Orange County.

The Proposed Project will involve upgrading the existing 138/12 kilovolt (kV) Capistrano Substation with a new 230/138/12kV gas insulated substation, conducting minor alterations to the existing Talega Substation, and bringing two new 230kV transmission lines into the southern Orange County area by rebuilding an existing 138kV line between Talega and Capistrano Substations. The Proposed Project is approximately 8 miles in length. The Proposed Project is primarily located in portions of the cities of San Juan Capistrano and San Clemente, as well as unincorporated Orange and San Diego Counties, and the United States Marine Corps Base Camp Pendleton. This Proposed Project has an anticipated in-service date of 2017.

1.2 REGULATORY BACKGROUND

Jurisdictional limits between the agencies (ACOE, RWQCB, and CDFG) vary due to the different governing documents that define the limits of jurisdiction. The following is a summary of the governing documents as they pertain to the limits of jurisdiction.

1.2.1 United States Army Corps of Engineers

The ACOE administers and enforces Section 404 of the Clean Water Act (CWA). Pursuant to Section 404 of the CWA, the ACOE regulates the discharge of dredged and/or fill material into

[1]Only the regulatory agencies can make a final determination of jurisdictional boundaries. If a final jurisdictional determination is required, TRC can assist in getting written confirmation of jurisdictional boundaries from the agencies. Typically, only the ACOE will provide written confirmation.

waters of the United States (U.S.). The term "waters of the U.S." is defined in ACOE regulations at 33 Code of Federal Register (CFR) Part 328.3(a) as:

> *(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
>
> *(2) All interstate waters including interstate wetlands;*
>
> *(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect foreign commerce including any such waters:*
>
> > *(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
> >
> > *(ii) From which fish or shell fish are or could be taken and sold in interstate or foreign commerce; or*
> >
> > *(iii) Which are used or could be used for industrial purpose by industries in interstate commerce...*
>
> *(4) All impoundments of waters otherwise defined as waters of the United States under the definition;*
>
> *(5) Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;*
>
> *(6) The territorial seas;*
>
> *(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.*
>
> *(8) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.*
>
> (9) *Waters of the United States do not include prior converted cropland.*[2] *Notwithstanding, the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the Environmental Protection Agency (U.S. EPA).*

[2] The term "prior converted cropland" is defined in the ACOE Regulatory Guidance Letter 90-7 (dated September 26, 1990) as "wetlands which were both manipulated (drained or otherwise physically altered to remove excess water from the land) and cropped before 23 December 1985, to the extent that they no longer exhibit important wetland values. Specifically, prior converted cropland is inundated for no more than 14 consecutive days during the growing season…." [Emphasis added.]

In the absence of wetlands, the limits of ACOE jurisdiction in non-tidal waters, such as intermittent streams, extend to the Ordinary High Water Mark (OHWM) which is defined at 33 CFR 328.3(e) as:

> *...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

Non-wetland waters are classified as either ephemeral, intermittent, or perennial waters as defined in the January 15, 2002 Federal Register notice:

Ephemeral Stream – An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Intermittent Stream – An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Perennial Stream – A perennial stream has flowing water year-round during a typical year. The water table is located above the streambed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

1.2.1.1 Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et. al.

The definition of "waters of the U.S." was altered by the January 9, 2001 U.S. Supreme Court Decision, *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, et. al.* (SWANCC). In the SWANCC decision, the Supreme Court held that the ACOE exceeded its authority by asserting CWA jurisdiction over an abandoned sand and gravel pit, solely because it provided habitat for migratory birds. The SWANCC rule is limited to waters that are non-navigable, isolated and intrastate and clarified that the ACOE staff should no longer rely on the use of waters by migratory birds as the sole basis for asserting jurisdiction.

Pursuant to Article I, Section 8 of the U.S. Constitution, federal regulatory authority extends only to activities that affect interstate commerce. In the early 1980s the ACOE interpreted the interstate commerce requirement in a manner that restricted ACOE jurisdiction on isolated (intrastate) waters. On September 12, 1985, the U.S. EPA asserted that ACOE jurisdiction extended to isolated waters that are used or could be used by migratory birds or endangered species, and the definition of "waters of the U.S." in ACOE regulations was modified as quoted above from 33 CFR 328.3(a).

In the SWANCC case the Court was asked whether use of an isolated, intrastate pond by migratory birds is a sufficient interstate commerce connection to bring the pond into federal

jurisdiction of Section 404 of the CWA. The written opinion notes that the Court's previous support of the ACOE's expansion of jurisdiction beyond navigable waters (*United States v. Riverside Bayview Homes, Inc*.) was for a wetland that abutted a navigable water and that the Court did not express any opinion on the question of the authority of the ACOE to regulate wetlands that are not adjacent to bodies of open water. The current opinion goes on to state:

> *In order to rule for the respondents here, we would have to hold that the jurisdiction of the ACOE extends to ponds that are not adjacent to open water. We conclude that the text of the statute will not allow this.*

Therefore, the Court's opinion may go beyond the migratory bird issue and says that no isolated, intrastate water is subject to the provisions of Section 404(a) of the CWA (regardless of any interstate commerce connection). However, the ACOE and U.S. EPA have issued a joint memorandum which states that they are interpreting the ruling to address only the migratory bird issue and leaving the other interstate commerce clause nexuses intact.

1.2.1.2 Rapanos v. United States and Carabell v. United States

On June 5, 2007, the U.S. EPA and ACOE issued joint guidance (U.S. EPA, 2008) that addresses the scope of jurisdiction pursuant to the CWA in light of the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (Rapanos). For project sites that include waters other than Traditional Navigable Waters (TNW) and/or their adjacent wetlands, or Relatively Permanent Waters (RPW) tributary to TNW and/or their adjacent wetlands, the ACOE must apply the significant nexus standard that is outlined in the *Approved Jurisdictional Determination Form* (ACOE, 2006). For "isolated" waters or wetlands, the joint guidance also requires an evaluation by the ACOE and U.S. EPA to determine whether other interstate commerce clause nexuses, not addressed in the SWANCC decision, are associated with isolated features on project sites for which a jurisdictional determination is being sought from the ACOE.

The agencies will assert jurisdiction over the following waters (U.S. EPA, 2008):

- TNWs;
- Wetlands adjacent to TNWs;
- Non-navigable tributaries of TNWs that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and
- Wetlands that directly abut such tributaries.

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW:

- Non-navigable tributaries that are not RPW;
- Wetlands adjacent to non-navigable tributaries that are not RPW; and
- Wetlands adjacent to but that does not directly abut a RPW non-navigable tributary.

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow); and

- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream TNWs; and
- Significant nexus includes consideration of hydrologic and ecologic factors.

1.2.1.3 Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term “wetlands” (a subset of “waters of the U.S.”) is defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the ACOE published a manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the 1987 Wetland Delineation Manual (Manual) (ACOE, 1987) and the Arid West Supplement (ACOE, 2006 and 2008) generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics, often referred to as a ‘three-parameter wetland.’ While the Manual and Arid West Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- More than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands (Reed, 1988);
- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and
- Indicators of wetland hydrology must be present, such as soil saturation. Whereas the Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with “problematic hydrophytic vegetation,” which require a minimum of 14 days of ponding to be considered a wetland.

1.2.2 Regional Water Quality Control Board

Pursuant to Section 401 of the CWA, the RWQCB regulates "waters of the U.S." with similar jurisdiction as the ACOE. The RWQCB focuses on the effects of a project on downstream water quality conditions and beneficial uses. In contrast to the ACOE, the RWQCB may assess jurisdiction over isolated features pursuant to the Porter-Cologne Water Quality Act. To obtain a Section 401 Water Quality Certification, the project must be in compliance with the California Environmental Quality Act (CEQA).

Subsequent to the SWANCC decision, the Chief Counsel for the State Water Resources Control Board (SWRCB) issued a memorandum that addressed the effects of the SWANCC decision on the Section 401 Water Quality Certification Program (Wilson, 2001). The memorandum states:

> *California's right and duty to evaluate certification requests under section 401 is pendant to (or dependent upon) a valid application for a section 404 permit from the ACOE, or another application for a federal license or permit. Thus if the ACOE determines that the water body in question is not subject to regulation under the ACOE's 404 program, for instance, no application for 401 certification will be required…*
>
> *The SWANCC decision does not affect the Porter Cologne authorities to regulate discharges to isolated, non-navigable waters of the states….*
>
> *Water Code section 13260 requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)." (Water Code § 13260(a)(1) (emphasis added).) The term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." (Water Code § 13050(e).) The U.S. Supreme Court's ruling in SWANCC has no bearing on the Porter-Cologne definition. While all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—waters of the United States is a subset of waters of the state. Thus, since Porter-Cologne was enacted California always had and retains authority to regulate discharges of waste into any waters of the state, regardless of whether the ACOE has concurrent jurisdiction under section 404. The fact that often Regional Boards opted to regulate discharges to, e.g., vernal pools, through the 401 program in lieu of or in addition to issuing waste discharge requirements (or waivers thereof) does not preclude the regions from issuing waste discharge requirements (WDRs) in the absence of a request for 401 certification….*

In this memorandum the SWRCB's Chief Counsel has made the clear assumption that fill material to be discharged into isolated "waters of the U.S." is to be considered equivalent to "waste" and therefore subject to the authority of the Porter-Cologne Water Quality Act. However, while providing a recounting of the Act's definition of "waters of the U.S.", this memorandum fails to also reference the Act's own definition of waste:

> *"Waste" includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.* (California Resources Agency, 1969)

The lack of inclusion of a reference to "fill material," "dirt," "earth" or other similar terms in the Act's definition of "waste," or elsewhere in the Act, suggests that no such association was intended. Thus, the Chief Counsel's memorandum signals that the SWRCB is attempting to retain jurisdiction over discharge of fill material into isolated "waters of the U.S." by administratively expanding the definition of "waste" to include "fill material" without actually seeking amendment of the Act's definition of waste (an amendment would require action by the state legislature). Consequently, discharge of fill material into "waters of the State" not subject to the jurisdiction of the ACOE pursuant to Section 404 of the CWA may require authorization pursuant to the Porter Cologne Water Quality Act through application for WDRs or through waiver of WDRs, despite the lack of a clear regulatory imperative.

1.2.3 California Department of Fish and Game

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game (CFG) Code, the CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFG defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFG's definition of "lake" includes "natural lakes or man-made reservoirs."

CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. CDFG's Legal Advisor has prepared the following opinion:

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways.
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated by (CDFG) as natural waterways.
- Artificial waterways without the attributes of natural waterways should generally not be subject to CFG Code provisions.

Thus, the types of water features that CDFG asserts jurisdiction on closely mirror those of the ACOE. Exceptions are CDFG's exclusion of isolated wetlands (those not associated with a river, stream, or lake), the addition of artificial stock ponds and irrigation ditches constructed on uplands, and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area's federal wetland status. However, the limits of jurisdiction can differ between

the ACOE and CDFG in non-tidal waters depending on the physical characteristics. While the ACOE asserts jurisdiction over the OHWM, which is typically limited to the bed and lower banks of a drainage feature for example, CDFG asserts jurisdiction over the bed and bank and any associated vegetation. This includes to the top of bank and can also extend outside the top of bank to the drip line of associated riparian vegetation.

2.0 METHODS

Prior to beginning the field delineation, a 200-scale color aerial photograph, the U.S. Fish and Wildlife Service (USFWS) NWI (USFWS, 2011), U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil mapping data (NRCS, 2011a), historic aerials (Google, 2012), and USGS topographic maps (USGS, 1974a, 1974b, 1974c and 1997) were examined to determine the locations of potential areas of jurisdiction.

Fieldwork for the delineation was conducted in May 2010, July 2010, December 2011, and February 2012 by TRC biologists Darren Burton, Ken McDonald, Travis Kegel, and Lauralyn K. Jensen. The delineation field work involved walking the entire survey corridor, focusing on (but not limited to) potential areas identified during the literature search, and physically identifying any hydrologic, vegetative, and geomorphic characteristics in order to delineate potentially jurisdictional waters and wetlands. The Proposed Project survey area was approximately 8 miles long and width ranged in size from between 500 feet along the transmission corridors to 1,100 feet in areas buffering the substation locations. While in the field, notes were taken documenting the characteristics of the jurisdictional areas, and jurisdictional areas and widths were recorded onto a 200-scale color aerial photograph using visible landmarks and/or were mapped with a Trimble Global Positioning System (GPS) hand-held unit. Field data was then digitized using Geographic Information Systems (GIS) to determine acreages. A detailed delineation map was prepared illustrating the features that intersect the Proposed Project.

A field survey was conducted according to the technical guidelines provided in the Manual and the Arid West Supplement to identify and delineate wetlands that may be subject to regulatory jurisdiction under Section 404 of the CWA. Wetlands were identified by the "three-factor" approach, in which criteria for wetland hydrology, hydrophytic vegetation, and hydric soils must all be met to conclude that an area is a wetland, as described in the Manual and summarized below. Wetlands that appeared to meet the ACOE criteria were considered potentially jurisdictional as any determination is subject to verification by the regulatory agencies.

- Vegetation: Plant species were identified in the field and the indicator status of dominant plants was determined using The National List of Plant Species that Occur in Wetlands: Region 0 – California (Reed, 1988). Plant species were classified as obligate wetland vegetation (OBL) with greater than 99% probability of occurring in wetlands; facultative wetland (FACW) with 67% to 99% probability of occurring in wetlands; facultative (FAC) with 33% to 67% probability of occurring in wetlands; facultative upland (FACU) with 1% to 33% probability of occurring in wetlands; or upland vegetation (UPL) with less than 1% probability of occurring in wetlands.
- Hydrology: The presence of primary wetland hydrology indicators was determined by observing inundation, saturation, water marks, sediment deposits, drainage patterns,

and/or drift lines. Soil pits were dug to a depth of 18 inches, or until refusal, using a sharpshooter shovel, and allowed to stand undisturbed for at least 10 minutes. Observations were then recorded as to depth of free water in the pit, and depth of saturated soil.

- Soil: Soil profiles were examined for color and texture. Soil color was determined using a Munsell Soil Color Chart and hydric soil characteristics were identified (i.e., sulfidic odor, low chroma colors, mottling, etc.). All soil profile data were recorded onto the required data forms.

"Waters of the U.S." were identified pursuant to criteria outlined in Section 401 and Section 404 of the CWA, including but not limited to the presence of an OHWM and connection to a downstream jurisdictional water body. The OHWM was determined by observing signs of flow including but not limited to shelving, drift lines, and disturbed vegetation. "Waters of the State" were identified pursuant to criteria outlined in Section 1600 of the CFG Code, including the presence of a defined bed and bank and any associated vegetation. Drainages that appeared to meet the criteria for "waters of the U.S." or "waters of the State" were considered potentially jurisdictional as any determination is subject to verification by the regulatory agencies.

3.0 RESULTS

3.1 TOPOGRAPHY AND HYDROLOGY

The Proposed Project survey area comprises approximately 659 acres and contains named blue-line drainages (five in total), as depicted on the USGS topographic maps (Figure 1). The named drainages include Horno Creek, San Juan Creek, Prima Deshecha Cañada, Segunda Deshecha Cañada, and Christianitos Creek. Elevation within the Proposed Project survey area ranged from approximately 110 to 740 feet above mean sea level (msl).

The Proposed Project survey area transects a mixture of habitats and land uses including urbanized areas where local hydrology and drainage patterns have been significantly altered, along with undeveloped land comprised of rough foothills with steep valleys and ravines. The undeveloped areas are comprised primarily of coastal sage scrub and ruderal vegetation bordered by residential and commercial land uses. Surface water runoff within the Proposed Project survey area appears to be captured by perennial creeks and underground storm water systems associated with the urban developments.

3.2 LAND USE

Land use within the Proposed Project survey area consists primarily of undeveloped land, residential communities, and natural preserve areas. Outside of developed areas, non-native grassland and coastal sage scrub dominate the terrain.

3.3 SOILS

The NRCS has mapped the following soil types as occurring within the Proposed Project survey area. Only two soil types, Myford Sandy Loam series and Riverwash soil types, are identified as

hydric in the NRCS's publication, *Hydric Soils of the United States* (NRCS, 2011b), however, per the Arid West Supplement, all hydric soils must be confirmed in the field.

- Alo Clay - The Alo Clay series are well drained and composed of clay and weathered bedrock. The parent materials consist of residuum weathered from sedimentary rock. At 25 to 29 inches in depth, weathered bedrock is found. These soils occur on hills at 200 to 3,250 feet above msl.
- Bosanko Clay - The Bosanko Clay series are well drained and composed of clay, clay loam, silty clay and weathered bedrock. The parent material consists of residuum weathered from granite. At 22 to 36 inches in depth, weathered paralithic bedrock is found. These soils occur on the back slopes of hills at 300 to 2,500 feet above msl.
- Botella Clay Loam - Botella Clay Loam is well drained and composed of clay loam, silty and sandy clay loam. The parent material is alluvium derived from sedimentary rock. At more than 80 inches in depth a restrictive feature is found. These soils occur on alluvial fans at 500 to 800 feet above msl.
- Callegus Clay Loam - Callegus Clay Loam is well drained and composed of clay loam and weathered bedrock. The parent material is residuum weathered from calcareous shale. At 15 to 19 inches in depth, paralithic bedrock is found. These soils occur on the back slopes of hills at 200 to 2,500 feet above msl.
- Cieneba Sandy Loam - The Cieneba Sandy Loam series are somewhat excessively drained and are composed of coarse sandy loam and weathered bedrock. The parent material is a residuum of weathered granite. At four to 20 inches in depth, paralithic bedrock is found. These soils occur on hillsides at 500 to 4,000 feet above msl.
- Corralitos Loamy Sand - The Corralitos Loamy Sand series are somewhat excessively well drained and are composed of loamy sand and stratified sand. The parent material is alluvium derived from mixed sources. At more than 80 inches in depth a restrictive feature is found. These soils occur on alluvial fans at 30 to 1,000 feet above msl.
- Cropley Clay - Cropley Clay is well drained and composed of clay, silty clay and clay loam. At more than 80 inches depth a restrictive feature is found. These soils occur on alluvial fans at 50 to 1,500 feet above msl.
- Huerhuero Loam - Huerhuero Loam is moderately well drained and composed of loam, clay loam, clay, stratified sand and sandy loam. The parent material is calcareous alluvium derived from sedimentary rock. At more than 80 inches depth a restrictive feature is found. These soils occur on marine terraces at 1,000 feet above msl.
- Myford Sandy Loam - The Myford Sandy Loam series are moderately well drained and composed of sandy loam, sandy clay and sandy clay loam. The parent material is alluvium derived from mix sources. At more than 80 inches in depth a restrictive feature is found. These soils occur on landform terraces at 1,500 feet above msl.
- Riverwash - Riverwash is not well drained and composed of sand and stratified course sand to sandy loam. The parent material is sandy and gravelly alluvium. These soils occur on fans at diverse elevations above msl.

- Soboba Cobbly Loamy Sand - Soboba Cobbly Loamy Sand is excessively drained and composed of very cobbly loamy sand. The parent material is sandy and gravelly alluvium derived from mixed sources. At more than 80 inches depth a restrictive feature is found. These soils occur on alluvial fans at 30 to 4,200 feet above msl.
- Sorrento Loam - The Sorrento Loam series are well drained and composed of loam, silty clay loam, clay loam, and stratified loamy fine sand to silt loam. The parent material is alluvium derived from sedimentary rock. At more than 80 inches depth a restrictive feature is found. These soils occur on alluvial fans at 80 to 1,800 feet above msl.
- Sorrento Clay Loam series - These Sorrento clay loam soils occur on alluvial fans in relatively flat areas and are composed of loam, silty clay loam, stratified loamy fine sand, and silt loam. The soils are well drained and occur at elevations of 80 to 1,800 feet above msl.
- Yorba Gravelly Sandy Loam - The Yorba Gravelly Sandy Loam series are well drained and composed of gravelly sandy loam, very gravelly sandy clay loam and very gravelly sandy loam. The parent material is sandy and gravelly alluvium derived from mixed sources. At more than 80 inches depth a restrictive feature is found. These soils occur on landform terraces at 100 to 2,500 feet above msl.
- Yorba Cobbly Sandy Loam series - These Sorrento loam soils are composed of very cobbly sandy loam, very gravelly clay loam and very gravelly sandy loam. The soils are well drained and occur at elevations of 100 to 2,500 feet above msl.

3.4 UNITED STATES ARMY CORPS OF ENGINEERS JURISDICTION

The potential ACOE jurisdiction within the Proposed Project survey area totals approximately 6.65 acres, of which 3.35 acres is wetland. The location and limits of these ACOE jurisdictional areas are depicted on Figure 2, *Delineation Map Sheets 1-11*. Representative site photographs are provided as Appendix A, *Site Photographs*, and data forms are provided as Appendix B, *Wetland Determination Data Forms*.

The Proposed Project survey area supports twelve drainage systems. Of the drainage systems within the Proposed Project survey area, eight are RPWs and four are ephemeral systems. The eight RPWs are known as Horno Creek, San Juan Creek, Segunda Deshecha Cañada, and Tributary to Segunda Deshecha Cañada 1, 2, 3, and Tributary to Christianitos Creek 1 and 3. The Proposed Project's four ephemeral waters are known as the Tributary to San Juan Creek, Rancho San Juan Drainage, Tributary to Prima Deshecha Cañada, and the Tributary to Christianitos Creek 2. The acreage of all drainages broken out by ACOE waters and wetlands is listed in Table 1. A description of the drainages is also provided below.

Table 1: Summary of ACOE Jurisdiction

Drainage Name/ Types of Waters	ACOE Waters (Acres)	ACOE Wetland (Acres)	Total ACOE Jurisdiction (Acres)	Approximate Linear Feet
Horno Creek (RPW)	0.14	0.05	**0.19**	540
San Juan Creek (RPW)	1.86	2.00	**3.86**	665
Tributary to San Juan Creek (Ephemeral)	0.05	-	**0.05**	1,630
Rancho San Juan Drainage (Ephemeral)	0.94	-	**0.94**	960
Tributary to Prima Deshecha Cañada (Ephemeral)	0.22	-	**0.22**	3,880
Segunda Deshecha Cañada (RPW)	-	0.68	**0.68**	1,040
Tributary to Segunda Deshecha Cañada 1 (RPW)	0.03	0.01	**0.04**	515
Tributary to Segunda Deshecha Cañada 2 (RPW)	0.03	-	**0.03**	155
Tributary to Segunda Deshecha Cañada 3 (RPW)	0.02	0.26	**0.28**	715
Tributary to Christianitos Creek 1 (RPW)	0.08	0.26	**0.34**	1,040
Tributary to Christianitos Creek 2 (Ephemeral)	0.04	-	**0.04**	610
Tributary to Christianitos Creek 3 (RPW)	0.02	-	**0.02**	630
Totals	**3.43**	**3.26**	**6.69**	**12,380**

3.4.1 Horno Creek

The ACOE jurisdiction associated with Horno Creek within the Proposed Project survey area totals 0.19 acre, of which 0.05 acre is wetland. Horno Creek is a RPW that traverses the Proposed Project survey area from northeast to southwest and ultimately connects to San Juan Creek, which is tributary to the Pacific Ocean, the closest TNW. Horno Creek is a relatively narrow creek on the southeast side of Marbella Golf Course in San Juan Capistrano, in a densely wooded area east of Golf Club Drive between the golf course and a development off of Rancho Viejo Road. Flowing water was observed in this feature during the field surveys, and based on these observations the feature is expected to experience year-round hydrology. Results of the survey have been mapped on Figure 2, Sheet 1.

Vegetation associated with Horno Creek is composed mainly of non-native, ornamental, and disturbance-associated species including Mexican fan palms (*Washingtonia robusta*), ornamental ficus trees (*Ficus* sp.), eucalyptus (*Eucalyptus* sp.), ash (*Fraxinus* sp.) various weedy annual plants (e.g., rabbits foot grass (*Polypogon monspeliensis*), Johnson grass (*Sorghum halepense*), and relatively few native wetland species (e.g., willowherb (*Epilobium ciliatum*), mulefat (*Baccharis salicifolia*)). Intermittently along the creek, small areas dominated by ash and/or arroyo willow (*Salix lasiolepis*) meet the vegetation requirements for wetlands. A photograph of Horno Creek is included in Appendix A, Photo 1.

Soil pits were excavated in Horno Creek indicating wetland soils in one area. The area (approximately 100 feet in length) had soils with wetland characteristics and also met hydrology and vegetation requirements for wetland. Results of the data pits are recorded in Appendix B (Sampling Points 8-11).

3.4.2 San Juan Creek

The ACOE jurisdiction associated with San Juan Creek within the Proposed Project survey area totals 3.86 acres, of which 2.00 acres are wetland. San Juan Creek is a RPW that traverses the Proposed Project survey area from northeast to southwest and ultimately connects to the Pacific Ocean, the closest TNW. The nearest cross streets are Via Parra and Calle Del Campo on the western bank, and San Juan Creek Road and Avenida La Mancha on the eastern bank. The creek consists of wide, braided features that experience year-round hydrology and heavy scouring. An OHWM as well as flowing water was observed during the field survey. Results of the survey have been mapped on Figure 2, Sheet 2.

Vegetation associated with San Juan Creek is composed of dense riparian vegetation including various willows (*Salix* sp.), mulefat (*Baccharis salicifolia*), giant reed (*Arundo donax*) and cattails (*Typha latifolia*). Other areas of the creek were devoid of vegetation or had small patches of scattered riparian vegetation. Photographs of San Juan Creek are included as Appendix A, Photos 2 and 3.

Soil pits were excavated in San Juan Creek indicating wetland soils in some areas. Wetland soils were generally limited to areas without scour, where high velocity storm flows would not wash soils away. Results of the data pits are recorded in Appendix B (Sampling Points 1-7).

3.4.2.1 Adjacent Wetland to San Juan Creek

There is a two-foot outfall pipe approximately 280 feet northwest of San Juan Creek. Approximately one inch of standing water was present near the outfall. Hydric soils and hydrophytic vegetation were also present in the area of standing water. Results of the data pits are recorded in Appendix B (Sampling Points 16-17). The area meeting wetland characteristics was less than 14 feet in length. At the limit of the wetland, the water appeared to be absorbed into the groundwater and there is no sign of surface flow between the outfall pipe and San Juan Creek. However, due to the proximity to a RPW (San Juan Creek), the ACOE will likely assert jurisdiction over this adjacent wetland. The wetland totals 0.0006 acre, and for the purposes of this delineation will be added to the wetland totals of San Juan Creek. A photograph of this wetland is included as Appendix A, Photo 4. The location of the wetland is mapped on Figure 2, Sheet 2.

3.4.3 Tributary to San Juan Creek

The ACOE jurisdiction associated with the tributary to San Juan Creek within the Proposed Project survey area totals 0.05 acre. There are no wetlands associated with this tributary. The tributary is located approximately 1,250 feet southeast of the southern end of Paseo Riobo Road in San Juan Capistrano. The tributary is comprised of two drainages that begin within the Proposed Project survey area and flow south to north until leaving the Proposed Project survey area and eventually confluencing with San Juan Creek. The tributary can be characterized as ephemeral, flowing only during and directly following storm events. Results of the survey have been mapped on Figure 2, Sheet 3.

Vegetation associated with the tributary consists entirely of upland plants including California sagebrush (*Artemisia californica*), deer weed (*Lotus scoparius*), coyote bush (*Baccharis pilularis*), black mustard (*Brassica nigra*), artichoke thistle (*Cynara cardunculus*), and various non-native bromes (*Bromus* ssp.). A photograph of this tributary is included as Appendix A, Photo 5.

No soil pits were excavated due to a lack of wetland vegetation. Wetland soils are not expected in the tributary.

3.4.4 Rancho San Juan Drainage

The ACOE jurisdiction associated with the Rancho San Juan drainage totals 0.94 acre within the Proposed Project survey area. There are no wetlands associated with this drainage. The Rancho San Juan drainage is located approximately 300 feet southwest of the intersection of Vista Montana and Via Granada in San Juan Capistrano. The drainage begins within the Proposed Project survey area in a vegetated containment basin and continues east within a vegetated channel. The surrounding area is in the process of development; currently the feature receives water from surrounding uplands but it is expected to receive nuisance flows from the new development. The Rancho San Juan drainage flows generally east to west within the Proposed Project survey area, eventually meeting with San Juan Creek which ultimately connects to the Pacific Ocean, the closest TNW. Results of the survey have been mapped on Figure 2, Sheet 4.

The entire drainage has been revegetated with native species and appears to be maintained, as there were very few weedy or non-native species. Vegetation associated with the feature

included: arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*), alkali bulrush (*Scirpus maritimus*), mulefat, California sycamore (*Platanus racemosa*), deer weed, and coyote bush. Photographs of this drainage are included as Appendix A, Photos 6 and 7.

No wetland soils were identified within the Rancho San Juan drainage. While no soil pits were excavated, based on observations and prior knowledge of the site, the drainage was recently constructed. Soils were comprised of hard clays consistent with recent excavation.

3.4.5 Tributary to Prima Deshecha Cañada

The ACOE jurisdiction associated with the Tributary to Prima Deshecha Cañada totals 0.22 acre within the Proposed Project survey area. There are no wetlands associated with the tributary. The tributary is located approximately 2,000 feet directly south of the southern end of La Pata road in the City of San Juan Capistrano. Tributary to Prima Deshecha Cañada is comprised of several ephemeral features that cross the Proposed Project survey area at multiple points in a northeast to southwest direction, continuing into downstream reaches of Prima Deshecha Cañada, and ultimately the Pacific Ocean. This ephemeral tributary can generally be described as incised with a distinct OHWM. Results of the survey have been mapped on Figure 2, Sheets 5 and 6.

Vegetation associated with the tributary is composed of annual weedy species such as black mustard, various non-native bromes, tocalote (*Centaurea melitensis*), as well as native upland species such as Mexican elderberry (*Sambucus mexicana*), California sagebrush, deer weed, and coyote bush. In addition, lower reaches contained riparian vegetation such as mulefat, arroyo willow, Himalayan blackberry (*Rubus discolor*), and stinging nettle (*Urtica dioica*). Photographs of this tributary are included as Appendix A, Photos 8 and 9.

No wetland soils were identified within the tributary. No soil pits were excavated, however, soils consisted primarily of hard clay and cobbles associated with high water velocities and consistent with the feature's deep incisions.

3.4.6 Segunda Deshecha Cañada

The ACOE jurisdiction associated with Segunda Deshecha Cañada within the Proposed Project survey area totals 0.68 acre, all of which is wetland. Segunda Deshecha Cañada is a RPW that traverses the Proposed Project survey area at two points. Segunda Deshecha Cañada generally travels northeast to southwest, exiting the Proposed Project survey area into an underground culvert that ultimately connects to the Pacific Ocean, the closest TNW. This drainage is located at the bottom of the canyon running generally parallel to Avenida La Plata road in the City of San Clemente. It contained flowing water during the field survey and is a RPW fed by nuisance flow from the surrounding residential communities. Results of the survey have been mapped on Figure 2, Sheets 7 and 8.

Vegetation on either bank consists of dense stands of Mexican elderberry, arroyo willow, and mulefat, as well as large swaths of cattails within the creek channel. A photograph of Segunda Deshecha Cañada is included as Appendix A, Photo 11.

Soil pits were excavated in Segunda Deshecha Cañada indicating wetland soils. Wetland soils were consistently identified within the OHWM of the drainage. Results of the data pits are recorded in Appendix B (Sampling Points 12-13).

3.4.7 Tributary to Segunda Deshecha Cañada 1

The ACOE jurisdiction associated with Tributary to Segunda Deshecha Cañada 1 totals 0.04 acre, of which 0.01 acre is wetland. It is located approximately 730 feet northeast of the intersection of La Pata and Vista Hermosa in the City of San Clemente. The tributary begins as it exits a box culvert and travels in a west-east direction, continuing into Segunda Deshecha Cañada. The tributary was flowing at the time of surveys and therefore is considered to be a RPW. Tributary to Segunda Deshecha 1 carries nuisance flows from surrounding developed areas. Results of the survey have been mapped on Figure 2, Sheet 7.

Vegetation associated with Tributary to Segunda Deshecha 1 includes coyote bush, black mustard, artichoke thistle, arroyo willow, cattails, and mulefat. A photograph of this tributary is included as Appendix A, Photo 10.

A soil pit was excavated in Tributary to Segunda Deshecha 1 indicating wetland soils in one small area located abutting the box culvert. Results of the data pit are recorded in Appendix B (Sampling Point 14).

3.4.8 Tributary to Segunda Deshecha Cañada 2

The ACOE jurisdiction associated with Tributary to Segunda Deshecha Cañada 2 within the Project survey area totals 0.03 acre. There are no wetlands associated with the tributary. The tributary is located approximately 850 feet southwest of the intersection of Vista Hermosa and Avenida Pico in the City of San Clemente. The tributary is contained within a 10 feet wide concrete box channel and appears to be part of a larger flood control facility. It continues into an underground box culvert that is expected to connect to downstream reaches of Segunda Deshecha Cañada and ultimately the Pacific Ocean. The feature was flowing during field investigations and is a RPW. Results of the survey have been mapped on Figure 2, Sheet 9.

Scattered weedy wetland vegetation was present in small pocket areas where sediment had collected within the box-culvert. Observed vegetation included rabbit's foot grass (*Polypogon monspeliensis*) and curly dock (*Rumex crispus*). A photograph of this tributary is included as Appendix A, Photo 12.

There were no soils associated with the tributary. Since it is contained within a concrete box channel, only shallow pockets of sediment were present within the tributary.

3.4.9 Tributary to Segunda Deshecha Cañada 3

The ACOE jurisdiction associated with Tributary to Segunda Deshecha Cañada 3 totals 0.28 acre, of which 0.26 acre is wetland. It is located approximately 750 feet southeast of the intersection of Calle Batido and Calle Alicante in the City of San Clemente. The feature transverses part of the Proposed Project survey area and travels in an east west direction, continuing into an underground box culvert that is expected to connect to downstream reaches of

Segunda Deshecha Cañada. Tributary to Segunda Deshecha 3 has two reaches associated with it. Reach 1 consists of an ephemeral two-foot feature that appears to convey flows from the surrounding upland areas. Reach 2 begins where a v-ditch confluences and supplies additional nuisance flows to the tributary creating dense riparian habitat. No surface water was identified at the time of the surveys. However, Reach 2 had saturation within 6 inches of the surface and is expected to have had flows lasting three months, and is therefore considered a RPW. Results of the survey have been mapped on Figure 2, Sheet 10.

Vegetation associated with the upland Reach 1 of the Tributary to Segunda Deshecha 3 includes California sagebrush, coyote bush, black mustard, and artichoke thistle. Vegetation associated with the riparian Reach 2 appears to have been revegetated with native species. In addition, Reach 2 appears to be maintained, as there were very few weedy or non-native species. The Reach 2 vegetation includes arroyo willow, sandbar willow, cattails, alkali bulrush, mulefat, and Mexican rush (*Juncus mexicanus*). A photograph of this tributary is included as Appendix A, Photo 13.

Soil pits were excavated in Tributary to Segunda Deshecha 3 indicating wetland soils. Wetland soils were only identified within Reach 2. Results of the data pits are recorded in Appendix B (Sampling Point 15).

3.4.10 Tributary to Christianitos Creek 1

The ACOE jurisdiction associated with tributary to Christianitos Creek 1 totals approximately 0.34 acre, of which 0.26 is wetland. The tributary is located north of the Talega Substation and south of Avenida Pico, in the City of San Clemente. The tributary generally travels west to east continuing out of the Proposed Project survey area and into Christianitos Creek. It begins in a flood control basin supporting wetlands. The feature then travels east through an outfall structure and under the access road to the Talega Substation. When the feature emerges there is a small area that has wetland characteristics. Surface water was present at the time of the surveys, presumably from urban runoff. Results of the survey have been mapped on Figure 2, Sheet 11.

Vegetation associated with the wetland portions of tributary to Christianitos Creek 1 were dominated by cattails, bulrushes, and arroyo willow. In the areas outside of the wetlands, dominant vegetation included poison oak (*Toxicodendron diversilobum*), stinging nettle and coast live oak (*Quercus agrifolia*). Photographs of this tributary are included as Appendix A, Photos 14 and 15.

Soil pits were excavated in tributary to Christianitos Creek 1 indicating wetland soils in most areas. The wetland soils were located in the flood control basin and surrounding the outfall structure south of the access road. Results of the data pits are recorded in Appendix B (Sampling Points 18-20).

3.4.11 Tributary to Christianitos Creek 2

The ACOE jurisdiction associated with tributary to Christianitos Creek 2 totals approximately 0.04 acre, none of which is wetland. The tributary begins west of the Talega Substation, is channelized underground through the Substation, and emerges on the east side of the Substation. Approximately 300 feet east of the substation the concrete channel stops and the drainage

becomes deeply incised. The drainage then continues east outside of the Proposed Project survey area and eventually to Christianitos Creek. The tributary is ephemeral in nature and had no surface water at the time of the survey. Results of the survey have been mapped on Figure 2, Sheet 11.

Vegetation associated with the unchannelized portion of the feature consists predominantly of upland plants dominated by deer weed, coyote bush, black mustard, and various non-native bromes. Few instances of poison oak and mulefat were also present. The channelized portion was free of vegetation. A photograph of this tributary is included as Appendix A, Photo 16.

No wetland soils were identified within the feature. No soil pits were excavated due to a lack of hydric vegetation. Soils consisted primarily of hard clay and cobbles associated with high water velocities and consistent with the feature's deep incisions.

3.4.12 Tributary to Christianitos Creek 3

The ACOE jurisdiction associated with tributary to Christianitos Creek 3 totals approximately 0.02 acre, none of which is wetland. The RPW tributary begins west of the Proposed Project survey area within the Pacific Golf Club. It flows southeast through the Proposed Project area, continues east outside of the Proposed Project survey area and eventually to Christianitos Creek. The tributary was wet at the time of survey primarily from nuisance flows from the golf course. The tributary was incised with the tributary bottom four to eight feet below the surrounding uplands. From the east boundary of the Project Survey area for approximately 480 feet, the tributary was vegetated with riparian species. Results of the survey have been mapped on Figure 2, Sheet 12.

Vegetation associated with the riparian portion of the feature was dominated by mulefat, tamarisk (*Tamarisk* sp.), coyote bush, ragweed, and various non-native bromes. Few instances of poison oak and ragweed were also present. Areas southeast of the riparian area were dominated by upland plants including black mustard, artichoke thistle, and coyote bush. A photograph of this tributary is included as Appendix A, Photo 17.

No wetland soils were identified within the feature. Soils consisted primarily of hard clay and cobbles associated with high water velocities and consistent with the feature's deep incisions.

3.5 REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION

All waters identified as ACOE jurisdictional were also identified as RWQCB jurisdictional. RWQCB jurisdiction within the Proposed Project survey area therefore totals the same as the ACOE jurisdiction at approximately 6.65 acres. The locations of this jurisdiction are depicted on the enclosed maps (Figure 2) and photographs (Appendix A), and described in Section 3.4 of this report.

3.6 CALIFORNIA DEPARTMENT OF FISH AND GAME JURISDICTION

CDFG jurisdiction associated with the Proposed Project survey area totals approximately 13.82 acres of which 13.52 acres consists of vegetated riparian habitat and 0.31 acre consists of unvegetated streambed. This includes all areas within ACOE jurisdiction in addition to adjacent

associated riparian vegetation. Below is a brief description of the drainage characteristics; for a more detailed description of the drainages please refer to Section 3.4 of this report. The acreage of all drainages mapped during the field survey is listed in Table 2.

Table 2: Summary of CDFG Jurisdiction

Drainage Name	Unvegetated Streambed (Acres)	Riparian (Acres)	Total CDFG Jurisdiction (Acres)	Approximate Linear Feet
Horno Creek	-	1.08	**1.08**	540
San Juan Creek	-	4.86	**4.86**	665
Tributary to San Juan Creek	0.05	-	**0.05**	1,630
Rancho San Juan Drainage	-	2.55	**2.55**	960
Tributary to Prima Deshecha Cañada	0.13	0.59	**0.72**	3,880
Segunda Deshecha Cañada	-	1.38	**1.38**	1,040
Tributary to Segunda Deshecha Cañada 1	0.03	0.01	**0.04**	155
Tributary to Segunda Deshecha Cañada 2	0.03	-	**0.03**	715
Tributary to Segunda Deshecha Cañada 3	0.01	0.55	**0.56**	515
Tributary to Christianitos Creek 1	0.01	2.24	**2.25**	1,040
Tributary to Christianitos Creek 2	0.04	-	**0.04**	610
Tributary to Christianitos Creek 3	0.01	0.26	**0.27**	630
Totals	**0.31**	**13.52**	**13.83**	**12,380**

3.6.1 Horno Creek

The CDFG jurisdiction associated with Horno Creek totals 1.08 acres, all of which is vegetated riparian habitat. As previously discussed, vegetation associated with the drainage area is composed mainly of non-native, ornamental and disturbance-associated species, and relatively few native wetland species. Riparian areas for this drainage include those species within the bank and their associated drip lines.

3.6.2 San Juan Creek

The CDFG jurisdiction associated with San Juan Creek totals 4.86 acres, all of which is vegetated riparian habitat. As previously discussed, the associated vegetation was dense and included willows, mulefat, and cattails with instances of non-natives such as giant reed.

3.6.3 Tributary to San Juan Creek

The CDFG jurisdiction associated with Tributary to San Juan Creek totals 0.05 acre, all of which is unvegetated streambed. Vegetation associated with the drainage was composed of native and non-native upland species

3.6.4 Rancho San Juan Drainage

The CDFG jurisdiction associated with the Rancho San Juan drainage totals 2.55 acres, all of which is vegetated riparian habitat. The associated riparian habitat is dominated primarily by native riparian species including mulefat and arroyo willow.

3.6.5 Tributary to Prima Deshecha Cañada

The CDFG jurisdiction associated with the Tributary to Prima Deshecha Cañada totals 0.72 acre, including 0.13 acre of unvegetated streambed and 0.59 acre of riparian habitat. The associated riparian habitat is dominated primarily by mulefat and arroyo willow.

3.6.6 Segunda Deshecha Cañada

The CDFG jurisdiction associated with the Segunda Deshecha Cañada totals 1.38 acres, all of which is riparian habitat. The associated riparian habitat is dominated primarily by arroyo willow and mulefat, as well as large swaths of cattails within the channel.

3.6.7 Tributary to Segunda Deshecha Cañada 1

The CDFG jurisdiction associated with the Tributary to Segunda Deshecha Cañada 1 totals 0.04 acre, of which 0.03 acre is vegetated riparian habitat. The associated riparian habitat is dominated by cattails.

3.6.8 Tributary to Segunda Deshecha Cañada 2

The CDFG jurisdiction associated with the Tributary to Segunda Deshecha Cañada 2 totals 0.03 acre, all of which is unvegetated streambed. The channel consists of a maintained box concrete flood control channel that is relatively free of vegetation.

3.6.9 Tributary to Segunda Deshecha Cañada 3

The CDFG jurisdiction associated with the Tributary to Segunda Deshecha Cañada 3 totals 0.56 acre, of which 0.01 acre is unvegetated streambed and 0.55 acre is riparian habitat. The associated riparian habitat is dominated by arroyo willow and cattails.

3.6.10 Tributary to Christianitos Creek 1

The CDFG jurisdiction associated with the Tributary to Christianitos Creek 1 totals 2.25 acres, of which 0.01 acre is unvegetated streambed and 2.24 acres is vegetated riparian habitat. The drainage includes a detention basin dominated by cattails and bulrushes and a drainage dominated by willows, poison oak, and coast live oak. These associated riparian habitats are dominated by primarily native riparian species with few instances of non-natives.

3.6.11 Tributary to Christianitos Creek 2

The CDFG jurisdiction associated with the Tributary to Christianitos Creek 2 totals 0.04 acre, all of which is unvegetated streambed. The vegetation associated with the drainage is dominated coastal sage scrub and weedy non-native species.

3.6.12 Tributary to Christianitos Creek 3

The CDFG jurisdiction associated with the Tributary to Christianitos Creek 3 totals 0.27 acre, of which 0.01 acre is unvegetated streambed and 0.26 acre is vegetated riparian habitat. The associated riparian habitats are dominated by both native and non-native species.

3.7 NON JURISDICTIONAL SWALES

There are a number of non-jurisdictional swales located throughout the Proposed Project survey area. The swales are located primarily around the Talega substation and between the landfill and Talega residential community in the vicinity of San Clemente. Typically, the swales are low gradient vegetated areas located at the foot of hillsides or other minor changes in topography. The swales are not considered jurisdictional due to low volume, infrequent or short duration flow, and a lack of an OHWM.

4.0 POTENTIAL PERMTIT REQUIREMENTS FROM PROJECT IMPACTS TO JURISDICTIONAL FEATURES

Any permanent or temporary impacts to the drainages identified in this report would likely require permits from the regulatory agencies (ACOE, RWQCB, and CDFG). Impacts should be considered from Proposed Project activities including the removal and installation of structures, temporary work spaces, pull and tension sites, erosion and sediment controls, and project access

requirements. The jurisdictional limits identified in this report are subject to verification by the regulatory agencies. A Jurisdictional Determination letter confirming jurisdiction can be requested from ACOE by submitting an Approved Jurisdictional Determination Form, which involves a significant nexus analysis pursuant to Rapanos, in addition to supporting documentation. A Jurisdictional Determination letter is not a requirement, but can assist with the permitting process. The alternative to obtaining a Jurisdictional Determination is to ask the ACOE to take jurisdiction based on our delineation and assessment of jurisdiction. An analysis of impacts will be performed and potential permitting strategies developed, based upon the delineation in this report and the Proposed Project design. The results of the analysis will be presented in the Biological Resources Assessment for the Proposed Project. The impacts analysis, and ACOE Jurisdictional Determination letter (if obtained), would be used to prepare the permit applications pursuant to Sections 401 and 404 of the CWA (RWQCB and ACOE, respectively), and Section 1602 of the CFG Code (CDFG).

The remainder of this page is intentionally left blank.

5.0 REFERENCES

ACOE (U.S. Army Corps of Engineers). 1987. ACOE of Engineers Wetlands Delineation Manual. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.

ACOE (U.S. Army Corps of Engineers). 2006. Interim Regional Supplement to the ACOE of Engineers Wetland Delineation Manual: Arid West Region. ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

ACOE (U.S. Army Corps of Engineers). 2008. Regional Supplement to the ACOE of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

California Resources Agency. 1969. Porter-Cologne Water Quality Control Act. California Water Code, Section 13000 et seq.: "Water Quality."

Federal Register. 2002. Vol. 67, No. 10 Tuesday, January 15, 2002

Google, 2012. Aerial as taken: November, 2009 through March, 2011. Online.

NRCS (Natural Resources Conservation Service). 2011a. *Web Soil Survey*. Online. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

NRCS (Natural Resources Conservation Services). 2011b. *National List of Hydric Soils, January 2011*. Online. http://soils.usda.gov/use/hydric/

Reed, P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands. U.S. Fish and Wildlife Service Biological Report 88(26.10).

U.S. EPA (U.S. Environmental Protection Agency). 2008. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States.

USFWS (United States Fish and Wildlife Service). 2011. National Wetlands Inventory Mapper Application. Online. Accessed December 2012.

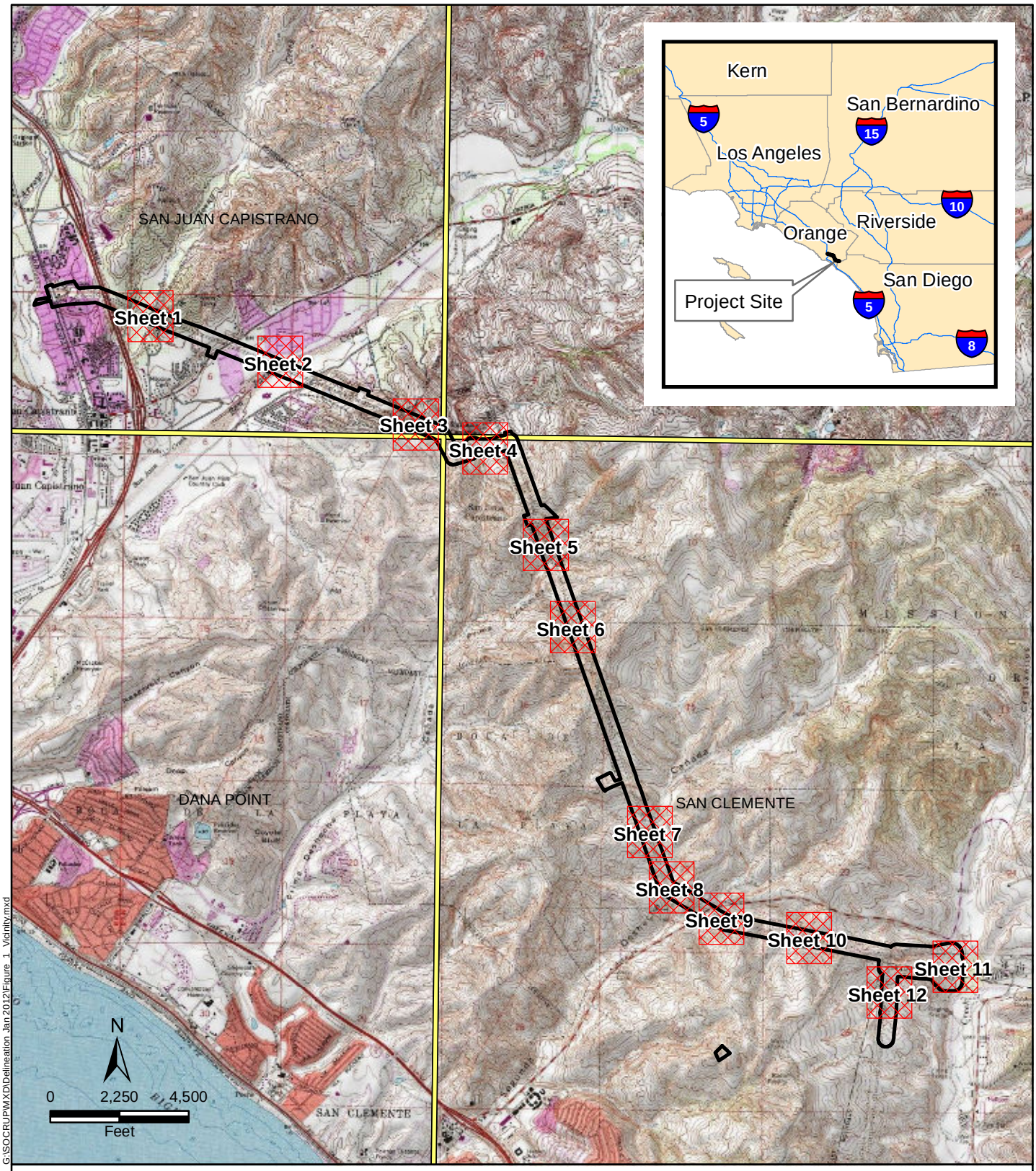
USGS (U.S. Geological Survey). 1974a. Dana Point, California 7.5-minute series topographic quadrangle. United States Department of Interior.

USGS (U.S. Geological Survey). 1974b. San Clemente, California 7.5-minute series topographic quadrangle. United States Department of Interior.

USGS (U.S. Geological Survey). 1974c. San Juan Capistrano, California 7.5-minute series topographic quadrangle. United States Department of Interior.

USGS (U.S. Geological Survey). 1997. Cañada Gobernadora, California 7.5-minute series topographic quadrangle. United States Department of Interior.

Wilson, Craig M. January 25. 2001. Memo addressed to the State Board Members and Regional Board Executive Officers.



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure_1_Vicinity.mxd

South Orange County Reliability Enhancement Project

Vicinity and Overview Map

Figure 1

Created For:	Created By:
Mary Turley	TRC
Date: 4/25/2012	

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- Delineation Sheet Number
- USGS Quadrangle Boundary

Source: USGS Topo Maps

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 1 of 12

Created For:	Created By:
Mary Turley	TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

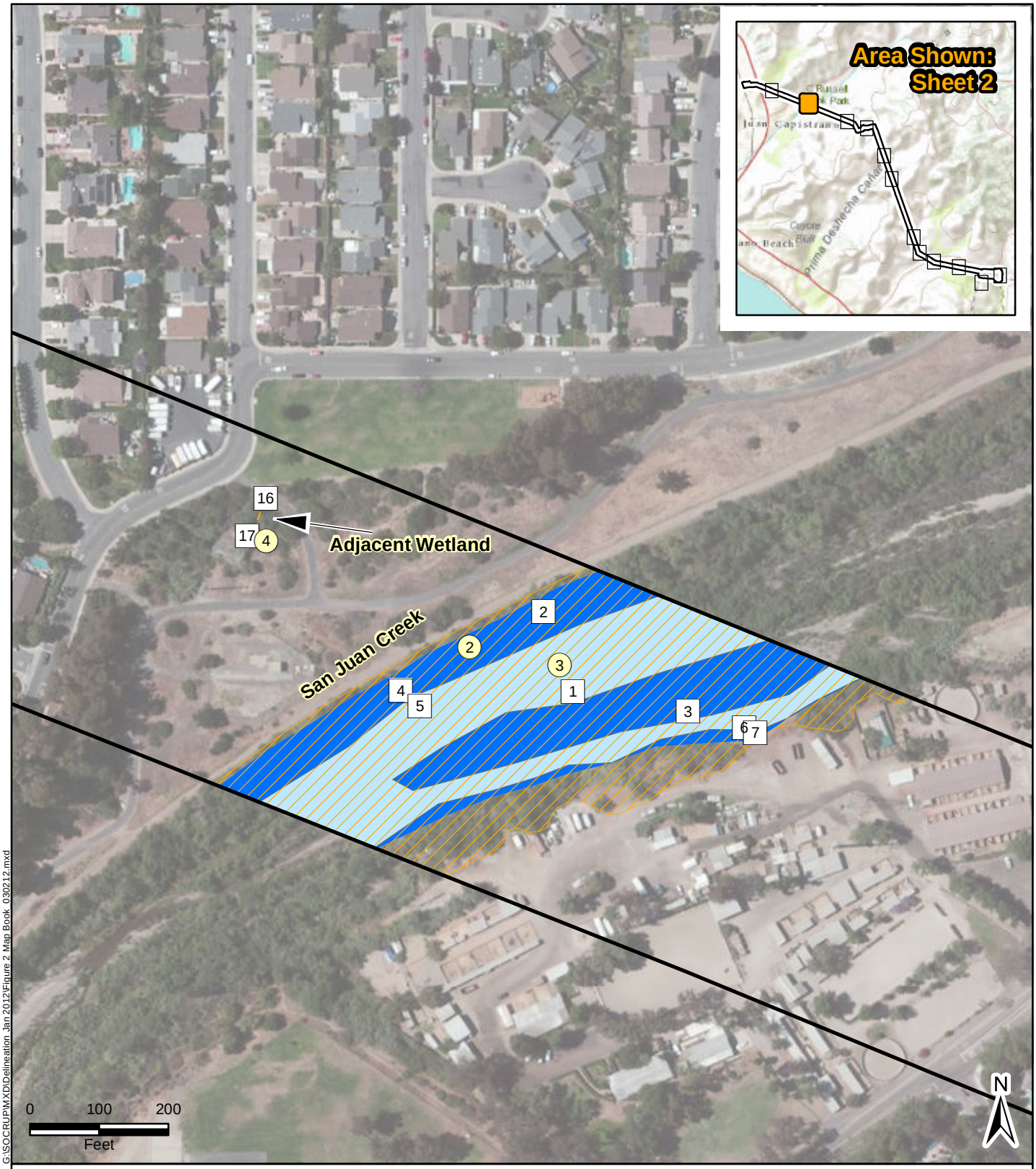
Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE — A Sempra Energy utility



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 2 of 12

Created For:	Created By:
Mary Turley	TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

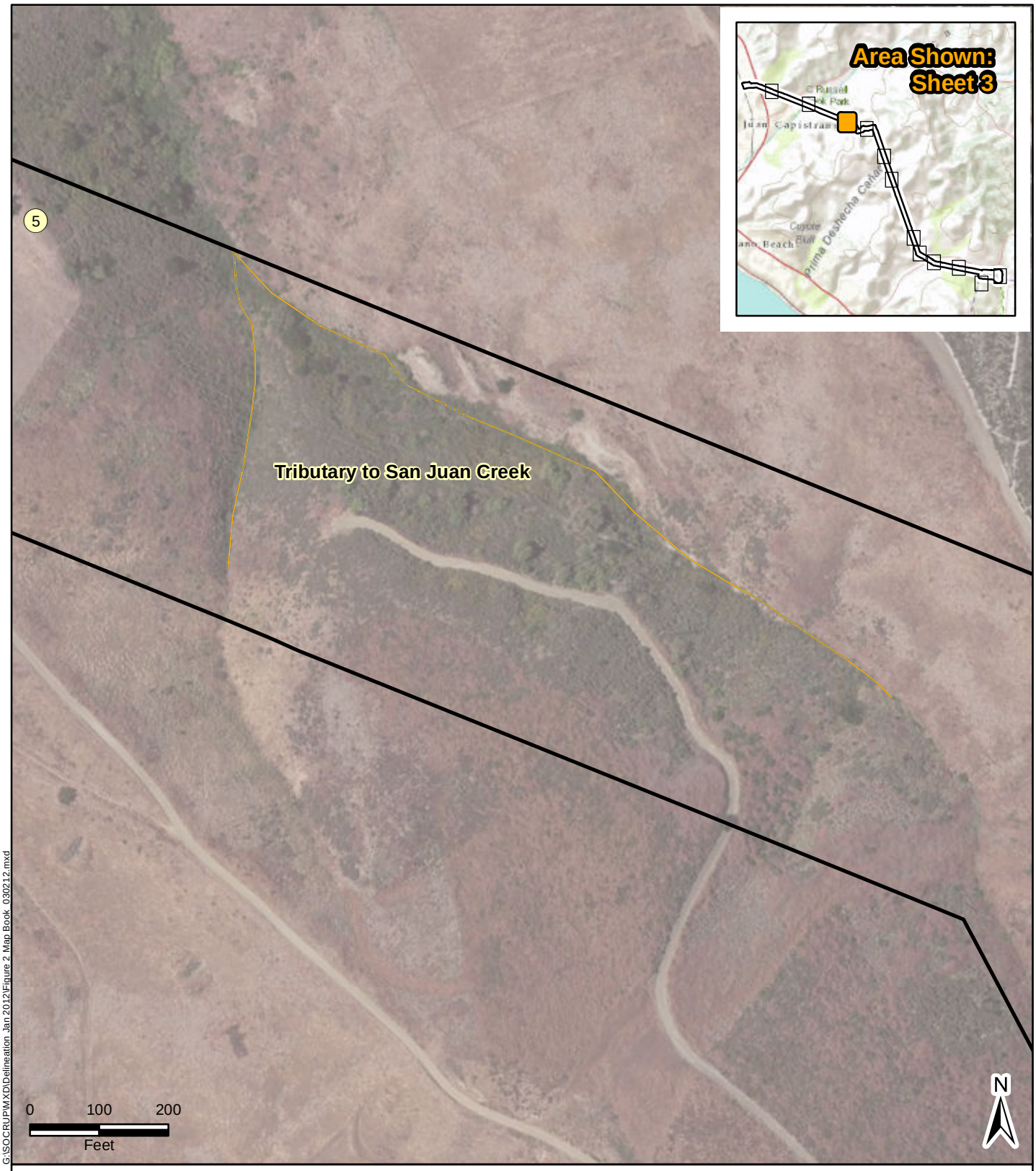
Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 3 of 12

Created For:	Created By:
Mary Turley	TRC
Date: 4/25/2012	

SDG&E is providing this map with the understanding that the map is not survey grade.

Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 4 of 12

Created For:	Created By:
Mary Turley	TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOC\RUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 5 of 12

Created For:	Created By:
Mary Turley	TRC
Date: 4/25/2012	

SDG&E is providing this map with the understanding that the map is not survey grade.

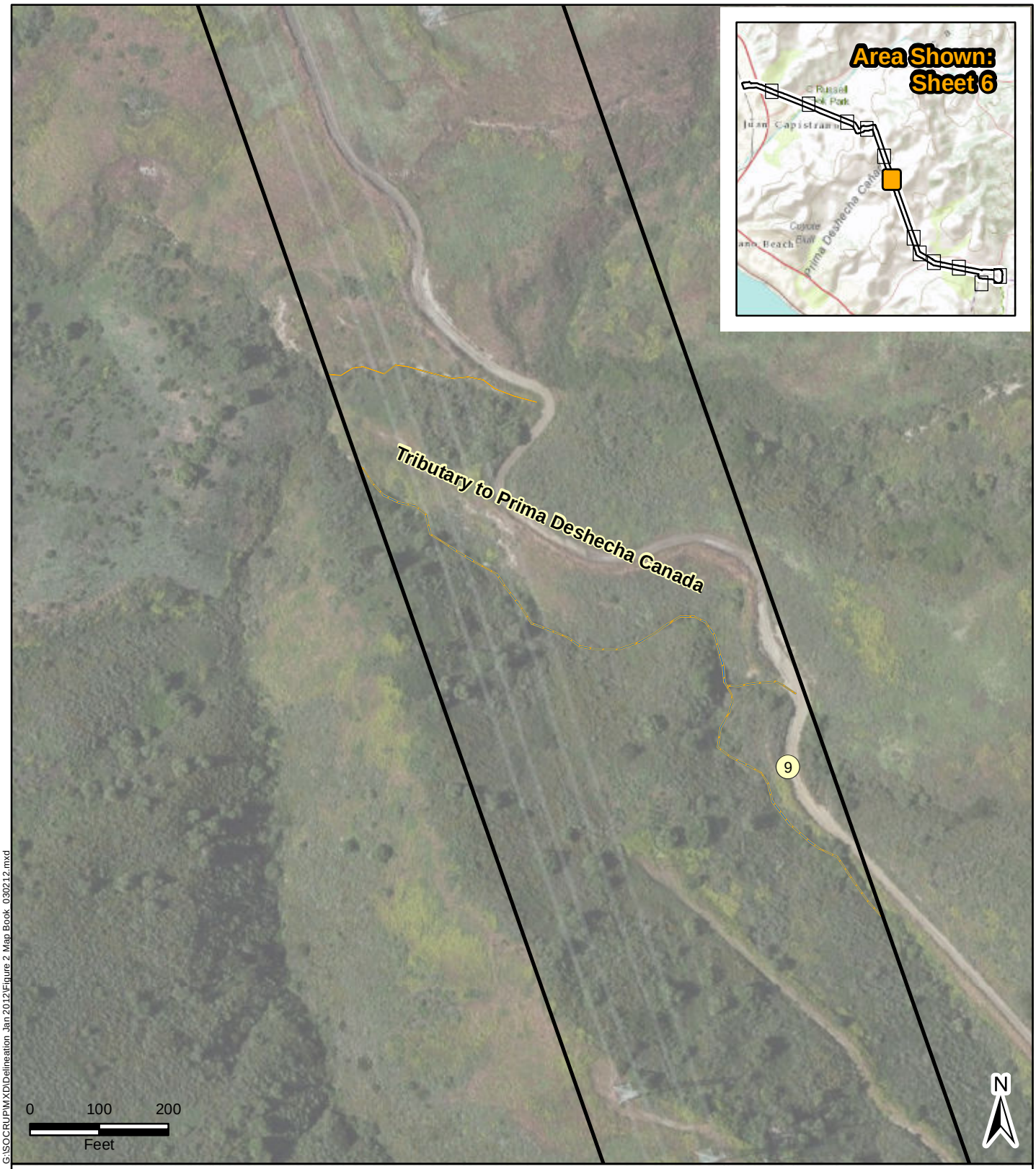
Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 6 of 12

Created For:	Created By:
Mary Turley	TRC
Date: 4/25/2012	

SDG&E is providing this map with the understanding that the map is not survey grade.

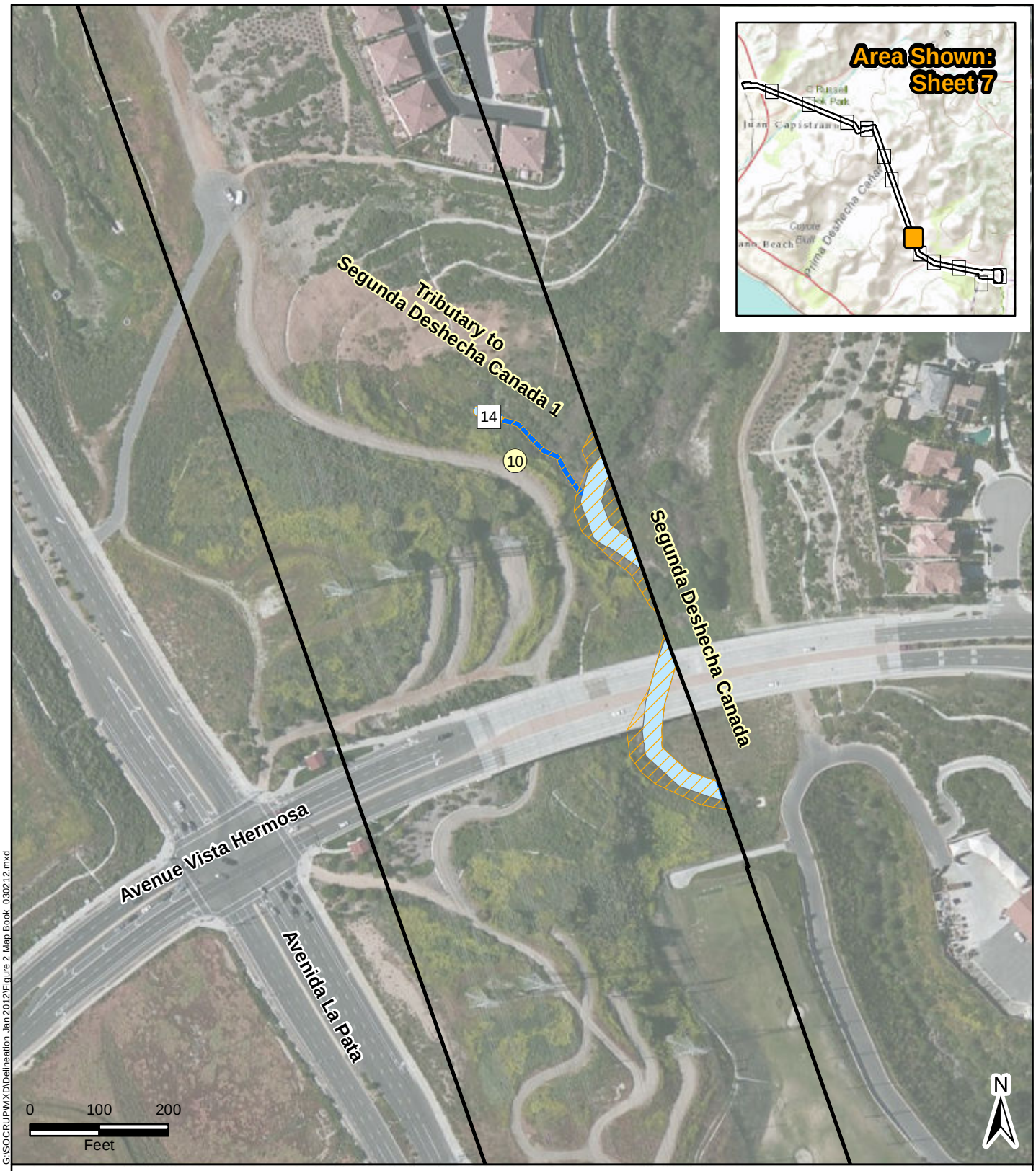
Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 7 of 12

Created For:	Created By:
Mary Turley	TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE — A Sempra Energy utility



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 8 of 12

Created For:	Created By:
Mary Turley	TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure 2_Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 9 of 12

Created For:	Created By:
Mary Turley	TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

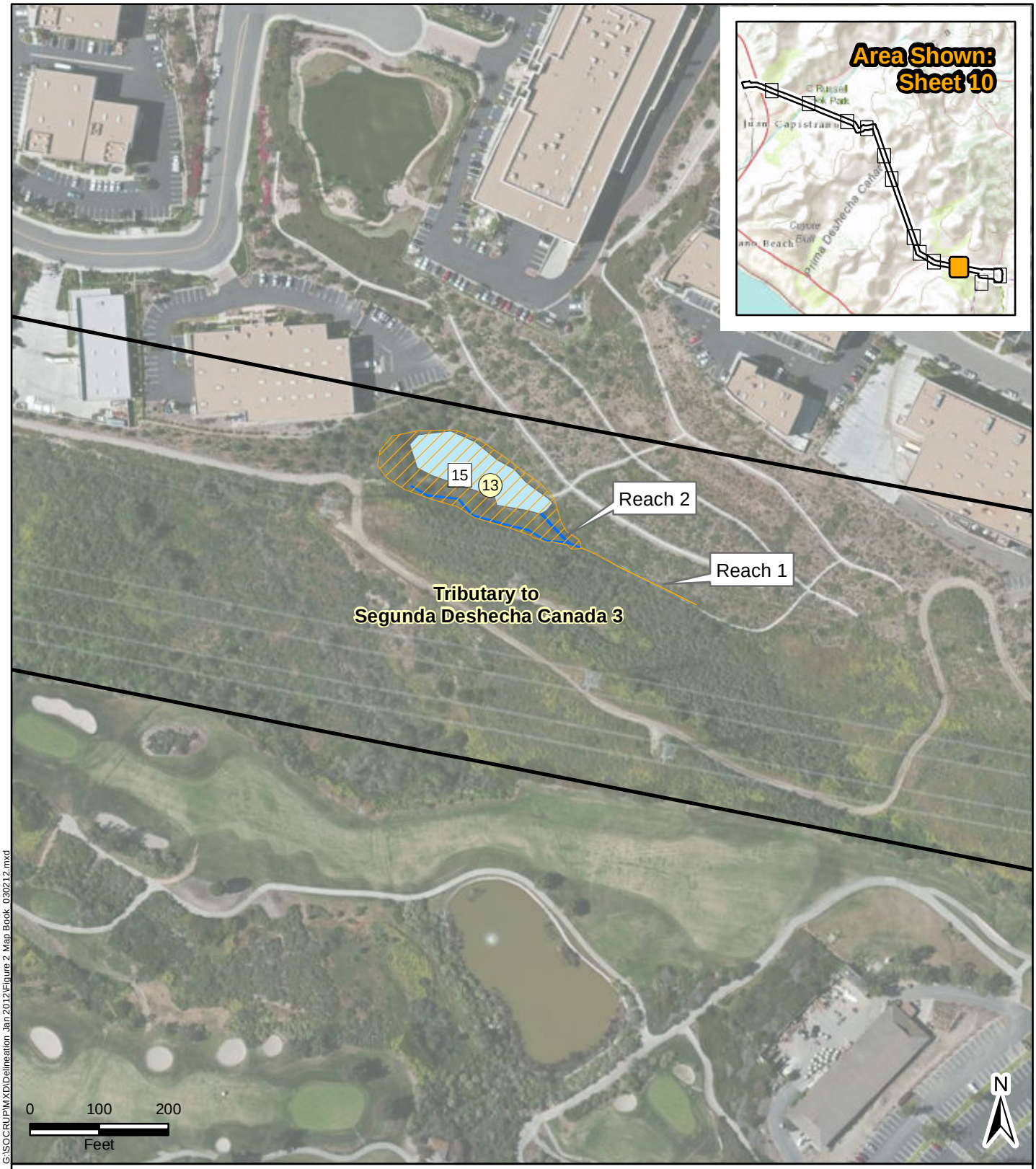
Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 10 of 12

Created For:	Created By:
Mary Turley	TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

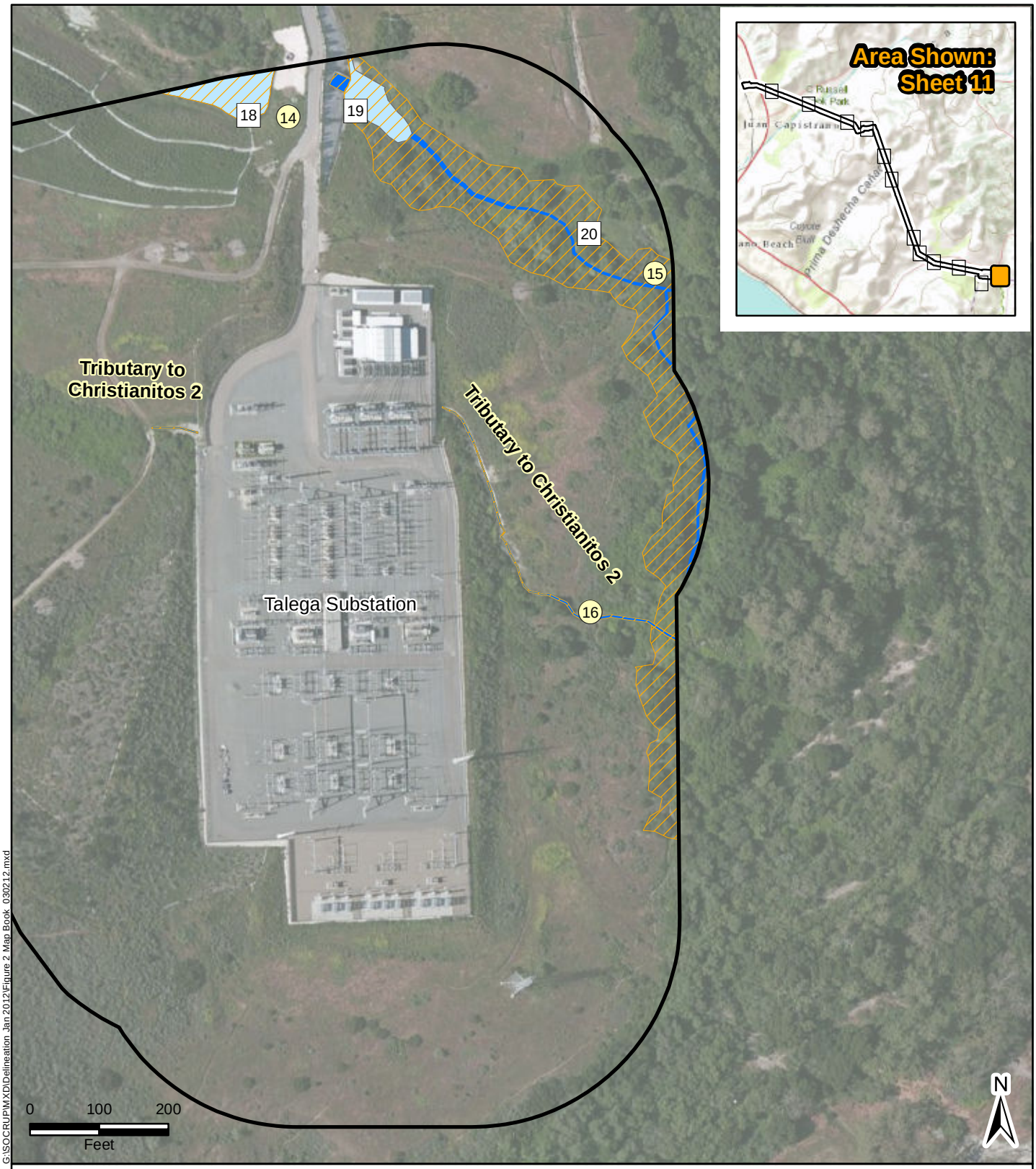
Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOC\RUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 11 of 12

Created For:	Created By:
Mary Turley	TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

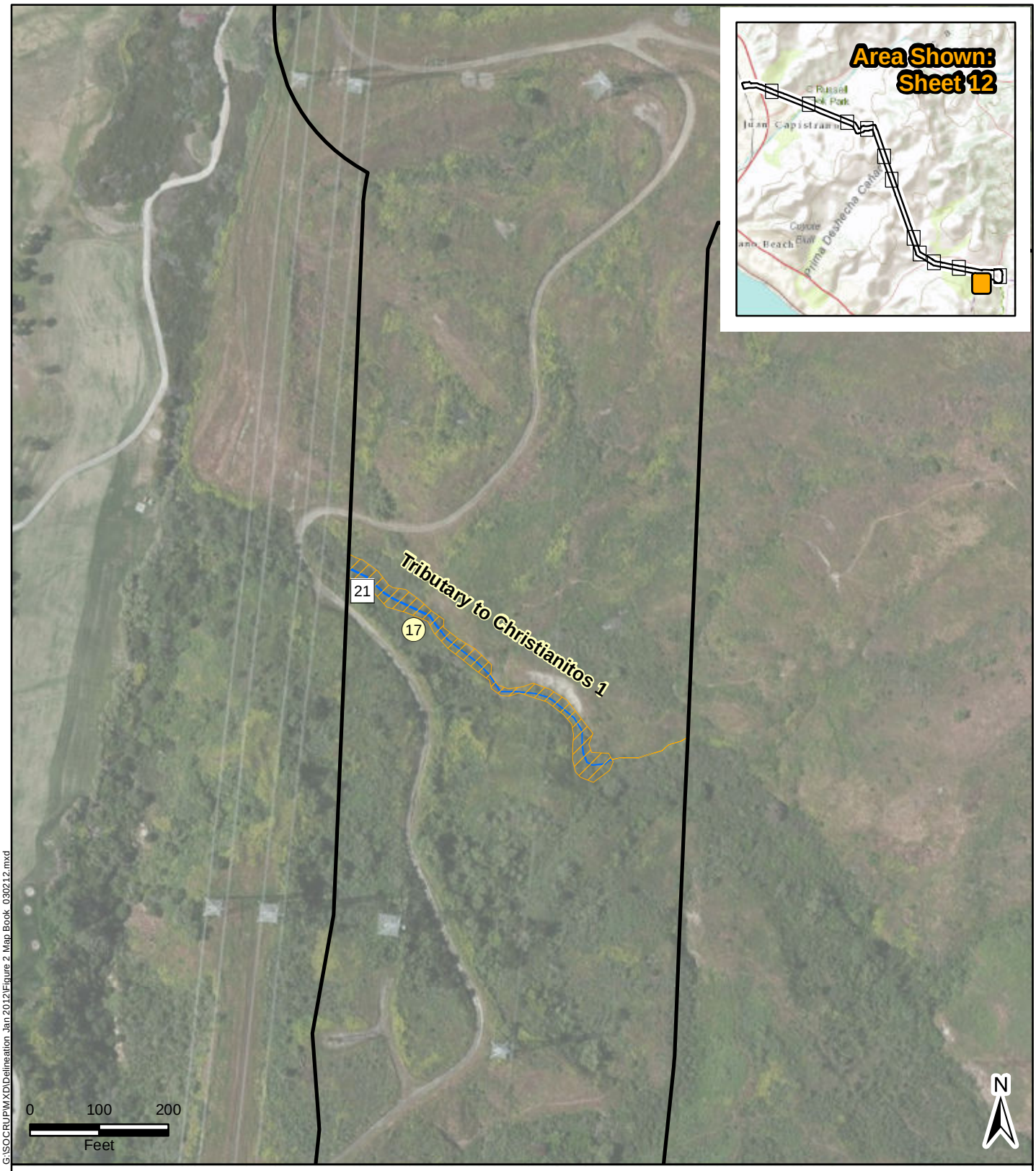
Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE
A Sempra Energy utility



G:\SOCRUP\MXD\Delineation_Jan 2012\Figure 2 Map Book_030212.mxd

South Orange County Reliability Enhancement Project

Delineation Map

Figure 2

Sheet 12 of 12

Created For:	Created By:
Mary Turley	TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Source: Bing Maps Aerial Imagery

Legend

- Proposed Project Survey Area
- ACOE Waters
- ACOE Wetland
- CDFG Jurisdiction
- # Photo Location
- # Wetland Soil Pit Location

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

Appendix A: Site Photographs

Appendix A: Site Photographs

	Photo 1: View of Horno Creek facing south. Creek was relatively narrow and was dominated by non-native vegetation.
	Photo 2: View of San Juan Creek facing west. Note flowing water and riparian/wetland vegetation.

Appendix A: Site Photographs

	Photo 3: View of San Juan Creek facing north. This area of San Juan Creek was relatively free of vegetation due to high water velocities.
	Photo 4: View of Adjacent Wetland to San Juan Creek. The wetland was small and had no surface water connection to the Creek.

Appendix A: Site Photographs

	Photo 5: Overview of Tributary to San Juan Creek facing southeast.
	Photo 6: View of Rancho San Juan drainage basin facing northwest. Basin was dominated by mulefat.

	Photo 7: View of Rancho San Juan drainage channel. Note distinct low-flow sign and riparian vegetation.
	Photo 8: View of lower reach of Tributary to Prima Deshecha Cañada facing west. Area was heavily vegetated with riparian vegetation, dominated by mulefat.

	Photo 9: View of upper reach of Tributary to Prima Deshecha Cañada facing northwest. The tributary is dominated by upland vegetation with scattered riparian vegetation.
	Photo 10: View of Tributary Segunda Deshecha Cañada 1. The tributary is located in uplands with OHWM only after connection to an outfall structure (not visible in photo).

	Photo 11: View of Segunda Deshecha Cañada facing south. The drainage supported a mixture of both upland and riparian vegetation.
	Photo 12: View of Tributary Segunda Deshecha Cañada 2 facing west. The tributary is a maintained flood control facility.

Appendix A: Site Photographs

	Photo 13: View of lower reach of Tributary Segunda Deshecha Cañada 3 facing north. The tributary is dominated by wetland and riparian vegetation.
	Photo 14: View of basin portion of Tributary to Christianitos Creek 1 facing north. The bottom of the basin was dominated by cattails.

	Photo 15: View of Tributary to Christianitos Creek 1 facing southwest in the lower reach of the drainage. The feature was slightly incised and was dominated by riparian vegetation.
	Photo 16: View of Tributary to Christianitos Creek 2 facing north. The feature was partially channelized in a two foot concrete channel.

	Photo 17: View of Tributary to Christianitos Creek 3 facing southeast. A portion of the tributary was heavily vegetated with riparian vegetation.

Appendix B: Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: #1

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 6, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.5063 Long: 117.6432 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10x10)			
1. Baccharis salicifolia	30	Y	FACW
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 10x10)			
1. Xanthium strumarium	5	N	FAC
2. Gnaphalium sp.	5	N	NI
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 90 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Pit is in an area that is seasonally scoured and inundated by overflow from the river.

SOIL

Sampling Point: #1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-15	5y 4/2	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No _____ Depth (inches): 15

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 12

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange Sampling Date: 5/26/10

Applicant/Owner: SDG&E State: CA Sampling Point: #2

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 6, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.50643 Long: 117.64325 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10x10)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	40	Y	FACW
2. Salix exigua	10	N	FACW
3.			
4.			
	50 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10x10)			
1. Baccharis salicifolia	50	Y	FACW
2. Salix exigua	5	N	FACW
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 10x10)			
1. Pichris echioides	7	N	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	7 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 93 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Pit is next to area of perennially running/wet region of San Juan Creek

SOIL

Sampling Point: #2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-3	5y 3/1	100					silty sand	
3-10	2.5y 3/2	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No _____ Depth (inches): 3

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sulfidic odor below 3 inches.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange Sampling Date: 5/26/10

Applicant/Owner: SDG&E State: CA Sampling Point: #3

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 5, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.50602 Long: 117.64256 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10x10)			
1. Baccharis salicifolia	50	Y	FACW
2. Salix exigua	5	N	FACW
3. Tamarix rammossissima	10	N	FACW
4.			
5.			
	65 = Total Cover		
Herb Stratum (Plot size: 10x10)			
1. Pichris echioides	7	N	NI
2. Scirpus sp.	10	Y	OBL
3. Cyperus sp.	5	N	OBL
4. Melilotus incana	10	Y	FAC
5.			
6.			
7.			
8.			
	32 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 68 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Pit is next to area of perennially running/wet region of San Juan Creek

SOIL

Sampling Point: #3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-3	Gley 1 2.5/10y						silt	
3-10	Gley 1 2.5/10y						rocky clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

Sulfidic odor below 1 inch. Soil almost black.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No _____ Depth (inches): 1

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: #4

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 6, T8S, R7W

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR): Lat: 33.50611 Long: 117.64392 Datum: NAD 83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No ✓	**Is the Sampled Area within a Wetland?** Yes No ✓
Hydric Soil Present?	Yes	No ✓	
Wetland Hydrology Present?	Yes	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10x10)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	5	Y	FACW
2.			
3.			
4.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10x10)			
1. Baccharis salicifolia	10	Y	FACW
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 10x10)			
1. Carduus sp.	15	N	NI
2. Tropeolum majus	5	N	NI
3. Bromus diandrus	30	Y	NI
4. Ambrosia psylostachia	10	N	FAC
5.			
6.			
7.			
8.			
	32	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

Pit is approx. 10 feet from a small drainage leading to San Juan Creek and 20 ft from Pit #3.

SOIL

Sampling Point: #4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-4	2.5y - 3/3						sandy loam	
4-10	2.5y - 5/3						sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: #5

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 6, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.50605 Long: 117.64383 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10x10)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	40	Y	FACW
2.			
3.			
4.			
	40 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10x10)			
1. Baccharis salicifolia	10	Y	FACW
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Approx. 10 feet from water's edge.

SOIL

Sampling Point: #5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-6	10yr - 3/2	60	5yr - 5/8	40			sand	
6-10	2.5yr - 2.5/1						sandy silt	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

Sulfuric odor and organic streaking in sandy soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No _____ Depth (inches): _____

Water Table Present? Yes ✓ No ✓ Depth (inches): 9

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 8

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: # 6

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 5, T8S, R7W

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR): Lat: 33.506 Long: 117.64227 Datum: NAD 83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No	**Is the Sampled Area within a Wetland?** Yes No ✓
Hydric Soil Present?	Yes	No ✓	
Wetland Hydrology Present?	Yes	No ✓	

Remarks:

Willow scrub with non-native weed understory.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10x10)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	10	Y	FACW
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10x10)			
1. Salix exigua	5	Y	FACW
2. Baccharis sarothroides	5	Y	FACW
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 10x10)			
1. Brassica nigra	20	Y	NI
2. Medicago indica	30	Y	FAC
3. Ambrosia psylostachya	5	N	FAC
4.			
5.			
6.			
7.			
8.			
	55 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

SOIL

Sampling Point: # 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10yr - 4/4							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Approx. 10 feet upslope from standing water in region between upland and riparian vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange County Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: #7

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 5, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.50601 Long: 117.64227 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15x15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	20	Y	FACW
2.			
3.			
4.			
	20 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10x10)			
1. Salix exigua	30	Y	OBL
2. Baccharis salicifolia	20	Y	FACW
3.			
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 10x10)			
1. Juncus sp.	10	N	FACW
2. Polypogon monspeliensis	40	Y	FACW
3. Melilotus indica	10	N	FAC
4.			
5.			
6.			
7.			
8.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. N/A			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Approximately 6 feet from standing water.

SOIL

Sampling Point: #7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-4	10y - 4/2						sandy clay	
4-8	10y - 3/2						silty sand	
8-10	5y - 3/1						silty sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No _____ Depth (inches): 9

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 8

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange County Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: #8

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 6, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.51004 Long: 117.6577 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15x15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ficus carica	10	N	NI
2. Eucalyptus citriadora	30	Y	NI
3. Acer negundo	20	N	NI
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10x10)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: 10x10)			
1. Fragaria x ananassa	90	Y	NI
2. Cyperus alternafolius	10	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. N/A			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 20 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species 10	x 2 =	20
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

At the edge of a maintained golf course with lots of ornamental plant species.

SOIL

Sampling Point: #8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-4	2.5y - 6/2		7.5yr - 6/8				loamyclay	streaking
4-10	2.5y - 4/1	97	5yr - 5/8	3			sandy clay	mottles

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange County Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: #9

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 6, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.5102 Long: 117.65761 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No _____ Hydric Soil Present? Yes ✓ No _____ Wetland Hydrology Present? Yes ✓ No _____	**Is the Sampled Area within a Wetland?** **Yes ✓ No _____**

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15x15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus sp.	30	Y	FACW
2. Salix lasiolepis	20	Y	FACW
3. Washingtonia robusta	10	N	NI
4. Acer negundo	10	N	NI
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. N/A			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: _____)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. N/A			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✓ No _____**

Remarks:

Mostly ornamental trees at the edge of a working golf course and a small perennial stream, no understory.

SOIL

Sampling Point: #9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-6	2.5y - 3/2		2.5yr - 5/8				loamyclay	
6-10	2.5yr 5/2		2.5yr - 4/8				clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 7

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange County Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: #10

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 6, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.51027 Long: 117.65754 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15x15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Washingtonia robusta	30	Y	NI
2. Fraxinus sp.	50	Y	FACW
3. Acer negundo	10	N	NI
4.			
	90%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10x10)			
1. N/A			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10x10)			
1. Cyperus alternafolia	40	Y	FACW
2. Oxalis per-caprae	10	N	NI
3.			
4.			
5.			
6.			
7.			
8.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 10x10)			
1. N/A			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Approximately 15 feet from running water.

SOIL

Sampling Point: #10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-10	2.5yr - 5/3						sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange County Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: #11

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 6, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.510 Long: 117.657 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15x15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus sp.	60	Y	FACW
2. Washingtonia robusta	20	Y	NI
3. Acer negundo	10	N	NI
4.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10x10)			
1. N/A			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10x10)			
1. Cyperus alternafolius	50	Y	FACW
2. Oxalis per-caprae	5	N	NI
3.			
4.			
5.			
6.			
7.			
8.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Approximately 8 feet from Pit #10, closer to stream.

SOIL

Sampling Point: #11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-6	2.5y - 3/1		5yr - 5/8	10			clay	
6-9	2.5y - 4/1		2.5yr - 5/8	40			sandy clay	
9-10	Gley 1 - 2.5/N							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Third layer has sulfur odor; very high rusty streaking component.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 9

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Approximately 3 feet from running water.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange County Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: # 12

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 22, T8S, R7W

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR): Lat: 33.45998 Long: 117.60082 Datum: NAD 83

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No	**Is the Sampled Area within a Wetland?** Yes ✓ No
Hydric Soil Present?	Yes ✓ No	
Wetland Hydrology Present?	Yes ✓ No	

Remarks:

Approximately 5 feet from running water, just within the edge of riparian habitat and upland habitat.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	10		
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10x10)			
1. Salix exigua	30	Y	OBL
2. Salix lasiolepis	30	Y	FACW
3. Typha sp.	30	Y	OBL
4.			
5.			
	90 = Total Cover		
Herb Stratum (Plot size: 10x10)			
1. Melilotus indica	50	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size:)			
1. N/A			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

Plot is approx. 5 feet from edge of running stream.

SOIL

Sampling Point: # 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-6	2.5y - 3/2						loamy clay+	
6-10	2.5y - 3/2		2.5yr - 3				loamy clay+	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

Mottles and clay increase with depth. The pit extends below the level of the surface water, but the clay is likely preventing saturation seepage.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

This drainage appears to have been altered in the past, and is likely fed by residential runoff. The toe of the slope is within feet of the drainage, and is covered with upland species along its length.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange County Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: _____ Sampling Point: #13

Investigator(s): D. Burton, K. McDonald Section, Township, Range: Sec 22, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.460 Long: 117.601 Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

The pit is within 8 feet of running water, 2 feet from the toe of the slope. (least Bell's vireo observed immediately adjacent to the site)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10x10)			
1. Baccharis salicifolia	50	Y	FACW
2. Isocoma menziesii	20	N	NI
3.			
4.			
5.			
	70 = Total Cover		
Herb Stratum (Plot size: 10x10)			
1. Ambrosia psilostachya	25	Y	FAC
2. Apium graveloens	5	N	FACW
3. Polypogon monspeliensis	40	Y	FACW
4. Picris echioides	10	N	FAC
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 55.9	x 2 = 111.8
FAC species 20.6	x 3 = 61.8
FACU species _____	x 4 = _____
UPL species 11.8	x 5 = 59
Column Totals: 88.3 (A)	232.6 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: #13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-11	2.5y - 3/2		2.5yr - 3/6				loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 11

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange Sampling Date: 5/27/10

Applicant/Owner: SDG&E State: CA Sampling Point: #14

Investigator(s): T. Kegel, L. Jensen Section, Township, Range: Sec 22, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.465742 Long: 117.603443 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Baccharis salicifolia	80	Y	FACW
2.			
3.			
4.			
5.			
	80 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Polypogon monspeliensis	5	N	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 90 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: #14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-11	2.5y - 3/2	100					loamy clay	Hydrogn Sulfide Odor

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- — Histosol (A1)
- — Histic Epipedon (A2)
- — Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- — Stratified Layers (A5) (**LRR C**)
- — 1 cm Muck (A9) (**LRR D**)
- — Depleted Below Dark Surface (A11)
- — Thick Dark Surface (A12)
- — Sandy Mucky Mineral (S1)
- — Sandy Gleyed Matrix (S4)
- — Sandy Redox (S5)
- — Stripped Matrix (S6)
- — Loamy Mucky Mineral (F1)
- — Loamy Gleyed Matrix (F2)
- — Depleted Matrix (F3)
- — Redox Dark Surface (F6)
- — Depleted Dark Surface (F7)
- — Redox Depressions (F8)
- — Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- — 1 cm Muck (A9) (**LRR C**)
- — 2 cm Muck (A10) (**LRR B**)
- — Reduced Vertic (F18)
- — Red Parent Material (TF2)
- — Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ———

Depth (inches): ———

Hydric Soil Present? Yes ✓ No ———

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

~~Primary Indicators (minimum of one required; check all that apply)~~

- ✓ Surface Water (A1)
- — High Water Table (A2)
- ✓ Saturation (A3)
- — Water Marks (B1) (**Nonriverine**)
- — Sediment Deposits (B2) (**Nonriverine**)
- — Drift Deposits (B3) (**Nonriverine**)
- — Surface Soil Cracks (B6)
- — Inundation Visible on Aerial Imagery (B7)
- — Water-Stained Leaves (B9)
- — Salt Crust (B11)
- — Biotic Crust (B12)
- — Aquatic Invertebrates (B13)
- — Hydrogen Sulfide Odor (C1)
- — Oxidized Rhizospheres along Living Roots (C3)
- — Presence of Reduced Iron (C4)
- — Recent Iron Reduction in Tilled Soils (C6)
- — Thin Muck Surface (C7)
- — Other (Explain in Remarks)

~~Secondary Indicators (2 or more required)~~

- — Water Marks (B1) (**Riverine**)
- — Sediment Deposits (B2) (**Riverine**)
- — Drift Deposits (B3) (**Riverine**)
- — Drainage Patterns (B10)
- — Dry-Season Water Table (C2)
- — Crayfish Burrows (C8)
- — Saturation Visible on Aerial Imagery (C9)
- — Shallow Aquitard (D3)
- — FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ——— Depth (inches): ———

Water Table Present? Yes ✓ No ——— Depth (inches): ———

Saturation Present? (includes capillary fringe) Yes ✓ No ——— Depth (inches): ———

Wetland Hydrology Present? Yes ✓ No ———

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SOCRUP City/County: Orange Sampling Date: 7/14/10

Applicant/Owner: SDG&E State: CA Sampling Point: #15

Investigator(s): T. Kegel, L. Jensen Section, Township, Range: Sec 26, T8S, R7W

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____

Subregion (LRR): _____ Lat: 33.456041 Long: 117.586498 Datum: NAD 83

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	100	Y	FACW
2.			
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Typha ssp.	10	N	OBL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: #15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-11	10GY	100					loamy clay	Strong Hydrogn Sulfide Odor

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No _____ Depth (inches): _____

Water Table Present? Yes ✓ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SOCREP | City/County: San Juan Capistrano, Orange | Sampling Date: 12/28/2011

Applicant/Owner: SDG&E | State: CA | Sampling Point: 16

Investigator(s): T. Kegel & S. Underbrink | Section, Township, Range: Sec6, T8S, R7W

Landform (hillslope, terrace, etc.): Outfall Pipe | Local relief (concave, convex, none): Concave | Slope (%): 1-2%

Subregion (LRR): C - Mediterranean California | Lat: 33° 30.408' N | Long: 117°, 38.676' W | Datum:

Soil Map Unit Name: SORRENTO LOAM, 0 TO 2 PERCENT SLOPES | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (•) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (•)	No ( )	
Hydric Soil Present?	Yes (•)	No ( )	**Is the Sampled Area within a Wetland?** Yes (•) No ( )
Wetland Hydrology Present?	Yes (•)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quarcus agrifolia*	30	Yes	Not Listed
2. *Sambucus mexicana*	15	No	FACU
3. *Rhus ovata*	5	No	Not Listed
4. *Arundo donax*	5	No	FACW
Total Cover:	55 %		
Sapling/Shrub Stratum			
1. *Typha latifolia*	60	Yes	OBL
2. *Cyperus alternifolius*	10	No	OBL
3. *Salix lasiolepis*	2	No	FACW
4.			
5.			
Total Cover:	72 %		
Herb Stratum			
1. *Epilobium ciliatum*	5	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	5 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	12	x 2 =	24
FAC species		x 3 =	0
FACU species	15	x 4 =	60
UPL species	35	x 5 =	175
Column Totals:	132 (A)		329 (B)

Prevalence Index = B/A = 2.49

Hydrophytic Vegetation Indicators:

- [ ] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (•) No ( )

Remarks:

SOIL

Sampling Point: 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-14	2.5 Y 2.5/1	100					Loam	10% Organic
14-18	Gley 1 3/10GY	90	10 YR 6/6	10	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [x] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks: Strong Hydrogen Sulfide odor

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [x] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [x] Drift Deposits (B3) (**Riverine**)
- [x] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes (•) No ( ) Depth (inches): 2

Water Table Present? Yes (•) No ( ) Depth (inches): 5

Saturation Present? (includes capillary fringe) Yes (•) No ( ) Depth (inches): 0

Wetland Hydrology Present? Yes (•) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SOCREP | City/County: San Juan Capistrano, Orange | Sampling Date: 12/28/2011

Applicant/Owner: SDG&E | State: CA | Sampling Point: 17

Investigator(s): T. Kegel & S. Underbrink | Section, Township, Range: Sec6, T8S, R7W

Landform (hillslope, terrace, etc.): Outfall Pipe | Local relief (concave, convex, none): Concave | Slope (%): 1-2%

Subregion (LRR): C - Mediterranean California | Lat: 33° 30.406' N | Long: 117°, 38.677' W | Datum:

Soil Map Unit Name: SORRENTO LOAM, 0 TO 2 PERCENT SLOPES | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quarcus agrifolia*	15		Not Listed
2.			
3.			
4.			
Total Cover:	15 %		
Sapling/Shrub Stratum			
1. *Typha latifolia*	10	No	OBL
2. *Arundo donax*	40	Yes	FACW
3.			
4.			
5.			
Total Cover:	50 %		
Herb Stratum			
1. *Epilobium ciliatum*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	20 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	60	x 2 =	120
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	15	x 5 =	75
Column Totals:	85 (A)		205 (B)

Prevalence Index = B/A = 2.41

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-5	2.5 Y 2.5/1	100					Loam	5% Organic
5-9	2.5 Y 3/1	100					sandy loam	
9-18	2.5 Y 5/3	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks: Strong Hydrogen Sulfide odor

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ◉ No ○ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SOCREP | City/County: San Juan Capistrano, Orange | Sampling Date: 12/29/2011

Applicant/Owner: SDG&E | State: CA | Sampling Point: 18

Investigator(s): T. Kegel & S. Underbrink | Section, Township, Range: s25,T8S,R7W

Landform (hillslope, terrace, etc.): Basin | Local relief (concave, convex, none): Concave | Slope (%): 1-2%

Subregion (LRR): C - Mediterranean California | Lat: 33° 27.308' N | Long: 117°, 34.314' W | Datum:

Soil Map Unit Name: ALO CLAY, 15 TO 30 PERCENT SLOPES | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Typha latifolia*	80	Yes	OBL
2. *Scirpus americanus*	10	No	OBL
3.			
4.			
5.			
Total Cover:	90 %		
Herb Stratum			
1. *Eleocharis palustis*	10	No	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	2.5 Y 2.5/1	100					Loam	
4-18	10 YR 2/1	100					Clay	Histic

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☒ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: Strong Hydrogen Sulfide odor

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches): 5

Water Table Present? Yes ◉ No ○ Depth (inches): 5

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SOCREP | City/County: San Juan Capistrano, Orange | Sampling Date: 12/29/2011

Applicant/Owner: SDG&E | State: CA | Sampling Point: 19

Investigator(s): T. Kegel & S. Underbrink | Section, Township, Range: sec25, T8S, R7W

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): Concave | Slope (%): 2-3%

Subregion (LRR): C - Mediterranean California | Lat: 33° 27.309' N | Long: 117°, 34.284' W | Datum: NAD 83

Soil Map Unit Name: SORRENTO LOAM, 2 TO 9 PERCENT SLOPES | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	90	Yes	FACW
2.			
3.			
4.			
Total Cover:	90 %		
Sapling/Shrub Stratum			
1. *Typha latifolia*	15	No	OBL
2.			
3.			
4.			
5.			
Total Cover:	15 %		
Herb Stratum			
1. *Juncus mexicanus*	10	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	100	x 2 =	200
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	115 (A)		215 (B)

Prevalence Index = B/A = 1.87

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	10YR 4/1	75	Gley 2 2.5/5PB	25	RM	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (•) No ( )

Remarks: Strong Hydrogen Sulfide odor

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [ ] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (•)	Depth (inches):	
Water Table Present?	Yes (•) No ( )	Depth (inches):	15
Saturation Present? (includes capillary fringe)	Yes (•) No ( )	Depth (inches):	10

Wetland Hydrology Present? Yes (•) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SOCREP | City/County: San Juan Capistrano, Orange | Sampling Date: 12/29/2011

Applicant/Owner: SDG&E | State: CA | Sampling Point: 20

Investigator(s): T. Kegel & S. Underbrink | Section, Township, Range: sec25, T8S, R7W

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): Concave | Slope (%): 2-3%

Subregion (LRR): C - Mediterranean California | Lat: 33° 27.289' N | Long: 117°, 34.205' W | Datum: NAD 83

Soil Map Unit Name: SORRENTO LOAM, 2 TO 9 PERCENT SLOPES | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifoloia*	5	No	Not Listed
2.			
3.			
4.			
Total Cover:	5 %		
Sapling/Shrub Stratum			
1. *Typha latifolia*	80	Yes	OBL
2. *Urtica dioica*	20	Yes	FACW
3.			
4.			
5.			
Total Cover:	100%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	20	x 2 =	40
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	105 (A)		145 (B)

Prevalence Index = B/A = 1.38

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	10YR 3/2	100%					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks: Strong Hydrogen Sulfide odor

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 2

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: SOCREP | City/County: San Diego County | Sampling Date: 02/28/2012

Applicant/Owner: SDG&E | State: CA | Sampling Point: 21

Investigator(s): T. Kegel & S. Underbrink | Section, Township, Range: Sec26, T8S,R7W

Landform (hillslope, terrace, etc.): Wash | Local relief (concave, convex, none): Concave | Slope (%): 2-3%

Subregion (LRR): C - Mediterranean California | Lat: 33°, 27', 0.0" N | Long: 117°, 34', 40.8" W | Datum: NAD 83

Soil Map Unit Name: | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (•) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (•)	No ( )	
Hydric Soil Present?	Yes ( )	No (•)	**Is the Sampled Area within a Wetland?** Yes ( ) No (•)
Wetland Hydrology Present?	Yes (•)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Baccharis salicifolia*	70	Yes	FACW*
2.			
3.			
4.			
Total Cover:	70 %		
Sapling/Shrub Stratum			
1. *Toxicodendron diversilobum*	20	Yes	FACU
2.			
3.			
4.			
5.			
Total Cover:	20 %		
Herb Stratum			
1. *Ambrosia psilostachya*	10	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 15 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	70	x 2 =	140
FAC species	10	x 3 =	30
FACU species	20	x 4 =	80
UPL species		x 5 =	0
Column Totals:	100 (A)		250 (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

- [ ] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (•) No ( )

Remarks:

SOIL

Sampling Point: 21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	2.5Y 3/2	95	7.5YR 4/6	5	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches): 1

Water Table Present? Yes ◉ No ○ Depth (inches): 1

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix D:
2008 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for San Diego Gas and Electric's Proposed Orange County Transmission Expansion Project

1903 Wright Place
Suite 190
Carlsbad, CA 92008

760.603.1740 PHONE
760.603.1750 FAX

www.TRCsolutions.com

October 1, 2008

Ms. Sandra Marquez
U.S. Fish and Wildlife Service
6010 Hidden Valley Road
Carlsbad, California 92011

SUBJECT: 2008 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for San Diego Gas & Electric's Proposed Orange County Transmission Expansion Project (Revised: October 1, 2008)

Permit Number: TE-037508-1 and TE-162994-0

Dear Ms. Marquez:

This letter report summarizes the methodology and findings of protocol-level surveys for the federally and state listed threatened coastal California gnatcatcher *Polioptila californica californica* (gnatcatcher) conducted by TRC in 2008 for San Diego Gas & Electric's (SDG&E) proposed Orange County Transmission Expansion Project (project) located in San Juan Capistrano and San Clemente, in Orange County, California. The areas surveyed are located within SDG&E's existing transmission corridor from the Talega substation northeast of Camp Pendleton to the Capistrano substation in southwestern Orange County (refer to Figure 1). Surveys were conducted to determine the presence/absence of coastal California gnatcatchers.

SURVEY LOCATIONS

Surveys were conducted along the existing transmission corridor, and comprised 250 feet on either side of the transmission line (survey area). The survey area was divided into four segments. Segments 1 through 3 were surveyed separately; Segment 4 did not contain suitable gnatcatcher habitat, and was not surveyed (see Figure 1). Only suitable gnatcatcher habitat, consisting of coastal sage scrub, disturbed coastal sage scrub, and restored coastal sage scrub, was surveyed. Elevation in the survey area ranged from approximately 225 to 700 feet above sea

level. Within the survey area, gnatcatcher critical habitat [1] comprises 41.07 acres, excluded essential habitat[2] comprises 52.08 acres, and 33.37 acres is exempt[3] (refer to Figures 2, 3, and 4).

Survey Segment 1

Segment 1 is located west of the SDG&E Talega Substation at the east end of Pico Avenida, and terminates at the existing transmission corridor where it spans Avenida Pico (see Figure 1). This survey segment is within T.8S., R.7W. of the U.S. Geological Survey (USGS) San Clemente 7.5-minute quadrangle.

Survey Segment 2

Segment 2 is located north of Avenida Pico and heads north-northwest to just south of the Prima Deshecha Sanitary Landfill entrance at the end of La Plata Avenue (see Figure 1). This survey area is within T.8S., R.7W. of the USGS San Clemente 7.5-minute quadrangle.

Survey Segment 3

Segment 3 is located north of the Prima Deshecha Sanitary Landfill entrance at La Plata Avenue and heads northwest to San Juan Creek Road (see Figure 1). This survey area is within T.8S., R.7W. of the USGS San Clemente and San Juan Capistrano 7.5-minute quadrangles.

PLANT COMMUNITIES

Within the survey area, approximately 67.75 acres of moderate to good quality coastal sage scrub and 65.20 acres of disturbed and restored coastal sage scrub were surveyed. Dominant native shrub species observed include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), California broom (*Lotus scoparius*), lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), coyote bush (*Baccharis piluaris*), mulefat (*Baccharis salicifolia*), and blue elderberry (*Sambucus mexicana*).

METHODOLOGY

Permitted biologists Paula Potenza (Permit No. TE-037508-1) and Vanessa Tisdale (Permit No. TE-162994-0), conducted the surveys according to the *USFWS Coastal California Gnatcatcher Presence/Absence Survey Protocol* for Natural Community Conservation Plan areas (USFWS, 1993). Matt Merscheim, Matt Willis, Kirstie Reynolds, Sommer Fisher, and Ryan Villanueva accompanied Paula Potenza as biologists authorized to conduct activities for gnatcatchers under the direct supervision of an independently authorized biologist. They are listed under or have recently been submitted to Permit No. TE-037508-1.

---

[1] United States Fish and Wildlife Service coastal California gnatcatcher final critical habitat, dated December 19, 2007, available online at http://criticalhabitat.fws.gov/. Critical habitat is considered essential for species survival.
[2] Excluded essential habitat is essential for the species but is administered under local plans, such as an HCP.
[3] Habitat within the jurisdiction of the Department of Defense is considered exempt.

Gnatcatcher surveys were conducted in appropriate vegetation within the survey area. Following protocol for SDG&E's Subregional Natural Community Conservation Plan (NCCP) presence/absence surveys, a minimum of three surveys were conducted at least one week apart. The surveys occurred within the gnatcatcher breeding season (March 15 through June 30). Table 1 below provides the survey dates.

Table 1: 2008 Survey Schedule

Survey Location	Surveyors	Survey Dates
Segment 1	Paula Potenza Matt Merscheim Matt Willis Kirstie Reynolds Sommer Fisher Ryan Villanueva	March 18, 19, 25, and 26; and April 1 and 2
Segment 2	Paula Potenza	April 15 and 29; and May 8
Segment 3	Vanessa Tisdale	May 28; and June 3 and 11

All surveys were conducted between approximately 7:00 a.m. and 12:35 p.m. Weather conditions during the surveys consisted of temperatures from 45 to 74 degrees Fahrenheit, winds from 0 to 10 miles per hour, and cloud cover from 0 to 100 percent. During periods of excessive heat, wind, rain, fog, or other inclement weather surveys were either halted or postponed. Taped vocalizations and "pishing" sounds were used to initially locate gnatcatchers. Taped calls were not used to elicit or prompt further behaviors from birds. Surveys were conducted by slowly walking survey routes and no more than 100 acres of suitable gnatcatcher habitat were surveyed per biologist per day. See Survey Data Summary attachment for a break down of survey conditions for each survey day.

RESULTS

During the surveys, biologists made 19 gnatcatcher observations, for a minimum of 14 individuals in the survey area. Separate individuals were determined by simultaneous sightings, proximity to previous sightings, and time lapse between consecutive sightings. Observations made in close temporal and spatial proximity are considered the same individual; therefore, the total minimum number of gnatcatchers is conservative. Four pairs were confirmed; two pair in Segment 3 and two nesting pair in Segment 1. See Figures 2, 3, 4, and 5 for depictions of the survey area and results on aerial maps and Figures 6 and 7 for depictions of the survey area and result on USGS 7.5 Quadrangles.

Survey Segment 1

Five gnatcatchers were identified; two nesting pairs and one single male (see Figure 2). Survey protocol for NCCP presence/absence surveys requires only three surveys to be conducted; therefore pair territories were not determined. The nesting sites for both pairs were identified based on adult gnatcatcher behaviors, but the nests were not approached. All observations were mapped. Pair 1 was observed in the survey area within good quality coastal sage scrub on a southeast facing slope approximately 425 feet west of the Talega Substation. Pair 2 was observed in the survey area within moderate (disturbed) quality coastal sage scrub on an east facing slope approximately 1,500 feet east of where the transmission corridor spans Pico Avenida. The single male was observed west of the second pair, approximately 1,000 feet east of where the transmission corridor spans Pico Avenida. The single male was observed in moderate (disturbed) coastal sage scrub in a north facing bowl adjacent to a commercial complex.

Survey Segment 2

Two gnatcatchers were identified in Segment 2 (see Figure 3). One male gnatcatcher responded to taped calls played by the surveyor (playback), and was observed just outside of the survey area. The male flew toward the taped calls from the west. After several minutes, the male flew several hundred feet east over a ridgeline and disappeared. The juvenile gnatcatcher responded to playback on May 8, 2008. The juvenile was observed in moderate (disturbed) coastal sage scrub on a west facing slope within the survey area. No adults were observed with the juvenile gnatcatcher.

Survey Segment 3

During the surveys, 11 gnatcatchers observations were made, for a minimum of seven individuals (see Figure 4). One male responded immediately to playback approximately 140 feet south of the survey area. An unknown individual simultaneously called within 100 feet of the male; therefore, these birds are considered Pair 3. Gnatcatchers were detected in this area on two of three surveys. Approximately 250 feet northwest, a male and female responded to playback and were observed together (Pair 4). These birds were detected on two of three surveys. In addition, three single individuals were detected; an unknown individual approximately 600 feet north of Pair 3 was detected on all three surveys, a female approximately 350 feet northwest of Pair 4 was observed on two of three surveys, and an unknown individual was heard calling in ruderal vegetation over 300 feet from known suitable coastal sage scrub.

Please contact me at (760) 603-1740 if you have any questions or comments regarding this letter.

Sincerely,



Paula Potenza
Lead Biologist

Attachments:
Surveyor Certification Statement
Survey Data Summary
Figure 1: Project Overview
Figure 2: Segment 1
Figure 3: Segment 2
Figure 4: Segment 3
Figure 5: Segment 4
Figure 6: USGS 7.5 Topographic Quadrangles
Figure 7: USGS 7.5 Topographic Quadrangles

Surveyor Certification Statement

The undersigned certify that this report and the included field data are a complete and accurate account of the findings and conclusions of year 2008 focused NCCP surveys for the coastal California gnatcatcher for the Orange County Transmission Expansion Project, Orange County, California.



Paula Potenza
Permit No. TE-037508-1
TRC
1903 Wright Place, Suite 190
Carlsbad, CA 92008



Vanessa Tisdale
Permit No. TE-162994-0
TRC
1903 Wright Place, Suite 190
Carlsbad, CA 92008

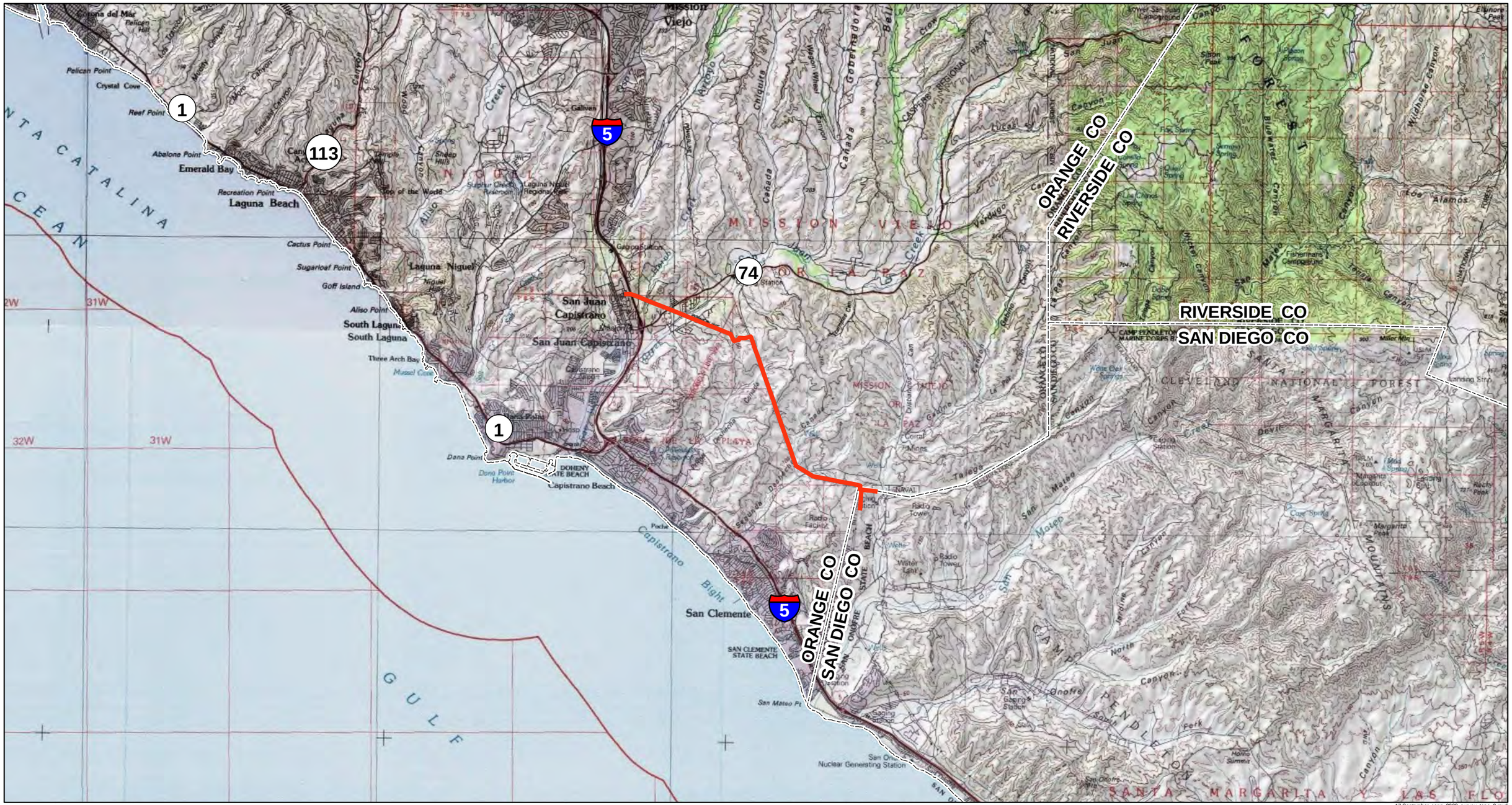
Survey Data Summary

2007/2008 Coastal California Gnatcatcher

Orange County Transmission Expansion Project

Date	Biologists	Hours	Weather Conditions
Segment 1			
18 March 2008	Paula Potenza	0800 to 1230	45° to 65° F, winds 2 to 5 (mph), cloud cover 0%
19 March 2008	P. Potenza	0800 to 1235	50° to 65° F, winds 0 to 8 (mph), cloud cover 100% to 30%
25 March 2008	P. Potenza Matt Merscheim Matt Willis	0745 to 1230	48° to 70° F, winds 2 to 8 (mph), cloud cover 100% to 0%
26 March 2008	P. Potenza Sommer Fisher Kirstie Reynolds Ryan Villanueva	0730 to 1205	48° to 68° F, winds 2 to 8 (mph), cloud cover 100%
1 April 2008	P. Potenza	0800 to 1200	58° to 60° F, winds 0 to 4 (mph), cloud cover 100%
2 April 2008	P. Potenza	0800 to 1215	55° to 65° F, winds 2 to 4 (mph), cloud cover 60% to 0%
Segment 2			
15 April 2008	P. Potenza	0830 to 1230	54° to 70° F, winds 3 to 10 (mph), cloud cover 100% to 10%
29 April 2008	P. Potenza	0700 to 1215	55° to 70° F, winds 0 to 6 (mph), cloud cover 100% to 0%
8 May 2008	P. Potenza	0800 to 1200	58° to 62° F, winds 0 to 8 (mph), cloud cover 100%
Segment 3			
29 May 2008	Vanessa Tisdale	0830 to 1230	63° to 70° F, winds 1 to 3 (mph), cloud cover 60% to 5%
3 June 2008	V. Tisdale	0800 to 1230	68° to 74° F, winds 0 to 2 (mph), cloud cover 95% to 0%
11 June 2008	V. Tisdale	0715 to 1045	63° to 70° F, winds 1 to 3 (mph), cloud cover 95% to 0%

Attachments:
Surveyor Certification Statement
Survey Data Summary
Figure 1: Project Overview
Figure 2: Segment 1
Figure 3: Segment 2
Figure 4: Segment 3
Figure 5: Segment 4
Figure 6: USGS 7.5 Topographic Quadrangles
Figure 7: USGS 7.5 Topographic Quadrangles



17 September. cagn_2008_survey_topo_2.mxd



0 1 2 4 Miles

1 in = 2 miles

1:126,000

FIGURE 1 - VICINITY MAP

SOUTH ORANGE COUNTY RELIABILITY UPGRADE PROJECT | SDG&E



California gnatcatcher observations
California gnatcatcher nest locations
Substations
Potential California gnatcatcher habitat
Transmission line
250-foot survey area
USFWS California gnatcatcher critical habitat
USFWS Excluded essential habitat
USFWS Exempt habitat

14 July 2008. Vanessa Tisdale. cagn_2008_survey_seg1.mxd

N
W E
S
0 225 450 900 Feet
1 inch equals 900 feet
1:10,800

0 1 2 Miles

FIGURE 2 - SEGMENT 1
ORANGE COUNTY TRANSMISSION EXPANSION | SDG&E

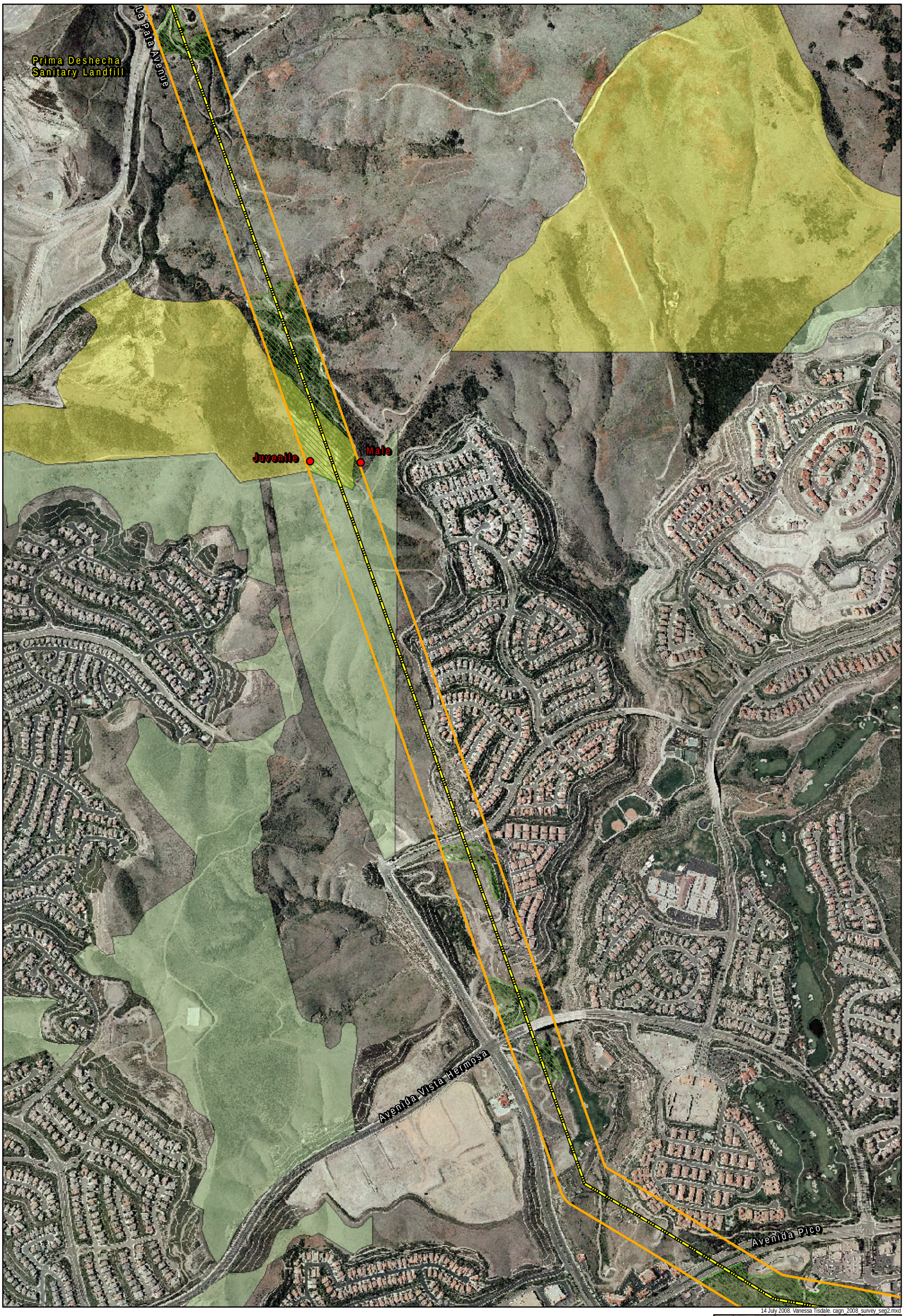


FIGURE 3 - SEGMENT 2

ORANGE COUNTY TRANSMISSION EXPANSION | SDG&E



14 July 2008. Vanessa Tisdale. cagn_2008_survey_seg3.mxd

California gnatcatcher observations
California gnatcatcher nest locations
Substations
Potential California gnatcatcher habitat
Transmission line
250-foot survey area
USFWS California gnatcatcher critical habitat
USFWS Excluded essential habitat
USFWS Exempt habitat

N W E S

0 225 450 900 Feet

1 inch equals 900 feet
1:10,800

0 1 2 Miles

SDGE
A Sempra Energy utility
TRC

FIGURE 4 - SEGMENT 3
ORANGE COUNTY TRANSMISSION EXPANSION | SDG&E



14 July 2008. Vanessa Tisdale. cagn_2008_survey_seg4.mxd

California gnatcatcher observations
California gnatcatcher nest locations
Substations
Potential California gnatcatcher habitat
Ttransmission line
250-foot survey area
USFWS California gnatcatcher critical habitat
USFWS Excluded essential habitat
USFWS Exempt habitat

N
W E
S
0 225 450 900 Feet
1 inch equals 900 feet
1:10,800

SDGE
A Sempra Energy utility
TRC

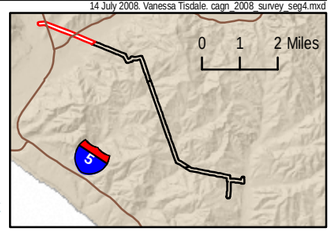


FIGURE 5 - SEGMENT 4
ORANGE COUNTY TRANSMISSION EXPANSION | SDG&E

Appendix E:
2010 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for San Diego Gas and Electric's Proposed South Orange County Reliability Upgrade Project

1903 Wright Place
Suite 190
Carlsbad, CA 92008

760.603.1740 PHONE
760.603.1750 FAX

www.TRCsolutions.com

June 23, 2010

Ms. Sandra Marquez
U.S. Fish and Wildlife Service
6010 Hidden Valley Road
Carlsbad, California 92011

SUBJECT: 2010 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for San Diego Gas & Electric's Proposed South Orange County Reliability Upgrade Project

Permit Number: TE-037508-1

Dear Ms. Marquez:

This letter report summarizes the methodology and findings of protocol-level surveys for the federally and state listed threatened coastal California gnatcatcher (*Polioptila californica californica*) (gnatcatcher) conducted by TRC in 2010 for San Diego Gas & Electric's (SDG&E) proposed South Orange County Reliability Upgrade Project (SOCRUP or "project") which runs between the cities of San Juan Capistrano and San Clemente, in southern Orange County, California as shown in Figure 1. The areas surveyed are located within SDG&E's existing transmission corridor from the Talega substation, located northeast of Camp Pendleton, to the Capistrano substation in southwestern Orange County (see Figures 2 and 3). Surveys were conducted to determine the presence/absence of coastal California gnatcatchers.

SURVEY LOCATIONS

Surveys were conducted along the existing transmission corridor, and comprised 250 feet on either side of the transmission line (survey area). The survey area was divided into two segments of the right-of-way. Each segment was surveyed on a separate day so that no more than 100 acres were surveyed per biologist per survey day. Only suitable gnatcatcher habitat, consisting of coastal sage scrub, disturbed coastal sage scrub, and restored coastal sage scrub, was surveyed. Elevation in the survey area ranged from approximately 225 to 700 feet above sea level. Within

the survey area, gnatcatcher critical habitat [1] comprises 41.07 acres, excluded essential habitat[2] comprises 52.08 acres, and 33.37 acres is exempt[3].

Survey Segment 1

Segment 1 is located in San Clemente, west of the SDG&E Talega Substation at the east end of Pico Avenida, continuing west and then north along the existing utility corridor, terminating on the south side of Calle Saluda. This survey segment is within Township 8S, Range 7W of the U.S. Geological Survey (USGS) San Clemente 7.5-minute quadrangle, as shown on Figure 2.

Survey Segment 2

Segment 2 is located north of Calle Saluda in San Clemente and follows the existing utility corridor north past the Prima Deshecha Sanitary Landfill and then turns northwest, terminating southeast of San Juan Creek Road in San Juan Capistrano. This survey area is within Township 8S, Range 7W of the USGS San Clemente and San Juan Capistrano 7.5-minute quadrangles, as shown on Figure 3.

PLANT COMMUNITIES

Within the survey area, approximately 67.75 acres of moderate to good quality coastal sage scrub and 65.20 acres of disturbed and restored coastal sage scrub were surveyed for a total of approximately 132.95 acres. Dominant native shrub species observed include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), California broom (*Lotus scoparius*), lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), coyote bush (*Baccharis piluaris*), mulefat (*Baccharis salicifolia*), and blue elderberry (*Sambucus mexicana*).

METHODOLOGY

Permitted biologist Paula Potenza (Permit No. TE-037508-1), conducted the surveys according to the *USFWS Coastal California Gnatcatcher Presence/Absence Survey Protocol* for Natural Community Conservation Plan areas (USFWS, 1993). Under the direct supervision of Ms. Potenza, Lisa Gadsby, Britta Dahlke, and Martha Heath accompanied Ms. Potenza on several of the surveys so that they could accumulate hours toward gaining a permit to conduct survey activities for gnatcatchers. Gnatcatcher surveys were conducted in appropriate vegetation within the survey area. Following protocol for SDG&E's Subregional Natural Community Conservation Plan (NCCP) presence/absence surveys, a minimum of three surveys were conducted at least one week apart. The surveys occurred within the gnatcatcher breeding season (March 15 through June 30). Table 1 below provides the survey dates and conditions.

[1] United States Fish and Wildlife Service coastal California gnatcatcher final critical habitat, dated December 19, 2007, available online at http://criticalhabitat.fws.gov/. Critical habitat is considered essential for species survival.
[2] Excluded essential habitat is essential for the species but is administered under local plans, such as an HCP.
[3] Habitat within the jurisdiction of the Department of Defense is considered exempt.

Table 1: 2010 Survey Schedule and Data Summary

Date/Segment	Biologists	Hours	Weather Conditions
May 11 Segment 1	Paula Potenza Lisa Gadsby Martha Heath	0620 to 1235	50° to 65° F, winds 1 to 2 (mph), cloud cover 20%
May 17 Segment 2	P. Potenza	0630 to 1205	54° to 56° F, winds 0 to 2 (mph), cloud cover 100%
May 18 Segment 1	P. Potenza Britta Dahlka	0645 to 1235	58° to 68° F, winds 0 to 5 (mph), cloud cover 100%
May 24 Segment 2	P. Potenza M. Heath	0615 to 1225	54° to 62° F, winds 2 to 5 (mph), cloud cover 0 to 15%
May 25 Segment 1	P. Potenza M. Heath	0615 to 1220	43° to 69° F, winds 0 to 6 (mph), cloud cover 0 to 25%
May 31 Segment 2	P. Potenza M. Heath	0600 to 1225	59° to 69° F, winds 0 to 8 (mph), cloud cover 0 to 15%

All surveys were conducted between approximately 6:00 a.m. and 12:35 p.m. Weather conditions during the surveys consisted of temperatures from 43 to 69 degrees Fahrenheit, winds from 0 to 8 miles per hour, and cloud cover from 0 to 100 percent. During periods of excessive heat, wind, rain, fog, or other inclement weather surveys were either halted or postponed. Taped vocalizations and "pishing" sounds were used to initially locate gnatcatchers. Taped calls were not used to elicit or prompt further behaviors from birds. Surveys were conducted by slowly walking survey routes and no more than 100 acres of suitable gnatcatcher habitat were surveyed per biologist per day.

RESULTS

During the surveys, biologists made 21 gnatcatcher observations (which included single, pair, and family groups), for a minimum estimation of 20 individuals (including adults and juveniles) in the survey area. Separate individuals were determined by simultaneous sightings, proximity to previous sightings, and time lapse between consecutive sightings. Observations made in close temporal and spatial proximity are considered the same individual; therefore, the total minimum number of gnatcatchers may be conservative. Six pairs were confirmed with two of the pairs observed as part of a family group. Both of the family groups had at least two juveniles with the pair. In addition, a minimum of three single males were identified. See Figures 2 and 3 for depictions of the survey area and result on USGS 7.5 Quadrangles.

Survey Segment 1

Three pair, one family group of four individuals, and one single male were observed for a total of eleven individuals. See Figure 2: Pair 1, Pair 2, Single Male 1, Pair 3, and Family Group 1 for the location of the gnatcatcher observations on this segment. Survey protocol for NCCP presence/absence surveys requires only three surveys to be conducted; therefore pair territories were not determined. All observations were mapped and depicted on Figure 2.

- Pair 1 was observed once in the survey area near the southwest corner of the Talega Substation on an east facing slope with revegetated coastal sage scrub vegetation.

- Pair 2 was observed during two separate surveys in high quality coastal sage scrub vegetation on the east and north facing slopes of a steep bowl near an existing steel lattice tower overlooking the Talega Substation.

- Single Male 1's location shown on Figure 2 is where a single male was sighted during each of the three surveys and is being considered a single male based on behavior during the sightings and lack of another sighting of a single male in the same general location during the same survey. The single male was observed in moderate (disturbed or revegetated) coastal sage scrub vegetation on north and east facing slopes adjacent to a commercial complex.

- Pair 3 was observed during all three surveys on an east facing slope in good quality coastal sage scrub vegetation located between a commercial golf course to the south and a commercial complex to the north.

- Family Group 1 was observed in good quality (revegetated) coastal sage scrub vegetation just south of Calle Saluda on the west side of the survey corridor. The family group included a pair (male and female) and at least two juvenile gnatcatchers. The family group was identified and documented even though they were just outside of the survey corridor because the coastal sage scrub vegetation they were observed in was not far from vegetation that they could occupy located within the survey area.

Survey Segment 2

One pair, one family group of four individuals, and three single males were observed for a total of nine individuals. See Figure 3: Single Male 2, Pair 4, Single Male 3, Family Group 2, and Single Male 4 for the location of the gnatcatcher observations on this segment. Survey protocol for NCCP presence/absence surveys requires only three surveys to be conducted; therefore pair territories were not determined. All observations were mapped and shown on Figure 3, attached.

- Single Male 2 was observed only once during the May 31st survey and responded to taped calls played by the surveyor (playback). The male was only observed after playback, and after briefly responding vocally to the playback was observed foraging in good quality coastal sage scrub vegetation on an east facing slope near an existing utility access road.

- Pair 4 was only observed once during the May 31st survey and responded to playback of calls. Pair 4 was observed foraging in a large patch of good quality coastal sage scrub vegetation on a north facing slope immediately adjacent to La Pata Avenue, the main access road to the Prima Deshecha Landfill.

- Single Male 3 was observed on three different occasions. Because of the steepness of the slopes and the dense, moderate (disturbed) to good quality coastal sage scrub vegetation, the surveyor was unable to follow and determine if this was more than one individual. Based on the location of the three sightings, it was conservatively estimated as a single individual.

- Family Group 2 was observed in moderate (disturbed) coastal sage scrub vegetation located along a ridgeline with an existing utility access road and in moderate (revegetation) coastal sage scrub on an east facing slope. The family group included a pair (male and female) and at least two juvenile gnatcatchers. The family group was observed at this location on one occasion and on a subsequent survey a pair (male and female) gnatcatcher was observed in the same location and was assumed to be the adult pair from the earlier family group sighting.

- Single Male 4 was observed during all three surveys in the same location, a steep west facing slope with dense, good quality coastal sage scrub vegetation. This male responded aggressively to playback during the first survey. The male flew from the north toward the playback calls and called repeatedly before flying back to the north. Playback was only played the one time during the first survey and was not played again during the remaining surveys at this location. The male appeared territorial and was possible paired. No female gnatcatcher was observed in this area however.

Please contact me at (760) 603-1740 if you have any questions or comments regarding this letter.

Sincerely,



Paula Potenza
Lead Biologist

Attachments:
Surveyor Certification Statement
Figure 1: Vicinity Map
Figure 2: USGS 7.5 Topographic Quadrangles
Figure 3: USGS 7.5 Topographic Quadrangles

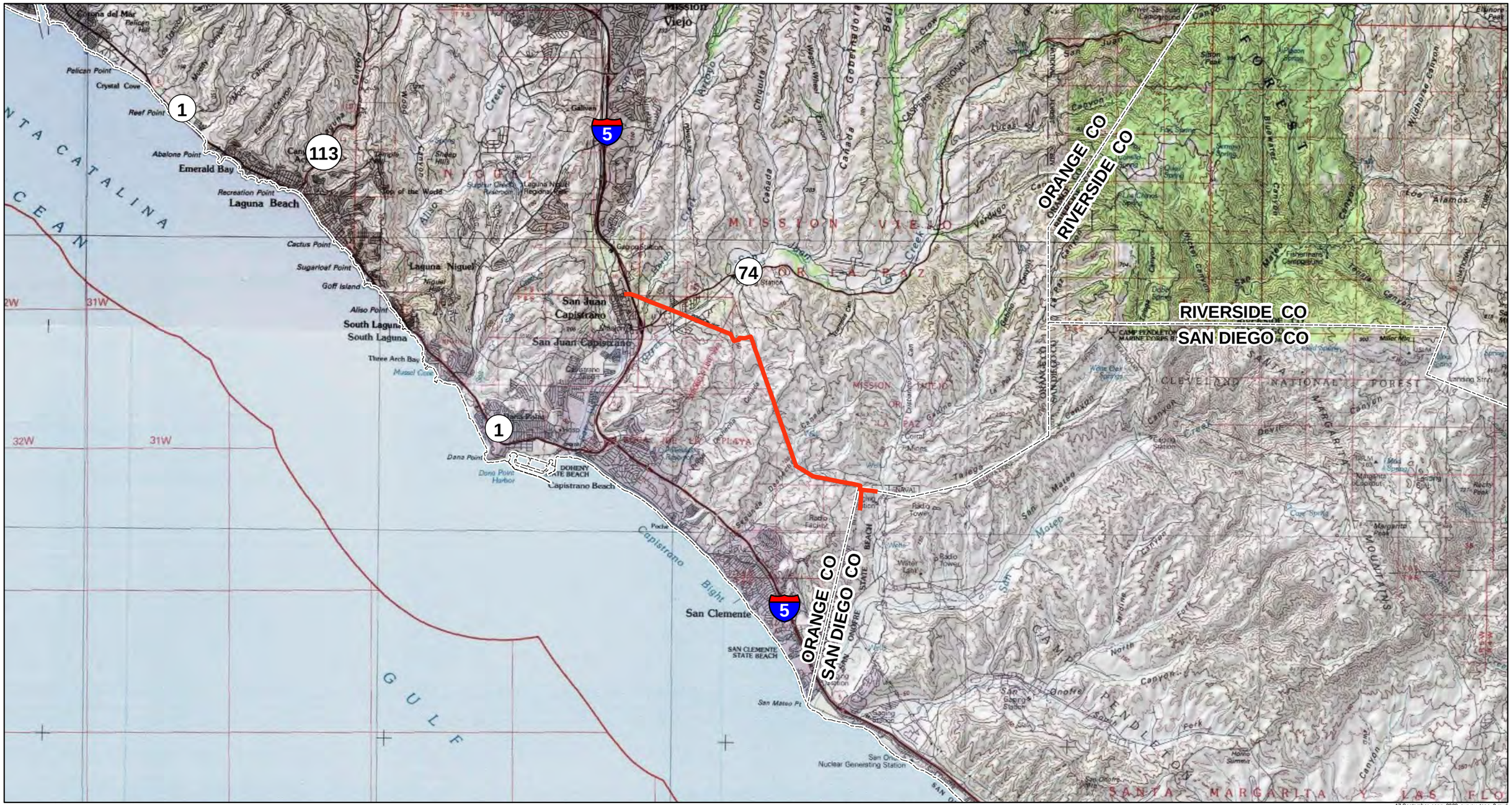
Surveyor Certification Statement

The undersigned certifies that this report and the included field data are a complete and accurate account of the findings and conclusions of year 2010 focused NCCP surveys for the coastal California gnatcatcher for SDG&E for the South Orange County Reliability Upgrade Project, Orange County, California.



June 8, 2010

Paula Potenza
Permit No. TE-037508-1
TRC
1903 Wright Place, Suite 190
Carlsbad, CA 92008



17 September. cagn_2008_survey_topo_2.mxd



0 1 2 4 Miles

1 in = 2 miles

1:126,000

FIGURE 1 - VICINITY MAP

SOUTH ORANGE COUNTY RELIABILITY UPGRADE PROJECT | SDG&E

Single Male 2

Segment 2

Segment 1

Family Group 1

CRISTIANITOS

PICO

Single Male 1

Pair 3

TALEGA

Pair 2

Pair 1

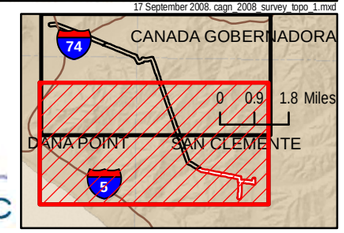
Coastal California Gnatcatcher
Substations
Survey Area
Transmission line
Groupings

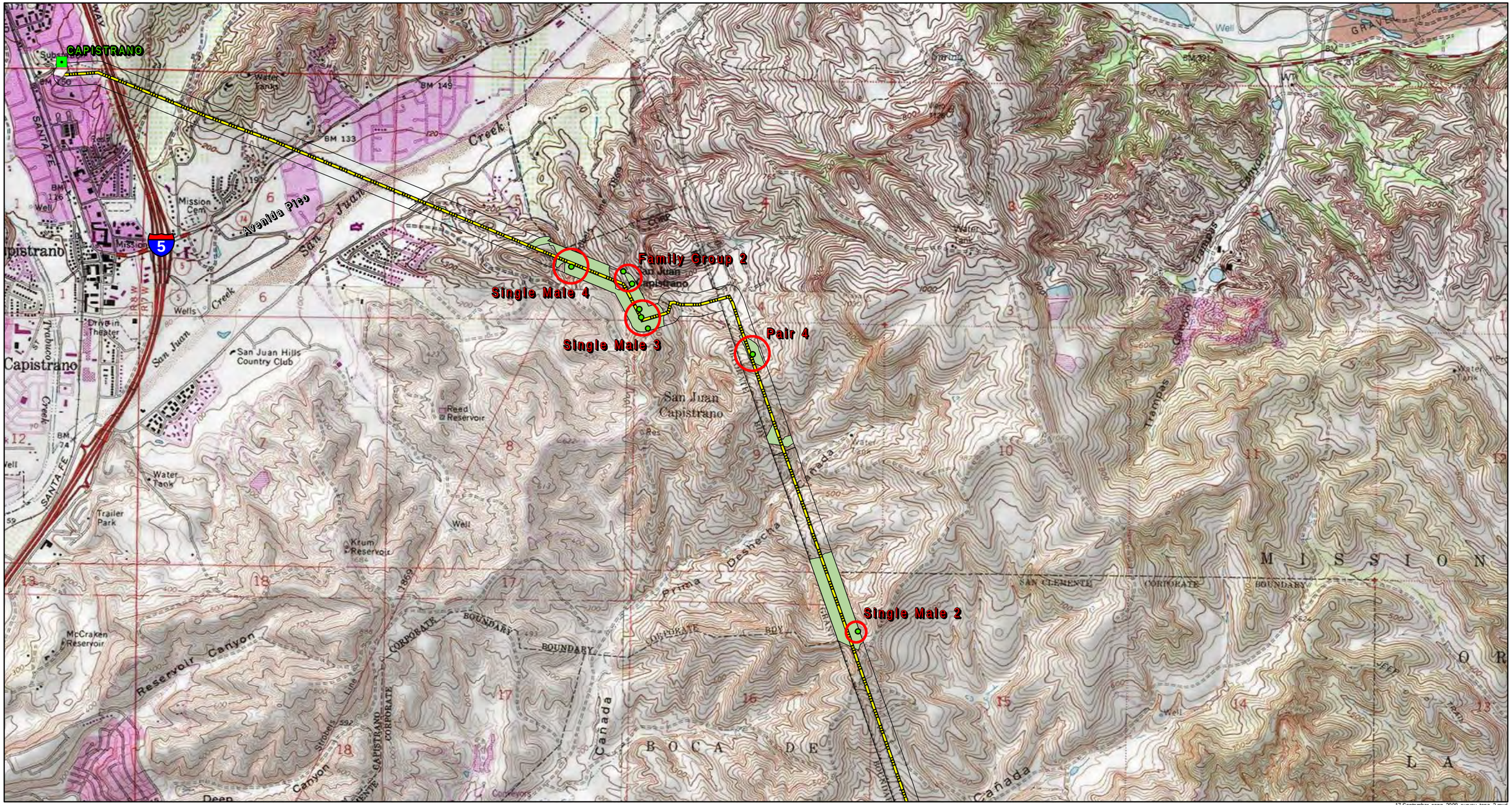
FIGURE 2 - USGS 7.5 TOPOGRAPHIC QUADRANGLES
SOUTH ORANGE COUNTY RELIABILITY UPGRADE PROJECT | SDG&E

USGS 7.5 Topographic Quadrangles
Canada Gobernadora
Dana Point
San Clemente
San Juan Capistrano

0 500 1,000 2,000 Feet
1 inch = 2,000 feet
1:24,000

17 September 2008. cagn_2008_survey_topo_1.mxd





17 September. capn_2008_survey_topo_2.mxd

- Coastal California Gnatcatcher
- Substations
- Survey Area
- Transmission line
- Groupings

FIGURE3 - USGS 7.5 TOPOGRAPHIC QUADRANGLES

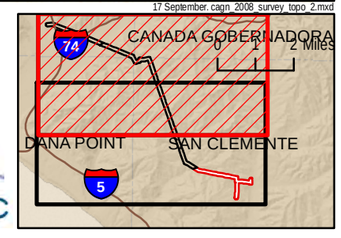
SOUTH ORANGE COUNTY RELIABILITY UPGRADE PROJECT | SDG&E

USGS 7.5 Topographic Quadrangles
Canada Gobernadora
Dana Point
San Clemente
San Juan Capistrano

N W E S

0 500 1,000 2,000 Feet

1 inch = 2,000 feet
1:24,000



Appendix F:
2010 Least Bell's Vireo (*Vireo bellii pusillus*) Survey Result for
San Diego Gas and Electric's Proposed South Orange County Reliability Upgrade Project

1903 Wright Place
Suite 190
Carlsbad, CA 92008

760.603.1740 PHONE
760.603.1750 FAX

www.TRCsolutions.com

June 23, 2010

Ms. Sandra Marquez
U.S. Fish and Wildlife Service
6010 Hidden Valley Road
Carlsbad, California 92011

SUBJECT: 2010 Least Bell's Vireo (*Vireo bellii pusillus*) Survey Report for San Diego Gas & Electric's Proposed South Orange County Reliability Upgrade Project

Dear Ms. Marquez:

This letter report summarizes the methodology and findings of protocol-level surveys for the federally and state endangered least Bell's vireo (vireo) conducted by TRC in 2010 for San Diego Gas & Electric's (SDG&E) proposed South Orange County Reliability Upgrade Project (SOCRUP or "project") which runs between the cities of San Juan Capistrano and San Clemente, in southern Orange County, California (as shown in Figure 1-Vicinity Map). The areas surveyed are located within SDG&E's existing transmission corridor from the Talega substation located northeast of Camp Pendleton to the Capistrano substation in southwestern Orange County (refer to Figures 2 and 3). Surveys were conducted to determine the presence/absence of least Bell's vireo.

SURVEY LOCATION

Surveys were conducted along a 250 foot width survey area along the existing transmission corridor. Only suitable vireo habitat, which included riparian woodland/scrub and mixed riparian/coastal sage scrub, was surveyed. Elevation in the survey area ranged from approximately 225 to 700 feet above sea level.

Riparian vegetation suitable for vireo occupation can be found in several creeks and drainages scattered throughout the survey area. Approximately 16 locations along the transmission corridor were surveyed. The northern most location occurring along a drainage with riparian vegetation west of Interstate 5, approximately 220 feet southeast of Golf Course Drive in San Juan Capistrano. The survey area heads southeast spanning San Juan Creek, several drainages with mixed willow riparian scrub/sage scrub south of the Prima Deshecha Sanitary Landfill to Pico Avenida, and several areas of mixed willow riparian scrub/baccharis scrub south of Pico Avenida along the Pacific Golf Course to the SDG&E Talega Substation, which is adjacent to Cristianitos Creek. The area surveyed is within T.8S., R.7W. of the U.S. Geological Survey (USGS) San Juan Capistrano and San Clemente 7.5-minute quadrangle.

PLANT COMMUNITIES

Within the survey area, approximately 40.22 acres of riparian and mixed riparian and coastal sage scrub vegetation were surveyed. Dominant native shrub species observed within the areas surveyed include willows (*Salix* sp.), western cottonwood (*Populus fremontii*), mule-fat (*Baccharis salicifolia*), blue elderberry (*Sambucus mexicana*), poison oak (*Toxicodendron diversilobum*), coyote brush (*Baccharis pilularis*), lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), toyon, (*Heteromeles arbutifolia*), California sagebrush (*Artemisia californica*), and California buckwheat (*Eriogonum fasciculatum*).

METHODOLOGY

Paula Potenza (TRC biologist) conducted three presence/absence surveys approximately ten days apart for least Bell's vireo Martha Heath accompanied Ms. Potenza on one of the surveys to gain experience with least Bell's vireo and the presence/absence survey protocol. The surveys were conducted on May 12, May 22, and June 1, 2010, according to the *USFWS Least Bell's Vireo Presence/Absence Survey Protocol* (USFWS, 1992). A minimum of three surveys were conducted per SDG&E's Subregional Natural Community Conservation Plan (NCCP) that states "in situations where more than one visit may be necessary to identify a given species, such as certain birds, no more than three site visits shall be required" (SDG&E's NCCP, Section 7.1.3, No. 13, p. 105, 1995). Because this was a presence/absence survey no vireo nest surveys were conducted, taped calls were not played, and vireos were typically not followed to prevent impacts to nests or nesting behaviors. Vireos were identified by calls/songs and by sight and were watched and followed only if identification and location needed to be confirmed. Table 1 below provides the survey dates and conditions.

Table 1: 2010 Survey Schedule and Data Summary

Date	Biologists	Hours	Weather Conditions
May 12	P. Potenza	0645 to 1110	48° to 65° F, winds 0 to 3 (mph), cloud cover 0%
May 22	P. Potenza	0715 to 1135	56° to 70° F, winds 0 to 4 (mph), cloud cover 55 to 95%
June 1	P. Potenza Martha Heath	0700 to 1135	61° to 62° F, winds 0 to 4 (mph), cloud cover 100%

All surveys were conducted between approximately 6:45 a.m. and 11:35 a.m. Weather conditions during the surveys consisted of temperatures from 48 to 70 degrees Fahrenheit, winds from 0 to 4 miles per hour, and cloud cover from 0 to 100 percent. During periods of excessive heat, wind, rain, fog, or other inclement weather surveys were halted or postponed. Surveys were conducted by slowly walking survey routes along the edges and through the riparian vegetation where possible and no more than 3 linear kilometers or 50 hectares of vireo habitat were surveyed on a single survey day.

RESULTS

An estimated total of seven individual least Bell's vireo were observed. Approximately 16 locations were surveyed and vireo was observed at six of those locations. During the surveys an estimated total of seven adults were heard and/or observed and none of the vireo appeared to be banded. The vireos were observed along six different drainages spanned or paralleled by the transmission corridor and one individual was observed in upland vegetation (see Figures 2 and 3). The least Bell's vireo sightings labeled 1 through 6 on Figures 2 and 3 were all located in small drainages with some riparian vegetation. One incidental vireo sighting (see vireo sighting labeled 6 on Figure 3) was made during a coastal California gnatcatcher survey. It was of a single male vireo calling from tree tobacco on a slope with coastal sage scrub vegetation. No drainage was observed in the immediate vicinity and the vireo was only observed this one time at this location. On Figures 2 and 3 were there are overlapping location "dots" for least Bell's vireo sightings, these sightings were counted as a single individual. Since only one vireo was either heard or observed at each of these overlapping "dot" locations, it was assumed that it was the same individual.

At least 6 brown-headed cowbirds (*Molothrus ater*), both males and females, were heard calling during all of the surveys in the San Juan Creek area (see Figure 3), but no cowbirds were directly observed. In the second drainage south of the Prima Deshecha Sanitary Landfill, a single least Bell's vireo male was observed during all three surveys. An actively baited brown-headed cowbird trap was located in this drainage as well, although the capture rate of brown-headed cowbirds is unknown.

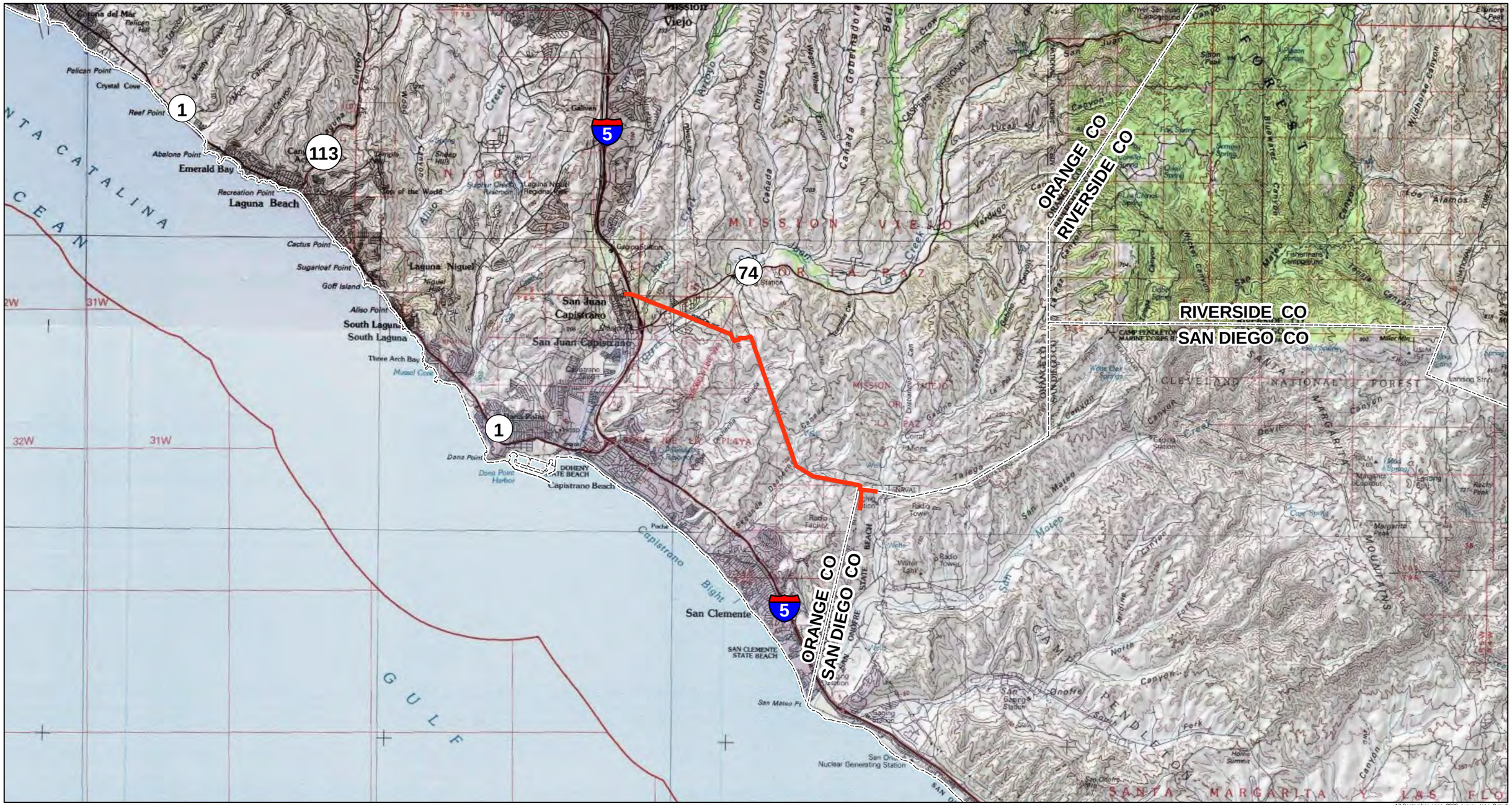
Please contact me at (760) 603-1740 if you have any questions or comments regarding this letter.

Sincerely,



Paula Potenza
Lead Biologist

Attachments
Figure 1: Project Vicinity Map
Figure 2: USGS 7.5 Topographic Quadrangles
Figure 3: USGS 7.5 Topographic Quadrangles



17 September. cagn_2008_survey_topo_2.mxd



0 1 2 4 Miles

1 in = 2 miles

1:126,000

FIGURE 1 - VICINITY MAP

SOUTH ORANGE COUNTY RELIABILITY UPGRADE PROJECT | SDG&E

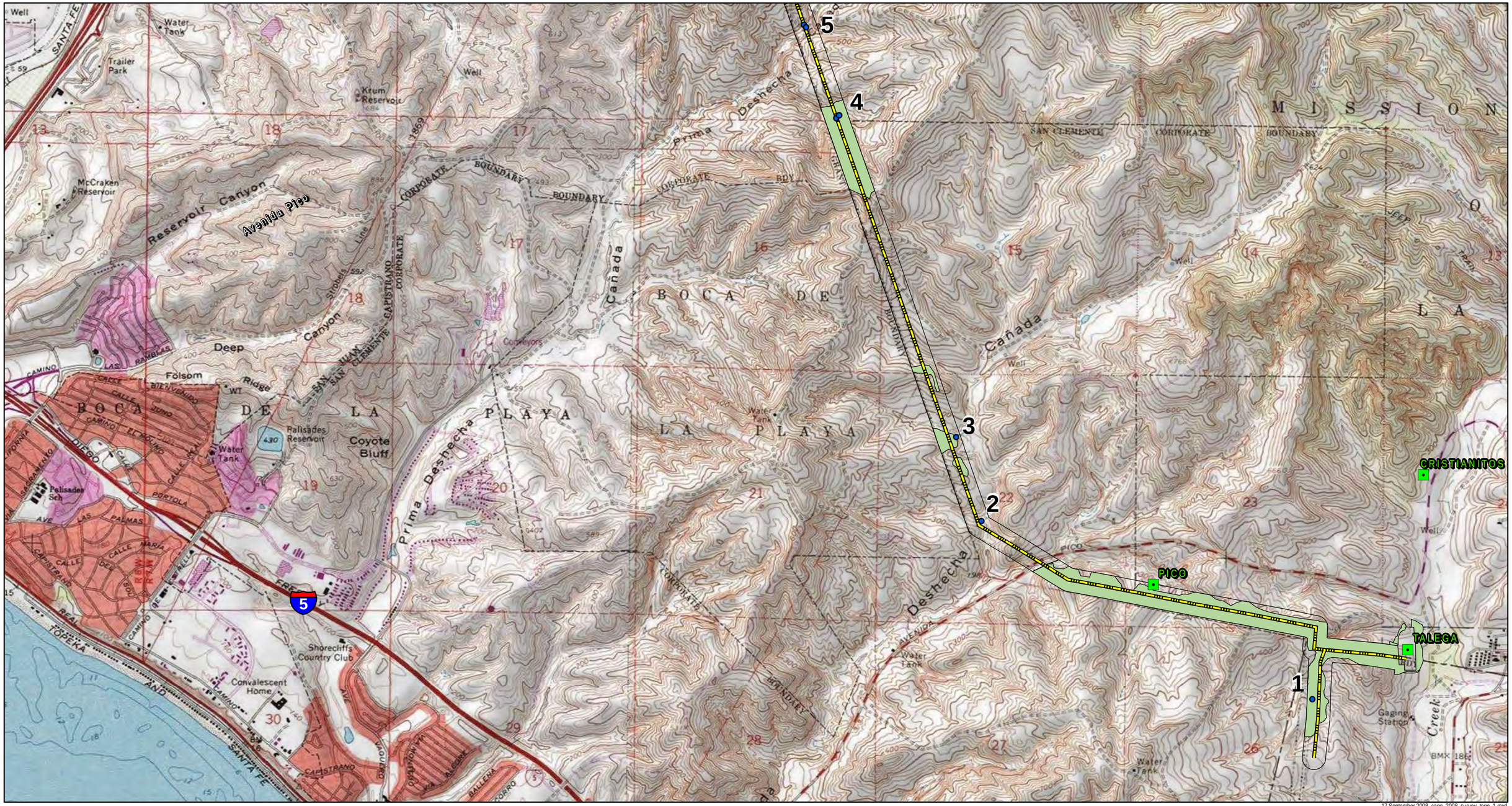


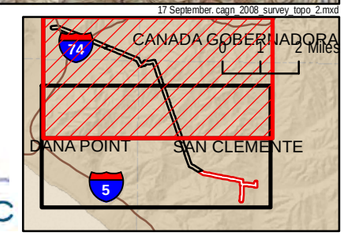
FIGURE 2 - USGS 7.5 TOPOGRAPHIC QUADRANGLES
SOUTH ORANGE COUNTY RELIABILITY UPGRADE PROJECT | SDG&E

CAPISTRANO
7
6
5
4
BHCB
LBV
Substations
Transmission line

FIGURE 2 - USGS 7.5 TOPOGRAPHIC QUADRANGLES
SOUTH ORANGE COUNTY RELIABILITY UPGRADE PROJECT | SDG&E

USGS 7.5 Topographic Quadrangles
Canada Gobernadora
Dana Point
San Clemente
San Juan Capistrano

0 500 1,000 2,000 Feet
1 inch = 2,000 feet
1:24,000



17 September. cagn 2008 survey topo 2.mxd

Appendix G:
Results of Protocol Surveys for Federally-Endangered Arroyo Toad (*Bufo californicus*) and Southwestern Willow Flycatcher (*Empidonax trailii extimus*) in Conjunction with San Diego Gas & Electric's Orange County Transmission Expansion Project located in Orange County, California

Bloom Biological, Inc.
Research | Consulting | Conservation

June 28, 2010

Ms. Sandra Marquez
Carlsbad Fish & Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92011

SUBJECT: Results of protocol surveys for federally-endangered Arroyo Toad (*Bufo californicus*) and Southwestern Willow Flycatcher (*Empidonax traillii extimus*) in conjunction with San Diego Gas & Electric's Orange County Transmission Expansion Project located in Orange County, California

Dear Ms. Marquez:

Bloom Biological, Incorporated (BBI) was retained by TRC Solutions, Incorporated to conduct surveys for federally-endangered Arroyo Toad (*Bufo californicus*) and Southwestern Willow Flycatcher (*Empidonax traillii extimus*) in conjunction with San Diego Gas & Electric's (SDG&E) Orange County Transmission Expansion Project located in Orange County, California. The three survey areas are within the SDG&E easement and a 250-foot buffer along San Juan Creek in the southeast corner of the USGS *San Juan Capistrano* 7.5' quadrangle (see attached topo exhibit) and Talega Creek in the southern portion of the USGS *San Clemente* 7.5' quadrangle . This letter describes the methods and the results of these surveys.

PROPOSED PROJECT DESCRIPTION

In order to increase reliability to its customers and substations in the southern Orange County region, SDG&E is proposing to rebuild the existing 138/12 kilovolt (kV) Capistrano Substation with a 230/138/12 kV substation. The South Orange County Reliability Upgrade project (Project) is intended to meet the area load growth and service reliability for approximately 118,000 customers (462 megawatts) within southern Orange County. This project includes upgrading the existing TL13835 (138 kV) with a twin 230 kV circuit and rebuilding the existing 138/12kV Capistrano substation into a new 230/138/12kV substation. The project will bring a new 230kV transmission source into southern Orange County for increased capacity and reliability. This project would have an anticipated in-service date of 2013.

The project would include the following primary components:

- Build new 230kV facilities at Capistrano Substation (Gas Insulated Substation);
- Relocate, rebuild and expand existing 138kV facilities at Capistrano Substation (Gas Insulated Substation);
- Relocate, rebuild and expand existing 12kV facilities at Capistrano Substation;
- New double-circuit 230kV transmission line within existing Talega to Capistrano utility corridor (new steel poles, replacing existing 138kV steel poles/towers/wood pole structures);
- Undergrounding of approximately 3000 feet of 230kV transmission line;
- Relocated 12kV distribution line both within and outside of the existing Talega to Capistrano utility corridor;
- Relocate existing 138kV transmission lines at Talega and add a new 138kV transmission line;
- Upgrade remote ends of all 138kV and 230kV transmission lines affected; and

- Changes to the Talega Substation to accommodate the new 230kV circuit..

METHODS

As previously stated, the three survey areas are within the SDG&E easement and a 250-foot buffer and, for the purposes of this report, will be referred to as Survey Areas A, B and C. These survey areas are as follows:

- Survey Area A - along San Juan Creek in the southeast corner of the USGS *San Juan Capistrano* 7.5' quadrangle. Approximate endpoints are 33° 30' 20.8", 117° 38' 33.0" and 33° 30' 22.3", 117° 38' 37.3".
- Survey Area B - along Talega Creek in the southern portion of the USGS *San Clemente* 7.5' quadrangle. Approximate endpoints are 33° 27' 21.6, 117° 35' 16.5" and 33° 27' 17.9", 117° 35' 13.2".
- Survey Area C – also along Talega Creek in the southern portion of the USGS *San Clemente* 7.5' quadrangle. Approximate endpoints are 33° 27' 04.0", 117° 34' 43.4" and 33° 27' 04.4", 117° 34' 44.2".

For all three sites, protocol surveys for Southwestern Willow Flycatcher were conducted on May 15 and June 5, 11, 17, and 25, 2010 following the Service's standard protocol for this species as described in Sogge *et al* (2010)[1]. Protocol surveys for Arroyo Toad were conducted on April 30; May 7, 15, 23, 29; and June 5, 2010 following the Service's standard protocol for this species as described in *USFWS Survey Protocol for the Arroyo Toad* (1999). All surveys were conducted by BBI biologist Peter Bloom (TE787376).

RESULTS

Southwestern Willow Flycatchers and Arroyo Toads are absent from all three survey areas.

Survey Area A

San Juan Creek in Survey Area A was the only survey location with surface water and the only site with potential, but unoccupied, breeding habitat for Arroyo Toad. Historically (~1994) this reach was occupied Arroyo Toad breeding and upland habitat. The species was extirpated more than a decade ago due to complete loss of upland habitat and permanent urban water runoff which created breeding conditions for Bulllfrogs (*Rana catesbeiana*) (Bloom pers. obs.). This location receives a substantial amount of urban runoff and contains a plant species mix that superficially appeared suitable for Southwestern Willow Flycatcher, however, the dense undergrowth found on this site probably inhibits nesting by this species. This area has potential to provide stopover habitat for migrating willow flycatchers and in some areas up and down stream, and may one day become occupied breeding habitat. Dominant plant species found in the survey area include *Typha latifolia*, *Salix lasiolepis*, *Arundo donax*, *Platanus racemosa*, *Quercus agrifolia*, *Eucalyptus globules*, *Artemisia californica*, *Baccharis salicifolia*, *B. pilularis* and *Salvia douglassiana*. Surrounding areas away from main drainage were dominated by non-native *Avena* and *Bromus* species. Bird species observed in the survey area were American Crow (*Corvus brachyrhynchos*), Anna's Hummingird (*Calypte anna*), Bullock's Oriole (*Icterus bullockii*),Bushtit (*Psaltriparus minimus*), California Gull (*Larus californicus*), California Quail (*Callipepla californica*), California Towhee (*Pipilo crissalis*), Cliff Swallow (*Petrochelidon pyrrhonota*), Common Yellowthroat (*Geothlypis trichas*), Great Blue Heron (*Ardea herodius*), House Finch (*Carpodacus mexicanus*),

[1] Sogge, M.K., Ahlers, D., and Sferra, S.J. 2010. A natural history summary and survey protocol for the Southwestern Willow Flycatcher: USGS Survey Techniques and Methods 2A-10.

House Sparrow (*Passer domesticus*), House Wren (*Troglodytes aedon*), Killdeer (*Charadrius vociferus*), Lesser Goldfinch (*Carduelis psaltria*), Mourning Dove (*Zenaida macroura*), Pacific-Slope Flycatcher (*Empidonax difficilis*), Red-shouldered Hawk (*Buteo lineatus*), Song Sparrow (*Melospiza melodia*), Turkey Vulture (*Cathartes aura*) and Western Scrub-Jay (*Aphelocoma californica*).

Survey Area B

Survey Area B is the larger (~ 200 m x 4 m) of two sites near Camp Pendleton and with occupied arroyo toad breeding habitat 400 meters away in San Mateo Creek. The site has no surface water but receives some runoff from an adjacent golf course. The soil type is a dense clay and while suitable upland foraging habitat for arroyo toads in the wet season, is low quality habitat in the dry season. Dominant plant species found in the survey area include *Salix lasiolepis*, *Quercus agrifolia*, *Baccharis salicifolia*, *B. pilularis* and *Artemisia californica*. Surrounding areas away from main drainage were dominated by non-native grasses. Bird species observed in the survey area were Anna's Hummingird (*Calypte anna*), Bushtit (*Psaltriparus minimus*), California Towhee (*Pipilo crissalis*), Common Raven (*Corvus corax*), House Finch (*Carpodacus mexicanus*), Lesser Goldfinch (*Carduelis psaltria*), Mourning Dove (*Zenaida macroura*), Northern Mockingbird (*Mimus polyglottos*), Red-tailed Hawk (*Buteo jamicensis*), Song Sparrow (*Melospiza melodia*), Western Meadowlark (*Sturnella neglecta*) and Wrentit (*Chamaea fasciata*).

Survey Area C

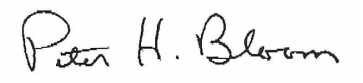
Survey Area C is the smaller (25 m x 25 m) of two sites near Camp Pendleton. Like Survey Area B, the site has no surface water, has an identical soil type and receives some runoff from an adjacent golf course. Dominant plant species found in the survey area are the same as those found at Survey Area B, except for the absence of *Quercus agrifolia* and the addition of dense stands of *Brassica nigra*. Bird species observed in the survey area were American Crow (*Corvus brachyrhynchos*), American Goldfinch (Carduelis tristis), Anna's Hummingird (*Calypte anna*), California Gnatcatcher (*Polioptila californica*), California Quail (*Callipepla californica*), California Thrasher (*Toxostoma redivivum*), California Towhee (*Pipilo crissalis*), Common Raven (*Corvus corax*), House Finch (*Carpodacus mexicanus*), Lesser Goldfinch (*Carduelis psaltria*), Mourning Dove (*Zenaida macroura*), Northern Rough-winged Swallow (Stelgidopteryx serripennis), Nuttall's Woodpecker (*Picoides nuttalli*), Red-tailed Hawk (*Buteo jamaicensis*), Say's Phoebe (Sayornis saya), Song Sparrow (*Melospiza melodia*), Western Kingbird (*Tyrannus verticalis*), Western Scrub-Jay (*Aphelocoma californica*), and Yellow-breasted Chat (*Icteria virens*).

CERTIFICATION: *I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.*

If you have any questions or comments regarding this letter please feel free to contact me at 714-544-6147.

Sincerely,

BLOOM BIOLOGICAL, INC.



Peter H. Bloom

Survey Area A

Survey Area B

Survey Area C

0 1200 2400 3600 ft

1:25000

UTM NAD83 Zone 11 Coordinates.
Map: Marcus C. England.
England Ecological. 29 June 2010.

Survey Area Locations

Bloom Biological, Inc.
Research | Consulting | Conservation

Appendix H: Vegetation and Sensitive Species Maps



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 1 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

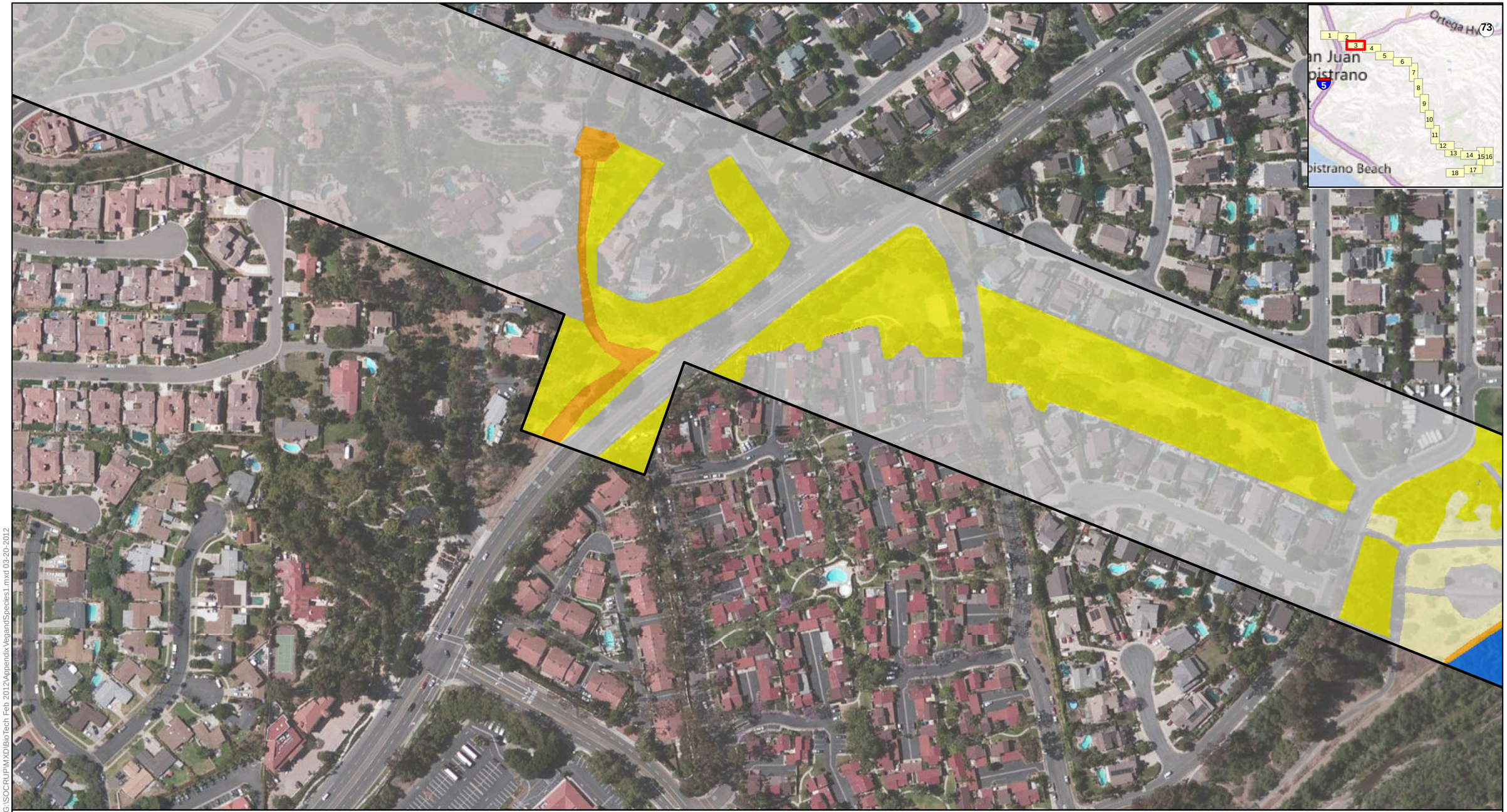
South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 2 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 3 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 4 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\AppendixVegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

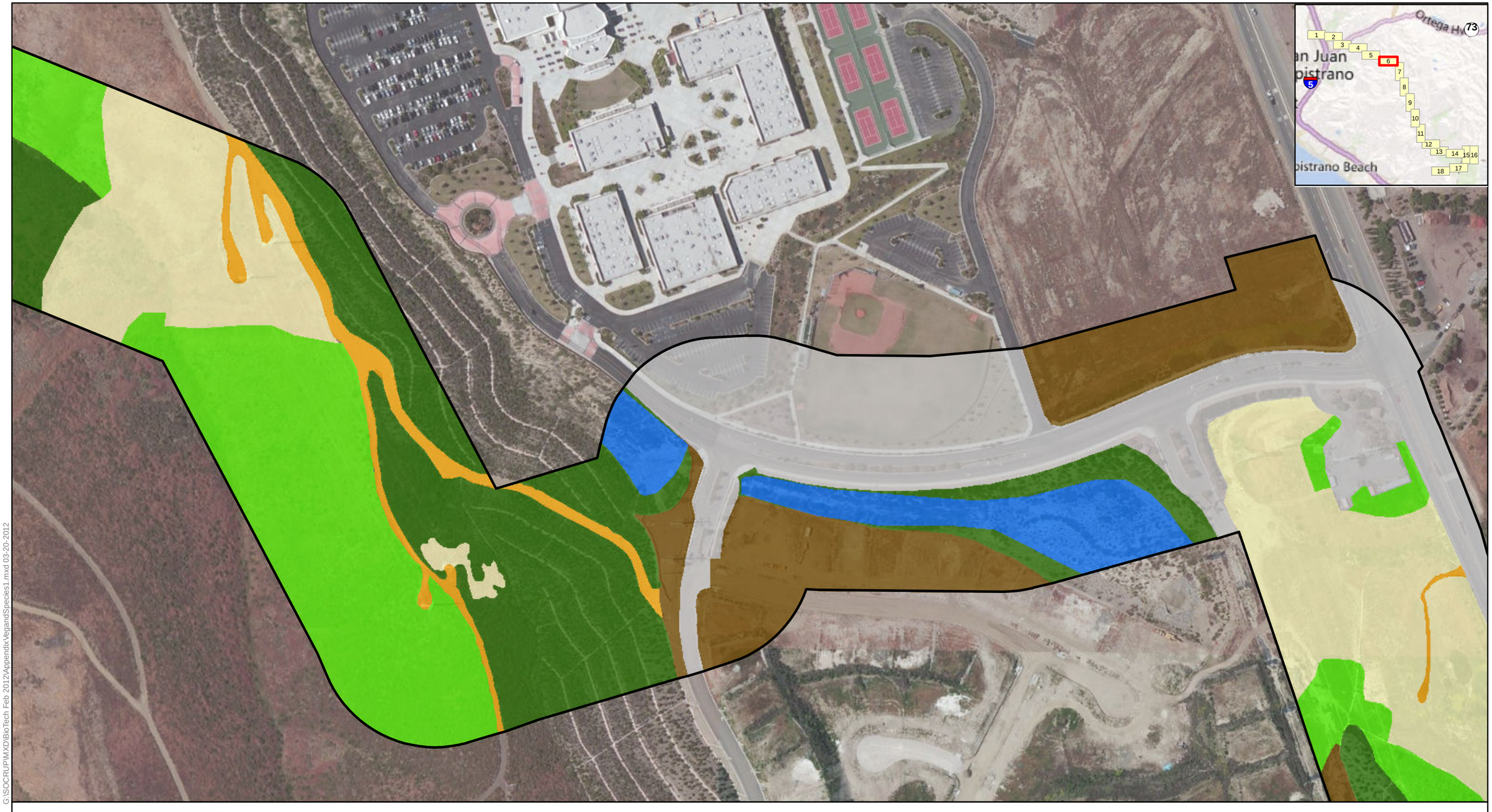
South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 5 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

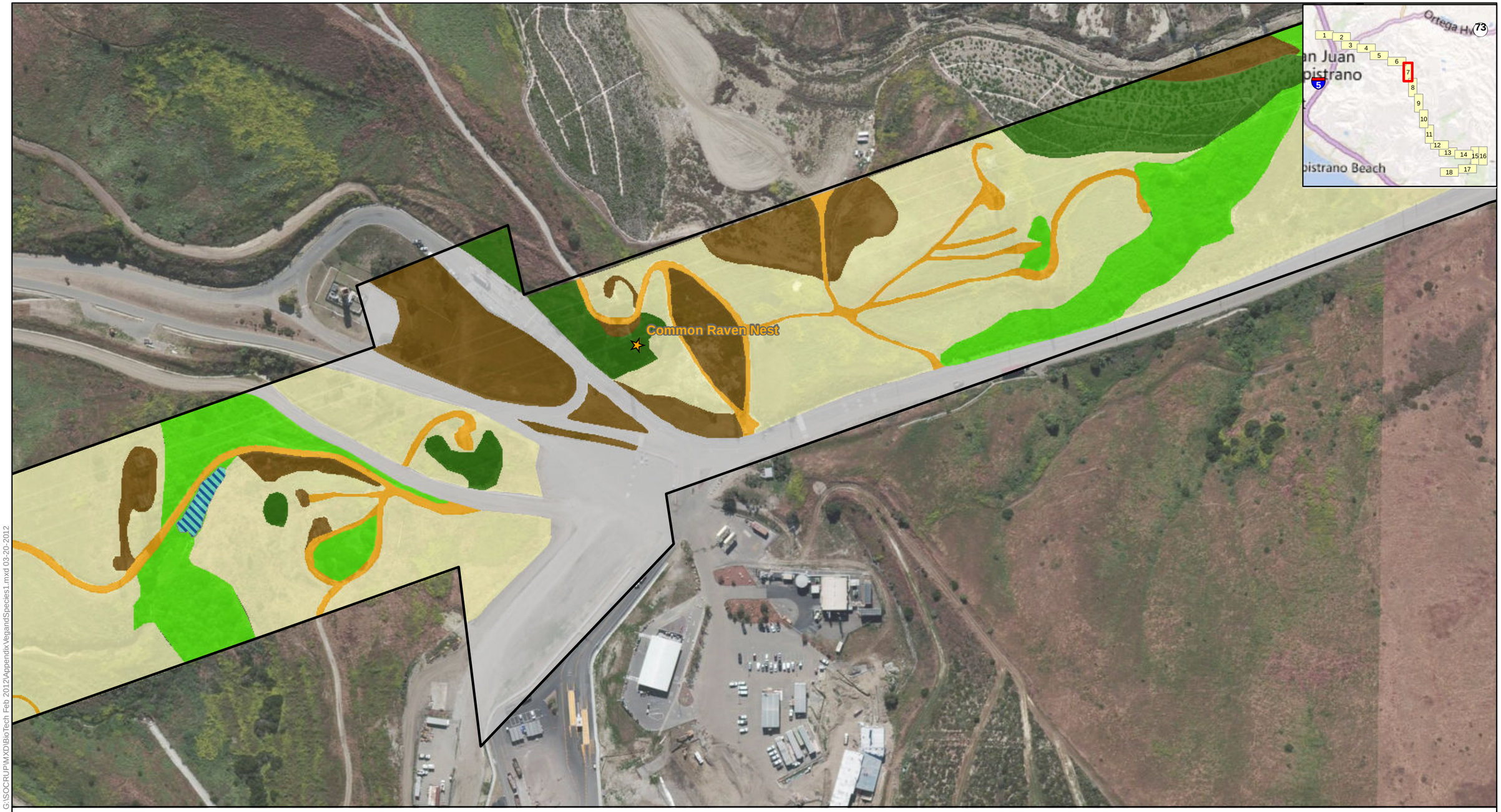
South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 6 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRU\PIM\XD\BioTech Feb 2012\Appendix Vegand\Species1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 7 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

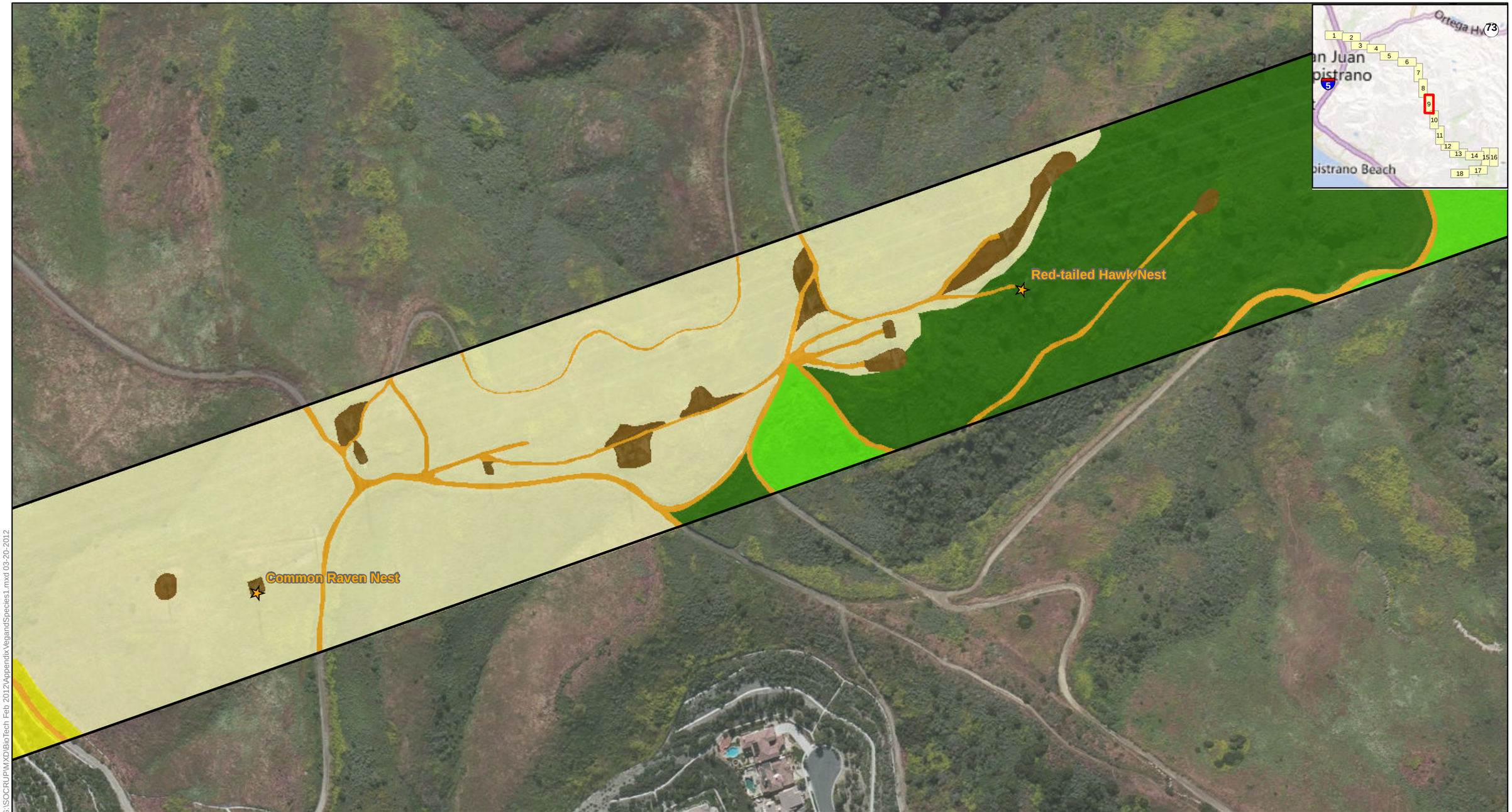
South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 8 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 9 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 10 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 11 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

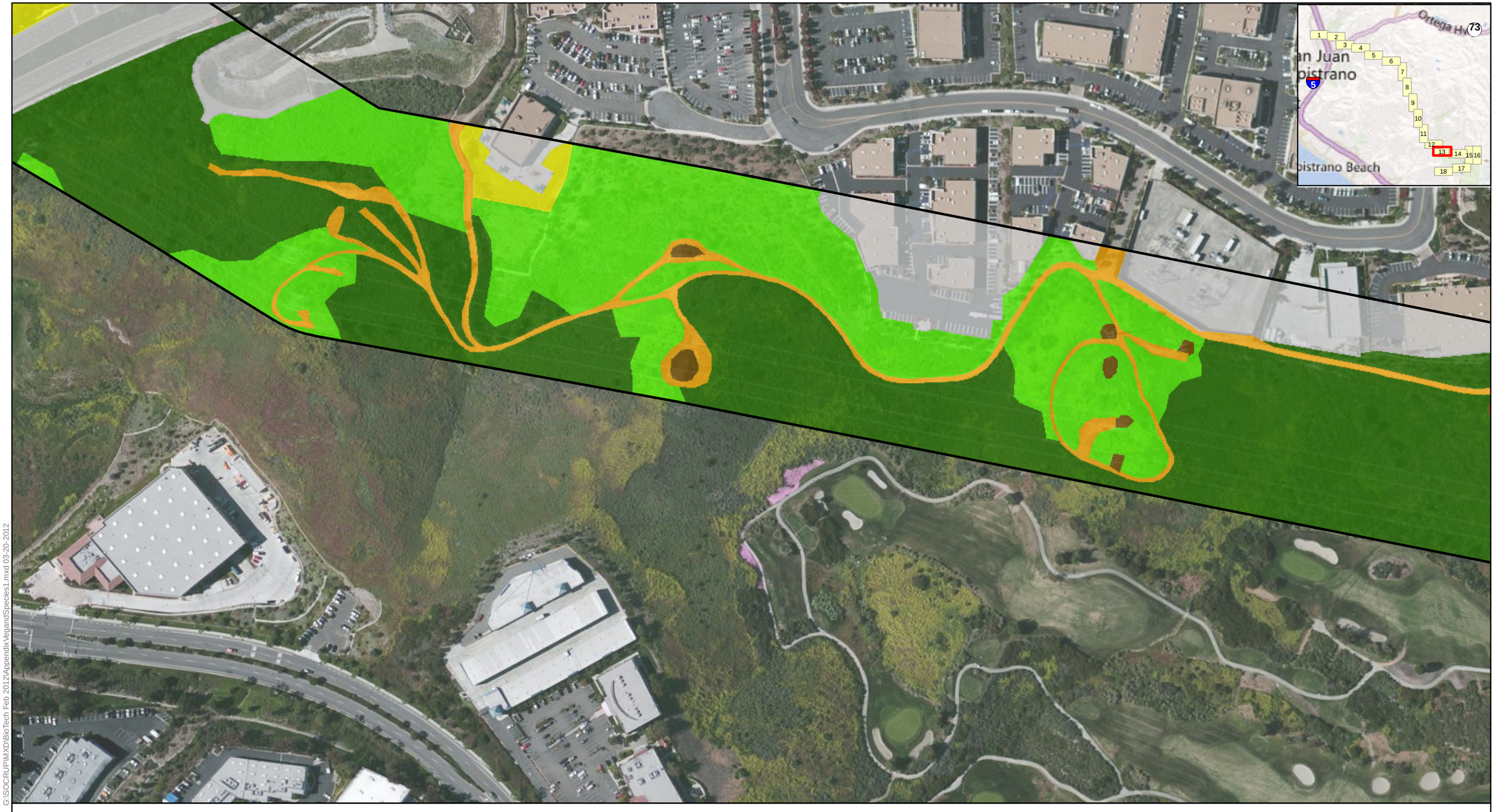
South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 12 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\Veg and\Species1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 13 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\AppendixVegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

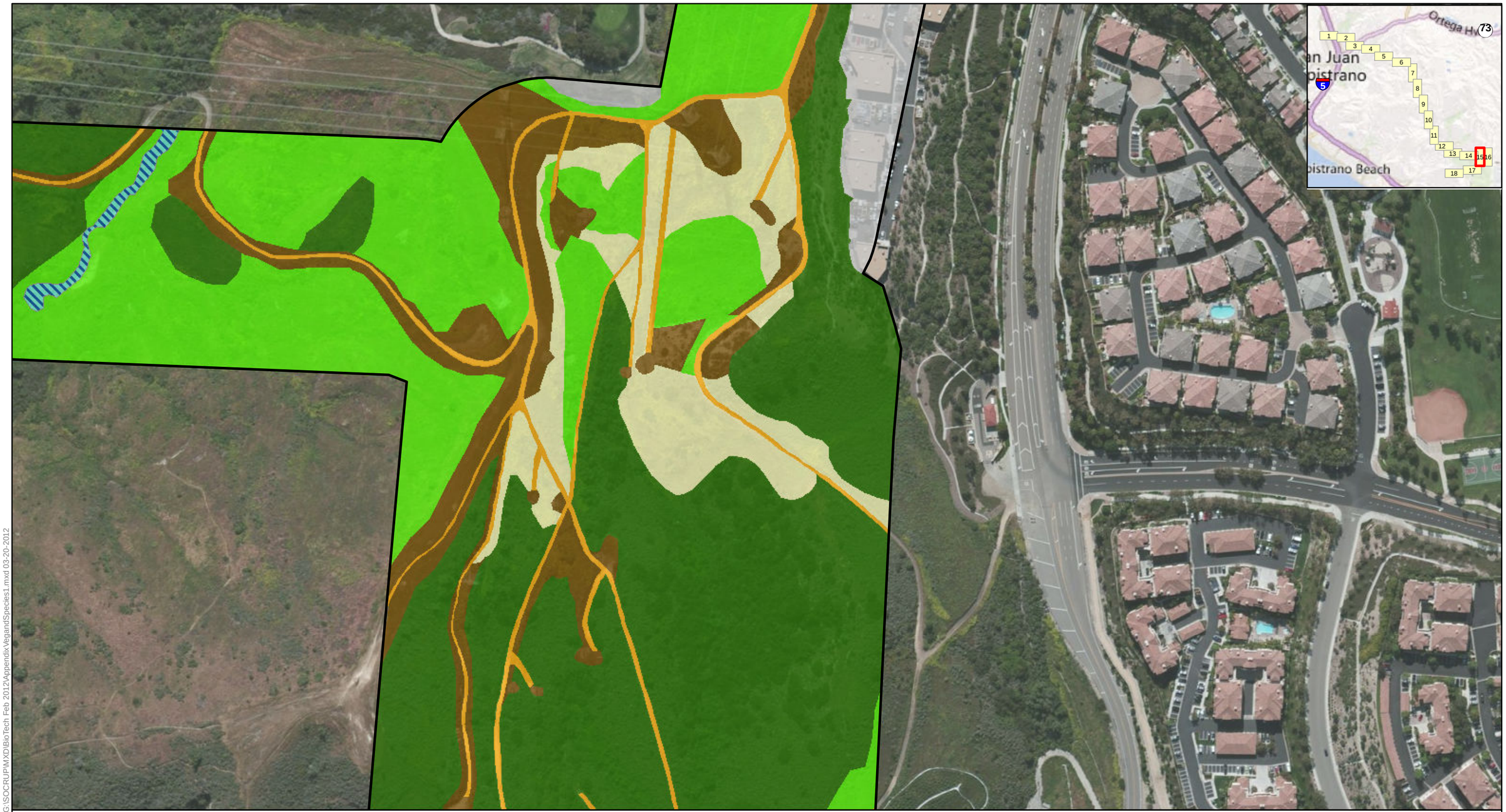
South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 14 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03.20.2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 15 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\vegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 16 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

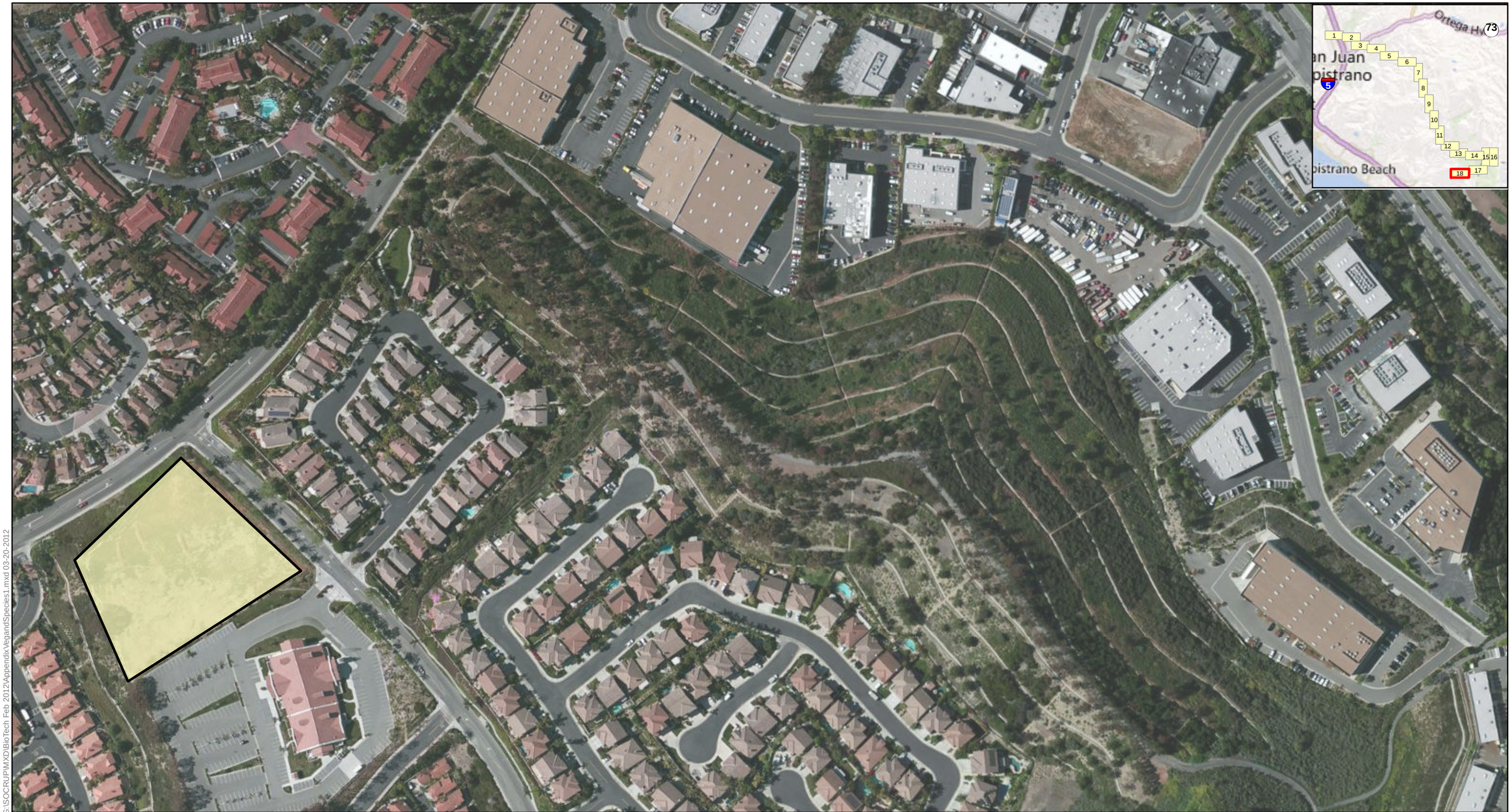
South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 17 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix\VegandSpecies1.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Legend

- Proposed Project Survey Area
- 2008 Nest Location
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Vegetation and Sensitive Species Maps

Sheet 18 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

Appendix I: Photo Exhibit

Appendix I: Photo Exhibit

	Photograph 1: View of coastal sage scrub (CSS) habitat within the survey corridor. Area was dense with native species and had few non native species.
	Photograph 2: View of disturbed CSS within the survey corridor. This habitat type is often seen at the interface between non-native habitats and CSS or CSS that has been historically disturbed through human activities (such as grazing or clearing).

Appendix I: Photo Exhibit

	Photograph 3: View of coastal freshwater marsh within Tributary to Christianitos Creek 1. Freshwater marsh plant communities are dominated by perennial, emergent monocots.
	Photograph 4: View of southern willow scrub (SWS) within San Juan Creek. SWS is found in areas adjacent water sources and includes a high percentage of native hydrophilic vegetation.

Appendix I: Photo Exhibit

	Photograph 5: View of disturbed SWS within San Juan Creek. Disturbed SWS has relatively open canopy due to disturbance that often leads to invasion of non-native species.
	Photograph 6: View of riparian scrub south of the Talega substation. Riparian scrub

Appendix I: Photo Exhibit

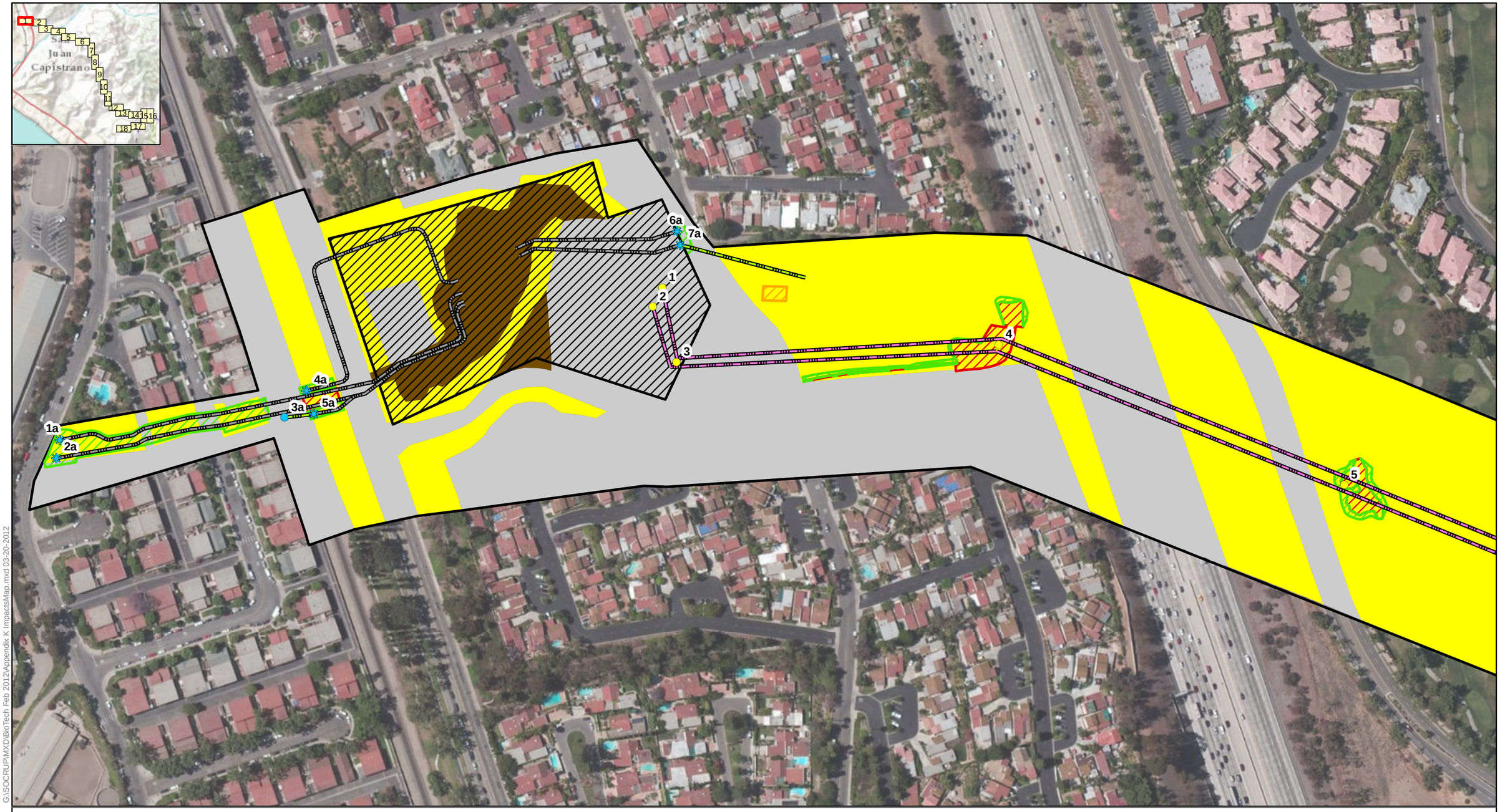
	Photograph 7: View of ruderal habitat within the survey corridor. Ruderal habitat is generally associated with significant human disturbance and is often found near disturbed and developed areas.
	Photograph 8: View of disturbed habitat adjacent to an existing transmission pole. Disturbed areas are relatively free of vegetation due to ongoing maintenance or recent human activity.

Appendix I: Photo Exhibit

	Photograph 9: View of ornamental vegetation adjacent to an existing transmission pole.
	Photograph 10: View of dirt road within the survey area. Dirt roads occur throughout the survey area and are typically used to access the existing transmission poles.

	Photograph 11: View of developed area at the Talega substation.

Appendix J: Impacts Maps



G:\SOC\RUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Impacts Map

Sheet 1 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

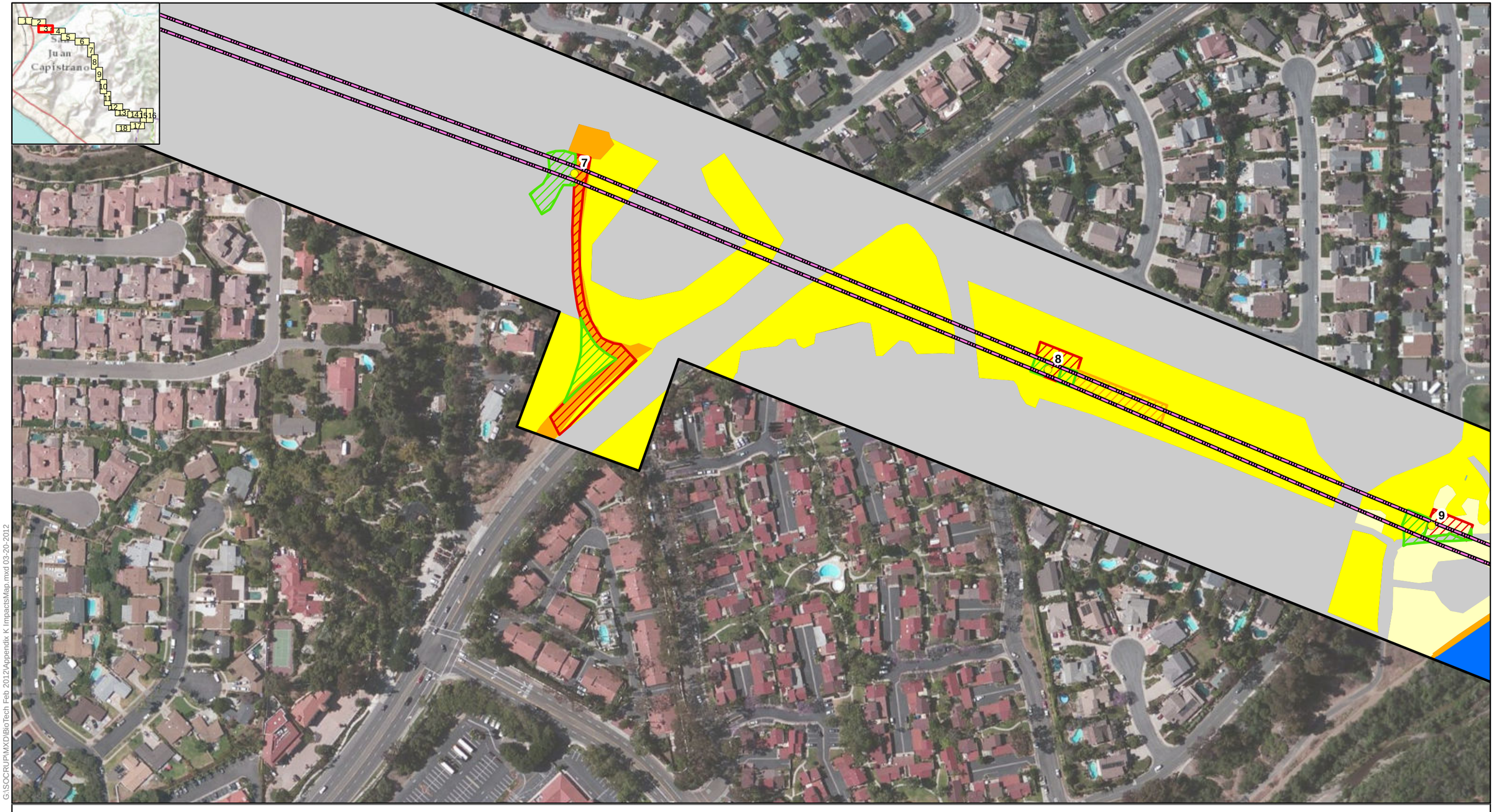
Impacts Map

Sheet 2 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE

A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Impacts Map

Sheet 3 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Impacts Map

Sheet 4 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE

A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K Impacts\Map.mxd 03.20.2012

Created For:
Mary Turley

Created By:
TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

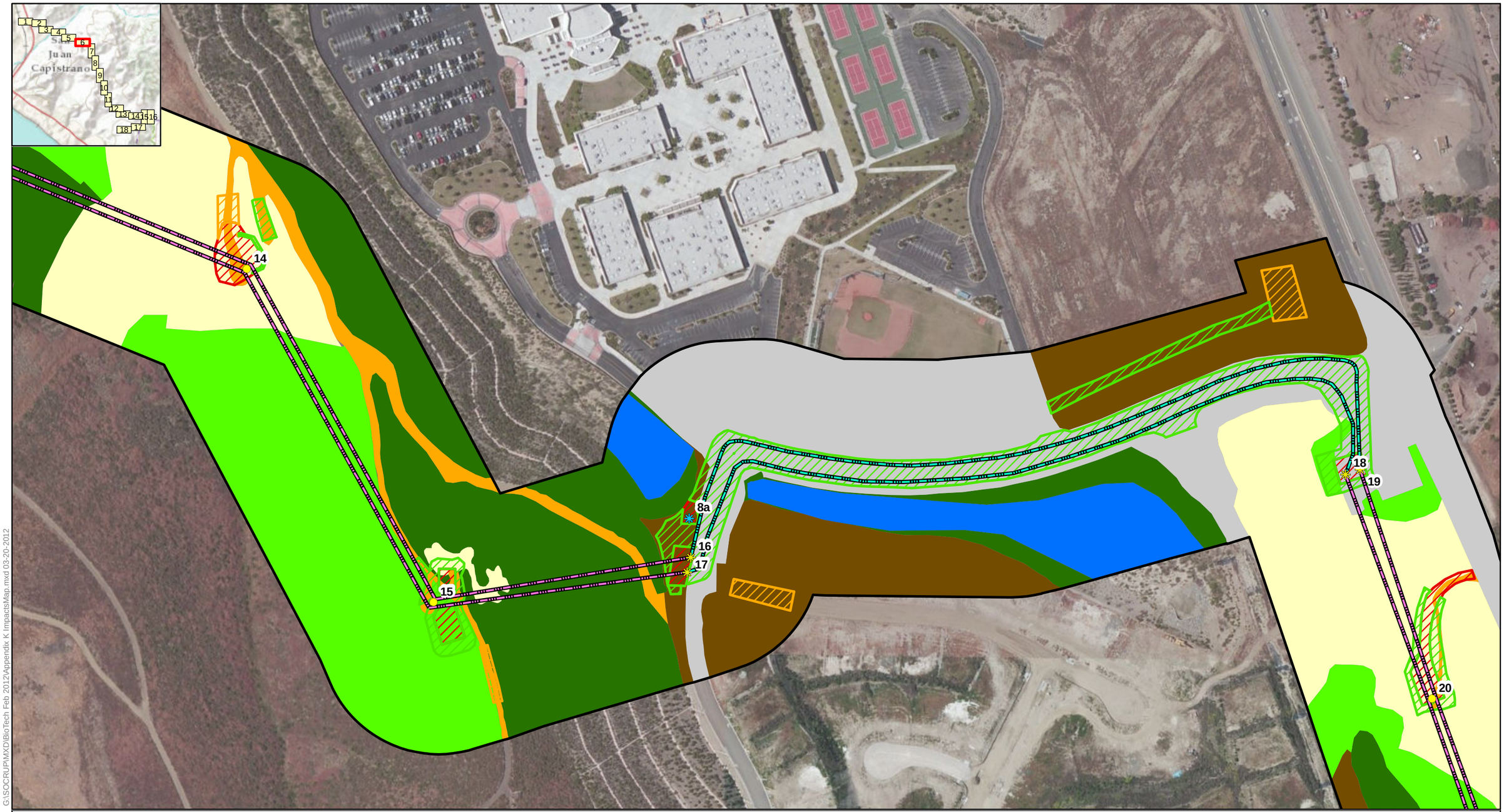
Impacts Map

Sheet 5 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE

A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

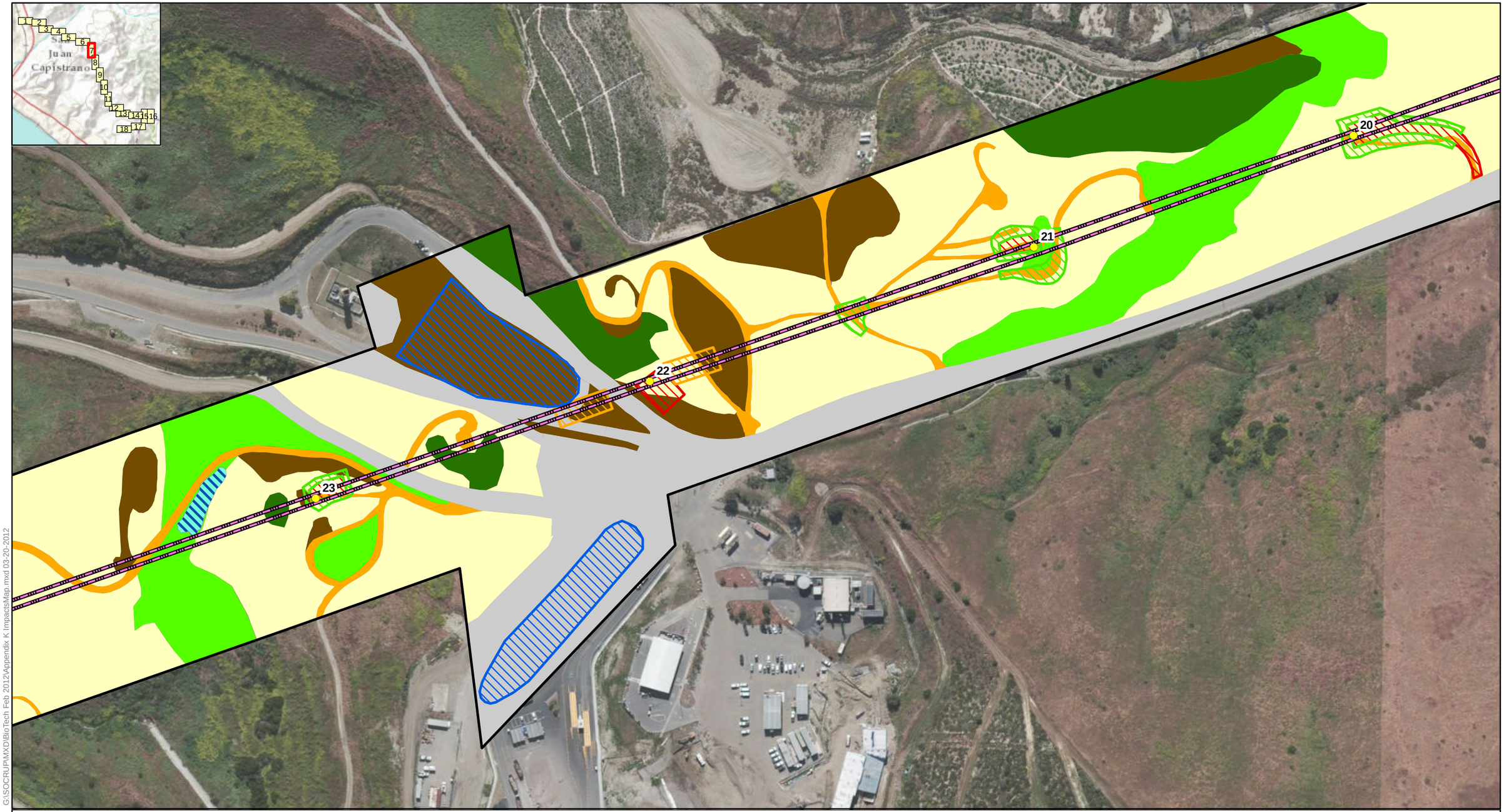
South Orange County Reliability Enhancement Project

Impacts Map

Sheet 6 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K Impacts\Map.mxd 03.20.2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

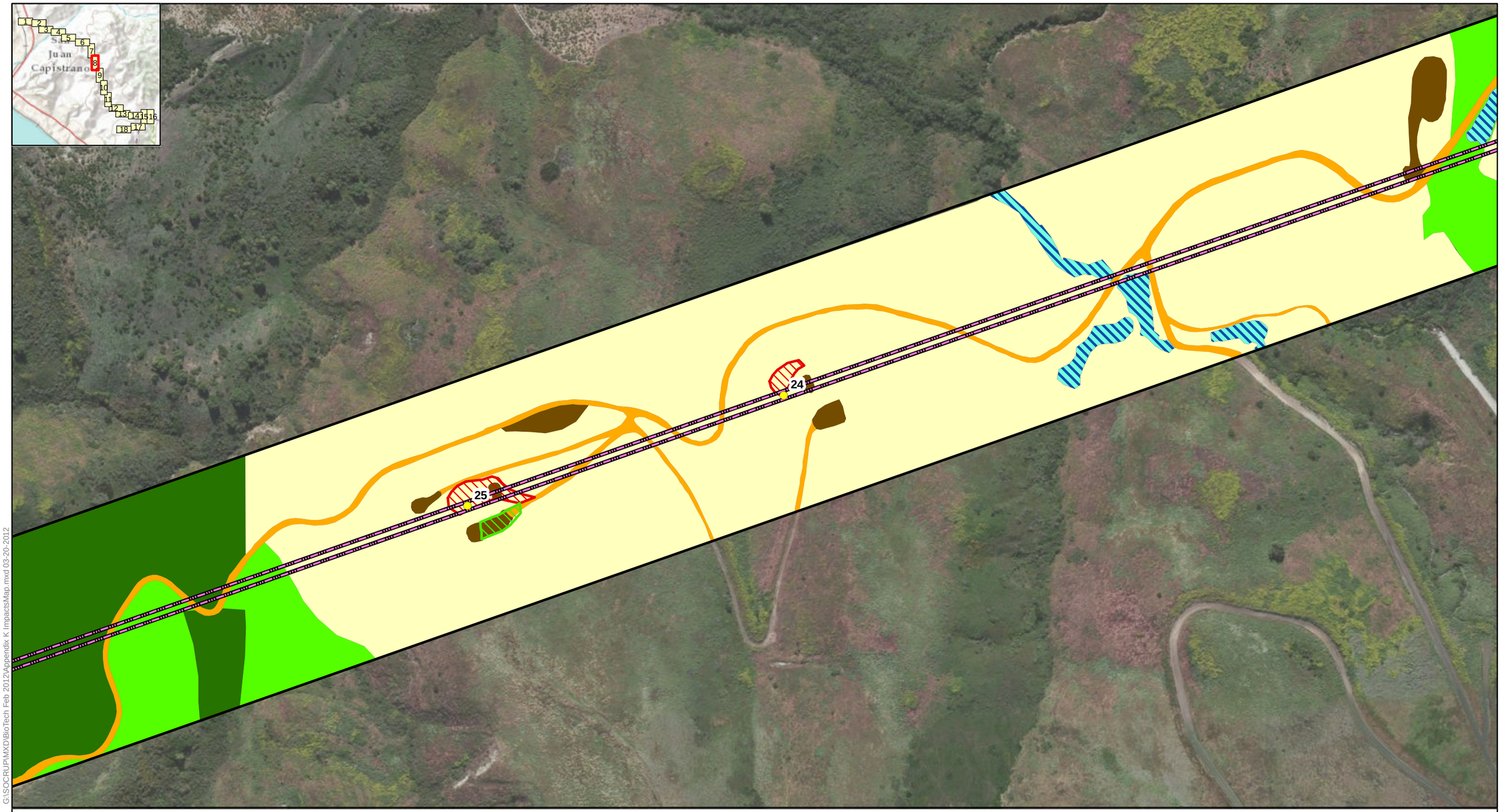
South Orange County Reliability Enhancement Project

Impacts Map

Sheet 7 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUPMXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Impacts Map

Sheet 8 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE

A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K Impacts\Map.mxd 03-20-2012

Created For:
Mary Turley

Created By:
TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

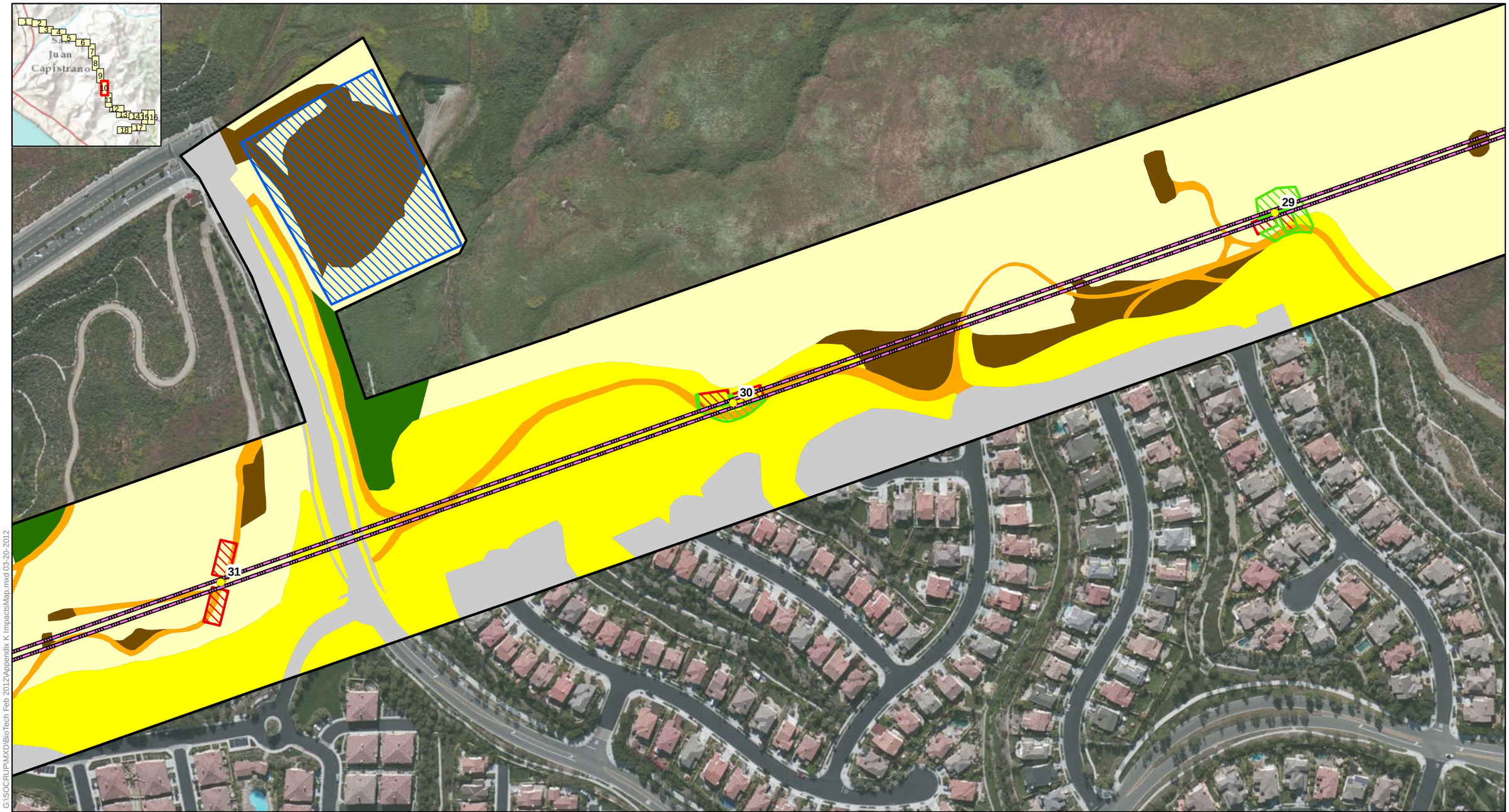
Impacts Map

Sheet 9 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE

A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For:
Mary Turley

Created By:
TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

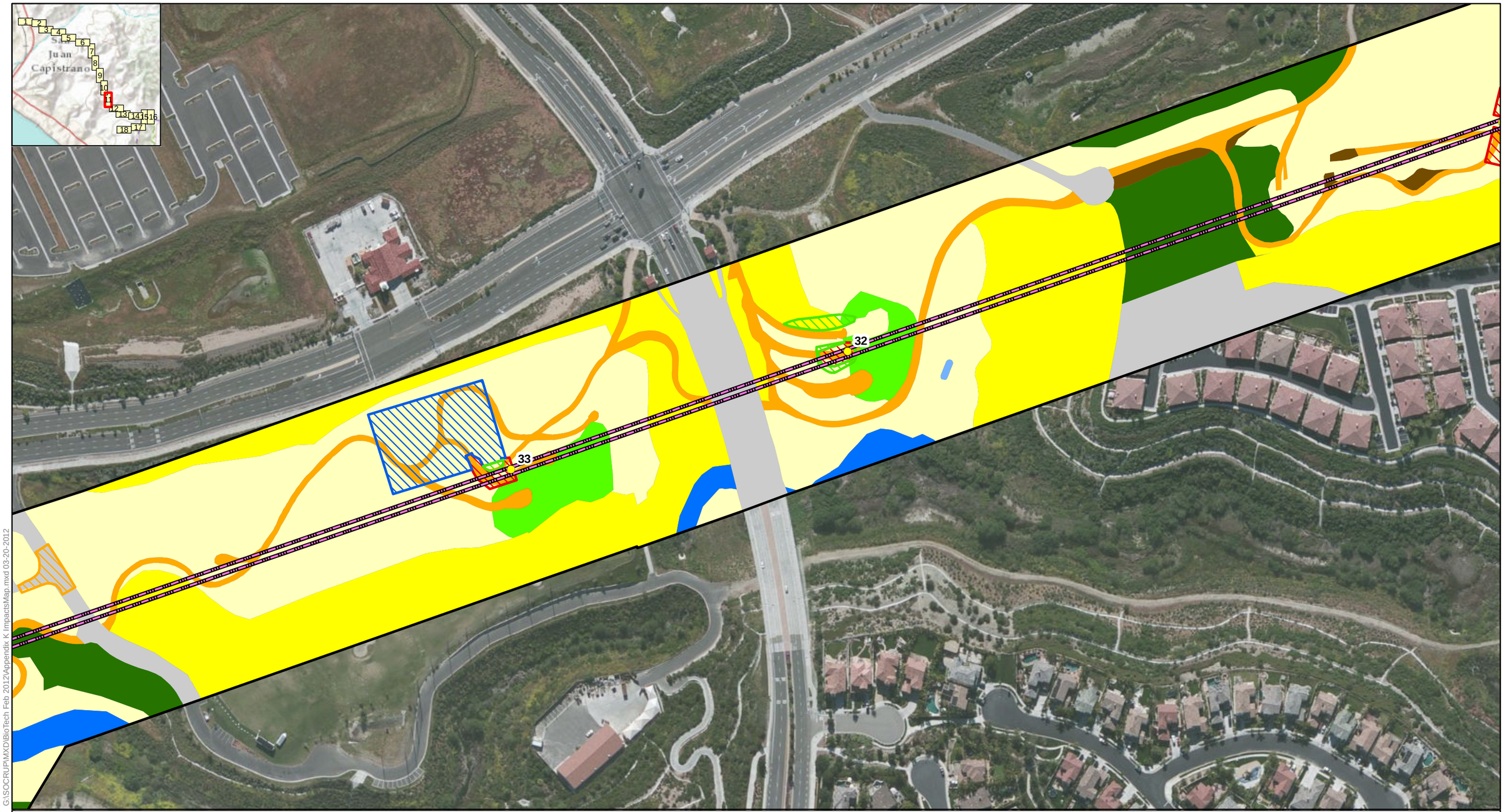
Impacts Map

Sheet 10 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE

A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K Impacts\Map.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

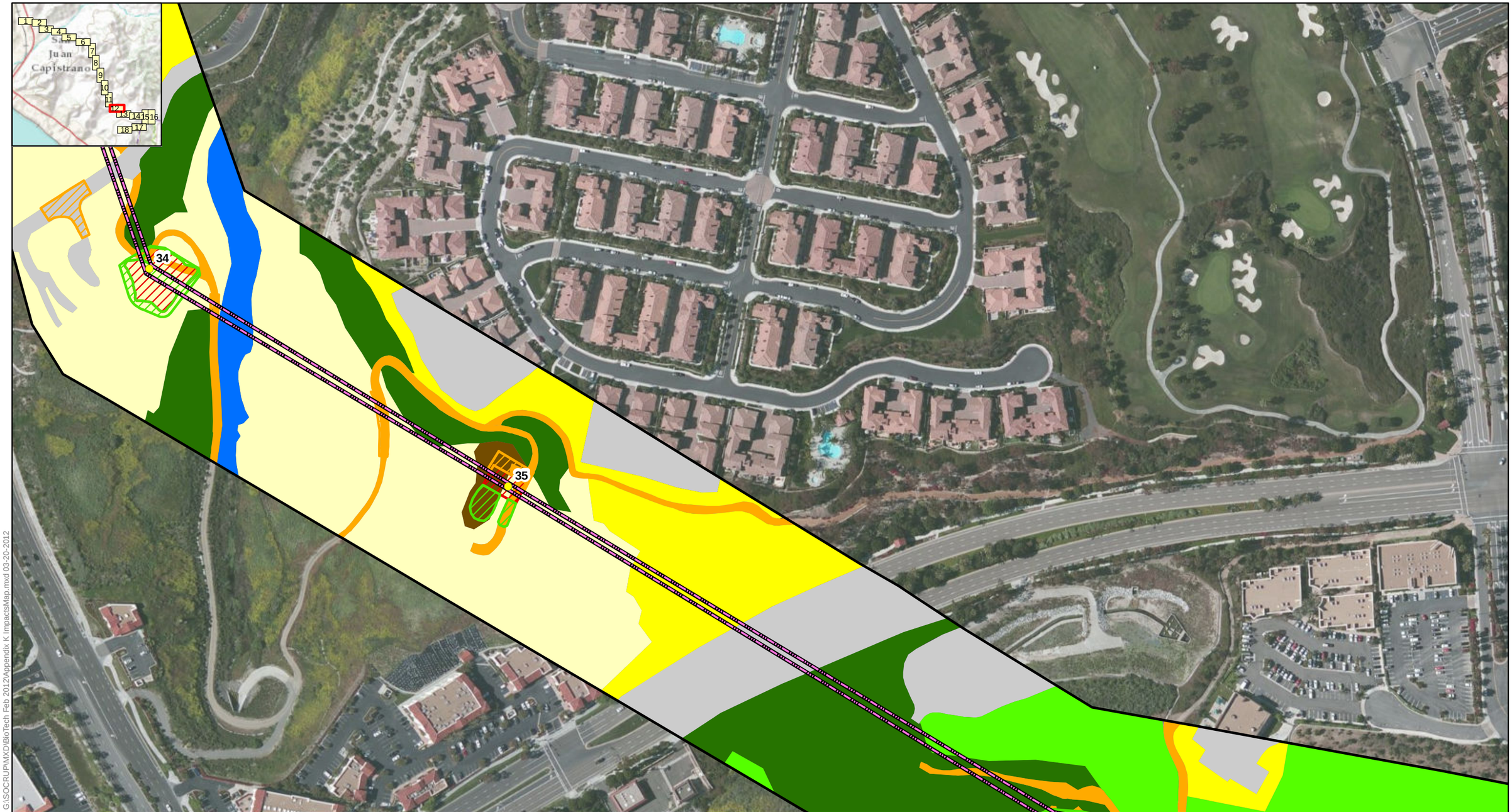
South Orange County Reliability Enhancement Project

Impacts Map

Sheet 11 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCR\UPMXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

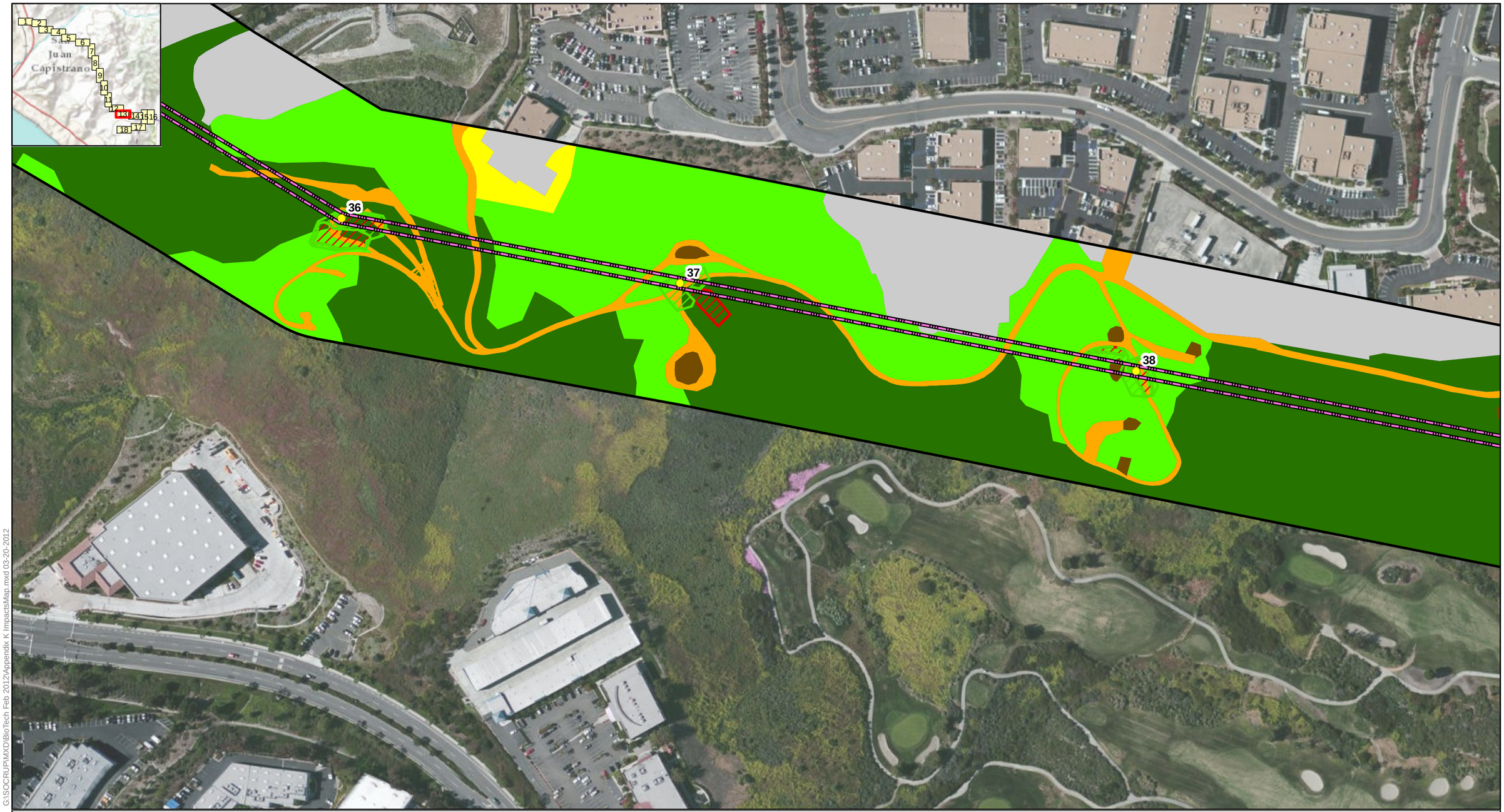
South Orange County Reliability Enhancement Project

Impacts Map

Sheet 12 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Impacts Map

Sheet 13 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

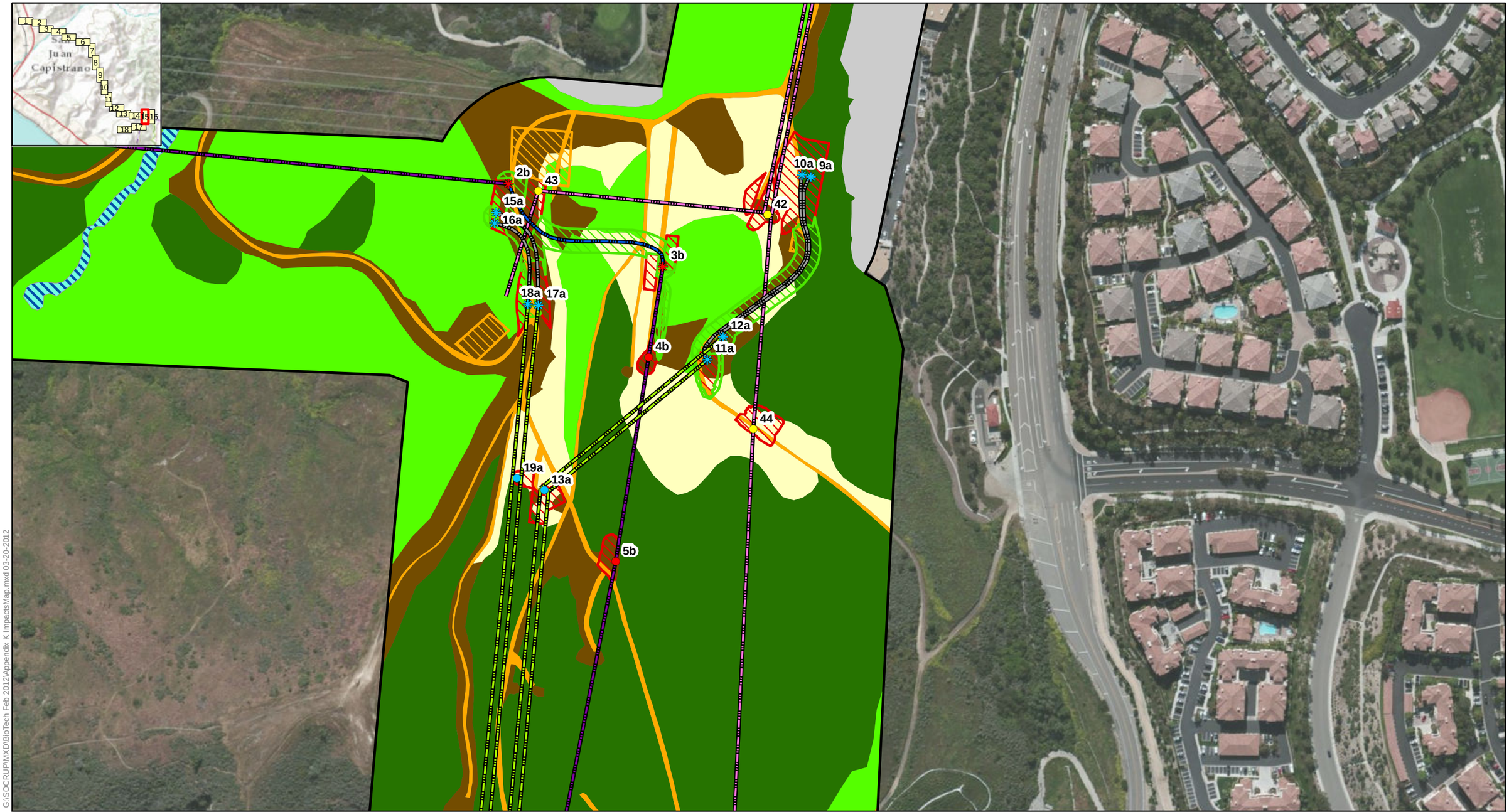
South Orange County Reliability Enhancement Project

Impacts Map

Sheet 14 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03.20.2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

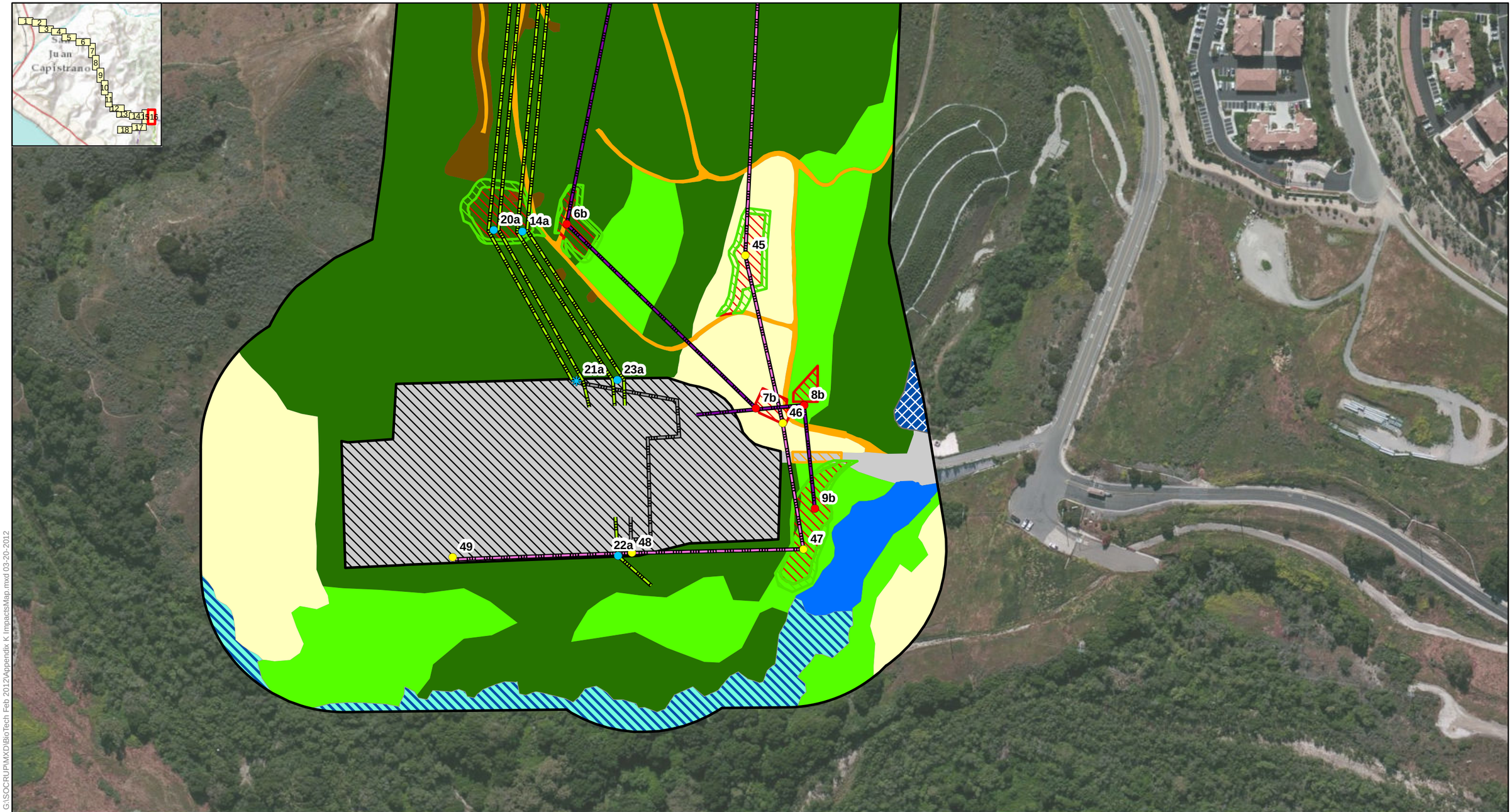
South Orange County Reliability Enhancement Project

Impacts Map

Sheet 15 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For:
Mary Turley

Created By:
TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Impacts Map

Sheet 16 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE

A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For:
Mary Turley

Created By:
TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Impacts Map

Sheet 17 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility



G:\SOCRUP\MXD\BioTech Feb 2012\Appendix K ImpactsMap.mxd 03-20-2012

Created For: Mary Turley

Created By: TRC

Date: 4/25/2012

SDG&E is providing this map with the understanding that the map is not survey grade.

Impact Types
- Permanent Impact
- Temporary Impact
- Staging Site (Temporary)
- String Site (Temporary)
- Substation Site

New Poles
- 230kV Standard Pole
- 230kV Cable Pole
- 138kV Standard Pole
- 138kV Cable Pole
- 69kV Standard Pole
- 69kV Cable Pole

Proposed Transmission Lines
- 230kV Transmission Line - Overhead
- 138kV Transmission Line - Overhead
- 69kV Transmission Line - Overhead
- 230kV Transmission Line - Underground
- 138kV Transmission Line - Underground
- 69kV Transmssion Line - Underground

Vegetation Types
- Coastal Sage Scrub
- Disturbed Coastal Sage Scrub
- Coastal Freshwater Marsh
- Southern Willow Scrub
- Disturbed Southern Willow Scrub
- Riparian Scrub
- Ruderal
- Disturbed
- Ornamental
- Dirt Road
- Developed

N

0 100 200 400 Feet

South Orange County Reliability Enhancement Project

Impacts Map

Sheet 18 of 18

SOUTH ORANGE COUNTY RELIABILITY ENHANCEMENT

SDGE A Sempra Energy utility

South Orange County Reliability Enhancement
San Juan Capistrano, CA 92675

Inquiry Number: 3233412.1s
January 06, 2012

EDR DataMap™ Corridor Study

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2006 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

SAN JUAN CAPISTRANO, CA 92675
SAN JUAN CAPISTRANO, CA 92675

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL RECORDS

Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
LIENS 2	CERCLA Lien Information
RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generator
RCRA-NonGen	RCRA - Non Generators
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
DOT OPS	Incident and Accident Data
US CDL	Clandestine Drug Labs
US BROWNFIELDS	A Listing of Brownfields Sites
FUDS	Formerly Used Defense Sites
LUCIS	Land Use Control Information System
CONSENT	Superfund (CERCLA) Consent Decrees
UMTRA	Uranium Mill Tailings Sites
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ODI	Open Dump Inventory
MINES	Mines Master Index File
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US HIST CDL	National Clandestine Laboratory Register
PCB TRANSFORMER	PCB Transformer Registration Database
FEDERAL FACILITY	Federal Facility Site Information listing
COAL ASH DOE	Sleam-Electric Plan Operation Data
FEMA UST	Underground Storage Tank Listing
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List

STATE AND LOCAL RECORDS

CA HIST Cal-Sites	Historical Calsites Database

EXECUTIVE SUMMARY

CA BOND EXP. PLAN - Bond Expenditure Plan
CA Toxic Pits - Toxic Pits Cleanup Act Sites
CA Cortese - "Cortese" Hazardous Waste & Substances Sites List
CA LIENS - Environmental Liens Listing
CA LDS - Land Disposal Sites Listing
CA MCS - Military Cleanup Sites Listing
CA Notify 65 - Proposition 65 Records
CA DEED - Deed Restriction Listing
CA WIP - Well Investigation Program Case List
CA CDL - Clandestine Drug Labs
CA RESPONSE - State Response Sites
CA HAULERS - Registered Waste Tire Haulers Listing
CA HWP - EnviroStor Permitted Facilities Listing
CA MWMP - Medical Waste Management Program Listing
CA PROC - Certified Processors Database
CA HWT - Registered Hazardous Waste Transporter Database

TRIBAL RECORDS

INDIAN RESERV - Indian Reservations
INDIAN ODI - Report on the Status of Open Dumps on Indian Lands
INDIAN LUST - Leaking Underground Storage Tanks on Indian Land
INDIAN UST - Underground Storage Tanks on Indian Land
INDIAN VCP - Voluntary Cleanup Priority Listing

EDR PROPRIETARY RECORDS

Manufactured Gas Plants - EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

NPL: Also known as Superfund, the National Priority List database is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund program. The source of this database is the U.S. EPA.

A review of the NPL list, as provided by EDR, and dated 06/30/2011 has revealed that there is 1 NPL site within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	***BLDG 2631***	***0***	***3***

EXECUTIVE SUMMARY

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 02/25/2011 has revealed that there is 1 CERCLIS site within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	***BLDG 2631***	***0***	***3***

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 03/09/2011 has revealed that there is 1 CORRACTS site within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	***BLDG 2631***	***0***	***3***

RCRA-TSDF: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-TSDF list, as provided by EDR, and dated 06/15/2011 has revealed that there is 1 RCRA-TSDF site within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	***BLDG 2631***	***0***	***3***

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 06/15/2011 has revealed that there are 3 RCRA-LQG sites within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	***BLDG 2631***	***0***	***3***
FLAVOR INFUSION, LLC	***1324 CALLE AVANZADO***	***12***	***157***

Site	Address	Map ID	Page
TRW INCORPORATED	*33000 AVENIDA PICO*	*13*	*172*

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/15/2011 has revealed that there are 3 RCRA-SQG sites within the searched area.

Site	Address	Map ID	Page
SHELL SERVICE STATION	*26571 JUNIPERO SERRA*	*1*	*106*
POLO CLEANERS	*31105 RANCHO VIEJO RD*	*6*	*118*
IMPACT BEARING	*1291 PUERTO DEL SOL*	*11*	*154*

US ENG CONTROLS: A listing of sites with engineering controls in place.

A review of the US ENG CONTROLS list, as provided by EDR, and dated 03/16/2011 has revealed that there is 1 US ENG CONTROLS site within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	*BLDG 2631*	*0*	*3*

US INST CONTROL: A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

A review of the US INST CONTROL list, as provided by EDR, and dated 03/16/2011 has revealed that there is 1 US INST CONTROL site within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	*BLDG 2631*	*0*	*3*

DOD: Consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

A review of the DOD list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 DOD site within the searched area.

Site	Address	Map ID	Page
CAMP PENDLETON MARINE CORPS BA		0	100

EXECUTIVE SUMMARY

ROD: Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid the cleanup.

A review of the ROD list, as provided by EDR, and dated 07/31/2011 has revealed that there is 1 ROD site within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	***BLDG 2631***	***0***	***3***

TRIS: The Toxic Chemical Release Inventory System identifies facilities that release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III, Section 313. The source of this database is the U.S. EPA.

A review of the TRIS list, as provided by EDR, and dated 12/31/2009 has revealed that there is 1 TRIS site within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	***BLDG 2631***	***0***	***3***

PADS: The PCB Activity Database identifies generators, transporters, commercial storers and/or brokers and disposers of PCBs who are required to notify the United States Environmental Protection Agency of such activities. The source of this database is the U.S. EPA.

A review of the PADS list, as provided by EDR, and dated 11/01/2010 has revealed that there is 1 PADS site within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	***BLDG 2631***	***0***	***3***

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 04/14/2010 has revealed that there are 2 FINDS sites within the searched area.

Site	Address	Map ID	Page
POLO CLEANERS	***31105 RANCHO VIEJO RD***	***6***	***118***
TRW INCORPORATED	***33000 AVENIDA PICO***	***13***	***172***

EXECUTIVE SUMMARY

RAATS: The RCRA Administration Action Tracking System contains records based on enforcement actions issued under RCRA and pertaining to major violators. It includes administrative and civil actions brought by the United States Environmental Protection Agency. The source of this database is the U.S. EPA.

A review of the RAATS list, as provided by EDR, and dated 04/17/1995 has revealed that there is 1 RAATS site within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	***BLDG 2631***	***0***	***3***

STATE AND LOCAL RECORDS

CA SCH: This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category. depending on the level of threat to public health and safety or the. environment they pose.

A review of the CA SCH list, as provided by EDR, and dated 11/07/2011 has revealed that there are 2 CA SCH sites within the searched area.

Site	Address	Map ID	Page
PLANT DEPOT SCHOOL SITE	***31251 AVENIDA LOS CERRI***	***5***	***116***
SAN JUAN ELEMENTARY SCHOOL	***31642 EL CAMINO REAL***	***8***	***146***

CA SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the CA SWF/LF list, as provided by EDR, and dated 11/21/2011 has revealed that there is 1 CA SWF/LF site within the searched area.

Site	Address	Map ID	Page
FORSTER CANYON LANDFILL	LA NOVIA & SAN JUAN CRE	9	149

CA WDS: California Water Resources Control Board - Waste Discharge System.

A review of the CA WDS list, as provided by EDR, and dated 06/19/2007 has revealed that there is 1 CA WDS site within the searched area.

Site	Address	Map ID	Page
TRW - CAPISTRANO TEST SITE	***33000 AVENIDA PICO***	***13***	***161***

EXECUTIVE SUMMARY

CA WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the CA WMUDS/SWAT list, as provided by EDR, and dated 04/01/2000 has revealed that there are 2 CA WMUDS/SWAT sites within the searched area.

Site	Address	Map ID	Page
FORSTER CANYON LANDFILL STN 17	FORSTER CANYON ROAD	9	150
SAN JUAN CAPISTRANO LANDFILL	NEAR SAN JUAN CREEK 300	9	151

CA NPDES: A listing of NPDES permits, including stormwater.

A review of the CA NPDES list, as provided by EDR, and dated 11/21/2011 has revealed that there is 1 CA NPDES site within the searched area.

Site	Address	Map ID	Page
T R W CAPISTRANO TEST SITE	***33000 AVENIDA PICO***	***13***	***182***

CA HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES].

A review of the CA HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 8 CA HIST CORTESE sites within the searched area.

Site	Address	Map ID	Page
ULTRAMAR/SAN JUAN SERVICE	***26572 JUNIPERO SERRA***	***1***	***100***
EXXON STATION #7-3050	26572 JUNIPERO SERRA	1	101
SHELL OIL STATION	***26571 JUNIPERO SERRA***	***1***	***109***
CHEVRON STATION #9-3160	***27112 ORTEGA***	***7***	***122***
TOSCO/76 PRODUCTS STATION	***27164 ORTEGA***	***7***	***127***
SHELL SERVICE STATION	***27101 ORTEGA***	***7***	***138***
LOS CERRITOS RANCH	***31642 AVENIDA LOS CERRI***	***7***	***145***
SOLAG DISPOSAL	***31731 PASEO ADELANTO***	***10***	***152***

CA SWRCY: A listing of recycling facilities in California.

A review of the CA SWRCY list, as provided by EDR, and dated 09/08/2011 has revealed that there is 1 CA SWRCY site within the searched area.

Site	Address	Map ID	Page
TOMRA PACIFIC INC	***989 AVENIDA PICO***	***14***	***189***

EXECUTIVE SUMMARY

CA LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the CA LUST list, as provided by EDR, and dated 11/10/2011 has revealed that there are 13 CA LUST sites within the searched area.

Site	Address	Map ID	Page
ULTRAMAR/SAN JUAN SERVICE	***26572 JUNIPERO SERRA***	***1***	***100***
ULTRAMAR /SAN JUAN SERVICE	***26572 JUNIPERO SERRA***	***1***	***101***
Status: Open - Site Assessment			
Status: Completed - Case Closed			
SHELL SERVICE STATION	***26571 JUNIPERO SERRA***	***1***	***106***
Status: Completed - Case Closed			
SHELL OIL STATION	***26571 JUNIPERO SERRA***	***1***	***109***
MARBELLA GOLF COURSE	***30650 GOLF CLUB***	***3***	***112***
Status: Completed - Case Closed			
CHEVRON STATION #93160	***27112 ORTEGA HWY***	***7***	***123***
Status: Completed - Case Closed			
CHEVRON STATION NO 93160	***27112 ORTEGA HWY***	***7***	***125***
TOSCO/76 PRODUCTS STATION	***27164 ORTEGA***	***7***	***127***
Status: Completed - Case Closed			
Status: Open - Site Assessment			
CIRCLE K STORES INC STATION #5	***27164 ORTEGA HWY***	***7***	***135***
SHELL SERVICE STATION	***27101 ORTEGA***	***7***	***138***
Status: Completed - Case Closed			
LOS CERRITOS RANCH	31642 AVENIDA LOS CERRI	7	144
ROMARCO REALTY CORP	31642 AVE LOS CERRITOS	7	144
Status: Completed - Case Closed			
PACIFIC GOLF CLUB	***200 AVENIDA LA PATA***	***15***	***190***
Status: Completed - Case Closed			

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 2 CA FID UST sites within the searched area.

Site	Address	Map ID	Page
MARBELLA GOLF & COUNTRY CLUB	***30650 GOLF CLUB DR***	***3***	***111***
T R W CAPISTRANO TEST SITE	33000 AVENIDA PICO	13	168

CA SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the CA SLIC list, as provided by EDR, and dated 11/10/2011 has revealed that there are 4 CA SLIC sites within the searched area.

Site	Address	Map ID	Page
POLO CLEANERS (MARBELLA PLAZA)	31105 RANCHO VIEJO ROAD	6	121
Facility Status: Completed - Case Closed			

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
NORTHROP GRUMMAN CAPISTRANO TE	***33000 AVENIDA PICO,***	***13***	***168***
Facility Status: Open - Site Assessment			
T R W CAPISTRANO TEST SITE	***33000 AVENIDA PICO***	***13***	***182***
Facility Status: Open - Site Assessment			
Facility Status: Open - Assessment & Interim Remedial Action			
**Additional key fields are available in the Map Findings section*			
TRW OPERATIONS & SUPPORT GROUP	33000 AVENIDA PICO	13	188
Facility Status: Completed - Case Closed			

CA UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the CA UST list, as provided by EDR, and dated 11/10/2011 has revealed that there are 4 CA UST sites within the searched area.

Site	Address	Map ID	Page
LOS CERRITOS RANCH	31251 AVENIDA LOS CERRI	5	118
CHEVRON STATION #93160	***27112 ORTEGA HWY***	***7***	***123***
T R W CAPISTRANO TEST SITE	***33000 AVENIDA PICO***	***13***	***182***
PACIFIC GOLF CLUB	***200 AVENIDA LA PATA***	***15***	***190***

CA HIST UST: Historical UST Registered Database.

A review of the CA HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 2 CA HIST UST sites within the searched area.

Site	Address	Map ID	Page
LOS CERRITOS RANCH	***31642 AVENIDA LOS CERRI***	***7***	***145***
TRW - CAPISTRANO TEST SITE	***33000 AVENIDA PICO***	***13***	***161***

NY MANIFEST: Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

A review of the NY MANIFEST list, as provided by EDR, has revealed that there are 2 NY MANIFEST sites within the searched area.

Site	Address	Map ID	Page
USMC CAMP PENDLETON	***BLDG 2631***	***0***	***3***
TRW INCORPORATED	***33000 AVENIDA PICO***	***13***	***172***

EXECUTIVE SUMMARY

CA SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the CA SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 4 CA SWEEPS UST sites within the searched area.

Site	Address	Map ID	Page
ULTRAMAR /SAN JUAN SERVICE	***26572 JUNIPERO SERRA***	***1***	***101***
MARBELLA GOLF & COUNTRY CLUB	***30650 GOLF CLUB DR***	***3***	***111***
T R W CAPISTRANO TEST SITE	***33000 AVENIDA PICO***	***13***	***182***
PACIFIC GOLF CLUB	***200 AVENIDA LA PATA***	***15***	***190***

CA CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CA CHMIRS list, as provided by EDR, and dated 12/31/2010 has revealed that there are 2 CA CHMIRS sites within the searched area.

Site	Address	Map ID	Page
TRW - CAPISTRANO TEST SITE	***33000 AVENIDA PICO***	***13***	***161***
T R W CAPISTRANO TEST SITE	***33000 AVENIDA PICO***	***13***	***182***

CA AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the CA AST list, as provided by EDR, and dated 08/01/2009 has revealed that there is 1 CA AST site within the searched area.

Site	Address	Map ID	Page
Not reported	30650 GOLF CLUB DR	3	112

CA VCP: Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

A review of the CA VCP list, as provided by EDR, and dated 11/07/2011 has revealed that there is 1 CA VCP site within the searched area.

Site	Address	Map ID	Page
SOLAG DISPOSAL	***31731 PASEO ADELANTO***	***10***	***152***

EXECUTIVE SUMMARY

CA DRYCLEANERS: A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaners' agents; linen supply; coin-operated laundries and cleaning; drycleaning plants except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

A review of the CA DRYCLEANERS list, as provided by EDR, and dated 06/28/2011 has revealed that there is 1 CA DRYCLEANERS site within the searched area.

Site	Address	Map ID	Page
ORIGINAL POLO CLEANERS	31105 RANCHO VIEJO RD S	6	121

CA ENF: A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

A review of the CA ENF list, as provided by EDR, and dated 08/15/2011 has revealed that there is 1 CA ENF site within the searched area.

Site	Address	Map ID	Page
SHELL SERVICE STATION	***27101 ORTEGA***	***7***	***138***

CA HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the CA HAZNET list, as provided by EDR, and dated 12/31/2010 has revealed that there are 16 CA HAZNET sites within the searched area.

Site	Address	Map ID	Page
MARBELLA GOLF COURSE	***30650 GOLF CLUB***	***3***	***112***
INTOWN PROP/HUD	31098 CALLE SAN DIEGO	4	114
SAN DIEGO GAS AND ELECTRIC PRO	31050 CAMINO CAPISTRANO	4	115
LAWSON'S LANDSCAPE	31050 CAMINO CAPISTRANO	4	115
POLO CLEANERS	***31105 RANCHO VIEJO RD***	***6***	***118***
CHEVRON STATION #9-3160	***27112 ORTEGA***	***7***	***122***
CHEVRON STATION NO 93160	***27112 ORTEGA HWY***	***7***	***125***
TOSCO/76 PRODUCTS STATION	***27164 ORTEGA***	***7***	***127***
CIRCLE K STORES INC STATION #5	***27164 ORTEGA HWY***	***7***	***135***
SHELL SERVICE STATION	***27101 ORTEGA***	***7***	***138***
SAN JUAN ELEMENTARY SCHOOL	***31642 EL CAMINO REAL***	***8***	***146***
IMPACT BEARING	***1291 PUERTO DEL SOL***	***11***	***154***
FLAVOR INFUSION, LLC	***1324 CALLE AVANZADO***	***12***	***157***
TRW INCORPORATED	***33000 AVENIDA PICO***	***13***	***172***
TOMRA PACIFIC INC	***989 AVENIDA PICO***	***14***	***189***
PACIFIC GOLF CLUB	***200 AVENIDA LA PATA***	***15***	***190***

EXECUTIVE SUMMARY

CA EMI: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the CA EMI list, as provided by EDR, and dated 12/31/2008 has revealed that there is 1 CA EMI site within the searched area.

Site	Address	Map ID	Page
NORTHROP GRUMMAN CAPISTRANO TE	***33000 AVENIDA PICO,***	***13***	***168***

CA ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the CA ENVIROSTOR list, as provided by EDR, and dated 11/07/2011 has revealed that there are 4 CA ENVIROSTOR sites within the searched area.

Site	Address	Map ID	Page
ENDEVCO CORPORATION Status: Inactive - Needs Evaluation	30700 RANCHO VIEJO ROAD	2	110
PLANT DEPOT SCHOOL SITE Status: Inactive - Needs Evaluation	***31251 AVENIDA LOS CERRI***	***5***	***116***
SAN JUAN ELEMENTARY SCHOOL Status: Inactive - Needs Evaluation	***31642 EL CAMINO REAL***	***8***	***146***
SOLAG DISPOSAL Status: No Further Action	***31731 PASEO ADELANTO***	***10***	***152***

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	1
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	1
CERC-NFRAP	0
LIENS 2	0
CORRACTS	1
RCRA-TSDF	1
RCRA-LQG	3
RCRA-SQG	3
RCRA-CESQG	0
RCRA-NonGen	0
US ENG CONTROLS	1
US INST CONTROL	1
ERNS	0
HMIRS	0
DOT OPS	0
US CDL	0
US BROWNFIELDS	0
DOD	1
FUDS	0
LUCIS	0
CONSENT	0
ROD	1
UMTRA	0
DEBRIS REGION 9	0
ODI	0
MINES	0
TRIS	1
TSCA	0
FTTS	0
HIST FTTS	0
SSTS	0
ICIS	0
PADS	1
MLTS	0
RADINFO	0
FINDS	2
RAATS	1
SCRD DRYCLEANERS	0
US HIST CDL	0
PCB TRANSFORMER	0
FEDERAL FACILITY	0
COAL ASH DOE	0
FEMA UST	0
COAL ASH EPA	0
STATE AND LOCAL RECORDS	
CA HIST Cal-Sites	0

MAP FINDINGS SUMMARY

Database	Total Plotted
CA BOND EXP. PLAN	0
CA SCH	2
CA Toxic Pits	0
CA SWF/LF	1
CA WDS	1
CA WMUDS/SWAT	2
CA NPDES	1
CA Cortese	0
CA HIST CORTESE	8
CA SWRCY	1
CA LUST	13
CA FID UST	2
CA SLIC	4
CA UST	4
CA HIST UST	2
CA LIENS	0
NY MANIFEST	2
CA SWEEPS UST	4
CA CHMIRS	2
CA LDS	0
CA AST	1
CA MCS	0
CA Notify 65	0
CA DEED	0
CA VCP	1
CA DRYCLEANERS	1
CA WIP	0
CA CDL	0
CA ENF	1
CA RESPONSE	0
CA HAZNET	16
CA EMI	1
CA ENVIROSTOR	4
CA HAULERS	0
CA HWP	0
CA MWMP	0
CA PROC	0
CA HWT	0
TRIBAL RECORDS	
INDIAN RESERV	0
INDIAN ODI	0
INDIAN LUST	0
INDIAN UST	0
INDIAN VCP	0
EDR PROPRIETARY RECORDS	
Manufactured Gas Plants	0

NOTES:

Sites may be listed in more than one database

NPL **USMC CAMP PENDLETON** **NPL** **1000344642**
Region **BLDG 2631** **CERCLIS** **92055MRNCRPO**
CAMP PENDLETON, CA 92055 **CORRACTS**
RCRA-TSDF
RCRA-LQG
US ENG CONTROLS
US INST CONTROL
ROD
TRIS
PADS
RAATS
NY MANIFEST

NPL:
EPA ID: CA2170023533
EPA Region: 09
Federal: Y
Final Date: 1989-11-21 00:00:00

Category Details:
NPL Status: Currently on the Final NPL
Category Description: Depth To Aquifer-<= 10 Feet
Category Value: 5

NPL Status: Currently on the Final NPL
Category Description: Distance To Nearest Population-> 0 And <= 1/4 Mile
Category Value: 10

Site Details:
Site Name: CAMP PENDLETON MARINE CORPS BASE
Site Status: Final
Site Zip: 92055
Site City: CAMP PENDLETON
Site State: CA
Federal Site: Yes
Site County: SAN DIEGO
EPA Region: 09
Date Proposed: 07/14/89
Date Deleted: Not reported
Date Finalized: 11/21/89

Substance Details:
NPL Status: Currently on the Final NPL
Substance ID: Not reported
Substance: Not reported
CAS #: Not reported
Pathway: Not reported
Scoring: Not reported

NPL Status: Currently on the Final NPL
Substance ID: A046
Substance: POLYCHLORINATED BIPHENYLS
CAS #: 1336-36-3
Pathway: GROUND WATER PATHWAY
Scoring: 3

NPL Status: Currently on the Final NPL
Substance ID: C321

USMC CAMP PENDLETON (Continued) **1000344642**

Substance: TRICHLOROETHANE
CAS #: 25323-89-1
Pathway: NO PATHWAY INDICATED
Scoring: 1

NPL Status: Currently on the Final NPL
Substance ID: U233
Substance: TP ACID (SILVEX), 2,4,5-
CAS #: 93-72-1
Pathway: NO PATHWAY INDICATED
Scoring: 1

Summary Details:

Conditions at proposal July 14, 1989): The Camp Pendleton Marine Corps Base encompasses approximately 125,000 acres in San Diego County, California. The installation is bordered by the City of San Clemente to the north, the City of Oceanside to the south, and the City of Fallbrook to the east. The base has served as a training base since its establishment in 1941. Industrial and other support operations have generated ha ardous wastes, including waste oils, contaminated fuels and other petroleum products, cleaning solvents, and pesticide rinsate. Camp Pendleton is participating in the Installation Restoration Program IRP), established in 1978. Under this program, the Department of Defense seeks to identify, investigate, and clean up contamination from ha ardous materials. As part of IRP studies, the Navy identified a number of potentially contaminated areas, including eight areas where wastes containing DDT, heptachlor, 2,4-T, lindane, inc, lead,trichloroethylene, methyl ethyl ketone, ben ene, and xylene had been deposited. Ground water is shallow, averaging 7-14 feet deep, and soils are permeable, conditions that facilitate movement of contaminants into ground water. The 40,000people living and working on the base obtain drinking water from wells within 3 miles of ha ardous substances on the base. The nearest well is within 1,320 feet of one of the disposal areas. To date, no contaminants have been detected in the camp s water supply. San Margarita River, Las Flores Creek, and San Mateo Creek empty into coastal wetlands within 2 miles of Camp Pendleton. Surface waters within 3 miles downstream are used for recreational activities. Critical habitatsfor three birds designated as endangered by the U.S. Fish and Wildlife Service are within 1 mile of the camp. The Marine Corps has completed a site inspection and is about to start planning for a remedial investigation/feasibility studyRI/FS)to determine the type and extent of contamination at the base and identify alternatives for remedial action. Status November 21, 1989): The RI/FS is underway.

Site Status Details:
NPL Status: Final
Proposed Date: 07/14/1989
Final Date: 11/21/1989
Deleted Date: Not reported

Narratives Details:
NPL Name: CAMP PENDLETON MARINE CORPS BASE
City: CAMP PENDLETON
State: CA

CERCLIS:

USMC CAMP PENDLETON (Continued) **1000344642**

Site ID:	0902732
EPA ID:	CA2170023533
Facility County:	SAN DIEGO
Short Name:	CAMP PENDLETON MARINE COR
Congressional District:	48
IFMS ID:	09Q3
SMSA Number:	7320
USGC Hydro Unit:	18070303
Federal Facility:	Federal Facility
DMNSN Number:	125000.00000
Site Orphan Flag:	N
RCRA ID:	Not reported
USGS Quadrangle:	Not reported
Site Init By Prog:	Not reported
NFRAP Flag:	Not reported
Parent ID:	Not reported
RST Code:	Not reported
EPA Region:	09
Classification:	Not reported
Site Settings Code:	SU
NPL Status:	Currently on the Final NPL
DMNSN Unit Code:	ACRE
RBRAC Code:	Not reported
RResp Fed Agency Code:	USNV
Non NPL Status:	Not reported
Non NPL Status Date:	Not reported
Site Fips Code:	06073
CC Concurrence Date:	Not reported
CC Concurrence FY:	Not reported
Alias EPA ID:	Not reported
Site FUDS Flag:	Not reported

CERCLIS Site Contact Name(s):

Contact ID:	9270482.00000
Contact Name:	Martin Hausladen
Contact Tel:	(415) 972-3007
Contact Title:	Remedial Project Manager (RPM)
Contact Email:	Not reported

Contact ID:	9271184.00000
Contact Name:	Karen Jurist
Contact Tel:	(415) 972-3219
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported

Contact ID:	9270048.00000
Contact Name:	Jeff Inglis
Contact Tel:	(415) 972-3095
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported

Contact ID:	13002167.00000
Contact Name:	Carl Brickner
Contact Tel:	(415) 972-3814
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Contact ID: 9270438.00000
Contact Name: Dawn Richmond
Contact Tel: (415) 972-3097
Contact Title: Site Assessment Manager (SAM)
Contact Email: Not reported

CERCLIS Site Alias Name(s):
Alias ID: 101
Alias Name: MARINE CORPS BASE CAMP PENDLETON
Alias Address: BLDG 2631
CAMP PENDLETON, CA 92055
Alias ID: 201
Alias Name: CAMP PENDLETON PCB SPILL
Alias Address: Not reported
CA
Alias ID: 202
Alias Name: CAMP PENDLETON MARINE CORPS BASE
Alias Address: CAMP PENDLETON MARINE BASE
CAMP PENDLETON, CA 92055
Alias ID: 203
Alias Name: CAMP PENDLETON MARINE CORPS BASE
Alias Address: CAMP PENDLETON MARINE BASE
SAN DIEGO COUNTY, CA 92055
Alias ID: 9270125
Alias Name: MCB CAMP PENDLETON
Alias Address: BLDG 2631
CAMP PENDLETON, CA 96614
Alias ID: 201
Alias Comments: PREVIOUS EPA ID# AZD 981 416 977

Site Description: Construction of Marine Corps Base (MCB) Camp Pendleton started in March 1942, and dedicated in September 1942. MCB Camp Pendleton has been a training facility since 1942, but was not designated a permanent base until October 1944. The base currently supports more than 36,000 military personnel and employs approximately 4,600 civilians. On November 15, 1989, MCB Camp Pendleton was added to the National Priorities List (NPL) primarily because an herbicide was detected in two base drinking water production wells. Site 9-41 Area Stuart Mesa Waste Stabilization Pond From 1963 to 1974 or 1975, the waste stabilization pond was operated as a sewage lagoon for oxidation and percolation of raw sewage generated in 41 Area. In 1975, a wet well and a lift station were installed, and raw sewage was pumped into a treatment facility in 43 Area. The waste stabilization pond, which contains water only briefly following heavy rainfall, has been used for stockpiling soils contaminated with petroleum hydrocarbons, primarily fuel and oil. The area immediately northeast of the waste stabilization pond has been used for disposal of wastes from mess hall grease traps. No base water production wells are located within 1 mile of Site 9. Upon sampling, 18 organic contaminants, resulting in concentrations under the preliminary remediation goal, were detected in soil samples. 24 metal contaminants were also detected. Of these contaminants, beryllium, cadmium, cooper, iron, lead, mercury, molybdenum, vanadium and zinc were the only chemicals having concentrations above their respective background values. 37 chemicals were detected in groundwater samples. Of these antimony, cadmium, chromium, 1,2-dichloroethane, mercury, nickel, tetrachloroethene and trichloroethene were reported to be in concentrations which exceeded either the Federal Maximum Contaminant Level (MCL) or the State MCL. 13 surface-water contaminants were detected and of those, copper was found to be above the maximum concentration level appropriate for both Federal and State Aquatic Life Standards. Results of the site characterization indicated adequate habitat

USMC CAMP PENDLETON (Continued) **1000344642**

within Site 9 for terrestrial plants, terrestrial animals and soil invertebrates. The aquatic habitat in the area is minimal. Although some native plants are present, Site 9 contains few or no sensitive plant communities. Based on the analyses of toxicity to aquatic and terrestrial organisms, concentrations of chemicals in soil, sediment, and surface water do no pose ecological risk to terrestrial or aquatic organisms. Site 4 and 4A - Marine Corps Air Station (MCAS) Drainage Ditch and Concrete-Lined Impoundment The drainage ditch reportedly was used from the 1940s through the early 1980s for the disposal of liquid wastes generated by flight-line operations and also received contaminated runoff from spills and aircraft washing. Hazardous substances reportedly placed in the drainage ditch include jet fuels, aviation gasoline, kerosene, paints, paint strippers, toluene, methyl ethyl ketone, methyl isobutyl ketone, trichloroethene, trichloroethane, nitrocellulose lacquers and thinners, aliphatic thinners and isopropanol. An estimated 11,000 to 25,000 gallons reportedly was discharged in or adjacent to the ditch prior to 1982. Other liquid wastes of unknown quantities including oils, hydraulic fluids, battery electrolyte solutions, and aircraft washing wastewater, reportedly were also discharged into the ditch. No information is available on the quantities or specific types of wastes received by the Site 4A impoundment. Sites 4 and 4A were included in the RI of Group A sites conducted between February 1992 and April 1993. Upon sampling in Site 4, 12 organic contaminants and 24 metals were detected in the soil. Of the metals, only barium, manganese, mercury, potassium, silver, and thallium had concentrations which exceeded background values. Site 4 registered 30 contaminants in surface-water, with chloride exceeding the chronic Federal Aquatic Life Standards. Site 24-26 Area Morale, Welfare, and Recreation Maintenance (MWR) Facility The MWR maintenance facility provides maintenance services for approximately 200 buildings at MCB Camp Pendleton. Potential sources of contamination at this site are the welding shop, the paint shop, and a former hazardous waste storage area. Site 24 was not investigated during the Initial Assessment Study (IAS) or the site inspection (SI). During a 1990 inspection, Environmental and Natural Resources Management Office personnel collected surface soil samples in areas of visible soil contamination. Compounds detected in the samples included total petroleum hydrocarbons, various heavy metals, benzene, and a number of semivolatile compounds. The site was included in the Remedial Investigation (RI) of Group A sites. Site 24, upon soil sampling, registered concentrations of 27 organic contaminants and 24 metal contaminants. Of these metal contaminants, antimony, cadmium, and mercury reported concentrations exceeding their respective background levels. Site 24 groundwater concentrations which exceeded Federal and State MCLs included only chromium, out of 29 contaminants. Groundwater metals concentrations exceeding Maximum Containment Levels may be due to the influence of shallow granitic bedrock beneath the site or other sources. These metals are not considered site-related given the operational history of site 24. Reports, proposed plans for remediation, and fact sheets were made available to the public. Both public comment periods and meetings were held. Marine Corps Base (MCB) Camp Pendleton is the primary Marine Corps amphibious training center on the west coast. Located between the cities of Los Angeles and San Diego, California, MCB Camp Pendleton covers approximately 125,000 acres, almost entirely in San Diego County. Camp Talega, in the 64 Area near the northwestern border of the base, extends into Orange County. Surrounding communities include San Clemente to the northwest, Fallbrook to the east, and Oceanside to the south. The base is bordered to the west by the Pacific Ocean and encompasses 17 miles of coastal area. Construction of MCB Camp Pendleton began in March 1942, and President Franklin D. Roosevelt dedicated the Base in September 1942. It was designated as a permanent Base in October 1944. It supports more than 36,000 military personnel and employs

USMC CAMP PENDLETON (Continued) **1000344642**

approximately 4,600 civilians. Land use within the perimeter of the Base consists of airfield operations, maneuver and impact areas, troop and family housing, recreation areas, and out-leased areas used by various entities (e.g., San Onofre Nuclear Generating Station, and agriculture). Most of the land within MCB Camp Pendleton is open and undeveloped and directly supports the training mission of the Base. Developed areas of the Base are isolated from one another by large areas of essentially undeveloped land used for training and maneuvers. The largest concentration of development is at the Headquarters Area in the southeast corner of the Base. The second largest concentration is the housing areas in the southwest corner of the Base, near the Oceanside Gate. Additional information on land use in specific areas of the Base and expected future land use at MCB Camp Pendleton and in surrounding communities is presented in the MCB Camp Pendleton Master Plan. The primary mission of MCB Camp Pendleton is military training, and has been since the Base was constructed in 1942. Environmental contamination is associated with the primary and support mission functions of the Base. The Base was placed on the National Priority List (NPL) in 1989. The Federal Facilities Agreement (FFA) between the USEPA, the State of California, and the U.S. Department of the Navy (DON) was signed in 1990. The FFA establishes a framework for implementing appropriate environmental investigation and remediation activities at the Base. The purpose of the Installation Restoration (IR) program is to identify, investigate, assess, and clean or control releases of hazardous substances as well as to cost effectively reduce the risk to human health and the environment from past waste disposal operations and hazardous material spills at Navy/Marine Corps stations. The IR program is administered in accordance with CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA). Investigations and cleanup actions for the Base are described in detail in the Administrative Record. Site 9, Stuart Mesa Waste Stabilization Pond, is located within a designated maneuver area in the Las Flores 41 Area in the southwestern part of MCB Camp Pendleton. The site is southwest of Stuart Mesa Road and consists of an approximately 500- by 400- foot, engineered earthen impoundment and adjacent areas, including a fenced grease disposal pit to the east of the waste stabilization pond. The 41 Area Stuart Mesa waste stabilization pond is located between two forks of a natural drainage arroyo on a relatively low-lying wave-cut terrace. An ephemeral stream trends north and east of the stabilization pond and drains southwestward toward the Pacific Ocean. Site 9 is underlain by marine terrace deposits and is located outside the largest groundwater basin on the base. The Santa Margarita basin provides the major source of drinking water consumed by MCB Camp Pendleton. The site is located within 1/4 to 1/2 mile of Interstate 5. Site 4, Marine Corps Air Station (MCAS) Drainage Ditch and Concrete-Lined Impoundment, is identified as the MCAS drainage ditch. The air station is located in the 23 Area of the base. In May 1990, Site 4 was expanded to include the concrete-lined surface impoundment. This impoundment is designated as Site 4A and is located between the MCAS drainage ditch and the MCAS, southwest of Building 2378. The MCAS drainage ditch is located along Vandegrift Boulevard in the Chappo subbasin of the Santa Margarita basin. The ditch is approximately 5 feet deep, 20 feet wide, and is located between the MCAS flight-line operations and the former Atchison, Topeka, and Santa Fe (AT&SF) railway tracks. Site 24, Morale, Welfare, and Recreation Maintenance (MWR) Facility, is located within the floodplain of the Santa Margarita River. The MWR maintenance facility is situated on a flat area surrounded by low hills on three sides. The 26 Area is used primarily for warehouse and maintenance facilities. Installation Restoration Program (IRP) sites at MCB Camp Pendleton were assigned to one of four groups (A, B, C and D) during the investigation phase according to potential impact to human health and the environment. Group A sites were believed to have the highest potential for

USMC CAMP PENDLETON (Continued) **1000344642**

such impact, Group D sites have the lowest. OU 3: Operable Unit 3 (OU) includes the following sites from Groups B, C and D: Group B; site 7 Soil and groundwater, Group C; sites 1D, 1E, 2A, 10, and 35 soil and groundwater; sites 16 and 27 soil; and site 17 sediment and surface water, Group D; sites 1A, 1B, 1C, 1F, 1I, 2C, 2D, 2F, 2G, 18, 32, 34, 36, 37, 38, 39, 40, 41, and 42 soil and groundwater. The base is divided into 35 major area designations for location of base activities. The OU 3 sites are located in various areas throughout the base. The OU 3 site names are as follows: Site 1A-Refuse Burning Ground in 14 Area, Site 1B- Refuse Burning Ground in 11 Area, Site 1C-Refuse Burning Ground in 14 Area, Site 1C- Refuse Burning Ground in 13 Area, Site 1D- Refuse Burning Ground in 20 Area, Site 1E- Refuse Burning Ground in 32 Area, Site 1F- Refuse Burning Ground in 43 Area, Site 1I- Refuse Burning Ground in 63 Area, Site 2A- Grease Disposal Pit in 14 Area, Site 2C- Grease Disposal Pit in 33 Area, Site 2D-Grease Disposal Pit in 43 Area, Site 2F- Grease Disposal Pit in 62 Area, Site 2G- Grease Disposal Pit in 31 Area, Site 7-Box Canyon Landfill, Site 10- 26 Area Sewage Sludge Composting Yard, Site 16- 22 Area Buildings 2215 and 22187 Ditch Confluence and Ditch, Site 18- 13/16 Area Building 1687 Spill and Ditch, Site 27- 22 Area Ditches Behind Building 22210, Site 32- Drum Storage Area and Drainage Between Buildings 41303 and 41366, Site 34- Combat Engineers Maintenance Facility, Buildings 62580-625832; Site 35- Former Sewage Treatment Plant Facility in 25 Area; Site 36- Debris Pile Area Behind Ponds at Sewage Treatment Plant II; Site 37- Pesticide and POL Handling Areas at San Clemente Ranch, Site 38-52 Area Sewer Line Building 52188; Site 39- 41 Area Sewer Line, Buildings 41300 and 41346; Site 40- 13 Area Sewer Line, Building 13103; Site 41- 13 Area Sewer Line, Building 13128; Site 42-13 Area Sewer Line, Building 13129. A Record of Decision (ROD) for OU 1 was signed in December 1995 and addresses the selected remedies for soil and groundwater at Site 9, soil at Site 4/4A, and soil and groundwater ate Site 24, all of which are Group A Sites. The ROD for OU 2 was signed in September 1997 and includes 13 Group A, Group B and Group C sites. These sites include Sites 2B and 31 soil; Sites 28 and 43 groundwater; Site 3 soil, sediment, and surface water; Site 5 soil and groundwater; Sites 19, 20 and 22 soil, sediment, groundwater and surface water; Sites 8A and 44 sediment and surface water. A ROD addressing OU 3 was signed in February 1999. OU 1: From 1963 until approximately 1975, the Stuart Mesa Waste Stabilization Pond served as an oxidation and percolation sewage lagoon for sewage generated in the 41 Area. Operations at the waste stabilization pond ceased in 1975 and the raw sewage was pumped from Building 41300 to a treatment facility in the 43 Area. The Department of Navy (DON) first identified Installation Restoration (IR) Site 9 during the Site Inspection (SI) performed in 1987 and 1988. During the SI, the DON discovered that waste oils or other liquids might have been disposed at the site. Following site identification, the DON classified IR Site 9 among the Group A Sites, those IR sites considered to have the greatest potential to impact human health and/or the environment. The DON conducted a Remedial Investigation (RI) of the Group A Sites between February 1992 and April 1993. The RI indicated remedial action was required due to the nature of the contaminants discovered at the site. The Feasibility Study (FS) for Site 9, completed in 1994, addressed potential remedial actions for petroleum hydrocarbons and beryllium in soil and trichloroethene (TCE) and tetrachloroethene (PCE) in groundwater. A Record of Decision (ROD) addressing Operable Unit (OU) 1 was completed in December of 1995. The ROD documented alternatives and the selection of remedial actions for IR Site 9 soil and groundwater. The remedies selected included no action for hydrocarbons and beryllium in soil and monitored natural attenuation, long-term monitoring, and land use controls for PCE and TCE in groundwater. Specifically, the ROD included the following major component: -Sampling and analysis of IR Site 9 monitoring wells semiannually for ten years to verify that dispersion and

USMC CAMP PENDLETON (Continued) **1000344642**

natural attenuation are occurring -Evaluation of the remedial alternative's effectiveness once every five years. -Compliance demonstration monitoring consisting of eight sampling events, evenly spaced throughout a one-year period, conducted during the eighth year of groundwater monitoring (2004) to assess the effectiveness of the dispersion and natural attenuation of PCE and TCE in groundwater. -Amendment of the Base Master Plan to restrict future access to the groundwater in the immediate vicinity of IR Site 9 for the duration of the long-term monitoring or until the contaminants in groundwater no longer exceed MCLs. An Explanation of Significant Difference (ESD) pertaining to the OU1 ROD was completed in September of 2004. OU 4: This decision document addresses the following sites at OU 4, MCB Camp Pendleton: -Site 1D - Refuse Burning Ground (20 Area) -Site 1E-1 - Former Burn Pits (32 Area) -Site 30 - Small Arms Firing Range Soil (31 Area) Site 1D is located north of the intersection of Vandergrift Boulevard and Stuart Mesa Road. Box Canyon Landfill is 1,500 feet northeast of the site. The Twin Lakes Sewage Disposal Plant is southwest of the site across Stuart Mesa Road. The Santa Margarita River is approximately 150 feet north of the site. The Site 1D burning area is no longer in operation, and military and civilian personnel cross the site infrequently because the vegetation is relatively dense. The regional groundwater flow direction in the valley-fill aquifer is to the west. Groundwater at Site 1D ranges from 6 to 10 feet below ground surface (bgs) and flows northwest towards the Santa Margarita River. No public drinking water wells are located downgradient of the site. The site is located in a floodplain, and therefore, the Base has no plans for future development. Site 1D is one of nine refuse burning grounds used from 1942 through the early 1970s to burn refuse generated by Base operations. Until 1970, all refuse at the Base was disposed of by burning; however, no information is available on the specific years of operation or the amount of refuse disposed of at each burning ground. The Base refuse burning areas were closed between the late 1960s and 1971. Site 1D was closed, covered with native soil, and allowed to revert to natural vegetation. Visual inspection in 1984 revealed no evidence of environmental Contamination. However, the cover material has since eroded, and contaminants have been exposed. Areas of stressed vegetation and stained soil have also been observed. The selected remedy for Site 1D in the OU 3 ROD was excavation and removal of contaminated soils with on-Base disposal to Site 7, Corrective Action Management Unit (CAMU). After the closure of the on-Base CAMU in April 2000, a decision was made to supplement the prior characterization of the site to refine the cost estimates and reevaluate the remedial options. As documented in the letter from the USEPA to Southwest Division Naval Facilities Engineering Command (SWDIV) dated September 28, 2000, and in accordance with the agreement reached at the 5 October 2000 FFA Project Management meeting, Site 1D was placed in OU 4 to facilitate an expedited schedule. There are no enforcement activities related to Site 1D. Environmental investigation and remediation activities associated with the site are implemented under the IR Program. The purpose of this program is to identify, investigate, assess, characterize, and clean or control releases of hazardous substances as well as to cost-effectively reduce the risk to human health and the environment from past waste disposal operations and hazardous material spills at Navy/Marine Corps stations. The program is administered in accordance with Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA), as amended by SARA. Site 1E-1 is a former refuse burning area located in 32 Area along MACS Road, approximately 3,000 feet from the Santa Margarita River. The burning area is no longer in operation. The northeast portion of the site contains an unpaved access road and is sparsely vegetated. The surrounding areas are undeveloped. The Santa Margarita River is approximately 3,200 feet southeast of the site. Based on the elevation of the site and known groundwater in the area,

USMC CAMP PENDLETON (Continued) **1000344642**

groundwater beneath the site is estimated at 100 feet bgs. No public drinking water wells are located downgradient of the site. Given the immediate proximity to MACS Road and the presence of endangered species (i.e., Pacific pocket mouse), it is unlikely that the site would be developed in the future. Site 1E-1 is one of nine refuse burning grounds used from 1942 through the early 1970s to burn refuse generated by Base operations. Until 1970, all refuse at the Base was disposed of by burning; however, no information is available on the specific years of operation or the amount of refuse disposed of at each burning ground. The Base refuse burning areas were closed between the late 1960s and 1971. Waste material from Site 1E-1 burn pits was disposed of in Site 1E by physically removing the material from the pits. The burn pits at Site 1E-1 were closed, covered with native soil, and allowed to revert to natural vegetation. At some point after the burn pits were closed, the area was graded for the realignment of MACS Road, which now crosses over a portion of the former burn pits. There are no enforcement activities related to Site 1E-1. Environmental investigation and remediation activities associated with the site are implemented under the IR Program. The purpose of this program is to identify, investigate, assess, characterize, and clean or control releases of hazardous substances as well as to cost-effectively reduce the risk to human health and the environment from past waste-disposal operations and hazardous material spills at Navy/Marine Corps stations. The program is administered in accordance with CERCLA, as amended by SARA. Site 30 is located in the 31 Area, approximately 1,300 feet west of Stuart Mesa Road and MACS Road. The Santa Margarita River is directly south of the site. No public drinking water wells are downgradient of the site. There are no military operations at Site 30, and military and civilian personnel rarely cross the site because the vegetation is relatively dense. The road through the site is active and construction activities occasionally occur along the road (i.e. water line replacement). Since fill material was deposited at the site in the 1960s and 1970s, the site has remained undeveloped and been allowed to return to a natural state. Given that at least a portion of the site is in the floodplain of the Santa Margarita River, and that threatened and endangered species are present, it is unlikely that the site will be developed for future use. Site 30 consists of soil fill material near an unpaved road west of Stuart Mesa Road. The soil contains bullets and bullet fragments from a 31 Area small arms firing range. The soil fill material was transported from firing ranges during the mid- to late-60s and possibly into the 70s. Site 30 is reported to be on and near prehistoric sites and historic archeological sites. The Monitoring and Discovery Plan reports that Site 30 is situated directly atop one prehistoric site, which is recorded as a low-density shell midden with over 100 pieces of shell. This prehistoric site also contains stone flakes, which are artifacts from the making of stone tools. The southern portion of a second archeological site is located near the eastern edge of Site 30. This second site contains both historic (ceramic fragments and ration tins) and prehistoric (one core fragment, one mano, one unidentified ground stone fragment, 15 pieces of lithic debitage, several fragments of bone, and over 300 pieces of marine shell) artifacts. A third archeological site is located approximately 360 feet north and upslope of Site 30 (outside of the planned remediation area) and is composed of one core fragment, four stone flakes, and more than 50 pieces of marine shell. There are no enforcement activities related to Site 30. Environmental investigation and remediation activities associated with the site are implemented under the IR Program. The purpose of this program is to identify, investigate, assess, characterize, and clean or control releases of hazardous substances as well as to cost-effectively reduce the risk to human health and the environment from past waste-disposal operations and hazardous material spills at Navy/Marine Corps stations. The program is administered in accordance with CERCLA as amended by SARA. A ROD

USMC CAMP PENDLETON (Continued) **1000344642**

was completed in June 2007 that addressed the soil at OU4. Operable Unit 5: Operable Unit (OU) 5 is comprised of Sites 1A-1, 1H, and 6A. Each site is described below. Site 1A-1: Site 1A-1 is a debris disposal area of approximately 1.5 acres in the 14 Area of the Base. Site 1A-1 is approximately 800 feet north-northeast of Site 1A, which is immediately northeast of Base Sewage Treatment Plant No. 1. Site 1A-1 is actively used as a military training area. Site 1A-1 contains buried waste and ash up to 10 feet thick that originally came from Site 1A. Site 1A was one of nine refuse burning grounds used from 1942 through the early 1970s to burn refuse generated by Base operations. The burned refuse buried at Site 1A-1 appears to be covered by a discontinuous thin layer of relatively clean soils, but some burned debris, ash, and refuse is exposed at the surface. It is not known if all the burn ash and debris at Site 1A-1 was moved at one time or placed in various stages over time. There are no known records regarding the placement of waste at Site 1A-1, and no burning was conducted at the site. Former waste disposal activities have resulted in approximately 20,000 cubic yards of soil contaminated with waste material and ash containing metals, dioxins and/or furans, and pesticides. Site 1A-1 is currently used as an active military training area. The site is no longer a waste disposal area, and the surrounding land is covered with natural vegetation, except Pilgrim Creek Trail along the eastern edge. The surrounding areas are also undeveloped and are designated as military training areas. The nearest troop housing is approximately 0.5 mile southwest. The nearest family housing, De Luz Housing, is approximately 0.75 mile northwest. Sewage Treatment Plant No. 1 is located approximately 2,500 feet southwest. The site is in the San Luis Rey groundwater basin, which is the source of drinking water for the City of Oceanside. The nearest production wells are over four miles south of the site in the San Luis Rey River valley. There is no groundwater at Site 1A-1. There is a small amount of groundwater present in the sediments in the downgradient Pilgrim Creek streambed. However, the quantity of water would not be sufficient for municipal use. MCB Camp Pendleton is expected to remain an active military installation into the future. Current land use is reasonably anticipated to continue indefinitely to support the mission of the facility. However, the Navy has assumed an unrestricted land use scenario in this record of decision (ROD) in an effort to avoid any form of future land use restrictions. Site 1H: Site 1H is a former burning ground and disposal area of approximately 0.9 acre in the 62 Area, near the western perimeter of the Base. The site is approximately 1,200 feet north of San Mateo Road. The site is actively used as a military training area. Site 1H was one of nine refuse burning grounds used from 1942 through the early 1970s to burn refuse generated by Base operations. In accordance with common Base practice at the time, burning grounds served as the principal trash disposal areas on the Base prior to the 1970s. Until 1970, all refuse at the Base was disposed of by burning; however, no information is available on the specific years of operation or the amount of refuse disposed of at each burning ground, including Site 1H. Site 1H and the surrounding area are covered with natural vegetation, undeveloped, and designated as military training areas. Groundwater at Site 1H is approximately 200 to 225 feet below ground surface. The nearest Base production wells are approximately 1 mile west-southwest of Site 1H, and results of fate and transport modeling concluded that there is no threat to groundwater. Marine Corps Base Camp Pendleton is expected to remain an active military installation into the future. Current land use is reasonably anticipated to continue indefinitely to support the mission of the facility. Site 6A: Site 6A is a former scrap metal and recycling storage area in the 22 Area of the Base. Site 6A is approximately 7.2 acres in size and is located south of Building 2241, which houses the Defense Reutilization and Marketing Office The Defense Reutilization and Marketing Office temporarily stored scrap metal at the site. The storage area had been

USMC CAMP PENDLETON (Continued) **1000344642**

covered with a thin layer of soil by periodic flooding, and scraps of metal were reportedly pounded into the ground between 1994 and 1995, causing an uneven ground surface. The site was repaved with approximately three inches of asphalt. Previous investigations indicate the presence of scrap metal at a depth of approximately 8 inches below ground surface. Site 6A is paved and used for industrial purposes. Marine Corps Base Camp Pendleton is expected to remain an active military installation into the future. Current land use is reasonably anticipated to continue indefinitely to support the mission of the facility. However, the Navy has assumed an unrestricted land use scenario in this ROD in an effort to avoid any form of future land use restrictions. Groundwater production wells are located north and west of Site 6A, within the Santa Margarita River valley. The nearest downgradient production well is 3,000 feet southwest of the site. Site 6A groundwater has been impacted by Volatile Organic Compounds from upgradient sources and is being investigated and addressed separately as part of the 22/23 Area. There are no enforcement activities at Sites 1A-1, 1H, and 6A. A ROD addressing OU5 was completed in February 2008.

CERCLIS Assessment History:

Action Code:	001
Action:	DISCOVERY
Date Started:	Not reported
Date Completed:	01/01/1980
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	PRELIMINARY ASSESSMENT
Date Started:	Not reported
Date Completed:	05/01/1984
Priority Level:	Low priority for further assessment
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	SITE INSPECTION
Date Started:	Not reported
Date Completed:	06/01/1987
Priority Level:	Low priority for further assessment
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	HAZARD RANKING SYSTEM PACKAGE
Date Started:	Not reported
Date Completed:	06/01/1987
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	EPA Fund-Financed
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	PROPOSAL TO NATIONAL PRIORITIES LIST
Date Started:	Not reported
Date Completed:	07/14/1989
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	EPA Fund-Financed
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	FINAL LISTING ON NATIONAL PRIORITIES LIST
Date Started:	Not reported
Date Completed:	11/21/1989
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	EPA Fund-Financed
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	Notice Letters Issued
Date Started:	Not reported
Date Completed:	05/21/1990
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	EPA Fund-Financed
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

USMC CAMP PENDLETON (Continued) **1000344642**

Action Code:	001
Action:	INTERAGENCY AGREEMENT NEGOTIATIONS
Date Started:	05/18/1990
Date Completed:	09/28/1990
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	FEDERAL INTERAGENCY AGREEMENT
Date Started:	09/28/1990
Date Completed:	09/28/1990
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Enforcement
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	RECORD OF DECISION
Date Started:	Not reported
Date Completed:	12/07/1995
Priority Level:	Not reported
Operable Unit:	OVERALL SITE
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	FEDERAL FACILITY REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Date Started:	09/28/1990
Date Completed:	12/07/1995
Priority Level:	Not reported
Operable Unit:	OVERALL SITE
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	FEDERAL FACILITY REMOVAL
Date Started:	08/15/1994
Date Completed:	12/22/1995

USMC CAMP PENDLETON (Continued) **1000344642**

Priority Level:	Cleaned up
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	Restoration Advisory Board
Date Started:	09/05/1996
Date Completed:	Not reported
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Not reported
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	003
Action:	FEDERAL FACILITY REMOVAL
Date Started:	08/01/1996
Date Completed:	09/04/1997
Priority Level:	Partially Cleaned up
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Non-Time Critical
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	002
Action:	FEDERAL FACILITY REMOVAL
Date Started:	04/22/1996
Date Completed:	09/12/1997
Priority Level:	Partially Cleaned up
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Non-Time Critical
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	002
Action:	RECORD OF DECISION
Date Started:	Not reported
Date Completed:	09/30/1997
Priority Level:	Not reported
Operable Unit:	NO ACTION SITES
Primary Responsibility:	Federal Facilities

USMC CAMP PENDLETON (Continued) **1000344642**

Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	002
Action:	FEDERAL FACILITY REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Date Started:	09/28/1990
Date Completed:	09/30/1997
Priority Level:	Not reported
Operable Unit:	NO ACTION SITES
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	003
Action:	FEDERAL FACILITY REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Date Started:	09/28/1990
Date Completed:	02/11/1999
Priority Level:	Not reported
Operable Unit:	LANDFILL
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	003
Action:	RECORD OF DECISION
Date Started:	Not reported
Date Completed:	02/11/1999
Priority Level:	Not reported
Operable Unit:	LANDFILL
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	003
Action:	FEDERAL FACILITY REMEDIAL DESIGN
Date Started:	01/17/1999
Date Completed:	06/17/1999
Priority Level:	Not reported
Operable Unit:	LANDFILL
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

For detailed financial records, contact EDR for a Site Report.:

Action Code:	003
Action:	FEDERAL FACILITY REMEDIAL ACTION
Date Started:	06/23/1999
Date Completed:	Not reported
Priority Level:	Not reported
Operable Unit:	LANDFILL
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Long Term Action
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	002
Action:	FEDERAL FACILITY FIVE YEAR REVIEW
Date Started:	06/25/2001
Date Completed:	08/19/2002
Priority Level:	Not reported
Operable Unit:	SITEWIDE
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	006
Action:	FEDERAL FACILITY REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Date Started:	09/06/2001
Date Completed:	02/27/2004
Priority Level:	Not reported
Operable Unit:	SOILS
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	FEDERAL FACILITY FEASIBILITY STUDY
Date Started:	09/06/2001
Date Completed:	02/27/2004
Priority Level:	Not reported
Operable Unit:	SOILS
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	001
Action:	Explanation Of Significant Differences

USMC CAMP PENDLETON (Continued) **1000344642**

Date Started:	Not reported
Date Completed:	09/22/2004
Priority Level:	Not reported
Operable Unit:	OVERALL SITE
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	004
Action:	RECORD OF DECISION
Date Started:	Not reported
Date Completed:	06/15/2007
Priority Level:	Not reported
Operable Unit:	SOILS
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	003
Action:	FEDERAL FACILITY FIVE YEAR REVIEW
Date Started:	Not reported
Date Completed:	09/27/2007
Priority Level:	Not reported
Operable Unit:	OVERALL SITE
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	005
Action:	FEDERAL FACILITY REMOVAL
Date Started:	09/06/2001
Date Completed:	10/29/2007
Priority Level:	Not reported
Operable Unit:	SOILS
Primary Responsibility:	Federal Facilities
Planning Status:	Primary
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	007
Action:	FEDERAL FACILITY REMEDIAL ACTION
Date Started:	10/29/2007
Date Completed:	Not reported
Priority Level:	Not reported
Operable Unit:	SOILS

USMC CAMP PENDLETON (Continued) **1000344642**

Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 004
Action: FEDERAL FACILITY REMEDIAL DESIGN
Date Started: 06/15/2007
Date Completed: 10/29/2007
Priority Level: Not reported
Operable Unit: SOILS
Primary Responsibility: Federal Facilities
Planning Status: Primary
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 005
Action: FEDERAL FACILITY REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Date Started: 02/03/2003
Date Completed: 02/21/2008
Priority Level: Not reported
Operable Unit: SOILS
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 005
Action: RECORD OF DECISION
Date Started: Not reported
Date Completed: 02/21/2008
Priority Level: Not reported
Operable Unit: SOILS
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 005
Action: FEDERAL FACILITY REMEDIAL DESIGN
Date Started: 02/21/2008
Date Completed: 02/21/2008
Priority Level: Not reported
Operable Unit: SOILS
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 002
Action: Explanation Of Significant Differences
Date Started: Not reported
Date Completed: 05/27/2008
Priority Level: Not reported
Operable Unit: LANDFILL
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 004
Action: FEDERAL FACILITY FIVE YEAR REVIEW
Date Started: Not reported
Date Completed: 08/28/2009
Priority Level: Not reported
Operable Unit: SITEWIDE
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 006
Action: FEDERAL FACILITY REMOVAL
Date Started: 04/06/2006
Date Completed: 09/28/2009
Priority Level: Not reported
Operable Unit: SOILS
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 005
Action: FEDERAL FACILITY REMEDIAL ACTION
Date Started: 02/21/2008
Date Completed: 09/29/2009
Priority Level: Not reported
Operable Unit: SOILS
Primary Responsibility: Federal Facilities
Planning Status: Not reported
Urgency Indicator: Not reported
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

USMC CAMP PENDLETON (Continued) **1000344642**

Action Code:	003
Action:	Explanation Of Significant Differences
Date Started:	Not reported
Date Completed:	07/09/2010
Priority Level:	Not reported
Operable Unit:	LANDFILL
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	008
Action:	FEDERAL FACILITY REMEDIAL ACTION
Date Started:	02/21/2008
Date Completed:	09/02/2010
Priority Level:	Not reported
Operable Unit:	SOILS
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	009
Action:	FEDERAL FACILITY REMEDIAL ACTION
Date Started:	08/01/1999
Date Completed:	09/07/2010
Priority Level:	Not reported
Operable Unit:	LANDFILL
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:	004
Action:	FEDERAL FACILITY REMEDIAL ACTION
Date Started:	10/29/2007
Date Completed:	09/07/2010
Priority Level:	Not reported
Operable Unit:	SOILS
Primary Responsibility:	Federal Facilities
Planning Status:	Not reported
Urgency Indicator:	Not reported
Action Anomaly:	Not reported

For detailed financial records, contact EDR for a Site Report.:

Federal Register Details:

Fed Register Date:	11/21/1989
Fed Register Volume:	54
Page Number:	48184

USMC CAMP PENDLETON (Continued) **1000344642**

Fed Register Date: 07/14/1989
Fed Register Volume: 54
Page Number: 29820

Click this hyperlink while viewing on your computer to access
92 additional US CERCLIS Financial: record(s) in the EDR Site Report.

CORRACTS:

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 03/09/2001
Action: CA750NO - Migration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 03/09/2001
Action: CA725NO - Current Human Exposures Under Control, Current human exposures are NOT under control
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/05/2004
Action: CA750YE - Migration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/05/2004
Action: CA725YE - Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533

USMC CAMP PENDLETON (Continued) **1000344642**

EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 05/01/1984
Action: CA049PA
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 05/01/1984
Action: CA029SF
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/01/1987
Action: CA049SI
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/03/1998
Action: CA210 - CA Responsibility Referred To A Non-RCRA Federal Authority
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/03/1998
Action: CA750NO - Migration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/03/1998
Action: CA725NO - Current Human Exposures Under Control, Current human exposures are NOT under control

USMC CAMP PENDLETON (Continued) **1000344642**

NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 07/25/1994
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 07/25/1994
Action: CA210SF - CA Responsibility Referred To A Non-RCRA Federal Authority, Corrective Action at the facility or area referred to CERCLA
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: OU 1 (GROUP A)
Actual Date: 09/23/1996
Action: CA150 - RFI Workplan Approved
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: OU 1 (GROUP A)
Actual Date: 09/23/1996
Action: CA200 - RFI Approved
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 10/24/1990
Action: CA100 - RFI Imposition
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 10/24/1990
Action: CA250 - CMS Imposition
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CA2170023533
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 11/02/1992
Action: CA050RF - RFA Completed, Assessment was an RFA
NAICS Code(s): 56199
All Other Support Services
Original schedule date: Not reported
Schedule end date: Not reported

RCRA-TSDF:
Date form received by agency: 03/01/2010
Facility name: MCB CAMP PENDLETON
Facility address: BLDG 22165
CAMP PENDLETON
CAMP PENDLETON, CA 92055
EPA ID: CA2170023533
Mailing address: AC/S ENVIR SECURITY
P.O. BOX 555008
MCB CAMP PENDLETON, CA 92055
Contact: MARGUERITE Y WILLIAMS
Contact address: BLDG 22165 CAMP PENDLETON
CAMP PENDLETON, CA 92055
Contact country: Not reported
Contact telephone: (760) 725-4375
Contact email: MARGURITE.WILLIAMS@USMC.MIL
EPA Region: 09
Land type: Federal
Classification: TSDF
Description: Handler is engaged in the treatment, storage or disposal of hazardous waste
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

USMC CAMP PENDLETON (Continued) **1000344642**

Owner/operator name: NATURAL RESOURCES
Owner/operator address: OFFICE BLDG 2276
MCB CAMP PENDLETON, CA 92055
Owner/operator country: Not reported
Owner/operator telephone: (714) 725-4820
Legal status: Federal
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: GOVERNMENT
Owner/operator address: BLDG 22165 CAMP PENDLETON
CAMP PENDLETON, CA 92055
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Federal
Owner/Operator Type: Owner
Owner/Op start date: 06/27/1985
Owner/Op end date: Not reported

Owner/operator name: MCB CAMP PENDLETON
Owner/operator address: Not reported
92055
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Federal
Owner/Operator Type: Operator
Owner/Op start date: 06/27/1985
Owner/Op end date: Not reported

Owner/operator name: NATURAL RESOURCES
Owner/operator address: OFFICE BLDG 2276
MCB CAMP PENDLETON, CA 99999
Owner/operator country: Not reported
Owner/operator telephone: (619) 725-4512
Legal status: Federal
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

USMC CAMP PENDLETON (Continued) **1000344642**

Universal Waste Summary:
Waste type: Batteries
Accumulated waste on-site: Yes
Generated waste on-site: No

Waste type: Lamps
Accumulated waste on-site: Yes
Generated waste on-site: No

Waste type: Pesticides
Accumulated waste on-site: Yes
Generated waste on-site: No

Waste type: Thermostats
Accumulated waste on-site: Yes
Generated waste on-site: No

Historical Generators:
Date form received by agency: 02/25/2008
Facility name: MCB CAMP PENDLETON
Site name: USMC CAMP PENDLETON
Classification: Large Quantity Generator

Date form received by agency: 02/27/2006
Facility name: MCB CAMP PENDLETON
Site name: USMC CAMP PENDLETON
Classification: Large Quantity Generator

Date form received by agency: 02/11/2004
Facility name: MCB CAMP PENDLETON
Site name: USMC CAMP PENDLETON
Classification: Large Quantity Generator

Date form received by agency: 02/27/2002
Facility name: MCB CAMP PENDLETON
Site name: USMC CAMP PENDLETON
Classification: Large Quantity Generator

Date form received by agency: 10/12/2000
Facility name: MCB CAMP PENDLETON
Site name: USMC CAMP PENDLETON
Classification: Large Quantity Generator

Date form received by agency: 03/04/1999
Facility name: MCB CAMP PENDLETON
Site name: MARINE CORPS BASE CAMP PENDLETON
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Facility name: MCB CAMP PENDLETON
Site name: USMC CAMP PENDLETON
Classification: Large Quantity Generator

Date form received by agency: 02/29/1996
Facility name: MCB CAMP PENDLETON
Site name: USMC, CAMP PENDLETON

USMC CAMP PENDLETON (Continued) **1000344642**

Classification: Large Quantity Generator

Date form received by agency: 02/29/1992
Facility name: MCB CAMP PENDLETON
Site name: MARINE CORPS BASE
Classification: Large Quantity Generator

Date form received by agency: 08/18/1980
Facility name: MCB CAMP PENDLETON
Site name: USMC CAMP PENDLETON
Classification: Large Quantity Generator

Hazardous Waste Summary:

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: D003
Waste name: A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.

Waste code: D004
Waste name: ARSENIC

Waste code: D005
Waste name: BARIUM

Waste code: D006
Waste name: CADMIUM

Waste code: D007
Waste name: CHROMIUM

Waste code: D008
Waste name: LEAD

Waste code: D009
Waste name: MERCURY

Waste code: D011

USMC CAMP PENDLETON (Continued) **1000344642**

Waste name: SILVER

Waste code: D018
Waste name: BENZENE

Waste code: D035
Waste name: METHYL ETHYL KETONE

Waste code: F003
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: U188
Waste name: PHENOL

Biennial Reports:

Last Biennial Reporting Year: 2011

Annual Waste Handled:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
Amount (Lbs): 102931

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
Amount (Lbs): 435059

Waste code: D003
Waste name: A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.
Amount (Lbs): 23475

Waste code: D004
Waste name: ARSENIC

USMC CAMP PENDLETON (Continued) **1000344642**

Amount (Lbs): 2194

Waste code: D005
Waste name: BARIUM
Amount (Lbs): 310

Waste code: D006
Waste name: CADMIUM
Amount (Lbs): 2201

Waste code: D007
Waste name: CHROMIUM
Amount (Lbs): 11705

Waste code: D008
Waste name: LEAD
Amount (Lbs): 441632

Waste code: D009
Waste name: MERCURY
Amount (Lbs): 2563

Waste code: D011
Waste name: SILVER
Amount (Lbs): 770

Waste code: D018
Waste name: BENZENE
Amount (Lbs): 8234

Waste code: D035
Waste name: METHYL ETHYL KETONE
Amount (Lbs): 250

Waste code: F003
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 315

Waste code: U188
Waste name: PHENOL
Amount (Lbs): 6

Corrective Action Summary:
Event date: 05/01/1984
Event: CA029SF

Event date: 05/01/1984

USMC CAMP PENDLETON (Continued) **1000344642**

Event:	CA049PA
Event date:	06/01/1987
Event:	CA049SI
Event date:	10/24/1990
Event:	RFI Imposition
Event date:	10/24/1990
Event:	CMS Imposition
Event date:	11/02/1992
Event:	RFA Completed, Assessment was an RFA.
Event date:	07/25/1994
Event:	CA Responsibility Referred To A Non-RCRA Federal Authority, Corrective Action at the facility or area referred to CERCLA.
Event date:	07/25/1994
Event:	CA Prioritization, Facility or area was assigned a high corrective action priority.
Event date:	09/23/1996
Event:	RFI Approved
Event date:	09/23/1996
Event:	RFI Workplan Approved
Event date:	06/03/1998
Event:	Current Human Exposures under Control, Current human exposures are NOT under control.
Event date:	06/03/1998
Event:	Igration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected.
Event date:	06/03/1998
Event:	CA Responsibility Referred To A Non-RCRA Federal Authority
Event date:	03/09/2001
Event:	Current Human Exposures under Control, Current human exposures are NOT under control.
Event date:	03/09/2001
Event:	Igration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected.
Event date:	04/05/2004
Event:	Current Human Exposures under Control, Yes, Current Human Exposures Under Control has been verified. Based on a review of information contained in the EI determination, current human exposures are expected to be under control at the facility under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.
Event date:	04/05/2004

USMC CAMP PENDLETON (Continued) **1000344642**

Event: Igration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of information contained in the EI determination, it has been determined that migration of contaminated groundwater is under control at the facility. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the existing area of contaminated groundwater. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

Facility Has Received Notices of Violations:

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 03/09/2010
Date achieved compliance: 03/09/2010
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/09/2010
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 01/13/2009
Date achieved compliance: 03/17/2009
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/31/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 01/13/2009
Date achieved compliance: 03/17/2009
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 11/04/2008

USMC CAMP PENDLETON (Continued) **1000344642**

Date achieved compliance: 11/24/2008
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 09/30/2008
Date achieved compliance: 10/07/2008
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/30/2008
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 09/30/2008
Date achieved compliance: 10/07/2008
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 01/15/2008
Date achieved compliance: 04/14/2008
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/15/2008
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 11/27/2007
Date achieved compliance: 01/29/2008

USMC CAMP PENDLETON (Continued) **1000344642**

Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/27/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 11/05/2007
Date achieved compliance: 11/05/2007
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 11/05/2007
Date achieved compliance: 01/29/2008
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 07/31/2007
Date achieved compliance: 09/05/2007
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/31/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 07/10/2007
Date achieved compliance: 09/06/2007
Violation lead agency: State

USMC CAMP PENDLETON (Continued) **1000344642**

Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/10/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: TSD - General Facility Standards
Date violation determined: 01/22/2007
Date achieved compliance: 02/05/2007
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/22/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: TSD - Contingency Plan and Emergency Procedures
Date violation determined: 01/22/2007
Date achieved compliance: 02/05/2007
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/22/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 02/22/2006
Date achieved compliance: 03/23/2006
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 02/22/2006
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 02/22/2001
Date achieved compliance: 03/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL

USMC CAMP PENDLETON (Continued) **1000344642**

Enforcement action date: 03/23/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: F - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 11/25/1998
Date achieved compliance: 12/10/1998
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/25/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.30-34.C
Area of violation: Generators - General
Date violation determined: 12/21/1995
Date achieved compliance: 12/21/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/21/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 12/21/1995
Date achieved compliance: 12/21/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/21/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/28/1994
Date achieved compliance: 03/21/1995
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.40-43.D
Area of violation: Generators - General
Date violation determined: 04/22/1994
Date achieved compliance: 05/18/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/22/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.10-18.B
Area of violation: TSD - General
Date violation determined: 04/22/1994
Date achieved compliance: 05/18/1994
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/22/1994
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/14/1994
Date achieved compliance: 04/20/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/13/1994
Date achieved compliance: 04/14/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/07/1994
Date achieved compliance: 04/13/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/05/1994
Date achieved compliance: 04/07/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/01/1994
Date achieved compliance: 04/05/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/31/1994
Date achieved compliance: 04/01/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/30/1994
Date achieved compliance: 03/31/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/25/1994
Date achieved compliance: 03/30/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/16/1994
Date achieved compliance: 03/25/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/03/1994
Date achieved compliance: 03/16/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/23/1994
Date achieved compliance: 03/03/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/16/1994
Date achieved compliance: 02/23/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/09/1994
Date achieved compliance: 02/16/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/02/1994
Date achieved compliance: 02/09/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0

USMC CAMP PENDLETON (Continued) **1000344642**

Final penalty amount:	0
Paid penalty amount:	0
Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	01/27/1994
Date achieved compliance:	02/02/1994
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0
Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	01/26/1994
Date achieved compliance:	01/27/1994
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0
Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	01/24/1994
Date achieved compliance:	01/26/1994
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0
Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	01/19/1994
Date achieved compliance:	01/24/1994
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0

USMC CAMP PENDLETON (Continued) **1000344642**

Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 12/02/1993
Date achieved compliance: 01/19/1994
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 10/20/1993
Date achieved compliance: 12/02/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 10/13/1993
Date achieved compliance: 10/20/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 10/06/1993
Date achieved compliance: 10/13/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

USMC CAMP PENDLETON (Continued) **1000344642**

Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	09/22/1993
Date achieved compliance:	10/06/1993
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0

Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	08/11/1993
Date achieved compliance:	09/22/1993
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0

Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	07/21/1993
Date achieved compliance:	08/11/1993
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0

Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	07/14/1993
Date achieved compliance:	07/21/1993
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0

Regulation violated:	FR - 262.10-12.A

USMC CAMP PENDLETON (Continued) **1000344642**

Area of violation:	Generators - General
Date violation determined:	07/07/1993
Date achieved compliance:	07/14/1993
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0

Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	06/10/1993
Date achieved compliance:	07/07/1993
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0

Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	05/26/1993
Date achieved compliance:	06/10/1993
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0

Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	05/19/1993
Date achieved compliance:	05/26/1993
Violation lead agency:	State
Enforcement action:	Not reported
Enforcement action date:	Not reported
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	Not reported
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0

Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General

USMC CAMP PENDLETON (Continued) **1000344642**

Date violation determined: 05/05/1993
Date achieved compliance: 05/19/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/28/1993
Date achieved compliance: 05/05/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/22/1993
Date achieved compliance: 04/28/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/21/1993
Date achieved compliance: 04/22/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/08/1993

USMC CAMP PENDLETON (Continued) **1000344642**

Date achieved compliance: 04/21/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/07/1993
Date achieved compliance: 04/08/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/17/1993
Date achieved compliance: 04/07/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/11/1993
Date achieved compliance: 03/17/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/10/1993
Date achieved compliance: 03/11/1993

USMC CAMP PENDLETON (Continued) **1000344642**

Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/08/1993
Date achieved compliance: 03/10/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/04/1993
Date achieved compliance: 03/08/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/03/1993
Date achieved compliance: 03/04/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/01/1993
Date achieved compliance: 03/03/1993
Violation lead agency: State

USMC CAMP PENDLETON (Continued) **1000344642**

Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/24/1993
Date achieved compliance: 03/01/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/19/1993
Date achieved compliance: 02/24/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/17/1993
Date achieved compliance: 02/19/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/10/1993
Date achieved compliance: 02/17/1993
Violation lead agency: State
Enforcement action: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/01/1993
Date achieved compliance: 02/10/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 01/13/1993
Date achieved compliance: 02/01/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 01/06/1993
Date achieved compliance: 01/13/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.30-37.C
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995

USMC CAMP PENDLETON (Continued) **1000344642**

Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 264.10-18.B
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995
Enf. disposition status: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 264.170-177.I
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.10-18.B
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 264.30-37.C
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.270-282.M
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 262.20-23.B
Area of violation: Generators - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.250-258.L
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State

USMC CAMP PENDLETON (Continued) **1000344642**

Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 264.50-56.D
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0

USMC CAMP PENDLETON (Continued) **1000344642**

Final penalty amount:	0
Paid penalty amount:	0
Regulation violated:	FR - 262.40-43.D
Area of violation:	Generators - General
Date violation determined:	11/05/1992
Date achieved compliance:	03/17/1995
Violation lead agency:	State
Enforcement action:	INITIAL 3008(A) COMPLIANCE
Enforcement action date:	03/17/1995
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	64000
Paid penalty amount:	64000
Regulation violated:	FR - 264.170-177.I
Area of violation:	TSD - General
Date violation determined:	11/05/1992
Date achieved compliance:	03/17/1995
Violation lead agency:	State
Enforcement action:	INITIAL 3008(A) COMPLIANCE
Enforcement action date:	03/17/1995
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	64000
Paid penalty amount:	64000
Regulation violated:	FR - 262.10-12.A
Area of violation:	Generators - General
Date violation determined:	11/05/1992
Date achieved compliance:	03/17/1995
Violation lead agency:	State
Enforcement action:	WRITTEN INFORMAL
Enforcement action date:	11/05/1992
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0
Regulation violated:	FR - 264.50-56.D
Area of violation:	TSD - General
Date violation determined:	11/05/1992
Date achieved compliance:	03/17/1995
Violation lead agency:	State
Enforcement action:	WRITTEN INFORMAL
Enforcement action date:	11/05/1992
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	0

USMC CAMP PENDLETON (Continued) **1000344642**

Paid penalty amount: 0

Regulation violated: FR - 264.250-258.L
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.30-34.C
Area of violation: Generators - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.50-60
Area of violation: Generators - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.270-282.M
Area of violation: TSD - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/05/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

USMC CAMP PENDLETON (Continued) **1000344642**

Regulation violated:	FR - 268.7
Area of violation:	LDR - General
Date violation determined:	11/05/1992
Date achieved compliance:	03/17/1995
Violation lead agency:	State
Enforcement action:	WRITTEN INFORMAL
Enforcement action date:	11/05/1992
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0

Regulation violated:	FR - 262.40-43.D
Area of violation:	Generators - General
Date violation determined:	11/05/1992
Date achieved compliance:	03/17/1995
Violation lead agency:	State
Enforcement action:	WRITTEN INFORMAL
Enforcement action date:	11/05/1992
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	0
Paid penalty amount:	0

Regulation violated:	FR - 262.30-34.C
Area of violation:	Generators - General
Date violation determined:	11/05/1992
Date achieved compliance:	03/17/1995
Violation lead agency:	State
Enforcement action:	INITIAL 3008(A) COMPLIANCE
Enforcement action date:	03/17/1995
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	64000
Paid penalty amount:	64000

Regulation violated:	FR - 262.50-60
Area of violation:	Generators - General
Date violation determined:	11/05/1992
Date achieved compliance:	03/17/1995
Violation lead agency:	State
Enforcement action:	INITIAL 3008(A) COMPLIANCE
Enforcement action date:	03/17/1995
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	0
Final penalty amount:	64000
Paid penalty amount:	64000

Regulation violated:	FR - 262.20-23.B

USMC CAMP PENDLETON (Continued) **1000344642**

Area of violation: Generators - General
Date violation determined: 11/05/1992
Date achieved compliance: 03/17/1995
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/17/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 64000
Paid penalty amount: 64000

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 10/21/1992
Date achieved compliance: 01/06/1993
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 10/08/1992
Date achieved compliance: 10/21/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 10/06/1992
Date achieved compliance: 10/08/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General

USMC CAMP PENDLETON (Continued) **1000344642**

Date violation determined: 09/02/1992
Date achieved compliance: 09/21/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 08/26/1992
Date achieved compliance: 09/02/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 08/12/1992
Date achieved compliance: 08/26/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 08/10/1992
Date achieved compliance: 08/12/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 08/05/1992

USMC CAMP PENDLETON (Continued) **1000344642**

Date achieved compliance: 08/10/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 07/15/1992
Date achieved compliance: 07/29/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 07/01/1992
Date achieved compliance: 07/15/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 06/24/1992
Date achieved compliance: 07/01/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 06/18/1992
Date achieved compliance: 06/24/1992

USMC CAMP PENDLETON (Continued) **1000344642**

Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 06/11/1992
Date achieved compliance: 06/18/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 06/10/1992
Date achieved compliance: 06/11/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 06/03/1992
Date achieved compliance: 06/10/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 05/27/1992
Date achieved compliance: 06/03/1992
Violation lead agency: State

USMC CAMP PENDLETON (Continued) **1000344642**

Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 05/20/1992
Date achieved compliance: 05/27/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 05/13/1992
Date achieved compliance: 05/20/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 05/07/1992
Date achieved compliance: 05/13/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 05/06/1992
Date achieved compliance: 05/07/1992
Violation lead agency: State
Enforcement action: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/15/1992
Date achieved compliance: 05/06/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/08/1992
Date achieved compliance: 04/15/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 04/01/1992
Date achieved compliance: 04/08/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/25/1992
Date achieved compliance: 04/01/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/18/1992
Date achieved compliance: 03/25/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/17/1992
Date achieved compliance: 03/18/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/03/1992
Date achieved compliance: 03/17/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/02/1992
Date achieved compliance: 03/03/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/25/1992
Date achieved compliance: 02/26/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 02/18/1992
Date achieved compliance: 02/25/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 12/17/1991
Date achieved compliance: 02/18/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 11/12/1991
Date achieved compliance: 08/14/1992
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.30-37.C
Area of violation: TSD - General
Date violation determined: 11/12/1991
Date achieved compliance: 08/14/1992
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 11/12/1991
Date achieved compliance: 08/14/1992
Violation lead agency: EPA
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 12/10/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 11/12/1991
Date achieved compliance: 08/14/1992
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 11/12/1991
Date achieved compliance: 08/14/1992
Violation lead agency: EPA
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 12/10/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA

USMC CAMP PENDLETON (Continued) **1000344642**

Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.30-34.C
Area of violation: Generators - General
Date violation determined: 11/12/1991
Date achieved compliance: 08/14/1992
Violation lead agency: EPA
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 12/10/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.170-177.I
Area of violation: TSD - General
Date violation determined: 11/12/1991
Date achieved compliance: 08/14/1992
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 10/08/1991
Date achieved compliance: 12/17/1991
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 10/01/1991
Date achieved compliance: 10/08/1991
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0

USMC CAMP PENDLETON (Continued) **1000344642**

Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 09/19/1991
Date achieved compliance: 10/01/1991
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 08/21/1991
Date achieved compliance: 09/19/1991
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 12/12/1990
Date achieved compliance: 07/24/1991
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 11/08/1990
Date achieved compliance: 12/12/1990
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0

USMC CAMP PENDLETON (Continued) **1000344642**

Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 11/06/1990
Date achieved compliance: 11/08/1990
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 10/27/1990
Date achieved compliance: 11/06/1990
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 07/17/1990
Date achieved compliance: 08/15/1992
Violation lead agency: EPA
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 05/22/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 07/17/1990
Date achieved compliance: 08/15/1992
Violation lead agency: EPA
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 05/22/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

USMC CAMP PENDLETON (Continued) **1000344642**

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 07/17/1990
Date achieved compliance: 08/15/1992
Violation lead agency: EPA
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 05/22/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 07/17/1990
Date achieved compliance: 08/15/1992
Violation lead agency: EPA
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 05/22/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 06/28/1989
Date achieved compliance: 11/30/1989
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 06/28/1989
Date achieved compliance: 11/30/1989
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/16/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 270

USMC CAMP PENDLETON (Continued) **1000344642**

Area of violation: TSD - General
Date violation determined: 06/28/1989
Date achieved compliance: 11/30/1989
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/16/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 06/28/1989
Date achieved compliance: 11/30/1989
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 06/28/1989
Date achieved compliance: 11/30/1989
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/16/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 06/28/1989
Date achieved compliance: 11/30/1989
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: F - 264.70-77.E
Area of violation: TSD - General

USMC CAMP PENDLETON (Continued) **1000344642**

Date violation determined: 04/06/1988
Date achieved compliance: 04/06/1988
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/31/1998
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 01/12/1988
Date achieved compliance: 06/28/1989
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/26/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 01/12/1988
Date achieved compliance: 06/28/1989
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/26/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 01/12/1988
Date achieved compliance: 06/28/1989
Violation lead agency: EPA
Enforcement action: STATE TO EPA ADMINISTRATIVE REFERRAL
Enforcement action date: 05/17/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 01/12/1988

USMC CAMP PENDLETON (Continued) **1000344642**

Date achieved compliance: 06/28/1989
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 01/12/1988
Date achieved compliance: 06/28/1989
Violation lead agency: EPA
Enforcement action: STATE TO EPA ADMINISTRATIVE REFERRAL
Enforcement action date: 05/17/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 01/12/1988
Date achieved compliance: 06/28/1989
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 03/12/1987
Date achieved compliance: 01/12/1988
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/26/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 03/12/1987
Date achieved compliance: 01/12/1988

USMC CAMP PENDLETON (Continued) **1000344642**

Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 03/12/1987
Date achieved compliance: 01/12/1988
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/26/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 03/12/1987
Date achieved compliance: 01/12/1988
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 03/12/1987
Date achieved compliance: 01/12/1988
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 03/12/1987
Date achieved compliance: 01/12/1988
Violation lead agency: EPA

USMC CAMP PENDLETON (Continued) **1000344642**

Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/26/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 264.110-120.G
Area of violation: TSD - Closure/Post-Closure
Date violation determined: 03/12/1987
Date achieved compliance: 01/12/1988
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/26/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 03/12/1987
Date achieved compliance: 01/12/1988
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Evaluation Action Summary:
Evaluation date: 10/18/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/04/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/06/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/23/2010

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/16/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/10/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/09/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/09/2010
Evaluation lead agency: State

Evaluation date: 03/09/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/02/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/12/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/02/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/01/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/24/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation lead agency: State

Evaluation date: 10/29/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/28/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/27/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/26/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/20/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/19/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/23/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/09/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/13/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/13/2009

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/17/2009
Evaluation lead agency: State

Evaluation date: 12/09/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/02/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/19/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/18/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/04/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 11/24/2008
Evaluation lead agency: State

Evaluation date: 11/04/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/29/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/28/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/27/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation lead agency: State

Evaluation date: 10/23/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/22/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/21/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/20/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/07/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/30/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/07/2008
Evaluation lead agency: State

Evaluation date: 09/30/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/23/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/16/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/09/2008

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 08/28/2008
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 08/13/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/31/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/24/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/15/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/15/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/14/2008
Evaluation lead agency: State

Evaluation date: 01/08/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/05/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/27/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/29/2008

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation lead agency: State

Evaluation date: 11/27/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/05/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/05/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 11/05/2007
Evaluation lead agency: State

Evaluation date: 11/05/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/17/2009
Evaluation lead agency: State

Evaluation date: 11/05/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/29/2008
Evaluation lead agency: State

Evaluation date: 11/01/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/31/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/18/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/17/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/16/2007

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/15/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/09/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 08/14/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/31/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/05/2007
Evaluation lead agency: State

Evaluation date: 07/31/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/17/2009
Evaluation lead agency: State

Evaluation date: 07/31/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/10/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/06/2007
Evaluation lead agency: State

Evaluation date: 07/10/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 01/22/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Contingency Plan and Emergency Procedures
Date achieved compliance: 02/05/2007

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation lead agency: State

Evaluation date: 01/22/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General Facility Standards
Date achieved compliance: 02/05/2007
Evaluation lead agency: State

Evaluation date: 02/22/2006
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Manifest
Date achieved compliance: 03/23/2006
Evaluation lead agency: State

Evaluation date: 05/26/2005
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/22/2003
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/18/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/27/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/22/2001
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/02/2001
Evaluation lead agency: State

Evaluation date: 03/21/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/23/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 12/10/1998
Evaluation lead agency: State

Evaluation date: 03/31/1998

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 04/06/1988
Evaluation lead agency: State

Evaluation date: 10/23/1996
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 12/21/1995
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 12/21/1995
Evaluation lead agency: State

Evaluation date: 12/21/1995
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/21/1995
Evaluation lead agency: State

Evaluation date: 03/21/1995
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/28/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/21/1995
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/20/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/18/1994
Evaluation lead agency: State

Evaluation date: 04/20/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 05/18/1994
Evaluation lead agency: State

Evaluation date: 04/14/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/20/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/13/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/14/1994

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/07/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/13/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/05/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/07/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/01/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/05/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/31/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/01/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/30/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/31/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/25/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/30/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/16/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/25/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/03/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/16/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/23/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/03/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/16/1994

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/23/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/09/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/16/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/02/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/09/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 01/27/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/02/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 01/26/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/27/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 01/24/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/26/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 01/19/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/24/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 12/02/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/19/1994
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 10/20/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/02/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 10/13/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/20/1993

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation lead agency: State Contractor/Grantee

Evaluation date: 10/06/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/13/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 09/22/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/06/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 08/11/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/22/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 07/21/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 08/11/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 07/14/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/21/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 07/07/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/14/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 06/10/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/07/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 05/26/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/10/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 05/19/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/26/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 05/05/1993

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/19/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/28/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/05/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/22/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/28/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/21/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/22/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/08/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/21/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/07/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/08/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/17/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/07/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/11/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/17/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/10/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/11/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/08/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/10/1993

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/04/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/08/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/03/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/04/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/01/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/03/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/24/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/01/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/19/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/24/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/17/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/19/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/10/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/17/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/01/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/10/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 01/13/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/01/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 01/06/1993

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/13/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 10/21/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/06/1993
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 10/08/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/21/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 10/06/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/08/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 09/21/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 03/17/1995
Evaluation lead agency: State

Evaluation date: 09/21/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/17/1995
Evaluation lead agency: State

Evaluation date: 09/21/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 03/17/1995
Evaluation lead agency: State

Evaluation date: 09/21/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 03/17/1995
Evaluation lead agency: State

Evaluation date: 09/02/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/21/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 08/26/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/02/1992

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation lead agency: State Contractor/Grantee

Evaluation date: 08/14/1992
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 08/12/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 08/26/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 08/10/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 08/12/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 08/05/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 08/10/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 07/29/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 07/15/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/29/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 07/01/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/15/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 06/24/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/01/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 06/18/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/24/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 06/11/1992

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/18/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 06/10/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/11/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 06/03/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/10/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 05/27/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 06/03/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 05/20/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/27/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 05/13/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/20/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 05/07/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/13/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 05/06/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/07/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/15/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/06/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/08/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/15/1992

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation lead agency: State Contractor/Grantee

Evaluation date: 04/01/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/08/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/25/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/01/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/18/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/25/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/17/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/18/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/03/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/17/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 03/02/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/03/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/26/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/25/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/26/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 02/18/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/25/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 12/17/1991

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/18/1992
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 11/12/1991
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 10/08/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/17/1991
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 10/01/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/08/1991
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 09/19/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/01/1991
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 08/21/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/19/1991
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 07/24/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 08/14/1992
Evaluation lead agency: EPA

Evaluation date: 07/24/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 08/14/1992
Evaluation lead agency: EPA

Evaluation date: 07/24/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 08/14/1992
Evaluation lead agency: EPA

Evaluation date: 12/12/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/24/1991

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation lead agency: State Contractor/Grantee

Evaluation date: 11/08/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/12/1990
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 11/06/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 11/08/1990
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 10/27/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 11/06/1990
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 07/17/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 08/15/1992
Evaluation lead agency: EPA

Evaluation date: 07/17/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 08/15/1992
Evaluation lead agency: EPA

Evaluation date: 06/28/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 11/30/1989
Evaluation lead agency: EPA

Evaluation date: 06/28/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 11/30/1989
Evaluation lead agency: EPA

Evaluation date: 01/12/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 06/28/1989
Evaluation lead agency: EPA

Evaluation date: 01/12/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 06/28/1989
Evaluation lead agency: EPA

Evaluation date: 03/12/1987

USMC CAMP PENDLETON (Continued) **1000344642**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 01/12/1988
Evaluation lead agency: EPA

Evaluation date: 03/12/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Closure/Post-Closure
Date achieved compliance: 01/12/1988
Evaluation lead agency: EPA

Evaluation date: 03/12/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 01/12/1988
Evaluation lead agency: EPA

US ENG CONTROLS:
EPA ID: CA2170023533
Site ID: 0902732
Name: CAMP PENDLETON MARINE CORPS BASE
Address: CAMP PENDLETON MARINE BASE
CAMP PENDLETON, CA 92055
EPA Region: 09
County: SAN DIEGO
Event Code: Not reported
Actual Date: Not reported

Action ID: 001
Action Name: Explanation Of Significant Differences
Action Completion date: 9/22/2004
Planned Complet. date: Not reported
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: No Further Action

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 12/7/1995
Planned Complet. date: 12/31/1995
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Monitoring

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 12/7/1995
Planned Complet. date: 12/31/1995
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Natural Attenuation

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 12/7/1995
Planned Complet. date: 12/31/1995
Operable Unit: 01
Contaminated Media : Soil

USMC CAMP PENDLETON (Continued) **1000344642**

Engineering Control: No Action

Action ID: 002
Action Name: RECORD OF DECISION
Action Completion date: 9/30/1997
Planned Complet. date: 9/30/1997
Operable Unit: 02
Contaminated Media : Groundwater
Engineering Control: No Action

Action ID: 002
Action Name: RECORD OF DECISION
Action Completion date: 9/30/1997
Planned Complet. date: 9/30/1997
Operable Unit: 02
Contaminated Media : Sediment
Engineering Control: No Action

Action ID: 002
Action Name: RECORD OF DECISION
Action Completion date: 9/30/1997
Planned Complet. date: 9/30/1997
Operable Unit: 02
Contaminated Media : Soil
Engineering Control: No Action

Action ID: 002
Action Name: RECORD OF DECISION
Action Completion date: 9/30/1997
Planned Complet. date: 9/30/1997
Operable Unit: 02
Contaminated Media : Surface Water
Engineering Control: No Action

Action ID: 004
Action Name: RECORD OF DECISION
Action Completion date: 6/15/2007
Planned Complet. date: 7/30/2007
Operable Unit: 04
Contaminated Media : Soil
Engineering Control: Disposal

Action ID: 004
Action Name: RECORD OF DECISION
Action Completion date: 6/15/2007
Planned Complet. date: 7/30/2007
Operable Unit: 04
Contaminated Media : Soil
Engineering Control: Excavation

Action ID: 004
Action Name: RECORD OF DECISION
Action Completion date: 6/15/2007
Planned Complet. date: 7/30/2007
Operable Unit: 04
Contaminated Media : Soil
Engineering Control: No Further Action

USMC CAMP PENDLETON (Continued) **1000344642**

Action ID: 004
Action Name: RECORD OF DECISION
Action Completion date: 6/15/2007
Planned Complet. date: 7/30/2007
Operable Unit: 04
Contaminated Media : Soil
Engineering Control: Sampling

Action ID: 004
Action Name: RECORD OF DECISION
Action Completion date: 6/15/2007
Planned Complet. date: 7/30/2007
Operable Unit: 04
Contaminated Media : Soil
Engineering Control: Solidification/ Stabilization

Action ID: 005
Action Name: RECORD OF DECISION
Action Completion date: 2/21/2008
Planned Complet. date: 9/30/2008
Operable Unit: 05
Contaminated Media : Soil
Engineering Control: Disposal

Action ID: 005
Action Name: RECORD OF DECISION
Action Completion date: 2/21/2008
Planned Complet. date: 9/30/2008
Operable Unit: 05
Contaminated Media : Soil
Engineering Control: Excavation

Action ID: 005
Action Name: RECORD OF DECISION
Action Completion date: 2/21/2008
Planned Complet. date: 9/30/2008
Operable Unit: 05
Contaminated Media : Soil
Engineering Control: No Further Action

Action ID: 005
Action Name: RECORD OF DECISION
Action Completion date: 2/21/2008
Planned Complet. date: 9/30/2008
Operable Unit: 05
Contaminated Media : Soil
Engineering Control: Solidification/ Stabilization

US INST CONTROL:
EPA ID: CA2170023533
Site ID: 0902732
Name: CAMP PENDLETON MARINE CORPS BASE
Action Name: RECORD OF DECISION
Address: CAMP PENDLETON MARINE BASE
CAMP PENDLETON, CA 92055
EPA Region: 09

USMC CAMP PENDLETON (Continued) **1000344642**

County: SAN DIEGO
Event Code: Not reported
Inst. Control: Institutional Controls, (N.O.S.)
Actual Date: Not reported
Complet. Date: 12/7/1995
Operable Unit: 01
Contaminated Media : Groundwater

ROD:
Full-text of USEPA Record of Decision(s) is available from EDR.

TRIS:

Click this hyperlink while viewing on your computer to access
6 additional US_TRIS: record(s) in the EDR Site Report.

PADS:
EPAID: CA2170023533
Facility name: USMC BASE CAMP PENDELTON
Facility Address: MARINE CORPS BASE, VARIOUS LOCATION
CAMP PENDLETON, CA
Facility country: US
Generator: Yes
Storer: No
Transporter: No
Disposer: No
Research facility: No
Smelter: No
Facility owner name: UNITED STATES MARINE CORPS
Contact title: Not reported
Contact name: TORRECARION, R.C. HAZ WSTE MAN
Contact tel: (619)725-9753
Contact extension: Not reported
Mailing address: BOX 555008, ASST CH STAFF ENV SCRTY
CAMP PENDLETON, CA
Mailing country: US
Cert. title: Not reported
Cert. name: Not reported
Cert. date: 10/4/1994
Date received: 1/4/1995

NY MANIFEST:
EPA ID: CA2170023533
Country: USA
Mailing Name: UNITED STATES MILITARY-DRMO PENDLETON
Mailing Contact: UNITED STATES MILITARY-DRMO PENDLETON
Mailing Address: BUILDING 2241-P.O. BOX 1608
Mailing Address 2: Not reported
Mailing City: OCEANSIDE
Mailing State: CA
Mailing Zip: 92054
Mailing Zip4: Not reported
Mailing Country: USA
Mailing Phone: 619-725-4332

USMC CAMP PENDLETON (Continued) **1000344642**

Document ID:	NYA3198881
Manifest Status:	Completed after the designated time period for a TSDF to get a copy to the DEC
Trans1 State ID:	703475
Trans2 State ID:	DB3945
Generator Ship Date:	860905
Trans1 Recv Date:	860905
Trans2 Recv Date:	860910
TSD Site Recv Date:	861001
Part A Recv Date:	860926
Part B Recv Date:	861009
Generator EPA ID:	CA2170023533
Trans1 EPA ID:	GAD042097261
Trans2 EPA ID:	Not reported
TSDF ID:	NYD000632372
Waste Code:	D003 - NON-LISTED REACTIVE WASTES
Quantity:	01847
Units:	P - Pounds
Number of Containers:	008
Container Type:	DM - Metal drums, barrels
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100
Year:	86

DOD Region **CAMP PENDLETON MARINE CORPS BASE** **DOD** **CUSA144257** **N/A**

CAMP PENDLETON MARINE COR (County), CA

DOD:

Feature 1:	Marine Corps DOD
Feature 2:	Not reported
Feature 3:	Not reported
URL:	Not reported
Name 1:	Camp Pendleton Marine Corps Base
Name 2:	Not reported
Name 3:	Not reported
State:	CA
DOD Site:	Yes
Tile name:	CASAN_DIEGO

---

1 **ULTRAMAR/SAN JUAN SERVICE** **CA HIST CORTESE** **S103296767**
26572 JUNIPERO SERRA **CA LUST** **N/A**
SAN JUAN CAPISTRANO, CA

CORTESE:

Region:	CORTESE
Facility County Code:	30
Reg By:	LTNKA
Reg Id:	9UT3636

LUST REG 9:

Region:	9
Status:	Preliminary site assessment workplan submitted
Case Number:	9UT3636
Local Case:	98UT36
Substance:	Gasoline
Qty Leaked:	Not reported

ULTRAMAR/SAN JUAN SERVICE (Continued) **S103296767**

Abate Method: Not reported
Local Agency: Orange
How Found: Other Means
How Stopped: Not reported
Source: Unknown
Cause: Unknown
Lead Agency: Local Agency
Case Type: Soil only
Date Found: 05/04/1998
Date Stopped: / /
Confirm Date: / /
Submit Workplan: 5/7/98
Prelim Assess: / /
Desc Pollution: Not reported
Remed Plan: / /
Remed Action: Not reported
Began Monitor: Not reported
Release Date: 05/07/1998
Enforce Date: Not reported
Closed Date: Not reported
Enforce Type: Not reported
Pilot Program: LOP
Basin Number: 901.23
GW Depth: Not reported
Beneficial Use: MUNBU
NPDES Number: Not reported
Priority: 2A
File Dispn: Administratively opened on database, however no file physically exists
Interim Remedial Actions: Not reported
Cleanup and Abatement order Number: Not reported
Waste Discharge Requirement Number: Not reported

---

1 **EXXON STATION #7-3050** **CA HIST CORTESE** **S104164228**
26572 JUNIPERO SERRA **N/A**
SAN JUAN CAPISTRANO, CA

CORTESE:
Region: CORTESE
Facility County Code: 30
Reg By: LTNKA
Reg Id: 9UT2029

---

1 **ULTRAMAR /SAN JUAN SERVICE** **CA LUST** **S100273620**
26572 JUNIPERO SERRA **CA SWEEPS UST** **N/A**
SAN JUAN CAPISTRANO, CA 92675

LUST:
Region: STATE
Global Id: T0605902555
Latitude: 33.519859039
Longitude: -117.666837855
Case Type: LUST Cleanup Site
Status: Open - Site Assessment
Status Date: 02/19/1999
Lead Agency: ORANGE COUNTY LOP
Case Worker: SK

ULTRAMAR /SAN JUAN SERVICE (Continued) **S100273620**

Local Agency:	ORANGE COUNTY LOP
RB Case Number:	9UT3636
LOC Case Number:	98UT036
File Location:	Local Agency
Potential Media Affect:	Aquifer used for drinking water supply, Soil
Potential Contaminants of Concern:	Fuel Oxygenates, Gasoline
Site History:	Please refer to recent Site Documents or Monitoring Reports in GeoTracker for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party.

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0605902555
Contact Type:	Regional Board Caseworker
Contact Name:	UNASSIGNED
Organization Name:	SAN DIEGO RWQCB (REGION 9)
Address:	9174 SKY PARK COURT, SUITE 100
City:	SAN DIEGO
Email:	Not reported
Phone Number:	Not reported

Global Id:	T0605902555
Contact Type:	Local Agency Caseworker
Contact Name:	SHYAMALA KALYANASUNDARAM
Organization Name:	ORANGE COUNTY LOP
Address:	1241 E. DYER ROAD SUITE 120
City:	SANTA ANA
Email:	ssundaram@ochca.com
Phone Number:	7144336262

LUST:

Global Id:	T0605902555
Action Type:	ENFORCEMENT
Date:	07/09/2009
Action:	Staff Letter

Global Id:	T0605902555
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

Global Id:	T0605902555
Action Type:	REMEDIATION
Date:	01/01/1950
Action:	Excavate and Dispose

Global Id:	T0605902555
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

Global Id:	T0605902555
Action Type:	ENFORCEMENT
Date:	03/30/2011
Action:	File review

ULTRAMAR /SAN JUAN SERVICE (Continued) **S100273620**

Global Id:	T0605902555
Action Type:	ENFORCEMENT
Date:	08/04/2004
Action:	Staff Letter

Region:	STATE
Global Id:	T0605902452
Latitude:	33.519859
Longitude:	-117.666836
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	01/06/1994
Lead Agency:	ORANGE COUNTY LOP
Case Worker:	SK
Local Agency:	ORANGE COUNTY LOP
RB Case Number:	9UT2029
LOC Case Number:	91UT087
File Location:	Local Agency
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0605902452
Contact Type:	Regional Board Caseworker
Contact Name:	UNASSIGNED
Organization Name:	SAN DIEGO RWQCB (REGION 9)
Address:	9174 SKY PARK COURT, SUITE 100
City:	SAN DIEGO
Email:	Not reported
Phone Number:	Not reported

Global Id:	T0605902452
Contact Type:	Local Agency Caseworker
Contact Name:	SHYAMALA KALYANASUNDARAM
Organization Name:	ORANGE COUNTY LOP
Address:	1241 E. DYER ROAD SUITE 120
City:	SANTA ANA
Email:	ssundaram@ochca.com
Phone Number:	7144336262

LUST:

Global Id:	T0605902452
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

Global Id:	T0605902452
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

ULTRAMAR /SAN JUAN SERVICE (Continued) **S100273620**

ORANGE CO. LUST:
Region: ORANGE
Facility Id: 98UT036
Current Status: 5C
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed: Not reported
Case Type: Other Ground Water
Record ID: RO0001928

Region: ORANGE
Facility Id: 91UT087
Current Status: Certification (Case Closed)
Released Substance: Diesel fuel oil and additives, Nos.1-D, 2-D, 2-4
Date Closed: 01/06/1994
Case Type: Soil Only
Record ID: RO0002961

LUST REG 9:
Region: 9
Status: Pollution Characterization
Case Number: 9UT2029
Local Case: 91UT87
Substance: Waste Oil
Qty Leaked: Not reported
Abate Method: Not reported
Local Agency: Orange
How Found: Inventory Control
How Stopped: Not reported
Source: Unknown
Cause: Unknown
Lead Agency: Local Agency
Case Type: Soil only
Date Found: 01/31/1991
Date Stopped: / /
Confirm Date: / /
Submit Workplan: 8/28/91
Prelim Assess: 01/01/1992
Desc Pollution: 9/24/92
Remed Plan: / /
Remed Action: Not reported
Began Monitor: Not reported
Release Date: 01/31/1991
Enforce Date: Not reported
Closed Date: Not reported
Enforce Type: Not reported
Pilot Program: LOP
Basin Number: 901.28
GW Depth: 34’
Beneficial Use: Municipal groundwater use
NPDES Number: Not reported
Priority: Not reported
File Dispn: File discarded, case closed
Interim Remedial Actions: No
Cleanup and Abatement order Number: Not reported
Waste Discharge Requirement Number: Not reported

ULTRAMAR /SAN JUAN SERVICE (Continued) **S100273620**

SWEEPS UST:

Status:	A
Comp Number:	2259
Number:	9
Board Of Equalization:	44-000285
Ref Date:	09-30-92
Act Date:	09-15-92
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	30-000-002259-000001
Actv Date:	Not reported
Capacity:	12000
Tank Use:	M.V. FUEL
Stg:	P
Content:	DIESEL
Number Of Tanks:	5

Status:	A
Comp Number:	2259
Number:	9
Board Of Equalization:	44-000285
Ref Date:	09-30-92
Act Date:	09-15-92
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	30-000-002259-000004
Actv Date:	Not reported
Capacity:	8000
Tank Use:	M.V. FUEL
Stg:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	A
Comp Number:	2259
Number:	9
Board Of Equalization:	44-000285
Ref Date:	09-30-92
Act Date:	09-15-92
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	30-000-002259-000005
Actv Date:	Not reported
Capacity:	8000
Tank Use:	M.V. FUEL
Stg:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	A
Comp Number:	2259
Number:	9
Board Of Equalization:	44-000285
Ref Date:	09-30-92

ULTRAMAR /SAN JUAN SERVICE (Continued) **S100273620**

Act Date:	09-15-92
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	30-000-002259-000006
Actv Date:	Not reported
Capacity:	8000
Tank Use:	M.V. FUEL
Stg:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	A
Comp Number:	2259
Number:	9
Board Of Equalization:	44-000285
Ref Date:	09-30-92
Act Date:	09-15-92
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	30-000-002259-000007
Actv Date:	Not reported
Capacity:	1000
Tank Use:	PETROLEUM
Stg:	P
Content:	Not reported
Number Of Tanks:	Not reported

---

1 **SHELL SERVICE STATION** **RCRA-SQG 1000288482**
26571 JUNIPERO SERRA **CA LUST CAD981458508**
SAN JUAN CAPISTRANO, CA 92675

RCRA-SQG:

Date form received by agency:	02/26/2004
Facility name:	SHELL SERVICE STATION
Facility address:	26571 JUNIPERO SERRA RD SAP #136016 SAN JUAN CAPISTRANO, CA 92675
EPA ID:	CAD981458508
Mailing address:	SHELL OIL PRODUCTS US 12700 NORTHBOROUGH DR MFT240-G HOUSTON, TX 770672508
Contact:	GARY V WING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(714) 731-8337
Contact email:	GVWING@SHELLOPUS.COM
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

SHELL SERVICE STATION (Continued) **1000288482**

Owner/Operator Summary:
Owner/operator name: SHELL OIL PRODUCTS US
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 08/01/1998
Owner/Op end date: Not reported

Owner/operator name: EQUILON ENTERPRISES LLC DBA SHELL OIL PR
Owner/operator address: PO BOX 2648
HOUSTON, TX 77252
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 08/01/1998
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 02/26/2004
Facility name: SHELL SERVICE STATION
Classification: Large Quantity Generator

Date form received by agency: 04/08/1998
Facility name: SHELL SERVICE STATION
Site name: SHELL OIL CO
Classification: Small Quantity Generator

Date form received by agency: 09/01/1996
Facility name: SHELL SERVICE STATION
Site name: SHELL OIL CO
Classification: Small Quantity Generator

Violation Status: No violations found

LUST:

SHELL SERVICE STATION (Continued) **1000288482**

Region:	STATE
Global Id:	T0605902366
Latitude:	33.520270944
Longitude:	-117.667183695
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	07/09/2004
Lead Agency:	ORANGE COUNTY LOP
Case Worker:	SK
Local Agency:	ORANGE COUNTY LOP
RB Case Number:	9UT1169
LOC Case Number:	88UT093
File Location:	Local Agency Warehouse
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0605902366
Contact Type:	Regional Board Caseworker
Contact Name:	UNASSIGNED
Organization Name:	SAN DIEGO RWQCB (REGION 9)
Address:	9174 SKY PARK COURT, SUITE 100
City:	SAN DIEGO
Email:	Not reported
Phone Number:	Not reported

Global Id:	T0605902366
Contact Type:	Local Agency Caseworker
Contact Name:	SHYAMALA KALYANASUNDARAM
Organization Name:	ORANGE COUNTY LOP
Address:	1241 E. DYER ROAD SUITE 120
City:	SANTA ANA
Email:	ssundaram@ochca.com
Phone Number:	7144336262

LUST:

Global Id:	T0605902366
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

Global Id:	T0605902366
Action Type:	REMEDIATION
Date:	01/01/1950
Action:	Excavate and Treat

Global Id:	T0605902366
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

Global Id:	T0605902366
Action Type:	RESPONSE
Date:	04/23/2003

SHELL SERVICE STATION (Continued) **1000288482**

Action: Other Report / Document

Global Id: T0605902366
Action Type: ENFORCEMENT
Date: 03/18/2003
Action: Staff Letter

Global Id: T0605902366
Action Type: ENFORCEMENT
Date: 07/09/2004
Action: Closure/No Further Action Letter

ORANGE CO. LUST:
Region: ORANGE
Facility Id: 88UT093
Current Status: Certification (Case Closed)
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed: 07/09/2004
Case Type: Other Ground Water
Record ID: RO0000741

---

1 **SHELL OIL STATION** **CA HIST CORTESE** **S101299943**
26571 JUNIPERO SERRA **CA LUST** **N/A**
SAN JUAN CAPISTRANO, CA 92675

CORTESE:
Region: CORTESE
Facility County Code: 30
Reg By: LTNKA
Reg Id: 9UT1169

LUST REG 9:
Region: 9
Status: Pollution Characterization
Case Number: 9UT1169
Local Case: 88UT93
Substance: Gasoline
Qty Leaked: Not reported
Abate Method: Not reported
Local Agency: Orange
How Found: Tank Closure
How Stopped: Close Tank
Source: Unknown
Cause: Unknown
Lead Agency: Local Agency
Case Type: Aquifer affected
Date Found: 05/06/1988
Date Stopped: 05/06/1988
Confirm Date: / /
Submit Workplan: Not reported
Prelim Assess: 02/15/1989
Desc Pollution: 9/24/92
Remed Plan: / /
Remed Action: Not reported
Began Monitor: Not reported
Release Date: 02/15/1989

SHELL OIL STATION (Continued) **S101299943**

Enforce Date: Not reported
Closed Date: Not reported
Enforce Type: Not reported
Pilot Program: LOP
Basin Number: 901.23
GW Depth: 34'
Beneficial Use: Municipal groundwater use
NPDES Number: Not reported
Priority: Not reported
File Dispn: Not reported
Interim Remedial Actions: Yes
Cleanup and Abatement order Number: Not reported
Waste Discharge Requirement Number: Not reported

---

2 **ENDEVCO CORPORATION** **CA ENVIROSTOR** **S110493826**
30700 RANCHO VIEJO ROAD **N/A**
SAN JUAN CAPISTRANO, CA 92765

ENVIROSTOR:
Site Type: Tiered Permit
Site Type Detailed: Tiered Permit
Acres: 0
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Not reported
Division Branch: Cleanup Cypress
Facility ID: 71004113
Site Code: Not reported
Assembly: 73
Senate: 38
Special Program: Not reported
Status: Inactive - Needs Evaluation
Status Date: Not reported
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not reported
Latitude: 33.51823
Longitude: -117.6623
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CA0000146068
Alias Type: EPA Identification Number
Alias Name: 71004113
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported

ENDEVCO CORPORATION (Continued) **S110493826**

Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

---

3 **MARBELLA GOLF & COUNTRY CLUB** **CA FID UST** **U001559767**
30650 GOLF CLUB DR **CA SWEEPS UST** **N/A**
SAN JUAN CAPISTRA, CA 92675

CA FID UST:

Facility ID:	30013247
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	30800 GOLF CLUB DR
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SAN JUAN CAPISTRA 92675
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	10601
Number:	9
Board Of Equalization:	Not reported
Ref Date:	09-30-92
Act Date:	09-15-92
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

3 | **CA AST** | **A100340562**
30650 GOLF CLUB DR | **N/A**
SAN JUAN CAPISTRANO, CA 92675

AST:

Owner:	MARBELLA GOLF & COUNTY CLUB
Total Gallons:	1,320
Certified Unified Program Agencies:	Orange

---

3 **MARBELLA GOLF COURSE** | **CA LUST** | **S106170917**
30650 GOLF CLUB | **CA HAZNET** | **N/A**
SAN JUAN CAPISTRANO, CA 92675

LUST:

Region:	STATE
Global Id:	T0605992001
Latitude:	33.513516
Longitude:	-117.654289
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/27/2005
Lead Agency:	ORANGE COUNTY LOP
Case Worker:	SK
Local Agency:	ORANGE COUNTY LOP
RB Case Number:	Not reported
LOC Case Number:	04UT002
File Location:	Local Agency
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0605992001
Contact Type:	Regional Board Caseworker
Contact Name:	UNASSIGNED
Organization Name:	SAN DIEGO RWQCB (REGION 9)
Address:	9174 SKY PARK COURT, SUITE 100
City:	SAN DIEGO
Email:	Not reported
Phone Number:	Not reported

Global Id:	T0605992001
Contact Type:	Local Agency Caseworker
Contact Name:	SHYAMALA KALYANASUNDARAM
Organization Name:	ORANGE COUNTY LOP
Address:	1241 E. DYER ROAD SUITE 120
City:	SANTA ANA
Email:	ssundaram@ochca.com
Phone Number:	7144336262

LUST:

Global Id:	T0605992001
Action Type:	ENFORCEMENT
Date:	05/27/2005
Action:	Closure/No Further Action Letter

Global Id:	T0605992001
Action Type:	ENFORCEMENT

MARBELLA GOLF COURSE (Continued) **S106170917**

Date: 01/12/2004
Action: * Corrective Action Orders

Global Id: T0605992001
Action Type: ENFORCEMENT
Date: 01/12/2004
Action: Notice of Responsibility

Global Id: T0605992001
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0605992001
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0605992001
Action Type: RESPONSE
Date: 04/19/2004
Action: Soil and Water Investigation Workplan

Global Id: T0605992001
Action Type: RESPONSE
Date: 02/09/2004
Action: Other Report / Document

ORANGE CO. LUST:
Region: ORANGE
Facility Id: 04UT002
Current Status: Certification (Case Closed)
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed: 05/27/2005
Case Type: Soil Only
Record ID: RO0003272

HAZNET:
Year: 2010
Gepaid: CAL000342270
Contact: MATTHEW MARSH
Telephone: 9496611143
Mailing Name: Not reported
Mailing Address: 30800 GOLF CLUB DR
Mailing City,St,Zip: SAN JUAN CAPISTRANO, CA 926755415
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Oil/water separation sludge
Disposal Method: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT
Tons: 6.56775
Facility County: Orange

Year: 2010

MARBELLA GOLF COURSE (Continued) **S106170917**

Gepaid: CAL000342270
Contact: MATTHEW MARSH
Telephone: 9496611143
Mailing Name: Not reported
Mailing Address: 30800 GOLF CLUB DR
Mailing City,St,Zip: SAN JUAN CAPISTRANO, CA 926755415
Gen County: Not reported
TSD EPA ID: TXD077603371
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 0.05
Facility County: Orange

Year: 2010
Gepaid: CAL000342270
Contact: MATTHEW MARSH
Telephone: 9496611143
Mailing Name: Not reported
Mailing Address: 30800 GOLF CLUB DR
Mailing City,St,Zip: SAN JUAN CAPISTRANO, CA 926755415
Gen County: Not reported
TSD EPA ID: TXD077603371
TSD County: Not reported
Waste Category: Unspecified organic liquid mixture
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 0.01
Facility County: Orange

Year: 2010
Gepaid: CAL000342270
Contact: MATTHEW MARSH
Telephone: 9496611143
Mailing Name: Not reported
Mailing Address: 30800 GOLF CLUB DR
Mailing City,St,Zip: SAN JUAN CAPISTRANO, CA 926755415
Gen County: Not reported
TSD EPA ID: TXD077603371
TSD County: Not reported
Waste Category: Waste oil and mixed oil
Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 0.15
Facility County: Orange

---

4 **INTOWN PROP/HUD** **CA HAZNET** **S103651754**
31098 CALLE SAN DIEGO **N/A**
SAN JUAN CAPISTRANO, CA 92675

HAZNET:
Year: 1997
Gepaid: CAC001334216
Contact: HUD
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 5528-3A E LA PALMA AVE
Mailing City,St,Zip: ANAHEIM HILLS, CA 928070000
Gen County: Orange

INTOWN PROP/HUD (Continued) **S103651754**

TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Household waste
Disposal Method: H01
Tons: .0025
Facility County: Orange

---

4 **SAN DIEGO GAS AND ELECTRIC PROPERTY** **CA HAZNET** **S108219444**
31050 CAMINO CAPISTRANO **N/A**
SAN JUAN CAPISTRANO, CA 92675

HAZNET:
Year: 2004
Gepaid: CAP000149963
Contact: SAN DIEGO GAS AND ELECTRIC PROPERTY
Telephone: Not reported
Mailing Name: Not reported
Mailing Address: 571 ENTERPRISE ST
Mailing City,St,Zip: ESCONDIDO, CA 920290000
Gen County: Orange
TSD EPA ID: CAD980675276
TSD County: Kern
Waste Category: Other inorganic solid waste
Disposal Method: T01
Tons: 17.5
Facility County: Not reported

---

4 **LAWSON'S LANDSCAPE** **CA HAZNET** **S103651743**
31050 CAMINO CAPISTRANO **N/A**
SAN JUAN CAPISTRANO, CA 92675

HAZNET:
Year: 1997
Gepaid: CAL000152953
Contact: KEN LAWSON
Telephone: 7144961733
Mailing Name: Not reported
Mailing Address: 31050 CAMINO CAPISTRANO
Mailing City,St,Zip: SAN JUAN CAPISTRANO, CA 926750000
Gen County: Orange
TSD EPA ID: CAD008302903
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: R01
Tons: .4587
Facility County: Orange

5 **PLANT DEPOT SCHOOL SITE** **CA SCH** **S105840767**
31251 AVENIDA LOS CERRITOS **CA ENVIROSTOR** **N/A**
SAN JUAN CAPISTRANO, CA 92675

SCH:

Facility ID:	30070001
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	5.81
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager:	Not reported
Supervisor:	* Triss Chesney
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	404437
Assembly:	73
Senate:	38
Special Program Status:	Not reported
Status:	Inactive - Needs Evaluation
Status Date:	07/01/2003
Restricted Use:	NO
Funding:	School District
Latitude:	33.508
Longitude:	-117.6592
APN:	NONE SPECIFIED
Past Use:	* AGRICULTURAL SERVICES
Potential COC:	30001, 30409
Confirmed COC:	30001
Potential Description:	NONE SPECIFIED
Alias Name:	ORANGE COE-PROPOSED PLANT DEPOT SITE
Alias Type:	Alternate Name
Alias Name:	ORANGE COUNTY DEPARTMENT OF EDUCATION
Alias Type:	Alternate Name
Alias Name:	PLANT DEPOT SCHOOL SITE
Alias Type:	Alternate Name
Alias Name:	404437
Alias Type:	Project Code (Site Code)
Alias Name:	30070001
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	03/12/2003
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	03/20/2003
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo

PLANT DEPOT SCHOOL SITE (Continued) **S105840767**

Completed Date: 01/14/2005
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Site Type: School Investigation
Site Type Detailed: School
Acres: 5.81
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: * Triss Chesney
Division Branch: Southern California Schools & Brownfields Outreach
Facility ID: 30070001
Site Code: 404437
Assembly: 73
Senate: 38
Special Program: Not reported
Status: Inactive - Needs Evaluation
Status Date: 07/01/2003
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: School District
Latitude: 33.508
Longitude: -117.6592
APN: NONE SPECIFIED
Past Use: * AGRICULTURAL SERVICES
Potential COC: 30001, 30409
Confirmed COC: 30001
Potential Description: NONE SPECIFIED
Alias Name: ORANGE COE-PROPOSED PLANT DEPOT SITE
Alias Type: Alternate Name
Alias Name: ORANGE COUNTY DEPARTMENT OF EDUCATION
Alias Type: Alternate Name
Alias Name: PLANT DEPOT SCHOOL SITE
Alias Type: Alternate Name
Alias Name: 404437
Alias Type: Project Code (Site Code)
Alias Name: 30070001
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 03/12/2003
Comments: Not reported

PLANT DEPOT SCHOOL SITE (Continued) **S105840767**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 03/20/2003
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 01/14/2005
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

---

5 **LOS CERRITOS RANCH** **CA UST** **U003879643**
31251 AVENIDA LOS CERRITOS **N/A**
SAN JUAN CAPISTRANO, CA 92675

UST:
Facility ID: 4192
Latitude: 33.50783
Longitude: -117.65618

---

6 **POLO CLEANERS** **RCRA-SQG** **1000818235**
31105 RANCHO VIEJO RD **FINDS** **CAD983639840**
SAN JUAN CAPISTRANO, CA 92675 **CA HAZNET**

RCRA-SQG:
Date form received by agency: 06/02/1992
Facility name: POLO CLEANERS
Facility address: 31105 RANCHO VIEJO RD
SAN JUAN CAPISTRANO, CA 92675
EPA ID: CAD983639840
Mailing address: RANCHO VIEJO RD
SAN JUAN CAPISTRANO, CA 92675
Contact: JOEL LEGUINA
Contact address: 31105 RANCHO VIEJO RD
SAN JUAN CAPISTRANO, CA 92675
Contact country: US
Contact telephone: (714) 496-7354
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

POLO CLEANERS (Continued) **1000818235**

Owner/Operator Summary:
- Owner/operator name: JACK ENLOW
- Owner/operator address: 31105 RANCHO VIEJO RD
  SAN JUAN CAPISTRANO, CA 92675
- Owner/operator country: Not reported
- Owner/operator telephone: (714) 496-7354
- Legal status: Private
- Owner/Operator Type: Owner
- Owner/Op start date: Not reported
- Owner/Op end date: Not reported

Handler Activities Summary:
- U.S. importer of hazardous waste: No
- Mixed waste (haz. and radioactive): No
- Recycler of hazardous waste: No
- Transporter of hazardous waste: No
- Treater, storer or disposer of HW: No
- Underground injection activity: No
- On-site burner exemption: No
- Furnace exemption: No
- Used oil fuel burner: No
- Used oil processor: No
- User oil refiner: No
- Used oil fuel marketer to burner: No
- Used oil Specification marketer: No
- Used oil transfer facility: No
- Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002878681

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:
- Year: 2010
- Gepaid: CAD983639840
- Contact: --
- Telephone: --
- Mailing Name: Not reported
- Mailing Address: 31105 RANCHO VIEJO RD
- Mailing City,St,Zip: SAN JUAN CAPISTRANO, CA 926751717

POLO CLEANERS (Continued) **1000818235**

Gen County: Not reported
TSD EPA ID: TXD077603371
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 0.15
Facility County: Orange

Year: 2009
Gepaid: CAD983639840
Contact: --
Telephone: --
Mailing Name: Not reported
Mailing Address: 31105 RANCHO VIEJO RD
Mailing City,St,Zip: SAN JUAN CAPISTRANO, CA 926751717
Gen County: Orange
TSD EPA ID: TXD077603371
TSD County: 99
Waste Category: Off-specification, aged or surplus organics
Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 0.035
Facility County: Orange

Year: 2007
Gepaid: CAD983639840
Contact: --
Telephone: --
Mailing Name: Not reported
Mailing Address: 31105 RANCHO VIEJO RD
Mailing City,St,Zip: SAN JUAN CAPISTRANO, CA 926751717
Gen County: Orange
TSD EPA ID: TXD077603371
TSD County: 99
Waste Category: Off-specification, aged or surplus organics
Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 0.33
Facility County: Orange

Year: 2006
Gepaid: CAD983639840
Contact: --
Telephone: --
Mailing Name: Not reported
Mailing Address: 31105 RANCHO VIEJO RD
Mailing City,St,Zip: SAN JUAN CAPISTRANO, CA 926751717
Gen County: Orange
TSD EPA ID: CAT000613893
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: H01
Tons: Not reported
Facility County: Orange

Year: 2005
Gepaid: CAD983639840
Contact: --
Telephone: --

POLO CLEANERS (Continued) **1000818235**

Mailing Name: Not reported
Mailing Address: 31105 RANCHO VIEJO RD
Mailing City,St,Zip: SAN JUAN CAPISTRANO, CA 926751717
Gen County: Orange
TSD EPA ID: CAT000613893
TSD County: Los Angeles
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: Not reported
Tons: 1.14
Facility County: Not reported

Click this hyperlink while viewing on your computer to access
25 additional CA_HAZNET: record(s) in the EDR Site Report.

---

6 **POLO CLEANERS (MARBELLA PLAZA)** **CA SLIC** **S106487027**
31105 RANCHO VIEJO ROAD, SUITE 11 **N/A**
SAN JUAN CAPISTRANO, CA 92675

SLIC:
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 07/19/2006
Global Id: SLT9S0114218
Lead Agency: SAN DIEGO RWQCB (REGION 9)
Lead Agency Case Number: Not reported
Latitude: 33.508591962
Longitude: -117.659388476
Case Type: Cleanup Program Site
Case Worker: JPA
Local Agency: Not reported
RB Case Number: SLT90011
File Location: Regional Board
Potential Media Affected: Aquifer used for drinking water supply
Potential Contaminants of Concern: * Chlorinated Solvents - PCE
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

---

6 **ORIGINAL POLO CLEANERS** **CA DRYCLEANERS** **S106077100**
31105 RANCHO VIEJO RD STE C11 **N/A**
SAN JUAN CAPISTRANO, CA 92675

DRYCLEANERS:
EPA Id: CAL000272077
NAICS Code: 81232
NAICS Description: Drycleaning and Laundry Services (except Coin-Operated)
SIC Code: 7211
SIC Description: Power Laundries, Family and Commercial
Create Date: 6/19/2003 2:54:00 PM
Facility Active: No
Inactive Date: 6/30/2004 3:01:00 PM
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 31105 RANCHO VIEJO RD STE C11
Mailing Address 2: Not reported
Mailing State: CA

ORIGINAL POLO CLEANERS (Continued) **S106077100**

Mailing Zip:	926751717
Owner Name:	DAN NEWELL
Owner Address:	31105 RANCHO VIEJO RD STE C11
Owner Address 2:	Not reported
Owner Telephone:	9494967354
Contact Name:	DAN NEWELL
Contact Address:	31105 RANCHO VIEJO RD STE C11
Contact Address 2:	Not reported
Contact Telephone:	9494967354

---

7 **CHEVRON STATION #9-3160** **CA HIST CORTESE** **S103648419**
27112 ORTEGA **CA HAZNET** **N/A**
SAN JUAN CAPISTRANO, CA

CORTESE:

Region:	CORTESE
Facility County Code:	30
Reg By:	LTNKA
Reg Id:	9UT2030

HAZNET:

Year:	2003
Gepaid:	CAL000049843
Contact:	KATHY NORRIS
Telephone:	9258425931
Mailing Name:	Not reported
Mailing Address:	PO BOX 6004
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	Orange
TSD EPA ID:	CAD008302903
TSD County:	Orange
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Not reported
Tons:	1.83
Facility County:	Orange

Year:	2002
Gepaid:	CAL000049843
Contact:	KATHY NORRIS
Telephone:	9258425931
Mailing Name:	Not reported
Mailing Address:	PO BOX 6004
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	Orange
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	R01
Tons:	0.16
Facility County:	Not reported

Year:	2001
Gepaid:	CAL000049843
Contact:	KATHY NORRIS
Telephone:	9258425931
Mailing Name:	Not reported
Mailing Address:	PO BOX 6004

CHEVRON STATION #9-3160 (Continued) **S103648419**

Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	Orange
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	R01
Tons:	0.22
Facility County:	Not reported

Year:	1998
Gepaid:	CAL000049843
Contact:	CHERVON PRODUCTS CO
Telephone:	9258425931
Mailing Name:	Not reported
Mailing Address:	PO BOX 6004
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	Orange
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method:	R01
Tons:	.7506
Facility County:	Orange

Year:	1996
Gepaid:	CAL000049843
Contact:	CHERVON PRODUCTS CO
Telephone:	9258425931
Mailing Name:	Not reported
Mailing Address:	PO BOX 6004
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	Orange
TSD EPA ID:	CAT080010101
TSD County:	San Diego
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	H01
Tons:	.2085
Facility County:	Orange

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

---

7 **CHEVRON STATION #93160** **CA LUST** **U003739478**
27112 ORTEGA HWY **CA UST** **N/A**
SAN JUAN CAPISTRANO, CA 92675

LUST:

Region:	STATE
Global Id:	T0605902453
Latitude:	33.502368
Longitude:	-117.657397
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	06/17/1992
Lead Agency:	ORANGE COUNTY LOP
Case Worker:	SK
Local Agency:	ORANGE COUNTY LOP
RB Case Number:	9UT2030

CHEVRON STATION #93160 (Continued) **U003739478**

LOC Case Number: 91UT090
File Location: Local Agency
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel, Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0605902453
Contact Type: Regional Board Caseworker
Contact Name: UNASSIGNED
Organization Name: SAN DIEGO RWQCB (REGION 9)
Address: 9174 SKY PARK COURT, SUITE 100
City: SAN DIEGO
Email: Not reported
Phone Number: Not reported

Global Id: T0605902453
Contact Type: Local Agency Caseworker
Contact Name: SHYAMALA KALYANASUNDARAM
Organization Name: ORANGE COUNTY LOP
Address: 1241 E. DYER ROAD SUITE 120
City: SANTA ANA
Email: ssundaram@ochca.com
Phone Number: 7144336262

LUST:
Global Id: T0605902453
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0605902453
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

UST:
Facility ID: 5943
Latitude: 33.50274
Longitude: -117.6574

ORANGE CO. UST:
Facility ID: FA0024007

7 CHEVRON STATION NO 93160 — **CA LUST** — **S102427772**
27112 ORTEGA HWY — **CA HAZNET** — **N/A**
SAN JUAN CAPISTRANO, CA 92675

ORANGE CO. LUST:

Region:	ORANGE
Facility Id:	91UT090
Current Status:	Certification (Case Closed)
Released Substance:	Diesel fuel oil and additives, Nos.1-D, 2-D, 2-4
Date Closed:	06/17/1992
Case Type:	Soil Only
Record ID:	RO0000736

Region:	ORANGE
Facility Id:	91UT090
Current Status:	Not reported
Released Substance:	Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed:	06/17/1992
Case Type:	Not reported
Record ID:	RO0000736

LUST REG 9:

Region:	9
Status:	Case Closed
Case Number:	9UT2030
Local Case:	91UT90
Substance:	Gasoline
Qty Leaked:	Not reported
Abate Method:	Not reported
Local Agency:	Orange
How Found:	Not reported
How Stopped:	Not reported
Source:	Unknown
Cause:	Unknown
Lead Agency:	Local Agency
Case Type:	Aquifer affected
Date Found:	/ /
Date Stopped:	/ /
Confirm Date:	/ /
Submit Workplan:	8/29/91
Prelim Assess:	/ /
Desc Pollution:	Not reported
Remed Plan:	/ /
Remed Action:	Not reported
Began Monitor:	Not reported
Release Date:	07/18/1991
Enforce Date:	Not reported
Closed Date:	6/17/92
Enforce Type:	Not reported
Pilot Program:	LOP
Basin Number:	901.28
GW Depth:	Not reported
Beneficial Use:	Municipal groundwater use
NPDES Number:	Not reported
Priority:	Not reported
File Dispn:	File discarded, case closed
Interim Remedial Actions:	No
Cleanup and Abatement order Number:	Not reported
Waste Discharge Requirement Number:	Not reported

CHEVRON STATION NO 93160 (Continued) **S102427772**

HAZNET:

Year:	2010
Gepaid:	CAR000121434
Contact:	KATHY NORRIS - RM L2173
Telephone:	9258425931
Mailing Name:	Not reported
Mailing Address:	PO BOX 6004
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	Not reported
TSD EPA ID:	CAD044429835
TSD County:	Not reported
Waste Category:	Unspecified oil-containing waste
Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.0125
Facility County:	Orange

Year:	2010
Gepaid:	CAR000121434
Contact:	KATHY NORRIS - RM L2173
Telephone:	9258425931
Mailing Name:	Not reported
Mailing Address:	PO BOX 6004
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	Not reported
TSD EPA ID:	CAD044429835
TSD County:	Not reported
Waste Category:	Unspecified oil-containing waste
Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.02
Facility County:	Orange

Year:	2010
Gepaid:	CAR000121434
Contact:	KATHY NORRIS - RM L2173
Telephone:	9258425931
Mailing Name:	Not reported
Mailing Address:	PO BOX 6004
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	Not reported
TSD EPA ID:	CAD044429835
TSD County:	Not reported
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.034
Facility County:	Orange

Year:	2010
Gepaid:	CAR000121434
Contact:	KATHY NORRIS - RM L2173
Telephone:	9258425931
Mailing Name:	Not reported
Mailing Address:	PO BOX 6004
Mailing City,St,Zip:	SAN RAMON, CA 945830000
Gen County:	Not reported

CHEVRON STATION NO 93160 (Continued) **S102427772**

TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: METALS RECOVERY INCLUDING RETORING,SMELTING,CHEMICALS,ECT
Tons: 0.0125
Facility County: Orange

Year: 2010
Gepaid: CAR000121434
Contact: KATHY NORRIS - RM L2173
Telephone: 9258425931
Mailing Name: Not reported
Mailing Address: PO BOX 6004
Mailing City,St,Zip: SAN RAMON, CA 945830000
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 0.0125
Facility County: Orange

Click this hyperlink while viewing on your computer to access
20 additional CA_HAZNET: record(s) in the EDR Site Report.

---

7 **TOSCO/76 PRODUCTS STATION** **CA HIST CORTESE** **S100231061**
27164 ORTEGA **CA LUST** **N/A**
SAN JUAN CAPISTRANO, CA 92675 **CA HAZNET**

CORTESE:
Region: CORTESE
Facility County Code: 30
Reg By: LTNKA
Reg Id: 9UT3719

Region: CORTESE
Facility County Code: 30
Reg By: LTNKA
Reg Id: 9UT448

LUST:
Region: STATE
Global Id: T0605902586
Latitude: 33.50265
Longitude: -117.657868
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 10/04/1995
Lead Agency: ORANGE COUNTY LOP
Case Worker: SK
Local Agency: ORANGE COUNTY LOP
RB Case Number: 9UT448
LOC Case Number: 85UT125
File Location: Local Agency
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Gasoline

TOSCO/76 PRODUCTS STATION (Continued) **S100231061**

Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0605902586
Contact Type: Regional Board Caseworker
Contact Name: UNASSIGNED
Organization Name: SAN DIEGO RWQCB (REGION 9)
Address: 9174 SKY PARK COURT, SUITE 100
City: SAN DIEGO
Email: Not reported
Phone Number: Not reported

Global Id: T0605902586
Contact Type: Local Agency Caseworker
Contact Name: SHYAMALA KALYANASUNDARAM
Organization Name: ORANGE COUNTY LOP
Address: 1241 E. DYER ROAD SUITE 120
City: SANTA ANA
Email: ssundaram@ochca.com
Phone Number: 7144336262

LUST:
Global Id: T0605902586
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0605902586
Action Type: REMEDIATION
Date: 01/01/1950
Action: Excavate and Dispose

Global Id: T0605902586
Action Type: REMEDIATION
Date: 01/01/1950
Action: Vent soil

Global Id: T0605902586
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Region: STATE
Global Id: T0605902561
Latitude: 33.502711689
Longitude: -117.6569189
Case Type: LUST Cleanup Site
Status: Open - Site Assessment
Status Date: 08/28/2000
Lead Agency: ORANGE COUNTY LOP
Case Worker: SK
Local Agency: ORANGE COUNTY LOP
RB Case Number: 9UT3719
LOC Case Number: 98UT066

TOSCO/76 PRODUCTS STATION (Continued) **S100231061**

File Location: Local Agency
Potential Media Affect: Aquifer used for drinking water supply, Soil, Surface water, Well used for drinking water supply
Potential Contaminants of Concern: Fuel Oxygenates, Gasoline
Site History: Please refer to recent Site Documents or Monitoring Reports in GeoTracker for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party.

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0605902561
Contact Type: Regional Board Caseworker
Contact Name: UNASSIGNED
Organization Name: SAN DIEGO RWQCB (REGION 9)
Address: 9174 SKY PARK COURT, SUITE 100
City: SAN DIEGO
Email: Not reported
Phone Number: Not reported

Global Id: T0605902561
Contact Type: Local Agency Caseworker
Contact Name: SHYAMALA KALYANASUNDARAM
Organization Name: ORANGE COUNTY LOP
Address: 1241 E. DYER ROAD SUITE 120
City: SANTA ANA
Email: ssundaram@ochca.com
Phone Number: 7144336262

LUST:
Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 11/01/2010
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 04/21/2011
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 09/03/2009
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 10/21/2009
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 10/04/2011
Action: File review

Global Id: T0605902561

TOSCO/76 PRODUCTS STATION (Continued) **S100231061**

Action Type: ENFORCEMENT
Date: 11/03/2011
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 09/21/2011
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 04/15/2011
Action: Site Visit / Inspection / Sampling

Global Id: T0605902561
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 06/17/2010
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 05/20/2010
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 05/26/2011
Action: File review

Global Id: T0605902561
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 10/07/2009
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 10/28/2010
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 10/29/2010
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 12/21/2009

TOSCO/76 PRODUCTS STATION (Continued) **S100231061**

Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 11/23/2009
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 12/22/2009
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 06/03/2010
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 07/08/2010
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 09/16/2008
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 03/25/2010
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 02/23/2009
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 12/29/2008
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 05/07/2009
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 04/16/2010
Action: Meeting

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 10/26/2011
Action: Meeting

TOSCO/76 PRODUCTS STATION (Continued) **S100231061**

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 05/12/2011
Action: Site Visit / Inspection / Sampling

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 05/26/2011
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 07/01/2009
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 07/08/2009
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 07/15/2009
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 05/03/2010
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 02/10/2011
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 05/23/2011
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 06/07/2011
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 05/02/2011
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 01/20/2011
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT

TOSCO/76 PRODUCTS STATION (Continued) **S100231061**

Date: 05/05/2011
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 04/26/2011
Action: Site Visit / Inspection / Sampling

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 05/10/2011
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 10/07/2011
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 04/28/2011
Action: File review

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 08/26/2004
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 09/28/2005
Action: Staff Letter

Global Id: T0605902561
Action Type: ENFORCEMENT
Date: 05/26/2009
Action: File review

ORANGE CO. LUST:
Region: ORANGE
Facility Id: 85UT125
Current Status: Certification (Case Closed)
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed: 10/04/1995
Case Type: Other Ground Water
Record ID: RO0001090

Region: ORANGE
Facility Id: 98UT066
Current Status: 5C
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed: Not reported
Case Type: Other Ground Water
Record ID: RO0002675

TOSCO/76 PRODUCTS STATION (Continued) **S100231061**

LUST REG 9:

Region:	9
Status:	Case Closed
Case Number:	9UT448
Local Case:	85UT125
Substance:	Gasoline
Qty Leaked:	Not reported
Abate Method:	EDVE
Local Agency:	Orange
How Found:	Tank Closure
How Stopped:	Not reported
Source:	Tank
Cause:	Corrosion
Lead Agency:	Local Agency
Case Type:	Aquifer affected
Date Found:	12/11/1985
Date Stopped:	/ /
Confirm Date:	/ /
Submit Workplan:	12/23/85
Prelim Assess:	03/05/1986
Desc Pollution:	6/14/90
Remed Plan:	04/22/1992
Remed Action:	2/1/93
Began Monitor:	Not reported
Release Date:	12/11/1985
Enforce Date:	7/18/91
Closed Date:	10/6/95
Enforce Type:	SEL
Pilot Program:	LOP
Basin Number:	901.28
GW Depth:	6’
Beneficial Use:	Municipal groundwater use
NPDES Number:	Not reported
Priority:	Not reported
File Dispn:	File discarded, case closed
Interim Remedial Actions:	Yes
Cleanup and Abatement order Number:	Not reported
Waste Discharge Requirement Number:	Not reported

HAZNET:

Year:	2001
Gepaid:	CAL000046553
Contact:	CHRISTOPHER Z HILL
Telephone:	7144286802
Mailing Name:	Not reported
Mailing Address:	PO BOX 25376
Mailing City,St,Zip:	SANTA ANA, CA 927995376
Gen County:	Orange
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	H01
Tons:	0.41
Facility County:	Not reported

Year:	1995

TOSCO/76 PRODUCTS STATION (Continued) **S100231061**

Gepaid:	CAL000046553
Contact:	UNION OIL COMPANY OF CALIFORNI
Telephone:	7144286560
Mailing Name:	Not reported
Mailing Address:	PO BOX 25376
Mailing City,St,Zip:	SANTA ANA, CA 927995376
Gen County:	Orange
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	H01
Tons:	.2085
Facility County:	Orange

Year:	1995
Gepaid:	CAL000046553
Contact:	UNION OIL COMPANY OF CALIFORNI
Telephone:	7144286560
Mailing Name:	Not reported
Mailing Address:	PO BOX 25376
Mailing City,St,Zip:	SANTA ANA, CA 927995376
Gen County:	Orange
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	H01
Tons:	.0350
Facility County:	Orange

Year:	1993
Gepaid:	CAL000046553
Contact:	UNION OIL COMPANY OF CALIFORNI
Telephone:	7144286560
Mailing Name:	Not reported
Mailing Address:	PO BOX 25376
Mailing City,St,Zip:	SANTA ANA, CA 927995376
Gen County:	Orange
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	R01
Tons:	.3127
Facility County:	Orange

---

7 **CIRCLE K STORES INC STATION #5676** **CA LUST** **S103472038**
27164 ORTEGA HWY **CA HAZNET** **N/A**
SAN JUAN CAPISTRANO, CA 92675

LUST REG 9:

Region:	9
Status:	Preliminary site assessment workplan submitted
Case Number:	9UT3719
Local Case:	98UT66
Substance:	Gasoline
Qty Leaked:	Not reported
Abate Method:	Not reported
Local Agency:	Orange
How Found:	Other Means

CIRCLE K STORES INC STATION #5676 (Continued) **S103472038**

How Stopped: Not reported
Source: Unknown
Cause: Unknown
Lead Agency: Local Agency
Case Type: Soil only
Date Found: 07/15/1998
Date Stopped: / /
Confirm Date: / /
Submit Workplan: 9/15/98
Prelim Assess: / /
Desc Pollution: Not reported
Remed Plan: / /
Remed Action: Not reported
Began Monitor: Not reported
Release Date: 09/15/1998
Enforce Date: Not reported
Closed Date: Not reported
Enforce Type: Not reported
Pilot Program: LOP
Basin Number: 901.28
GW Depth: Not reported
Beneficial Use: MUNBU
NPDES Number: Not reported
Priority: 2A
File Dispn: Administratively opened on database, however no file physically exists
Interim Remedial Actions: Not reported
Cleanup and Abatement order Number: Not reported
Waste Discharge Requirement Number: Not reported

HAZNET:
Year: 2009
Gepaid: CAL000276954
Contact: DANELLE EICHHORST
Telephone: 2812933723
Mailing Name: Not reported
Mailing Address: 600 N DAIRY ASHFORD -US MARKETING -
Mailing City,St,Zip: HOUSTON, TX 77079
Gen County: Orange
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Other organic solids
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 3.9
Facility County: Orange

Year: 2009
Gepaid: CAL000276954
Contact: DANELLE EICHHORST
Telephone: 2812933723
Mailing Name: Not reported
Mailing Address: 600 N DAIRY ASHFORD -US MARKETING -
Mailing City,St,Zip: HOUSTON, TX 77079
Gen County: Orange
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Aqueous solution with total organic residues less than 10 percent

CIRCLE K STORES INC STATION #5676 (Continued) **S103472038**

Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.231
Facility County:	Orange
Year:	2008
Gepaid:	CAL000276954
Contact:	DANELLE EICHHORST
Telephone:	2812933723
Mailing Name:	Not reported
Mailing Address:	600 N DAIRY ASHFORD -US MARKETING -
Mailing City,St,Zip:	HOUSTON, TX 77079
Gen County:	Orange
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Other organic solids
Disposal Method:	OTHER TREATMENT
Tons:	0.05
Facility County:	Orange
Year:	2007
Gepaid:	CAL000276954
Contact:	DANELLE EICHHORST
Telephone:	2812933723
Mailing Name:	Not reported
Mailing Address:	600 N DAIRY ASHFORD -US MARKETING -
Mailing City,St,Zip:	HOUSTON, TX 77079
Gen County:	Orange
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.1
Facility County:	Orange
Year:	2005
Gepaid:	CAL000169292
Contact:	HAZMAT SPECIALIST
Telephone:	6027284180
Mailing Name:	Not reported
Mailing Address:	PO BOX 52085
Mailing City,St,Zip:	PHOENIX, AZ 850722085
Gen County:	Orange
TSD EPA ID:	CAD980884183
TSD County:	Sacramento
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method:	H01
Tons:	0.08
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

7 **SHELL SERVICE STATION** **CA HIST CORTESE** **S102437361**
27101 ORTEGA **CA LUST** **N/A**
SAN JUAN CAPISTRANO, CA 92675 **CA ENF**
CA HAZNET

CORTESE:

Region:	CORTESE
Facility County Code:	30
Reg By:	LTNKA
Reg Id:	9UT490

LUST:

Region:	STATE
Global Id:	T0605902592
Latitude:	33.502976512
Longitude:	-117.657741
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	06/12/2006
Lead Agency:	ORANGE COUNTY LOP
Case Worker:	SK
Local Agency:	ORANGE COUNTY LOP
RB Case Number:	9UT490
LOC Case Number:	86UT062
File Location:	Local Agency
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0605902592
Contact Type:	Local Agency Caseworker
Contact Name:	SHYAMALA KALYANASUNDARAM
Organization Name:	ORANGE COUNTY LOP
Address:	1241 E. DYER ROAD SUITE 120
City:	SANTA ANA
Email:	ssundaram@ochca.com
Phone Number:	7144336262

Global Id:	T0605902592
Contact Type:	Regional Board Caseworker
Contact Name:	UNASSIGNED
Organization Name:	SAN DIEGO RWQCB (REGION 9)
Address:	9174 SKY PARK COURT, SUITE 100
City:	SAN DIEGO
Email:	Not reported
Phone Number:	Not reported

LUST:

Global Id:	T0605902592
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

Global Id:	T0605902592
Action Type:	REMEDIATION
Date:	01/01/1950

SHELL SERVICE STATION (Continued) **S102437361**

Action: Vent soil

Global Id: T0605902592
Action Type: REMEDIATION
Date: 01/01/1950
Action: Vent soil

Global Id: T0605902592
Action Type: REMEDIATION
Date: 01/01/1950
Action: Pump and Treat Groundwater

Global Id: T0605902592
Action Type: REMEDIATION
Date: 01/01/1950
Action: Dual Phase Extraction

Global Id: T0605902592
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0605902592
Action Type: ENFORCEMENT
Date: 03/04/2004
Action: Staff Letter

Global Id: T0605902592
Action Type: ENFORCEMENT
Date: 05/26/2005
Action: Staff Letter

Global Id: T0605902592
Action Type: ENFORCEMENT
Date: 06/12/2006
Action: Closure/No Further Action Letter

Global Id: T0605902592
Action Type: ENFORCEMENT
Date: 01/03/2006
Action: Staff Letter

ORANGE CO. LUST:
Region: ORANGE
Facility Id: 86UT062
Current Status: Certification (Case Closed)
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed: 06/12/2006
Case Type: Other Ground Water
Record ID: RO0002310

LUST REG 9:
Region: 9
Status: Remedial action (cleanup) Underway
Case Number: 9UT490

SHELL SERVICE STATION (Continued) **S102437361**

Local Case:	86UT62
Substance:	Gasoline
Qty Leaked:	Not reported
Abate Method:	FPEDVE
Local Agency:	Orange
How Found:	Tank Closure
How Stopped:	New Tank
Source:	Tank
Cause:	Overfill
Lead Agency:	Local Agency
Case Type:	Aquifer affected
Date Found:	05/01/1986
Date Stopped:	05/01/1986
Confirm Date:	/ /
Submit Workplan:	Not reported
Prelim Assess:	03/11/1987
Desc Pollution:	Not reported
Remed Plan:	09/18/1987
Remed Action:	1/29/93
Began Monitor:	Not reported
Release Date:	05/23/1986
Enforce Date:	8/18/87
Closed Date:	Not reported
Enforce Type:	Cleanup and Abatement Orders
Pilot Program:	LOP
Basin Number:	901.28
GW Depth:	35’
Beneficial Use:	Municipal groundwater use
NPDES Number:	Not reported
Priority:	Not reported
File Dispn:	Not reported
Interim Remedial Actions:	Yes
Cleanup and Abatement order Number:	87-123
Waste Discharge Requirement Number:	Not reported

ENF:

Region:	9
Facility Id:	256716
Agency Name:	Shell Oil Company - Anaheim
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	5541
SIC Desc 1:	Gasoline Service Stations
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported

SHELL SERVICE STATION (Continued) **S102437361**

NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	TANKS
# Of Programs:	1
WDID:	9 000209N87
Reg Measure Id:	160981
Reg Measure Type:	Unregulated
Region:	9
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Historical
Status Date:	06/17/2005
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	Not reported
Fee Code:	Not reported
Direction/Voice:	Passive
Enforcement Id(EID):	220635
Region:	9
Order / Resolution Number:	LT870818
Enforcement Action Type:	Clean-up and Abatement Order
Effective Date:	08/18/1987
Adoption/Issuance Date:	Not reported
Achieve Date:	5/9/1996
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 9 000209N87
Description:	UNKNOWN
Program:	TANKS
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0

SHELL SERVICE STATION (Continued) **S102437361**

Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0
Region:	9
Facility Id:	256716
Agency Name:	Shell Oil Company - Anaheim
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	Not reported
Place Longitude:	Not reported
SIC Code 1:	5541
SIC Desc 1:	Gasoline Service Stations
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	TANKS
# Of Programs:	1
WDID:	9 000209N87
Reg Measure Id:	160981
Reg Measure Type:	Unregulated
Region:	9
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Historical
Status Date:	06/17/2005
Effective Date:	Not reported
Expiration/Review Date:	Not reported

SHELL SERVICE STATION (Continued) **S102437361**

Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	Not reported
Fee Code:	Not reported
Direction/Voice:	Passive
Enforcement Id(EID):	220341
Region:	9
Order / Resolution Number:	96-043
Enforcement Action Type:	Clean-up and Abatement Order
Effective Date:	06/13/1996
Adoption/Issuance Date:	Not reported
Achieve Date:	6/13/1996
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Enforcement - 9 000209N87
Description:	UNKNOWN
Program:	TANKS
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

HAZNET:

Year:	2010
Gepaid:	CAR000104190
Contact:	J. Traylor/ENV REPORTING ANALYST
Telephone:	7132416992
Mailing Name:	Not reported
Mailing Address:	PO Box 3127
Mailing City,St,Zip:	HOUSTON, TX 772530000
Gen County:	Not reported
TSD EPA ID:	CAT000646117
TSD County:	Not reported
Waste Category:	Unspecified sludge waste
Disposal Method:	LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)
Tons:	0.22935
Facility County:	Orange

Year:	2010
Gepaid:	CAR000104190
Contact:	J. Traylor/ENV REPORTING ANALYST
Telephone:	7132416992
Mailing Name:	Not reported

SHELL SERVICE STATION (Continued) **S102437361**

Mailing Address: PO Box 3127
Mailing City,St,Zip: HOUSTON, TX 772530000
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Unspecified organic liquid mixture
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 0.017
Facility County: Orange

---

7 LOS CERRITOS RANCH **CA LUST** **S105034725**
31642 AVENIDA LOS CERRITOS **N/A**
SAN JUAN CAPISTRANO, CA 92675

---

7 ROMARCO REALTY CORP **CA LUST** **S102436009**
31642 AVE LOS CERRITOS **N/A**
SAN JUAN CAPISTRANO, CA 92673

LUST:
Region: STATE
Global Id: T0605902460
Latitude: 33.50354
Longitude: -117.656912
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 09/19/1994
Lead Agency: ORANGE COUNTY LOP
Case Worker: SK
Local Agency: ORANGE COUNTY LOP
RB Case Number: 9UT2116
LOC Case Number: 92UT041
File Location: Local Agency
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel, Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0605902460
Contact Type: Local Agency Caseworker
Contact Name: SHYAMALA KALYANASUNDARAM
Organization Name: ORANGE COUNTY LOP
Address: 1241 E. DYER ROAD SUITE 120
City: SANTA ANA
Email: ssundaram@ochca.com
Phone Number: 7144336262

LUST:
Global Id: T0605902460
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

ROMARCO REALTY CORP (Continued) **S102436009**

Global Id: T0605902460
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

ORANGE CO. LUST:
Region: ORANGE
Facility Id: 92UT041
Current Status: Certification (Case Closed)
Released Substance: Diesel fuel oil and additives, Nos.1-D, 2-D, 2-4
Date Closed: 09/19/1994
Case Type: Soil Only
Record ID: RO0001925

Region: ORANGE
Facility Id: 92UT041
Current Status: Not reported
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed: 09/19/1994
Case Type: Not reported
Record ID: RO0001925

---

7 **LOS CERRITOS RANCH** **CA HIST CORTESE** **U001577812**
31642 AVENIDA LOS CERRITOS **CA HIST UST** **N/A**
SAN JUAN CAPISTRANO, CA 92675

CORTESE:
Region: CORTESE
Facility County Code: 30
Reg By: LTNKA
Reg Id: 9UT2116

HIST UST:
Region: STATE
Facility ID: 00000037673
Facility Type: Other
Other Type: FARM
Total Tanks: 0006
Contact Name: RAY HERNANDEZ
Telephone: 7144931627
Owner Name: ROBERT B. HONEYMAN
Owner Address: 31642 AVENIDA LOS CERRITOS
Owner City,St,Zip: SAN JUAN CAPISTRANO, CA 92675

Tank Num: 001
Container Num: 1
Year Installed: 1945
Tank Capacity: 00060000
Tank Used for: Not reported
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 002
Container Num: 2
Year Installed: 1975

LOS CERRITOS RANCH (Continued) **U001577812**

Tank Capacity: 00003000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 003
Container Num: 3
Year Installed: 1975
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Visual, Stock Inventor

Tank Num: 004
Container Num: 4
Year Installed: Not reported
Tank Capacity: 00000000
Tank Used for: Not reported
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Not reported

Tank Num: 005
Container Num: 5
Year Installed: 1975
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Visual, Stock Inventor

Tank Num: 006
Container Num: 6
Year Installed: 1975
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: Visual, Stock Inventor

---

8 **SAN JUAN ELEMENTARY SCHOOL** **CA SCH** **S105088327**
31642 EL CAMINO REAL **CA HAZNET** **N/A**
SAN JUAN CAPISTRANO, CA 92675 **CA ENVIROSTOR**

SCH:

Facility ID: 60000050
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 8
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Mitigation And Brownfield Reuse Program
Project Manager: Not reported

SAN JUAN ELEMENTARY SCHOOL (Continued) **S105088327**

Supervisor:	* Rafat Abbasi
Division Branch:	Southern California Schools & Brownfields Outreach
Site Code:	404514
Assembly:	73
Senate:	38
Special Program Status:	Not reported
Status:	Inactive - Needs Evaluation
Status Date:	01/03/2006
Restricted Use:	NO
Funding:	School District
Latitude:	33.5039
Longitude:	-117.6615
APN:	NONE SPECIFIED
Past Use:	* EDUCATIONAL SERVICES, AGRICULTURAL - ORCHARD, SCHOOL - ELEMENTARY
Potential COC:	30001, 30004, 30006, 30007, 30008, 30013
Confirmed COC:	30001-NO,30004-NO,30006-NO,30007-NO,30008-NO,30013-NO
Potential Description:	SOIL
Alias Name:	CAPISTRANO USD-SAN JUAN ELEMENTARY SCL
Alias Type:	Alternate Name
Alias Name:	110021641829
Alias Type:	EPA (FRS #)
Alias Name:	404514
Alias Type:	Project Code (Site Code)
Alias Name:	60000050
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	12/27/2005
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	01/15/2004
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

HAZNET:

Year:	2000
Gepaid:	CAC002332409
Contact:	CAPISTRANO UNIFIED SCHOOL DIST
Telephone:	9494897276
Mailing Name:	Not reported
Mailing Address:	32972 CALLE PERFECTO
Mailing City,St,Zip:	SAN JUAN CAPISTRANO, CA 926750000

SAN JUAN ELEMENTARY SCHOOL (Continued) **S105088327**

Gen County: Orange
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: .8428
Facility County: Orange

ENVIROSTOR:
Site Type: School Investigation
Site Type Detailed: School
Acres: 8
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: * Rafat Abbasi
Division Branch: Southern California Schools & Brownfields Outreach
Facility ID: 60000050
Site Code: 404514
Assembly: 73
Senate: 38
Special Program: Not reported
Status: Inactive - Needs Evaluation
Status Date: 01/03/2006
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: School District
Latitude: 33.5039
Longitude: -117.6615
APN: NONE SPECIFIED
Past Use: * EDUCATIONAL SERVICES, AGRICULTURAL - ORCHARD, SCHOOL - ELEMENTARY
Potential COC: 30001, 30004, 30006, 30007, 30008, 30013
Confirmed COC: 30001-NO,30004-NO,30006-NO,30007-NO,30008-NO,30013-NO
Potential Description: SOIL
Alias Name: CAPISTRANO USD-SAN JUAN ELEMENTARY SCL
Alias Type: Alternate Name
Alias Name: 110021641829
Alias Type: EPA (FRS #)
Alias Name: 404514
Alias Type: Project Code (Site Code)
Alias Name: 60000050
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 12/27/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 01/15/2004
Comments: Not reported

SAN JUAN ELEMENTARY SCHOOL (Continued) **S105088327**

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

---

9 **FORSTER CANYON LANDFILL** **CA SWF/LF** **S102361458**
LA NOVIA & SAN JUAN CREEK RD. **N/A**
SAN JUAN CAPISTRANO, CA

SWF/LF (SWIS):

Region:	STATE
Facility ID:	30-AB-0366
Lat/Long:	33.5013500 / -117.64807
Owner Name:	Advanced Group 99-S-J
Owner Telephone:	7145571998
Owner Address:	Not reported
Owner Address2:	22974 El Toro Road
Owner City,St,Zip:	Lake Forest, CA 92630
Operator:	OC Waste and Recycling
Operator Phone:	7148344000
Operator Address:	Not reported
Operator Address2:	300 N Flower Street, Suite 400
Operator City,St,Zip:	Santa Ana, CA 92703
Operator's Status:	Closed
Permit Date:	Not reported
Permit Status:	Not reported
Permitted Acreage:	0
Activity:	Solid Waste Disposal Site
Regulation Status:	Pre-regulations
Landuse Name:	Residential
GIS Source:	GPS
Category:	Disposal
Unit Number:	01
Inspection Frequency:	Quarterly
Accepted Waste:	Not reported
Closure Date:	01/01/1980
Closure Type:	Actual
Disposal Acreage:	0
SWIS Num:	30-AB-0366
Waste Discharge Requirement Num:	Not reported
Program Type:	Not reported
Permitted Throughput with Units:	0
Actual Throughput with Units:	Not reported
Permitted Capacity with Units:	0
Remaining Capacity:	0
Remaining Capacity with Units:	Not reported

9 **FORSTER CANYON LANDFILL STN 17** **CA WMUDS/SWAT** **S103442727**
FORSTER CANYON ROAD **N/A**
SAN JUAN CAPISTRANO ,CA, CA

WMUDS/SWAT:

Edit Date:	Not reported
Complexity:	Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.
Primary Waste:	Solid Wastes
Primary Waste Type:	Nonhazardous Solid Wastes/Influent or Solid Wastes that contain nonhazardous putrescible and non putrescible solid, semisolid, and liquid wastes (E.G., garbage, trash, refuse, paper, demolition and construction wastes, manure, vegetable or animal solid and semisolid waste).
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	Not reported
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Private
Agency Name:	CAPISTRANO ASCOT DEVELOPMENT
Agency Department:	INTEGRATED WASTE MANAGEMENT
Agency Address:	55 WEST MONROE STE 1500
Agency City,St,Zip:	CHICAGO ,IL 60603
Agency Contact:	MR. MICHAEL F. SEXTON
Agency Telephone:	3123725600
Land Owner Name:	SAN JUAN CREEK ASSOCIATES
Land Owner Address:	2300 MICHALSON, SUITE 800
Land Owner City,St,Zip:	IRVINE, CA 92714
Land Owner Contact:	MR. RAY POULTER
Land Owner Phone:	Not reported
Region:	9
Facility Type:	Solid Waste Site-Class III - Landfills for non hazardous solid wastes.
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	9511
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	True
Solid Waste Assessment Test Program:	True
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	False
Department of Defence:	False
Solid Waste Assessment Test Program:	COUNTY OF ORANGE
Threat to Water Quality:	Moderate Threat to Water Quality. A violation could have a major adverse impact on receiving biota, can cause aesthetic impairment to a significant human population, or render unusable a potential domestic or municipal water supply. Awsthetic impairment would include nuisance from a waste treatment facility.

FORSTER CANYON LANDFILL STN 17 (Continued) **S103442727**

Sub Chapter 15:	True
Regional Board Project Officer:	AMM
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	Not reported
Waste Discharge Requirements:	H
Self-Monitoring Rept. Frequency:	Not reported
Waste Discharge System ID:	9 000036N90
Solid Waste Information ID:	Not reported

---

9 **SAN JUAN CAPISTRANO LANDFILL** **CA WMUDS/SWAT** **S103442733**
NEAR SAN JUAN CREEK 300' N **N/A**
SAN JUAN CAPISTRANO, CA

WMUDS/SWAT:

Edit Date:	Not reported
Complexity:	Not reported
Primary Waste:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	Not reported
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Not reported
Agency Name:	ORANGE, COUNTY OF
Agency Department:	SOLID WASTE MANAGEMENT
Agency Address:	1300 SOUTH GRAND AVENUE
Agency City,St,Zip:	SANTA ANA 92705
Agency Contact:	FRANK BOWERMAN, DIRECTOR
Agency Telephone:	Not reported
Land Owner Name:	UNKNOWN
Land Owner Address:	Not reported
Land Owner City,St,Zip:	CA
Land Owner Contact:	Not reported
Land Owner Phone:	Not reported
Region:	9
Facility Type:	Not reported
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	Not reported
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	False
Solid Waste Assessment Test Program:	True
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	False
Department of Defence:	False
Solid Waste Assessment Test Program:	ORANGE, COUNTY OF
Threat to Water Quality:	Not reported
Sub Chapter 15:	False

SAN JUAN CAPISTRANO LANDFILL (Continued) **S103442733**

Regional Board Project Officer:	MA
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	Not reported
Waste Discharge Requirements:	Not reported
Self-Monitoring Rept. Frequency:	Not reported
Waste Discharge System ID:	9 300005NUR
Solid Waste Information ID:	Not reported

---

10 **SOLAG DISPOSAL** **CA HIST CORTESE** **S104241827**
31731 PASEO ADELANTO **CA VCP** **N/A**
SAN JUAN CAPISTRA, CA 92675 **CA ENVIROSTOR**

CORTESE:

Region:	CORTESE
Facility County Code:	30
Reg By:	LTNKA
Reg Id:	9UT3568

VCP:

Facility ID:	30990002
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	1.83
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	JOHNSON ABRAHAM
Supervisor:	Emad Yemut
Division Branch:	Cleanup Cypress
Site Code:	400786
Assembly:	73
Senate:	38
Special Programs Code:	Voluntary Cleanup Program
Status:	No Further Action
Status Date:	05/02/2001
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	33.49715 / -117.6784
APN:	NONE SPECIFIED
Past Use:	FUEL - VEHICLE STORAGE/ REFUELING, JUNKYARD
Potential COC:	30001, 30005, 30013, 30019, 30080
Confirmed COC:	30019-NO,30080-NO,30001-NO,30005-NO,30013
Potential Description:	OTH, SOIL
Alias Name:	SOLAG DISPOSAL SITE
Alias Type:	Alternate Name
Alias Name:	110033606060
Alias Type:	EPA (FRS #)
Alias Name:	400786
Alias Type:	Project Code (Site Code)
Alias Name:	30990002
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

SOLAG DISPOSAL (Continued) **S104241827**

Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	01/13/2000
Comments:	DTSC entered into a Voluntary Cleanup Agreement with Solag Disposal for the review and comment on the results of previous investigations that were conducted without DTSC oversight.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	05/02/2001
Comments:	The PEA Report was approved. DTSC recommended that the monitoring wells constructed on-site should be properly abandoned.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	09/29/2000
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

ENVIROSTOR:

Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Cleanup
Acres:	1.83
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	NONE SPECIFIED
Program Manager:	JOHNSON ABRAHAM
Supervisor:	Emad Yemut
Division Branch:	Cleanup Cypress
Facility ID:	30990002
Site Code:	400786
Assembly:	73
Senate:	38
Special Program:	Voluntary Cleanup Program
Status:	No Further Action
Status Date:	05/02/2001
Restricted Use:	NO
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	Responsible Party
Latitude:	33.49715
Longitude:	-117.6784
APN:	NONE SPECIFIED
Past Use:	FUEL - VEHICLE STORAGE/ REFUELING, JUNKYARD
Potential COC:	30001, 30005, 30013, 30019, 30080
Confirmed COC:	30019-NO,30080-NO,30001-NO,30005-NO,30013
Potential Description:	OTH, SOIL
Alias Name:	SOLAG DISPOSAL SITE

SOLAG DISPOSAL (Continued) **S104241827**

Alias Type: Alternate Name
Alias Name: 110033606060
Alias Type: EPA (FRS #)
Alias Name: 400786
Alias Type: Project Code (Site Code)
Alias Name: 30990002
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 01/13/2000
Comments: DTSC entered into a Voluntary Cleanup Agreement with Solag Disposal for the review and comment on the results of previous investigations that were conducted without DTSC oversight.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 05/02/2001
Comments: The PEA Report was approved. DTSC recommended that the monitoring wells constructed on-site should be properly abandoned.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 09/29/2000
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

---

11 **IMPACT BEARING** **RCRA-SQG** **1007264049**
1291 PUERTO DEL SOL **CA HAZNET** **CAR000152074**
SAN CLEMENTE, CA 92673

RCRA-SQG:
Date form received by agency: 03/15/2004
Facility name: IMPACT BEARING
Facility address: 1291 PUERTO DEL SOL
SAN CLEMENTE, CA 92673
EPA ID: CAR000152074
Contact: RICHARD D KAY
Contact address: 1291 PUERTO DEL SOL
SAN CLEMENTE, CA 92673
Contact country: US
Contact telephone: 949-361-5356
Contact email: RICHARDKAY@SBCGLOBAL.NET
EPA Region: 09
Classification: Small Small Quantity Generator

IMPACT BEARING (Continued) **1007264049**

Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	SANDY WHITE
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	03/02/2004
Owner/Op end date:	Not reported

Owner/operator name:	RICHARD KAY
Owner/operator address:	1291 PUERTO DEL SOL
	SAN CLEMENTE, CA 92673
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	03/02/2004
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code:	D001
Waste name:	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Violation Status: No violations found

IMPACT BEARING (Continued) **1007264049**

HAZNET:

Year:	2010
Gepaid:	CAR000152074
Contact:	RICHARD D KAY
Telephone:	9494882922
Mailing Name:	Not reported
Mailing Address:	1291 PUERTA DEL SOL
Mailing City,St,Zip:	SAN CLEMENTE, CA 926736310
Gen County:	Not reported
TSD EPA ID:	CAD008364432
TSD County:	Not reported
Waste Category:	Not reported
Disposal Method:	FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons:	0.45036
Facility County:	Orange

Year:	2010
Gepaid:	CAR000152074
Contact:	RICHARD D KAY
Telephone:	9494882922
Mailing Name:	Not reported
Mailing Address:	1291 PUERTA DEL SOL
Mailing City,St,Zip:	SAN CLEMENTE, CA 926736310
Gen County:	Not reported
TSD EPA ID:	CAD008364432
TSD County:	Not reported
Waste Category:	Not reported
Disposal Method:	FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons:	0.68805
Facility County:	Orange

Year:	2010
Gepaid:	CAR000152074
Contact:	RICHARD D KAY
Telephone:	9494882922
Mailing Name:	Not reported
Mailing Address:	1291 PUERTA DEL SOL
Mailing City,St,Zip:	SAN CLEMENTE, CA 926736310
Gen County:	Not reported
TSD EPA ID:	CAD008364432
TSD County:	Not reported
Waste Category:	Not reported
Disposal Method:	FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons:	0.68805
Facility County:	Orange

Year:	2009
Gepaid:	CAR000152074
Contact:	RICHARD D KAY
Telephone:	9493615356
Mailing Name:	Not reported
Mailing Address:	1291 PUERTA DEL SOL
Mailing City,St,Zip:	SAN CLEMENTE, CA 926736310
Gen County:	Orange
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Not reported

IMPACT BEARING (Continued) **1007264049**

Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 0.9174
Facility County: Orange

Year: 2009
Gepaid: CAR000152074
Contact: RICHARD D KAY
Telephone: 9493615356
Mailing Name: Not reported
Mailing Address: 1291 PUERTA DEL SOL
Mailing City,St,Zip: SAN CLEMENTE, CA 926736310
Gen County: Orange
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 1.134
Facility County: Orange

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

---

12 **FLAVOR INFUSION, LLC** **RCRA-LQG** **1008372164**
1324 CALLE AVANZADO **CA HAZNET** **CAR000163774**
SAN CLEMENTE, CA 92673

RCRA-LQG:
Date form received by agency: 03/03/2010
Facility name: FLAVOR INFUSION, LLC
Facility address: 1324 CALLE AVANZADO
SAN CLEMENTE, CA 92673
EPA ID: CAR000163774
Mailing address: CALLE AVANZADO
SAN CLEMENTE, CA 92673
Contact: STEVE KLEHR
Contact address: CALLE AVANZADO
SAN CLEMENTE, CA 92673
Contact country: Not reported
Contact telephone: (949) 276-4600
Telephone ext.: 222
Contact email: SKLEHR@FLAVORINFUSION.COM
EPA Region: 09
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

FLAVOR INFUSION, LLC (Continued) **1008372164**

Owner/operator name: FLAVOR INFUSION LLC
Owner/operator address: 332 FOREST AVE STE 19
LAGUNA BEACH, CA 92651
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 02/02/2004
Owner/Op end date: Not reported

Owner/operator name: FLAVOR INFUSION, LLC
Owner/operator address: CALLE AVANZADO
SAN CLEMENTE, CA 92673
Owner/operator country: Not reported
Owner/operator telephone: (949) 276-4600
Legal status: Municipal
Owner/Operator Type: Owner
Owner/Op start date: 06/10/2005
Owner/Op end date: Not reported

Owner/operator name: FLAVOR INFUSION, LLC
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Municipal
Owner/Operator Type: Operator
Owner/Op start date: 02/02/2004
Owner/Op end date: Not reported

Owner/operator name: FLAVOR INFUSION LLC
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Municipal
Owner/Operator Type: Operator
Owner/Op start date: 06/10/2005
Owner/Op end date: Not reported

Owner/operator name: STEVE KLEHR
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 09/12/2005
Owner/Op end date: Not reported

Owner/operator name: DAN DECLARK
Owner/operator address: 332 FOREST AVE, SUITE 19
LAGUNA BEACH, CA 92651
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner

FLAVOR INFUSION, LLC (Continued) **1008372164**

Owner/Op start date: 01/01/2005
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 08/26/2008
Facility name: FLAVOR INFUSION, LLC
Site name: FLAVOR INFUSION
Classification: Large Quantity Generator

Date form received by agency: 07/13/2005
Facility name: FLAVOR INFUSION, LLC
Site name: FLAVOR INFUSION LLC
Classification: Small Quantity Generator

Hazardous Waste Summary:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE

FLAVOR INFUSION, LLC (Continued) **1008372164**

MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Biennial Reports:

Last Biennial Reporting Year: 2011

Annual Waste Handled:

Waste code:	D001
Waste name:	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
Amount (Lbs):	24402.8

Violation Status: No violations found

HAZNET:

Year:	2010
Gepaid:	CAR000163774
Contact:	MATT PULSKAMP/DIR. OF MFG
Telephone:	9492764600
Mailing Name:	Not reported
Mailing Address:	1324 CALLE AVANZADO
Mailing City,St,Zip:	SAN CLEMENTE, CA 926730000
Gen County:	Not reported
TSD EPA ID:	CAD008252405
TSD County:	Not reported
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons:	0.0495
Facility County:	Orange

Year:	2010
Gepaid:	CAR000163774
Contact:	MATT PULSKAMP/DIR. OF MFG
Telephone:	9492764600
Mailing Name:	Not reported
Mailing Address:	1324 CALLE AVANZADO
Mailing City,St,Zip:	SAN CLEMENTE, CA 926730000
Gen County:	Not reported
TSD EPA ID:	CAD008252405
TSD County:	Not reported
Waste Category:	Unspecified aqueous solution
Disposal Method:	FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons:	0.231
Facility County:	Orange

Year:	2010
Gepaid:	CAR000163774
Contact:	MATT PULSKAMP/DIR. OF MFG
Telephone:	9492764600
Mailing Name:	Not reported
Mailing Address:	1324 CALLE AVANZADO

FLAVOR INFUSION, LLC (Continued) **1008372164**

Mailing City,St,Zip: SAN CLEMENTE, CA 926730000
Gen County: Not reported
TSD EPA ID: CAD008252405
TSD County: Not reported
Waste Category: Unspecified solvent mixture
Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 4.86
Facility County: Orange

Year: 2010
Gepaid: CAR000163774
Contact: MATT PULSKAMP/DIR. OF MFG
Telephone: 9492764600
Mailing Name: Not reported
Mailing Address: 1324 CALLE AVANZADO
Mailing City,St,Zip: SAN CLEMENTE, CA 926730000
Gen County: Not reported
TSD EPA ID: CAD008252405
TSD County: Not reported
Waste Category: Unspecified solvent mixture
Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 2.772
Facility County: Orange

Year: 2009
Gepaid: CAR000163774
Contact: STEVE KLEHR/DIRECTOR OF OPTNS
Telephone: 9492764600
Mailing Name: Not reported
Mailing Address: 1324 CALLE AVANZADO
Mailing City,St,Zip: SAN CLEMENTE, CA 926730000
Gen County: Orange
TSD EPA ID: CAD008302903
TSD County: Los Angeles
Waste Category: Unspecified organic liquid mixture
Disposal Method: FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons: 2.618
Facility County: Orange

Click this hyperlink while viewing on your computer to access
8 additional CA_HAZNET: record(s) in the EDR Site Report.

---

13 **TRW - CAPISTRANO TEST SITE** **CA WDS** **U001577787**
33000 AVENIDA PICO **CA HIST UST** **N/A**
SAN CLEMENTE, CA 92672 **CA CHMIRS**

CA WDS:
Facility ID: San Diego 000000034
Facility Type: Municipal/Domestic - Facility that treats sewage or a mixture of predominantly sewage and other waste from districts, municipalities, communities, hospitals, schools, and publicly or privately owned systems (excluding individual subsurface leaching systems disposing of less than 1,000 gallons per day).
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: Not reported
Subregion: 9
Facility Telephone: 9493617106

TRW - CAPISTRANO TEST SITE (Continued) **U001577787**

Facility Contact:	RICK ASHER
Agency Name:	NGST
Agency Address:	PO BOX 10
Agency City,St,Zip:	SAN CLEMENTE 926740010
Agency Contact:	RICK ASHER
Agency Telephone:	9493617106
Agency Type:	Private
SIC Code:	8734
SIC Code 2:	Not reported
Primary Waste:	Domestic Sewage
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The facility is not a POTW.
Treat To Water:	Moderate Threat to Water Quality. A violation could have a major adverse impact on receiving biota, can cause aesthetic impairment to a significant human population, or render unusable a potential domestic or municipal water supply. Awsthetic impairment would include nuisance from a waste treatment facility.
Complexity:	Category B - Any facility having a physical, chemical, or biological waste treatment system (except for septic systems with subsurface disposal), or any Class II or III disposal site, or facilities without treatment systems that are complex, such as marinas with petroleum products, solid wastes, and sewage pump out facilities.

HIST UST:

Region:	STATE
Facility ID:	00000037708
Facility Type:	Other
Other Type:	AEROSPACE
Total Tanks:	0002
Contact Name:	F.R. GARBARINE
Telephone:	7144924157
Owner Name:	TRW ELECTRONICS & DEFENSE
Owner Address:	ONE SPACE PARK
Owner City,St,Zip:	REDONDO BEACH, CA 90278
Tank Num:	001
Container Num:	#1
Year Installed:	Not reported
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	None
Tank Num:	002
Container Num:	#2
Year Installed:	Not reported
Tank Capacity:	00002000
Tank Used for:	PRODUCT

TRW - CAPISTRANO TEST SITE (Continued) **U001577787**

Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: None

CHMIRS:

OES Incident Number:	99-3632	
OES notification:	8/29/199911:00:16 AM	
OES Date:	Not reported	
OES Time:	Not reported	
Incident Date:	Not reported	
Date Completed:	**Not reported**	
Property Use:	Not reported	
Agency Id Number:	Not reported	
Agency Incident Number:	Not reported	
Time Notified:	Not reported	
Time Completed:	Not reported	
Surrounding Area:	Not reported	
Estimated Temperature:	Not reported	
Property Management:	Not reported	
Special Studies 1:	Not reported	
Special Studies 2:	Not reported	
Special Studies 3:	Not reported	
Special Studies 4:	Not reported	
Special Studies 5:	Not reported	
Special Studies 6:	Not reported	
More Than Two Substances Involved?:		Not reported
Resp Agncy Personel # Of Decontaminated:		Not reported
Responding Agency Personel # Of Injuries:		Not reported
Responding Agency Personel # Of Fatalities:		Not reported
Others Number Of Decontaminated:		Not reported
Others Number Of Injuries:		Not reported
Others Number Of Fatalities:		Not reported
Vehicle Make/year:	Not reported	
Vehicle License Number:	Not reported	
Vehicle State:	Not reported	
Vehicle Id Number:	Not reported	
CA/DOT/PUC/ICC Number:	Not reported	
Company Name:	Not reported	
Reporting Officer Name/ID:	Not reported	
Report Date:	Not reported	
Comments:	Not reported	
Facility Telephone:	Not reported	
Waterway Involved:	No	
Waterway:	Not reported	
Spill Site:	Not reported	
Cleanup By:	Unknown	
Containment:	Not reported	
What Happened:	Not reported	
Type:	Not reported	
Measure:	Not reported	
Other:	Not reported	
Date/Time:	Not reported	
Year:	1999	
Agency:	Orange Co SO	
Incident Date:	8/29/199912:00:00 AM	
Admin Agency:	San Clemente Fire Department	
Amount:	Not reported	

TRW - CAPISTRANO TEST SITE (Continued) **U001577787**

Contained:	Yes
Site Type:	Industrial Plant
E Date:	Not reported
Substance:	Peroxide solution w/water
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	300
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	A explosion in a container of the solution, unknown cause.

OES Incident Number:	03-0883
OES notification:	2/15/200312:04:19 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported

More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported

Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported

TRW - CAPISTRANO TEST SITE (Continued) **U001577787**

Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2003
Agency:	Northrop Grumman
Incident Date:	2/14/200312:00:00 AM
Admin Agency:	San Clemente Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Industrial Plant
E Date:	Not reported
Substance:	Hydrogen Peroxide 50%
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	665
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Peroxide spilled into a secondary tank and the substance was released through an open valve.
OES Incident Number:	01-2537
OES notification:	5/1/200103:21:07 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported

TRW - CAPISTRANO TEST SITE (Continued) **U001577787**

Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Yes
Waterway:	storm drain
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2001
Agency:	TRW
Incident Date:	5/1/200112:00:00 AM
Admin Agency:	San Clemente Fire Department
Amount:	Not reported
Contained:	Unknown
Site Type:	Other
E Date:	Not reported
Substance:	Hydrogen Peroxide 10% solution
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	3300
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0.000000
Evacuations:	0
Number of Injuries:	0

TRW - CAPISTRANO TEST SITE (Continued) **U001577787**

Number of Fatalities:	0
Description:	Employee opened wrong valve and released substance onto the ground.
OES Incident Number:	07-4993
OES notification:	8/20/2007 10:51:32 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Storm Drain
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2007
Agency:	Orange County Sheriff
Incident Date:	8/20/2007 12:00:00 AM
Admin Agency:	San Clemente Fire Department
Amount:	Not reported
Contained:	No
Site Type:	Industrial Plant

TRW - CAPISTRANO TEST SITE (Continued) **U001577787**

E Date:	Not reported
Substance:	Sewage
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	6000
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	08/20/07 at 2145 hrs, sewage spill - no details.

---

13 **T R W CAPISTRANO TEST SITE** **CA FID UST** **U002096357**
33000 AVENIDA PICO **N/A**
SAN CLEMENTE, CA 92672

CA FID UST:

Facility ID:	30017450
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	7143617052
Mail To:	Not reported
Mailing Address:	33000 AVENIDA PICO
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SAN CLEMENTE 92672
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

---

13 **NORTHROP GRUMMAN CAPISTRANO TEST SITE - NORTHROP GRUMMAN CTS** **CA SLIC** **S105940122**
33000 AVENIDA PICO, **CA EMI** **N/A**
SAN CLEMENTE, CA 92673

SLIC:

Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	12/21/2010
Global Id:	T10000002696
Lead Agency:	SAN DIEGO RWQCB (REGION 9)
Lead Agency Case Number:	Not reported
Latitude:	33.4630063513127

NORTHROP GRUMMAN CAPISTRANO TEST SITE - NORTHROP GRUMMAN CTS (Continued) **S105940122**

Longitude:	-117.55006313324
Case Type:	Cleanup Program Site
Case Worker:	XY
Local Agency:	ORANGE COUNTY
RB Case Number:	Not reported
File Location:	Regional Board
Potential Media Affected:	Other Groundwater (uses other than drinking water), Soil, Soil Vapor
Potential Contaminants of Concern:	Tetrachloroethylene (PCE), Trichloroethylene (TCE), Freon, Polychlorinated biphenyls (PCBs), NDMA - N-Nitrosodimethylamine, Other inorganic / salt, Perchlorate, Chromium
Site History:	The Area of concern is located in the eastern portion of the Facility. Its operation includes a former surface impoundment/reservoir (43DT); A7 test stand, specifically the former location of several above ground pools located off the west end of the test stand; the hydrazine drum storage area; and concrete drainage swale. During historical investigations of Phase I (2005) and II (2006), the sub-areas u 43DT, A7 test stand, hydrazine drum storage area and concrete drainage swale were investigated respectively. Constituents of concerns include chlorinated solvents, NDMA, Hydrazine, Cr(VI), PCB, and Freon in soil (including soil gas) and/or groundwater.

Click here to access the California GeoTracker records for this facility:

EMI:

Year:	1987
County Code:	30
Air Basin:	SC
Facility ID:	779
Air District Name:	SC
SIC Code:	8734
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	50
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	30
Air Basin:	SC
Facility ID:	779
Air District Name:	SC
SIC Code:	8734
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	29
NOX - Oxides of Nitrogen Tons/Yr:	5
SOX - Oxides of Sulphur Tons/Yr:	3
Particulate Matter Tons/Yr:	1

NORTHROP GRUMMAN CAPISTRANO TEST SITE - NORTHROP GRUMMAN CTS (Continued) **S105940122**

Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1995
County Code: 30
Air Basin: SC
Facility ID: 779
Air District Name: SC
SIC Code: 8734
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 1
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1996
County Code: 30
Air Basin: SC
Facility ID: 779
Air District Name: SC
SIC Code: 8734
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 2
Reactive Organic Gases Tons/Yr: 2
Carbon Monoxide Emissions Tons/Yr: 15
NOX - Oxides of Nitrogen Tons/Yr: 4
SOX - Oxides of Sulphur Tons/Yr: 1
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1997
County Code: 30
Air Basin: SC
Facility ID: 779
Air District Name: SC
SIC Code: 8734
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 2
Reactive Organic Gases Tons/Yr: 2
Carbon Monoxide Emissions Tons/Yr: 47
NOX - Oxides of Nitrogen Tons/Yr: 3
SOX - Oxides of Sulphur Tons/Yr: 1
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1998
County Code: 30
Air Basin: SC
Facility ID: 779

NORTHROP GRUMMAN CAPISTRANO TEST SITE - NORTHROP GRUMMAN CTS (Continued) **S105940122**

Air District Name:	SC
SIC Code:	8734
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	47
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	1
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
County Code:	30
Air Basin:	SC
Facility ID:	779
Air District Name:	SC
SIC Code:	8734
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	47
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	1
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
County Code:	30
Air Basin:	SC
Facility ID:	779
Air District Name:	SC
SIC Code:	8734
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	47
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	1
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
County Code:	30
Air Basin:	SC
Facility ID:	779
Air District Name:	SC
SIC Code:	8734
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0

NORTHROP GRUMMAN CAPISTRANO TEST SITE - NORTHROP GRUMMAN CTS (Continued) **S105940122**

Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	9
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	1
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

---

13 **TRW INCORPORATED** **RCRA-LQG** **1000119222**
33000 AVENIDA PICO **FINDS** **CAD000629402**
SAN CLEMENTE, CA 92672 **NY MANIFEST**
CA HAZNET

RCRA-LQG:

Date form received by agency:	03/01/2010
Facility name:	NORTHROP GRUMMAN SYSTEMS CORPORATION
Facility address:	33000 AVENIDA PICO SAN CLEMENTE, CA 92673
EPA ID:	CAD000629402
Mailing address:	P.O. BOX 10 SAN CLEMENTE, CA 926730010
Contact:	RICHARD K ASHER
Contact address:	P.O. BOX 10 SAN CLEMENTE, CA 926730010
Contact country:	Not reported
Contact telephone:	(949) 361-7106
Contact email:	RICHARD.ASHER@NGC.COM
EPA Region:	09
Land type:	Private
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	NORTHROP GRUMMAN SYSTEMS CORP
Owner/operator address:	Not reported 92693
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	09/01/1963
Owner/Op end date:	Not reported
Owner/operator name:	TRW INCORPORATED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported

TRW INCORPORATED (Continued) **1000119222**

Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: THE SAN JUAN PARTNERSHIP #6
Owner/operator address: P.O. BOX #9
SAN JUAN CAPISTRANO, CA 92693
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1940
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Universal Waste Summary:
Waste type: Batteries
Accumulated waste on-site: Yes
Generated waste on-site: No

Waste type: Lamps
Accumulated waste on-site: Yes
Generated waste on-site: No

Waste type: Thermostats
Accumulated waste on-site: Yes
Generated waste on-site: No

TRW INCORPORATED (Continued) **1000119222**

Historical Generators:

Date form received by agency: 02/25/2008
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: NORTHROP GRUMMAN / CAPISTRANO TEST SITE
Classification: Large Quantity Generator

Date form received by agency: 02/27/2006
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: NORTHROP GRUMMAN/CAPISTRANO TEST SITE
Classification: Large Quantity Generator

Date form received by agency: 02/27/2004
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: NORTHROP GRUMMAN / CAPISTRANO TEST SITE
Classification: Large Quantity Generator

Date form received by agency: 01/15/2004
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: NORTHROP GRUMMAN SPACE MISSION SYS CORP
Classification: Large Quantity Generator

Date form received by agency: 04/10/2002
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: TRW/CAPISTRANO TEST SITE
Classification: Large Quantity Generator

Date form received by agency: 10/12/2000
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: TRW/CAPISTRANO TEST SITE
Classification: Large Quantity Generator

Date form received by agency: 03/04/1999
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: TRW/CAPISTRANO TEST SITE
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: TRW INC.
Classification: Large Quantity Generator

Date form received by agency: 02/27/1996
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: TRW/CAPISTRANO TEST SITE
Classification: Large Quantity Generator

Date form received by agency: 03/25/1994
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: TRW/ CAPISTRANO TEST SITE
Classification: Large Quantity Generator

Date form received by agency: 02/28/1992
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: TRW
Classification: Large Quantity Generator

Date form received by agency: 04/13/1990

TRW INCORPORATED (Continued) **1000119222**

Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: TRW INC.-SPACE & DEFENSE (SITE 45)
Classification: Large Quantity Generator

Date form received by agency: 08/20/1980
Facility name: NORTHROP GRUMMAN SYSTEMS CORPORATION
Site name: TRW INC.
Classification: Large Quantity Generator

Hazardous Waste Summary:
Waste code: 133
Waste name: 133

Waste code: 135
Waste name: 135

Waste code: 151
Waste name: 151

Waste code: 181
Waste name: 181

Waste code: 214
Waste name: 214

Waste code: 221
Waste name: 221

Waste code: 331
Waste name: 331

Waste code: 343
Waste name: 343

Waste code: 352
Waste name: 352

Waste code: 513
Waste name: 513

Waste code: 551
Waste name: 551

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS

TRW INCORPORATED (Continued) **1000119222**

USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: D007
Waste name: CHROMIUM

Waste code: D008
Waste name: LEAD

Waste code: D039
Waste name: TETRACHLOROETHYLENE

Waste code: F001
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F003
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Biennial Reports:

Last Biennial Reporting Year: 2011

Annual Waste Handled:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT

TRW INCORPORATED (Continued) **1000119222**

WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
Amount (Lbs): 4185

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
Amount (Lbs): 129150

Waste code: D007
Waste name: CHROMIUM
Amount (Lbs): 137640

Waste code: D008
Waste name: LEAD
Amount (Lbs): 137640

Waste code: D039
Waste name: TETRACHLOROETHYLENE
Amount (Lbs): 4000

Waste code: F001
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 5510

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 5510

Waste code: F003
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL

TRW INCORPORATED (Continued) **1000119222**

BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 1510

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 10/24/2002
Date achieved compliance: 09/02/2003
Violation lead agency: EPA
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 09/26/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 33214
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 10/24/2002
Date achieved compliance: 09/02/2003
Violation lead agency: EPA
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 09/26/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 33214
Paid penalty amount: 33214

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 10/24/2002
Date achieved compliance: 09/02/2003
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/25/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 10/24/2002
Date achieved compliance: 09/02/2003
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: 12/31/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

TRW INCORPORATED (Continued) **1000119222**

Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: F - 264.190-201.J
Area of violation: TSD - General
Date violation determined: 10/24/2002
Date achieved compliance: 09/02/2003
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: 12/31/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Evaluation Action Summary:
Evaluation date: 06/28/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/20/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/15/2006
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: Local

Evaluation date: 05/02/2005
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 10/24/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/02/2003
Evaluation lead agency: EPA

Evaluation date: 10/24/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 09/02/2003
Evaluation lead agency: EPA

FINDS:

TRW INCORPORATED (Continued) **1000119222**

Registry ID: 110002416387

Environmental Interest/Information System

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

NY MANIFEST:

EPA ID:	CAD000629402
Country:	USA
Mailing Name:	TRW/CAPISTRANO TEST SITE
Mailing Contact:	RICHARD ASHNER
Mailing Address:	BOX 10 33000 AVENIDA PICO
Mailing Address 2:	Not reported
Mailing City:	SAN CLEMENTE
Mailing State:	CA
Mailing Zip:	92673
Mailing Zip4:	Not reported
Mailing Country:	USA
Mailing Phone:	714-361-7106

Document ID:	NYB7731828
Manifest Status:	Completed after the designated time period for a TSDF to get a copy to the DEC
Trans1 State ID:	11278PNY
Trans2 State ID:	Not reported
Generator Ship Date:	970723
Trans1 Recv Date:	970723
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	970811
Part A Recv Date:	970827
Part B Recv Date:	970826
Generator EPA ID:	CAD000629402
Trans1 EPA ID:	NYD980769947
Trans2 EPA ID:	Not reported
TSDF ID:	NYD000632372
Waste Code:	D002 - NON-LISTED CORROSIVE WASTES
Quantity:	00010
Units:	P - Pounds
Number of Containers:	001
Container Type:	CY - Cylinders
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100
Year:	97

TRW INCORPORATED (Continued) **1000119222**

Document ID:	NYB4413258
Manifest Status:	Completed after the designated time period for a TSDF to get a copy to the DEC
Trans1 State ID:	10210PNY
Trans2 State ID:	Not reported
Generator Ship Date:	931005
Trans1 Recv Date:	931005
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	931101
Part A Recv Date:	Not reported
Part B Recv Date:	931116
Generator EPA ID:	CAD000629402
Trans1 EPA ID:	NYD980769947
Trans2 EPA ID:	Not reported
TSDF ID:	NYD000632372
Waste Code:	D003 - NON-LISTED REACTIVE WASTES
Quantity:	00150
Units:	P - Pounds
Number of Containers:	002
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	100
Year:	93

HAZNET:

Year:	2002
Gepaid:	CAD000629402
Contact:	RICHARD K ASHER ENVR COORDINAT
Telephone:	9493617106
Mailing Name:	Not reported
Mailing Address:	PO BOX 10
Mailing City,St,Zip:	SAN CLEMENTE, CA 926740010
Gen County:	Orange
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	H01
Tons:	0.07
Facility County:	Not reported

Year:	2002
Gepaid:	CAD000629402
Contact:	RICHARD K ASHER ENVR COORDINAT
Telephone:	9493617106
Mailing Name:	Not reported
Mailing Address:	PO BOX 10
Mailing City,St,Zip:	SAN CLEMENTE, CA 926740010
Gen County:	Orange
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	R01
Tons:	14.95
Facility County:	Not reported

Year:	2002
Gepaid:	CAD000629402
Contact:	RICHARD K ASHER ENVR COORDINAT

TRW INCORPORATED (Continued) **1000119222**

Telephone:	9493617106
Mailing Name:	Not reported
Mailing Address:	PO BOX 10
Mailing City,St,Zip:	SAN CLEMENTE, CA 926740010
Gen County:	Orange
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	R01
Tons:	18.76
Facility County:	Not reported

Year:	2002
Gepaid:	CAD000629402
Contact:	RICHARD K ASHER ENVR COORDINAT
Telephone:	9493617106
Mailing Name:	Not reported
Mailing Address:	PO BOX 10
Mailing City,St,Zip:	SAN CLEMENTE, CA 926740010
Gen County:	Orange
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Liquids with mercury >= 20 Mg./L
Disposal Method:	Not reported
Tons:	0.00
Facility County:	Not reported

Year:	2002
Gepaid:	CAD000629402
Contact:	RICHARD K ASHER ENVR COORDINAT
Telephone:	9493617106
Mailing Name:	Not reported
Mailing Address:	PO BOX 10
Mailing City,St,Zip:	SAN CLEMENTE, CA 926740010
Gen County:	Orange
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Laboratory waste chemicals
Disposal Method:	H01
Tons:	0.00
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
142 additional CA_HAZNET: record(s) in the EDR Site Report.

---

13 **T R W CAPISTRANO TEST SITE** **CA NPDES** **U003659709**
33000 AVENIDA PICO **CA SLIC** **N/A**
SAN CLEMENTE, CA 92672 **CA UST**
CA SWEEPS UST
CA CHMIRS

NPDES:

Npdes Number:	CAS000002
Facility Status:	Terminated
Agency Id:	Not reported
Region:	9
Regulatory Measure Id:	401919
Order No:	2009-0009-DWQ

T R W CAPISTRANO TEST SITE (Continued) **U003659709**

Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	9 30C357312
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	02/09/2010
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	06/20/2011
Discharge Name:	Pfeiler and Associates Engineers, Inc
Discharge Address:	14181 Fern Avenue
Discharge City:	Chino
Discharge State:	California
Discharge Zip:	91710

SLIC:

Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	12/21/2010
Global Id:	T10000002698
Lead Agency:	SAN DIEGO RWQCB (REGION 9)
Lead Agency Case Number:	Not reported
Latitude:	33.4624514218978
Longitude:	-117.547745704651
Case Type:	Cleanup Program Site
Case Worker:	XY
Local Agency:	ORANGE COUNTY
RB Case Number:	Not reported
File Location:	Regional Board
Potential Media Affected:	Other Groundwater (uses other than drinking water), Soil, Soil Vapor
Potential Contaminants of Concern:	Tetrachloroethylene (PCE), Trichloroethylene (TCE), Freon, Polychlorinated biphenyls (PCBs), NDMA - N-Nitrosodimethylamine, Perchlorate, Chromium
Site History:	The Area of concern is located in the eastern portion of the Facility and at the east of the HEPTS area. The main test area is composed of HATS, VETS, and potentially PITS operation areas. HATS includes the Bldg. 42E AST(water), upper (42D, F, V) and lower (steam vent, 42M and IPA containment structure) HATS, and gunnite drainage swale (not sure if this swale area has ever been investigated). PITS include the propulsion integration test stand, containment areas, and 42C Toluene AST. VETS includes the 42Y Bldg. valve shop; the former laser area (42N NACL aera); 42B lower VETS containment structure; the upper VETS [the former and current surface impoundment/reservoirs including the Fire X, former Fire X and cooling waer reservoirs Its operation includes a former surface impoundment/reservoir (43DT)]; and the former lower VETS reservoir (41H); the 41C bldg. diesel fuel AST and generator area; and the 41G current and former IPA, diesel, and brine ASTs. During historical investigations, soil and groundwater contamination has been observed. Constituents of concerns include VOCs (chlorinated solvents, hydrazine, PCB, NDMA, Cr(VI) and perchlorate.

Click here to access the California GeoTracker records for this facility:

Region:	STATE
Facility Status:	**Open - Assessment & Interim Remedial Action**
Status Date:	12/15/2010
Global Id:	T10000002686

T R W CAPISTRANO TEST SITE (Continued) **U003659709**

Lead Agency:	SAN DIEGO RWQCB (REGION 9)
Lead Agency Case Number:	Not reported
Latitude:	33.4615921693435
Longitude:	-117.559697628021
Case Type:	Cleanup Program Site
Case Worker:	XY
Local Agency:	ORANGE COUNTY
RB Case Number:	Not reported
File Location:	Regional Board
Potential Media Affected:	Other Groundwater (uses other than drinking water), Soil, Soil Vapor
Potential Contaminants of Concern:	Trichloroethylene (TCE), Freon, NDMA - N-Nitrosodimethylamine, Perchlorate, Chromium
Site History:	The subject site is located approximately in the north-center of the operation areas of the Northrop Grumman Capistrano Test Site (the Facility). The site consists of the Bldg.41A valve, machine and weld shops, clean room (the upper shop area), and the septic area and former surface irrigation pond (the lower pond area). A (likely) perched GW aquifer has been found at the site with GW table ranging between 10? and about 50? bgs. Historical investigation results have shown elevated concentrations of VOCs (e.g., TCE and Freon 113) in soil vapor; various contaminants, including TCE Freon 113, NDMA, perchlorate and Cr(VI) have also been found in groundwater. SVE and DPE have been employed at the site to remediate contamination. At this time (as of 12/15/2010), two DPE systems are still in operation at the site. The site is currently vacant and is scheduled to be demolished by 12/31/2010.

Click here to access the California GeoTracker records for this facility:

Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	09/29/2010
Global Id:	T10000002570
Lead Agency:	SAN DIEGO RWQCB (REGION 9)
Lead Agency Case Number:	Not reported
Latitude:	33.4608045136871
Longitude:	-117.565212249756
Case Type:	Cleanup Program Site
Case Worker:	XY
Local Agency:	ORANGE COUNTY
RB Case Number:	Not reported
File Location:	Regional Board
Potential Media Affected:	Soil
Potential Contaminants of Concern:	Trichloroethylene (TCE), Xylene, Freon
Site History:	The Chem Lab is located in the west portion of the operational areas of the CTS facility. The Chem Lab operational include the 44A, B, and D former sump locations; a former drum storage area; septic area; former gravimelt; and former surface impoundment/reservoir locations. During the historical Phase I (October 2005) and Phase II (2006) investigations, soil borings were drilled down to 10? bgs with soil vapor and soil samples collected. VOCs including Freon 113, Toluene,Ethylbenzene,Xylene, and TCE were found, in general, at low concentrations (<10 ug/L) in soil vapor samples; at one boring SV08, higher concentration of Freon (50 ug/L air) was found at 10? bgs than at 5? bgs. No VOCs were found in soil samples; one sample (in SB04) showed detection of hydrazine (at low level). SVE and DPE had been used at the site to remediate VOCs and Cr(VI) impacted soil and

T R W CAPISTRANO TEST SITE (Continued) **U003659709**

groundwater. Six wells have been installed at the site. There wells were down to 25? bgs, soil lithology showed mostly sand. GW table is in general 15 to 20? bgs. As of 03/2010, VOCs including TCE (up to 62 ppb), Freon (14 ppb) and Cr (VI) (up to 3.9 ug/L) have been found in groundwater. ClO4 and hydrazine were found at low concentrations once. Only low levels of Methyl Chloride were found in one boring (VW-1 at 10? and 20? bgs, respectively) during well installation.

Click here to access the California GeoTracker records for this facility:

Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	01/04/2010
Global Id:	T10000001730
Lead Agency:	SAN DIEGO RWQCB (REGION 9)
Lead Agency Case Number:	#09IC011
Latitude:	33.4623798178436
Longitude:	-117.547101974487
Case Type:	Cleanup Program Site
Case Worker:	XY
Local Agency:	ORANGE COUNTY LOP
RB Case Number:	2090034
File Location:	Regional Board
Potential Media Affected:	Other Groundwater (uses other than drinking water), Soil, Soil Vapor, Under Investigation
Potential Contaminants of Concern:	Polychlorinated biphenyls (PCBs), Explosives (UXO, MEC), Munitions Debris (MD), Lead, Polynuclear aromatic hydrocarbons (PAHs)
Site History:	The Capistrano Test Site (CTS) is located on a 2,800 acres of leased land at San Clemente, Orange County. Northrop Grumman Space Technology (NGST) leases the land from Mission Viejo Ranch. Of the 2,800 acres of leased land, 500 acres are developed and used to conduct reserch adn development testing on prototype rocket engines and laser systems, and testing of satellite communication systems. Past activities have included coal desulphurization, coal combustor, adn coal fired burner research. The remainig 2,300 acres of undeveloped land provides a buffer to the surrounding areas from site testing activities and has been used by the Mission Viejo Ranch to support ranching activities. Areas of concerns at the site include , and not limited to, operation areas (sub-areas) Bldg. 41A area, FETS, Chem Lab, HEPTS, the Main Test area (upper and lower HATS, PITS and VETS) and upper and lower shooting ranges. As part of a site redevelopment plan, facilty-wide investigations were conducted in June 2002, October 2005, and 2006 respectively. Constituents of concerns, including and not limited to, chlorinated solvents (PCE, TCE, 1,1-DCE, etc.) and other VOCs (e.g., BTEX, Freon 113), hydrazine, PCB, and Cr(VI) have observed in both soil and groundwater. In addition, emerging contaminants such as perchlorate, NDMA, 1,2,3-TCP, and 1,4-Dioxane have been observed in groundwater at some of the subareas. Remedial actions at the facility include the removal of lead-impacted soil from the upper and the the lower shooting ranges in November 2009, (following which the Orange County Health Care Agency issued NFA letters for the two shooting ranges in May 2010); the interim remedial actions [SVE and Dual Phase Extraction (DPE)] at the Bldg. 41A area [also with hot spot (so-called source zone) soil removal] and FETS areas; and the removal of PCB and ME impacted soil at the HEPTS and VETS areas (report not

T R W CAPISTRANO TEST SITE (Continued) **U003659709**

submitted, removal activity occurred sometime before 1/25/2010) Additional investiations, including groundwater monitoring and site characterization (at the HEPTS and the Main Test areas) are currently on-going at the facility.

Click here to access the California GeoTracker records for this facility:

Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	09/29/2010
Global Id:	T10000002571
Lead Agency:	SAN DIEGO RWQCB (REGION 9)
Lead Agency Case Number:	Not reported
Latitude:	33.4573315829573
Longitude:	-117.563881874084
Case Type:	Cleanup Program Site
Case Worker:	XY
Local Agency:	ORANGE COUNTY
RB Case Number:	Not reported
File Location:	Regional Board
Potential Media Affected:	Other Groundwater (uses other than drinking water), Soil, Soil Vapor
Potential Contaminants of Concern:	Benzene, Other Chlorinated Hydrocarbons, Freon
Site History:	The subject site is located at the southwest portion of the operational area. Historical operation includes the Bldg. 46F valve shop; former generator location; former north and south surface impoundments/reservoirs area; former test cells and a former hydrocarbon remediation area. Results of historical investigation have shown soil (including soil vapor) and groundwater contamination by TCE, 1,1-DCE, benzene, and Freon 113 at the site. Interim remedial actions including SVE and DPE had been used. Currently, a remedy of in-situ chemical injection is being considered to remove the contamination of chlorinated solvents at the site.

Click here to access the California GeoTracker records for this facility:

UST:

Facility ID:	9698
Latitude:	33.42506
Longitude:	-117.61495

SWEEPS UST:

Status:	Not reported
Comp Number:	3947
Number:	Not reported
Board Of Equalization:	44-016101
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	30-000-003947-000018
Actv Date:	Not reported
Capacity:	500
Tank Use:	UNKNOWN
Stg:	PRODUCT
Content:	Not reported

T R W CAPISTRANO TEST SITE (Continued) **U003659709**

Number Of Tanks: 1

Status: A
Comp Number: 3947
Number: 9
Board Of Equalization: 44-016101
Ref Date: 09-30-92
Act Date: 09-15-92
Created Date: 02-29-88
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

CHMIRS:
OES Incident Number: 05-1086
OES notification: 2/17/200503:17:48 PM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported

T R W CAPISTRANO TEST SITE (Continued) **U003659709**

Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2005
Agency:	Northrop Grumman
Incident Date:	2/17/200512:00:00 AM
Admin Agency:	San Clemente Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Merchant/Business
E Date:	Not reported
Substance:	Hydrogen Peroxide
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	115
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	A fitting broke on the way to the tank.

---

13 **TRW OPERATIONS & SUPPORT GROUP - CAPISTRANO TEST SITE** **CA SLIC** **S110041747**
33000 AVENIDA PICO **N/A**
SAN JUAN CAPISTRANO, CA 92675

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	10/12/1988
Global Id:	SL0605977705
Lead Agency:	SAN DIEGO RWQCB (REGION 9)
Lead Agency Case Number:	Not reported
Latitude:	33.4605538944774
Longitude:	-117.559504508972
Case Type:	Cleanup Program Site
Case Worker:	JPA
Local Agency:	Not reported
RB Case Number:	9 000081N85
File Location:	Regional Board
Potential Media Affected:	Soil
Potential Contaminants of Concern:	Not reported

TRW OPERATIONS & SUPPORT GROUP - CAPISTRANO TEST SITE (Continued) **S110041747**

Site History: See information about an associated new release with case number T10000001730.

Click here to access the California GeoTracker records for this facility:

---

14 **TOMRA PACIFIC INC** **CA SWRCY** **S109935032**
989 AVENIDA PICO **CA HAZNET** **N/A**
SAN CLEMENTE, CA 92673

SWRCY:

Facility Phone Number:	(951) 520-1700
Whether The Facility Is Grandfathered:	N
Effective Date:	05/06/2011
Rural:	N
As Of:	09/07/2011
Party Number:	139087

HAZNET:

Year:	2010
Gepaid:	CAL000324834
Contact:	ERICA FRANSEN
Telephone:	2083954793
Mailing Name:	Not reported
Mailing Address:	PO BOX 20 DEPT 72405
Mailing City,St,Zip:	BOISE, ID 837260000
Gen County:	Not reported
TSD EPA ID:	OHD083377010
TSD County:	Not reported
Waste Category:	Aqueous solution (2 < pH < 12.5) containing reactive anions ...
Disposal Method:	CHEMICAL REDUCTION WITH OR WITHOUT PRECIPITATION
Tons:	0.0115
Facility County:	Orange

Year:	2010
Gepaid:	CAL000324834
Contact:	ERICA FRANSEN
Telephone:	2083954793
Mailing Name:	Not reported
Mailing Address:	PO BOX 20 DEPT 72405
Mailing City,St,Zip:	BOISE, ID 837260000
Gen County:	Not reported
TSD EPA ID:	OHD083377010
TSD County:	Not reported
Waste Category:	Unspecified solvent mixture
Disposal Method:	FUEL BLENDING PRIOR TO ENERGY RECOVERY AT ANOTHER SITE
Tons:	0.002
Facility County:	Orange

Year:	2008
Gepaid:	CAL000324834
Contact:	ERICA FRANSEN
Telephone:	2083954793
Mailing Name:	Not reported
Mailing Address:	250 PARKCENTER BLVD
Mailing City,St,Zip:	BOISE, ID 837060000
Gen County:	Orange
TSD EPA ID:	CAD008364432

TOMRA PACIFIC INC (Continued) **S109935032**

TSD County: Los Angeles
Waste Category: Alkaline solution without metals pH >= 12.5
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 0.015
Facility County: Orange

---

15 **PACIFIC GOLF CLUB** **CA LUST** **U003433332**
200 AVENIDA LA PATA **CA UST** **N/A**
SAN CLEMENTE, CA 92673 **CA SWEEPS UST**
CA HAZNET

LUST:
Region: STATE
Global Id: T0605946407
Latitude: 33.453304
Longitude: -117.590421
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 03/06/2002
Lead Agency: ORANGE COUNTY LOP
Case Worker: JS
Local Agency: ORANGE COUNTY LOP
RB Case Number: Not reported
LOC Case Number: 01UT014
File Location: Local Agency
Potential Media Affect: Under Investigation
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0605946407
Contact Type: Regional Board Caseworker
Contact Name: UNASSIGNED
Organization Name: SAN DIEGO RWQCB (REGION 9)
Address: 9174 SKY PARK COURT, SUITE 100
City: SAN DIEGO
Email: Not reported
Phone Number: Not reported

Global Id: T0605946407
Contact Type: Local Agency Caseworker
Contact Name: GENIECE HIGGINS
Organization Name: ORANGE COUNTY LOP
Address: 1241 EAST DYER ROAD SUITE 120
City: SANTA ANA
Email: ghiggins@ochca.com
Phone Number: 7144336263

LUST:
Global Id: T0605946407
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0605946407

PACIFIC GOLF CLUB (Continued) **U003433332**

Action Type: Other
Date: 01/01/1950
Action: Leak Reported

ORANGE CO. LUST:
Region: ORANGE
Facility Id: 01UT014
Current Status: Certification (Case Closed)
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded
Date Closed: 03/06/2002
Case Type: Undetermined
Record ID: RO0001454

UST:
Facility ID: 15338
Latitude: 33.45079
Longitude: -117.59146

SWEEPS UST:
Status: A
Comp Number: 9245
Number: 9
Board Of Equalization: 44-016748
Ref Date: 09-30-92
Act Date: 09-15-92
Created Date: 02-29-88
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

HAZNET:
Year: 2010
Gepaid: CAL000316002
Contact: JAY PESICKA
Telephone: 9493334840
Mailing Name: Not reported
Mailing Address: 200 AVENIDA LA PATA
Mailing City,St,Zip: SAN CLEMENTE, CA 926736301
Gen County: Not reported
TSD EPA ID: CAD097030993
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons: 0.15
Facility County: Orange

Year: 1998

PACIFIC GOLF CLUB (Continued) **U003433332**

Gepaid:	CAL000064180
Contact:	KEN OKUDA-GAIA & URANIUS
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	200 AVENIDA LA PATA
Mailing City,St,Zip:	SAN CLEMENTE, CA 926736301
Gen County:	Orange
TSD EPA ID:	CAD093459485
TSD County:	Fresno
Waste Category:	Organic liquids with metals (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	H01
Tons:	.0542
Facility County:	Orange

Count: 44 records

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CAMP PENDLETON	S105155585	US MARINE CORP ACS ENV SEC BLD	52ND AREA & BASILONE RD	92055	CA SWF/LF, CA WDS
CAMP PENDLETON	1007465966	U.S. MARINE CORPS-CAMP PENDLETON SOUTH	ADMINISTRATION BLDG. 1160 (RM: 295)	92055	FINDS
CAMP PENDLETON	S106069985	SOUTH MESA HOUSING MAINT	AREA 20	92055	CA San Diego Co. HMMD
CAMP PENDLETON	S105155584	US MARINE CORP LAS PULGAS LAND	43 AREA AND BASILONE RD	92055	CA SWF/LF, CA NPDES, CA WDS
CAMP PENDLETON	S108224950	WATKINS CONTRACTING INC/SOUTH DIV US NAVY SITE	BASILONE RD	92055	CA HAZNET
CAMP PENDLETON	1008931452	NORTH COUNTY TRANSPORTATION DISTRICT	RAILROAD CROSSING AT SAN MATEO CREEK	92055	FINDS
LAGUNA NIGUEL	S107147397	SOUTH ORANGE COUNTY WASTE WATER AUTHORI	283031 ALICIA PKWY	92677	CA HAZNET
LAGUNA NIGUEL	1005415591	COSTCO WHOLESALE NO 690	27220 HEATHER RIDGE RD	92677	RCRA-SQG, FINDS, CA UST, CA HAZNET
LAGUNA NIGUEL	A100340573		31461 ST OF THE GOLDEN LANTERN	92677	CA AST
OCEANSIDE	S103619392	NORTH COUNTY TRANSIT COASTER SVC	1 COASTER WAY	92055	CA HAZNET
OCEANSIDE	S111079623	NORTH COUNTY TRANSIT DISTRICT	LONG 331487	92055	CA HAZNET
ORANGE	S110736242	SOUTH OLA VISTA STREET REHAB	AVENIDA PRINCESA TO AVE	92673	CA NPDES
ORANGE	S110736241	SOUTH OLA VISTA ST REHABILITATION PHASE 1 PROJECT 18318	PALIZADA TO N AVE	92673	CA NPDES
ORANGE COUNTY	2011976974	DANA MARINA WEST C-DOCK IN THE SOUTH EAST CORNER. NONE	DANA MARINA WEST C-DOCK IN THE SOUTH EAST CORNER. NONE		ERNS
ORANGE COUNTY	2011979156	ORANGE COUNTY FLOOD CONTROL CHANNEL 7251 FENWICK LANE	ORANGE COUNTY FLOOD CONTROL CHANNEL 7251 FENWICK LANE		ERNS
SAN CLEMENTE	1000409128	SOUTHERN CAL EDISON	1 5 BASELINE	92672	RCRA-SQG, FINDS
SAN CLEMENTE	1000151451	ADVANCED SURGICAL INERVENTION	920A CALLE NEGOCI0	92672	RCRA-SQG, FINDS
SAN CLEMENTE	1000324713	PICO CLEANERS	95 CALLE INDUSTRIAS	92672	RCRA-SQG, FINDS
SAN CLEMENTE	1004675643	TEXACO SERVICE STATION	795 EL CAMINO REAL	92673	RCRA-SQG, FINDS
SAN CLEMENTE	1000401479	NELSONS CONTINENTAL CLEANERS	810 EL CAMINO REAL	92672	RCRA-SQG, FINDS
SAN CLEMENTE	S102439021	THRIFTY SERVICE STATION #	1010 EL CAMINO REAL	92672	CA HIST CORTESE, CA LUST
SAN CLEMENTE	S102433750	MOBIL SERVICE STATION #18	1430 EL CAMINO REAL	92672	CA HIST CORTESE, CA LUST
SAN CLEMENTE	S102439080	THRIFTY SERVICE STATION #392	1010 EL CAMINO REAL	92672	CA LUST
SAN CLEMENTE	S102436306	SAN CLEMENTE CAR WASH	1731 EL CAMINO REAL	92673	CA HIST CORTESE, CA LUST
SAN CLEMENTE	S109035041	FRED STIER AUTO SALES LOT	1645 EL CAMINO REAL	92672	CA LUST
SAN CLEMENTE	S104165723	SHELL STATION	2400 S EL CAMINO REAL	92672	CA HIST CORTESE
SAN CLEMENTE	1000921580	SAN ONOFRE NUC GENERATINGSTA	5000 S PACIFIC COASTHY	92672	CORRACTS, RCRA-TSDF, RCRA-LQ CA UST, CA HWP
SAN CLEMENTE	S106060433	SAN ONOFRE NUC GENERATING STA	5000 S PACIFIC COAST HWY	92672	CA LUST, CA SLIC, CA SWEEPS UST CA AST, CA San Diego Co. HMMD, CA SAN DIEGO CO. SAM
SAN CLEMENTE	S102436400	SO CAL EDISON CO SAN ONOFRE FA	5000 PACIFIC COAST HWY	92672	CA NPDES, CA LUST
SAN CLEMENTE	S104586778	SOUTHERN CALIFORNIA EDISON CO SAN ONOFRE	5000 PACIFIC COAST HWY	92672	CA WDS, CA NPDES, CA HIST CORTESE, CA CHMIRS, CA ENF, CA HAZNET, CA ENVIROSTOR
SAN CLEMENTE	S107737230	SAN CLEMENTE ISLAND NALF	SAN CLEMENTE	92672	CA ENVIROSTOR
SAN CLEMENTE	S110770316	SAN CLEMENTE BURN DUMP	VISTA BAHIA PARK	92673	CA SLIC
SAN JUAN CAPISTRANO	1000271462	LAAKMANN ELECTRO-OPTICS, INC	3305 CALLE AVIADOR	92675	RCRA-SQG, FINDS

Count: 44 records

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SAN JUAN CAPISTRANO	S103653287	COUNTY ORANGE/EMA	3301 ORETAGA HWY	92675	CA HAZNET
SAN JUAN CAPISTRANO	S109821500	RANCHO MISSION VIEJO COMPOST FACILITY	ORTEGA HWY		CA SWF/LF
SAN JUAN CAPISTRANO	S105026328	BEACON SERVICE STATION	33977 ORTEGA HWY/LUC	92675	CA HIST CORTESE
SAN JUAN CAPISTRANO	S109422301	CITY OF SAN JUAN CAPISTRANO LVTOP.	32400 N PSO ADELANTO 500		CA SWF/LF
SAN JUAN CAPISTRANO	S111291384	COUNTY OF ORANGE - ANTONIO PARKWAY WIDENING CONSTRUCTION DEW	ZERO ANTONIO PKWY & ORTEGA HWY		CA NPDES
SAN ONOFRE	S108407228	SAN ONOFRE TRUCK SCALES	HY 5 SOUTH	92055	CA SAN DIEGO CO. SAM
SAN ONOFRE	S102436399	SAN ONOFRE NUCLEAR GEN STATION	5000 PACIFIC COAST HWY S	92672	CA LUST
SAN ONOFRIE	93302335	I-5 SB, SOUTH OF SAN ONOFRIE	I-5 SB, SOUTH OF SAN ONOFRIE	92672	ERNS
SOUTH LAGUNA	U001577845	COAST HIGHWAY SEWAGE LIFT STAT	33101 COAST HIGHWAY	92677	CA HIST UST
SOUTH LAGUNA	U001577867	STATION #5434	#4 MONARCH BAY PLAZA	92677	CA HIST UST
SOUTH LAGUNA	U001577868	UNION OIL SERVICE STATION #543	#J MONARCH BAY PLAZA	92677	CA HIST UST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 06/30/2011
Date Data Arrived at EDR: 07/12/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 79

Source: EPA
Telephone: N/A
Last EDR Contact: 10/12/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 06/30/2011
Date Data Arrived at EDR: 07/12/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 79

Source: EPA
Telephone: N/A
Last EDR Contact: 10/12/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 06/30/2011
Date Data Arrived at EDR: 07/12/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 79

Source: EPA
Telephone: N/A
Last EDR Contact: 10/12/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/25/2011
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 11/29/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/25/2011
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 11/29/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 09/09/2011
Date Data Arrived at EDR: 09/16/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/09/2011
Date Data Arrived at EDR: 03/15/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 91

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/14/2011
Next Scheduled EDR Contact: 02/27/2012
Data Release Frequency: Quarterly

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/05/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Quarterly

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/05/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/05/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/05/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Varies

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/15/2011
Date Data Arrived at EDR: 07/07/2011
Date Made Active in Reports: 08/08/2011
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/05/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/16/2011
Date Data Arrived at EDR: 03/25/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/09/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/16/2011
Date Data Arrived at EDR: 03/25/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/09/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Varies

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 10/03/2011
Date Data Arrived at EDR: 10/04/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 38

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 10/04/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 10/04/2011
Date Data Arrived at EDR: 10/04/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 38

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/03/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Annually

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/29/2011
Date Data Arrived at EDR: 08/09/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 94

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 11/08/2011
Next Scheduled EDR Contact: 02/20/2012
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 06/08/2011
Date Data Arrived at EDR: 09/16/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 13

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 12/05/2011
Next Scheduled EDR Contact: 03/19/2012
Data Release Frequency: Quarterly

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 06/27/2011
Date Data Arrived at EDR: 06/27/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/27/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Semi-Annually

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/20/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 08/12/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 112

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 12/09/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/22/2011
Next Scheduled EDR Contact: 03/05/2012
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/01/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 41

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 12/27/2011
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/31/2011
Date Data Arrived at EDR: 09/14/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 15

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/14/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/21/2010
Date Made Active in Reports: 01/28/2011
Number of Days to Update: 99

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/29/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 09/08/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 21

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 12/07/2011
Next Scheduled EDR Contact: 03/19/2012
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/17/2010
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 94

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 12/02/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/27/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 11/28/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 11/28/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77
Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/07/2011
Date Data Arrived at EDR: 01/21/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 59
Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2010
Date Data Arrived at EDR: 11/10/2010
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 98
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/19/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/21/2011
Date Data Arrived at EDR: 07/15/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 60
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 12/12/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/11/2011
Date Data Arrived at EDR: 01/13/2011
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 34
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/13/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/14/2010
Date Data Arrived at EDR: 04/16/2010
Date Made Active in Reports: 05/27/2010
Number of Days to Update: 41

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 12/13/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/30/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Biennially

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/10/2010
Date Data Arrived at EDR: 01/11/2011
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/14/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 02/18/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 100
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/04/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/08/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/08/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Varies

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing
The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54
Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 10/24/2011
Next Scheduled EDR Contact: 02/06/2012
Data Release Frequency: Varies

STATE AND LOCAL RECORDS

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/07/2011
Date Data Arrived at EDR: 11/08/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/14/2011
Next Scheduled EDR Contact: 02/20/2012
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/21/2011
Date Data Arrived at EDR: 11/22/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 21

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/22/2011
Next Scheduled EDR Contact: 03/05/2012
Data Release Frequency: Quarterly

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 11/14/2011
Next Scheduled EDR Contact: 02/27/2012
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 11/21/2011
Date Data Arrived at EDR: 11/22/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/22/2011
Next Scheduled EDR Contact: 03/05/2012
Data Release Frequency: Quarterly

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 11/28/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 11/30/2011
Date Data Arrived at EDR: 11/30/2011
Date Made Active in Reports: 12/16/2011
Number of Days to Update: 16

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 01/03/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES].

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 11/10/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 33

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Quarterly

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/10/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 33

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 11/10/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 12/14/2011
Number of Days to Update: 34
Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Semi-Annually

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8
Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 12/05/2012
Next Scheduled EDR Contact: 03/19/2012
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 09/19/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/09/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Varies

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 05/03/2011
Date Made Active in Reports: 06/15/2011
Number of Days to Update: 43

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 11/10/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 33

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

AST: Aboveground Petroleum Storage Tank Facilities

Registered Aboveground Storage Tanks.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 10/11/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 11/10/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 33

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/20/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: No Update Planned

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 24

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/13/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Semi-Annually

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/07/2011
Date Data Arrived at EDR: 11/08/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/14/2011
Next Scheduled EDR Contact: 02/20/2012
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 06/28/2011
Date Data Arrived at EDR: 07/21/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 10/03/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/15/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/30/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2011
Date Data Arrived at EDR: 08/11/2011
Date Made Active in Reports: 09/09/2011
Number of Days to Update: 29

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 01/03/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Varies

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 11/07/2011
Date Data Arrived at EDR: 11/08/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/14/2011
Next Scheduled EDR Contact: 02/20/2012
Data Release Frequency: Quarterly

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/19/2011
Date Made Active in Reports: 08/16/2011
Number of Days to Update: 28

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 10/18/2010
Number of Days to Update: 19

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/30/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Varies

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 09/14/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 39

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 12/27/2011
Next Scheduled EDR Contact: 03/05/2012
Data Release Frequency: Varies

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 11/07/2011
Date Data Arrived at EDR: 11/08/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 35

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/14/2011
Next Scheduled EDR Contact: 02/20/2012
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/09/2010
Date Data Arrived at EDR: 08/11/2010
Date Made Active in Reports: 08/20/2010
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/02/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/20/2011
Date Data Arrived at EDR: 10/21/2011
Date Made Active in Reports: 11/08/2011
Number of Days to Update: 18

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/21/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 09/09/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/10/2011
Number of Days to Update: 27

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 12/12/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/20/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Semi-Annually

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 11/07/2011
Next Scheduled EDR Contact: 02/20/2012
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/16/2011
Date Data Arrived at EDR: 06/02/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 103

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/01/2011
Date Data Arrived at EDR: 11/01/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 10

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/01/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/31/2011
Date Data Arrived at EDR: 02/01/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 48

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/02/2011
Date Data Arrived at EDR: 11/04/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 7

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 08/11/2011
Date Data Arrived at EDR: 08/12/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 32

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Semi-Annually

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/02/2011
Date Data Arrived at EDR: 11/04/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 7
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 08/04/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 39
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25
Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/01/2011
Date Data Arrived at EDR: 06/01/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 13
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 07/01/2011
Date Data Arrived at EDR: 08/26/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 18

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 08/11/2011
Date Data Arrived at EDR: 08/12/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 32

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/01/2011
Date Data Arrived at EDR: 11/01/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 10

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 08/04/2011
Date Data Arrived at EDR: 10/04/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 38

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 10/04/2011
Next Scheduled EDR Contact: 01/16/2012
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 10/10/2011
Date Data Arrived at EDR: 10/11/2011
Date Made Active in Reports: 11/09/2011
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/30/2011
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/10/2011
Date Data Arrived at EDR: 10/11/2011
Date Made Active in Reports: 11/14/2011
Number of Days to Update: 34

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/30/2011
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/28/2011
Date Data Arrived at EDR: 11/29/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 14

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 11/07/2011
Next Scheduled EDR Contact: 02/20/2012
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 12/16/2011
Next Scheduled EDR Contact: 02/27/2012
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 12/20/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/28/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 24

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/24/2011
Date Data Arrived at EDR: 10/25/2011
Date Made Active in Reports: 11/22/2011
Number of Days to Update: 28

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/25/2011
Next Scheduled EDR Contact: 11/07/2011
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 11/17/2011
Next Scheduled EDR Contact: 03/05/2012
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 02/09/2011
Date Data Arrived at EDR: 02/09/2011
Date Made Active in Reports: 03/04/2011
Number of Days to Update: 23

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/24/2011
Next Scheduled EDR Contact: 02/06/2012
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 02/03/2011
Date Data Arrived at EDR: 02/08/2011
Date Made Active in Reports: 03/03/2011
Number of Days to Update: 23

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/24/2011
Next Scheduled EDR Contact: 02/06/2012
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/17/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 11/14/2011
Number of Days to Update: 26

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 10/17/2011
Date Data Arrived at EDR: 10/25/2011
Date Made Active in Reports: 11/14/2011
Number of Days to Update: 20

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 10/11/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 07/09/2008
Date Data Arrived at EDR: 07/09/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 22

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/05/2011
Next Scheduled EDR Contact: 03/19/2012
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/05/2012
Next Scheduled EDR Contact: 03/19/2012
Data Release Frequency: No Update Planned

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/01/2011
Date Data Arrived at EDR: 11/17/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 26

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/14/2011
Next Scheduled EDR Contact: 02/27/2012
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/02/2011
Date Data Arrived at EDR: 11/18/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 25

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/14/2011
Next Scheduled EDR Contact: 02/27/2012
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/02/2011
Date Data Arrived at EDR: 11/18/2011
Date Made Active in Reports: 12/14/2011
Number of Days to Update: 26
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/14/2011
Next Scheduled EDR Contact: 02/27/2012
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/18/2011
Number of Days to Update: 35
Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 12/09/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/20/2011
Date Data Arrived at EDR: 10/21/2011
Date Made Active in Reports: 11/08/2011
Number of Days to Update: 18
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/20/2011
Date Data Arrived at EDR: 10/21/2011
Date Made Active in Reports: 11/14/2011
Number of Days to Update: 24
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/26/2012
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/02/2011
Date Data Arrived at EDR: 10/12/2011
Date Made Active in Reports: 11/08/2011
Number of Days to Update: 27
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/07/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/02/2011
Date Data Arrived at EDR: 10/14/2011
Date Made Active in Reports: 11/08/2011
Number of Days to Update: 25
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/07/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/30/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 12/16/2011
Number of Days to Update: 15

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/14/2011
Next Scheduled EDR Contact: 02/27/2012
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/09/2010
Date Data Arrived at EDR: 09/15/2010
Date Made Active in Reports: 09/29/2010
Number of Days to Update: 14

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 12/16/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2011
Date Data Arrived at EDR: 11/04/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 39

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 12/12/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 11/14/2011
Next Scheduled EDR Contact: 02/27/2012
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 11/14/2011
Next Scheduled EDR Contact: 02/27/2012
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 09/27/2011
Date Data Arrived at EDR: 09/28/2011
Date Made Active in Reports: 10/19/2011
Number of Days to Update: 21
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 10/17/2011
Date Data Arrived at EDR: 11/29/2011
Date Made Active in Reports: 12/05/2011
Number of Days to Update: 6
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/14/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 09/20/2011
Date Data Arrived at EDR: 09/22/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 32
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/14/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22
Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 09/06/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/10/2011
Number of Days to Update: 27
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 12/05/2011
Next Scheduled EDR Contact: 03/19/2012
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 09/01/2011
Date Data Arrived at EDR: 09/01/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 32
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 12/12/2011
Next Scheduled EDR Contact: 02/27/2012
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 09/20/2011
Date Data Arrived at EDR: 09/28/2011
Date Made Active in Reports: 10/25/2011
Number of Days to Update: 27
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 01/03/2012
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/20/2011
Date Data Arrived at EDR: 09/28/2011
Date Made Active in Reports: 10/19/2011
Number of Days to Update: 21
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 01/03/2012
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/05/2011
Date Data Arrived at EDR: 04/06/2011
Date Made Active in Reports: 05/12/2011
Number of Days to Update: 36
Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/27/2011
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 10/19/2011
Number of Days to Update: 36
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 12/09/2011
Next Scheduled EDR Contact: 03/26/2012
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 10/27/2011
Date Data Arrived at EDR: 11/23/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 20

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/17/2011
Next Scheduled EDR Contact: 03/05/2012
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 09/14/2011
Date Data Arrived at EDR: 09/15/2011
Date Made Active in Reports: 10/24/2011
Number of Days to Update: 39

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/21/2011
Next Scheduled EDR Contact: 01/23/2012
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/17/2011
Next Scheduled EDR Contact: 03/05/2012
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 10/27/2011
Date Data Arrived at EDR: 11/07/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 36

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/31/2011
Next Scheduled EDR Contact: 02/13/2012
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 08/30/2011
Date Data Arrived at EDR: 09/20/2011
Date Made Active in Reports: 10/19/2011
Number of Days to Update: 29

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 11/15/2011
Date Data Arrived at EDR: 11/21/2011
Date Made Active in Reports: 12/14/2011
Number of Days to Update: 23

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/21/2011
Date Data Arrived at EDR: 11/22/2011
Date Made Active in Reports: 12/22/2011
Number of Days to Update: 30

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/22/2011
Next Scheduled EDR Contact: 03/05/2012
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/20/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 22

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/18/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 11/01/2011
Date Data Arrived at EDR: 11/08/2011
Date Made Active in Reports: 12/22/2011
Number of Days to Update: 44

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 11/08/2011
Next Scheduled EDR Contact: 02/20/2012
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 12/01/2009
Date Made Active in Reports: 12/14/2009
Number of Days to Update: 13

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 06/24/2011
Date Made Active in Reports: 06/30/2011
Number of Days to Update: 6

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/28/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/15/2011
Number of Days to Update: 27

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

© 2010 Tele Atlas North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

EDR DataMap®
Corridor Study

South Orange County
Reliability Enhancement

- Listed Sites
- Earthquake Epicenters (Richter 5 or greater)
- Search Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Pipelines
- Powerlines
- Fault Lines
- Water
- Superfund Sites
- Federal DOD Sites
- Indian Reservations BIA
- 100-Yr Flood Zones
- National Wetland Inventory



San Juan Capistrano, CA

0 1/2 1

Scale in Miles

EDR® Environmental Data Resources Inc

Copyright © 2012 EDR, Inc. © 2010 Tele Atlas Rel. 07/2009.

The EDR Aerial Photo Decade Package

OCTE
Camino Capistrano/Calle Lorenzo
San Juan Capistrano, CA 92675

Inquiry Number: 2154760.1

February 29, 2008

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report AS IS. Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2008 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Date EDR Searched Historical Sources:

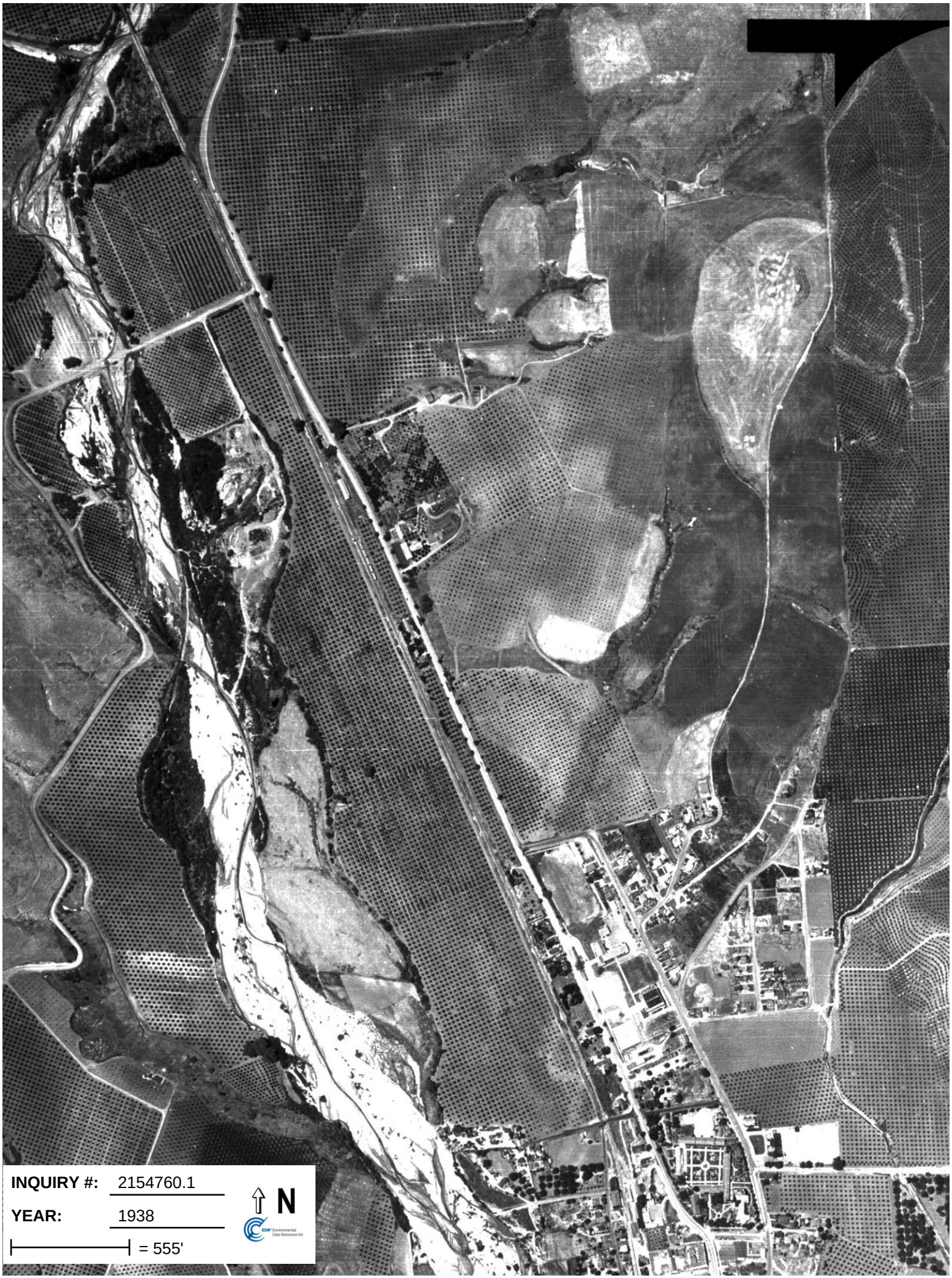
Aerial Photography February 29, 2008

Target Property:

Camino Capistrano/Calle Lorenzo

San Juan Capistrano, CA 92675

Year	***Scale***	***Details***	***Source***
1938	Aerial Photograph. Scale: 1"=555'	Flight Year: 1938	Laval
1946	Aerial Photograph. Scale: 1"=655'	Flight Year: 1946	Jack Ammann
1952	Aerial Photograph. Scale: 1"=555'	Flight Year: 1952	Pacific Air
1968	Aerial Photograph. Scale: 1"=480'	Flight Year: 1968	Teledyne
1977	Aerial Photograph. Scale: 1"=666'	Flight Year: 1977	Teledyne
1989	Aerial Photograph. Scale: 1"=666'	Flight Year: 1989	USGS
1994	Aerial Photograph. Scale: 1"=666'	Flight Year: 1994	USGS
2002	Aerial Photograph. Scale: 1"=666'	Flight Year: 2002	USGS


INQUIRY #: 2154760.1
YEAR: 1938
= 555'
N

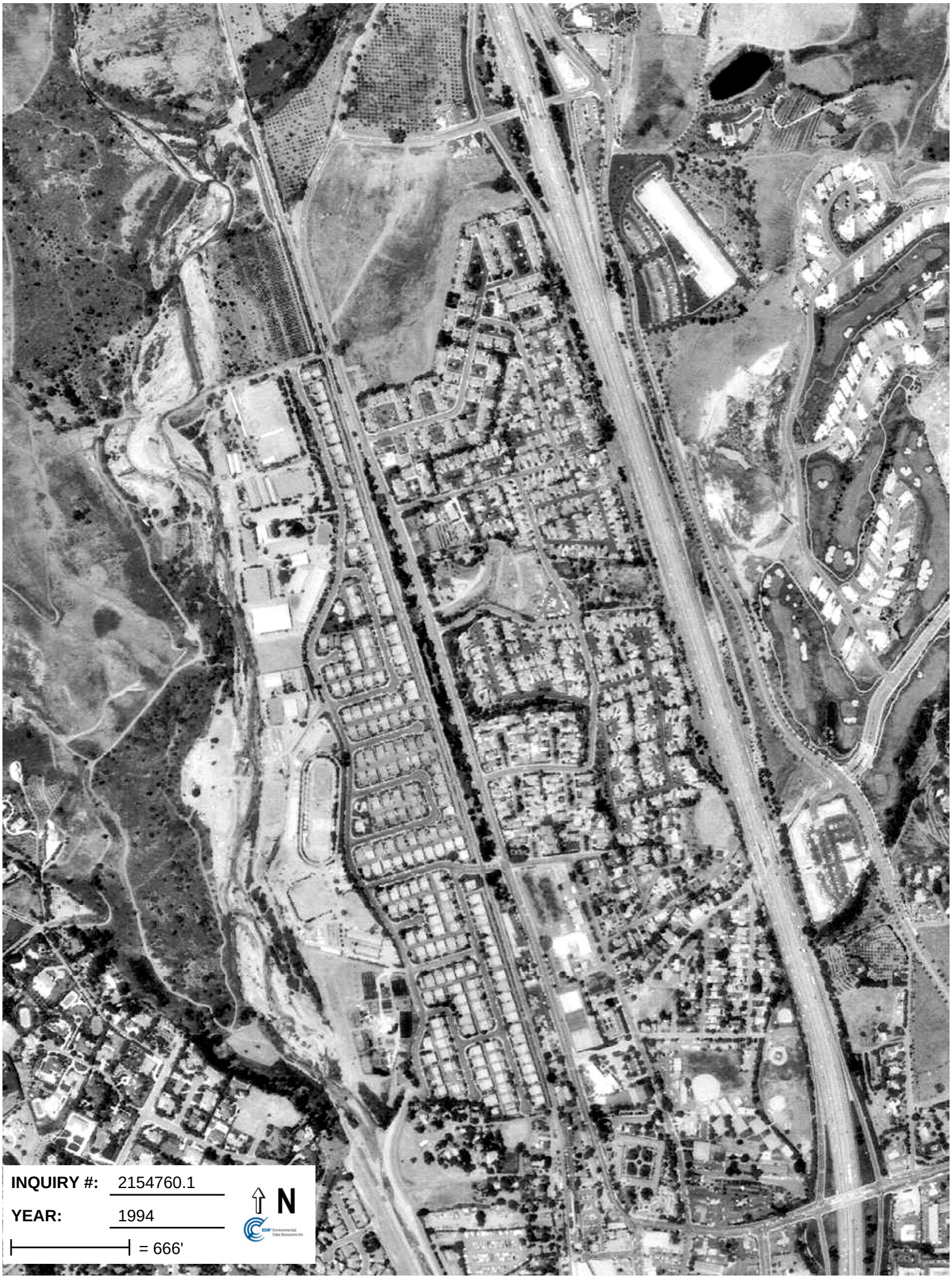

INQUIRY #: 2154760.1
YEAR: 1946
= 655'
N


INQUIRY #: 2154760.1
YEAR: 1952
= 555'
N


INQUIRY #: 2154760.1
YEAR: 1968
= 480'
N


INQUIRY #: 2154760.1
YEAR: 1977
= 666'
N


INQUIRY #: 2154760.1
YEAR: 1989
= 666'
N


INQUIRY #: 2154760.1
YEAR: 1994
= 666'
N


INQUIRY #: 2154760.1
YEAR: 2002
= 666'
N

Material Safety Data Sheet

Sulfur Hexafluoride

Section 1. Chemical product and company identification

Product name : Sulfur Hexafluoride

Supplier : AIRGAS INC., on behalf of its subsidiaries
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Product use : Synthetic/Analytical chemistry.

Synonym : Sulfur fluoride; OC-6-11; Elegas; SF6; Hexafluorure de soufre; UN 1080; Esaflon

MSDS # : 001048

Date of Preparation/Revision : **4/26/2010.**

In case of emergency : 1-866-734-3438

Section 2. Hazards identification

Physical state : Gas. [COLORLESS, ODORLESS GAS. [NOTE: SHIPPED AS A LIQUEFIED COMPRESSED GAS. CONDENSES DIRECTLY TO A SOLID UPON COOLING.]]

Emergency overview : WARNING!

MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
CONTENTS UNDER PRESSURE.

Do not puncture or incinerate container. May cause target organ damage, based on animal data.

Contact with rapidly expanding gases can cause frostbite.

Target organs : May cause damage to the following organs: upper respiratory tract.

Routes of entry : Inhalation

Potential acute health effects

Eyes : Contact with rapidly expanding gas may cause burns or frostbite.

Skin : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : Acts as a simple asphyxiant.

Ingestion : Ingestion is not a normal route of exposure for gases

Potential chronic health effects : **CARCINOGENIC EFFECTS**: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

Section 3. Composition, Information on Ingredients

Name	CAS number	% Volume	Exposure limits
Sulfur Hexafluoride	2551-62-4	100	**ACGIH TLV (United States, 1/2009).** TWA: 5970 mg/m³ 8 hour(s). TWA: 1000 ppm 8 hour(s). **NIOSH REL (United States, 6/2009).** TWA: 6000 mg/m³ 10 hour(s). TWA: 1000 ppm 10 hour(s). **OSHA PEL (United States, 11/2006).** TWA: 6000 mg/m³ 8 hour(s). TWA: 1000 ppm 8 hour(s). **OSHA PEL 1989 (United States, 3/1989).** TWA: 6000 mg/m³ 8 hour(s).

TWA: 1000 ppm 8 hour(s).

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training.If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

Flammability of the product : Non-flammable.

Products of combustion : Decomposition products may include the following materials:
sulfur oxides
halogenated compounds

Fire-fighting media and instructions : Use an extinguishing agent suitable for the surrounding fire.

Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.

Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up : Immediately contact emergency personnel. Stop leak if without risk. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Handling : High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Storage : Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Personal protection in case of a large spill : Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.

Product name

sulphur hexafluoride

ACGIH TLV (United States, 1/2009).
TWA: 5970 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).
NIOSH REL (United States, 6/2009).
TWA: 6000 mg/m³ 10 hour(s).
TWA: 1000 ppm 10 hour(s).
OSHA PEL (United States, 11/2006).
TWA: 6000 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).
OSHA PEL 1989 (United States, 3/1989).
TWA: 6000 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Molecular weight : 146.06 g/mole

Molecular formula : F6-S

Melting/freezing point : Sublimation temperature: -64.15°C (-83.5°F)

Critical temperature : 45.5°C (113.9°F)

Vapor pressure : 320 (psig)

Vapor density : 5.114 (Air = 1)

Specific Volume (ft^3/lb) : 2.5994

Gas Density (lb/ft^3) : 0.3847

Section 10. Stability and reactivity

Stability and reactivity : The product is stable.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Toxicity data

Chronic effects on humans : May cause damage to the following organs: upper respiratory tract.

Other toxic effects on humans : No specific information is available in our database regarding the other toxic effects of this material to humans.

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Reproduction toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Aquatic ecotoxicity

Not available.

Environmental fate : Not available.

Environmental hazards : No known significant effects or critical hazards.

Toxicity to the environment : Not available.

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1080	SULFUR HEXAFLUORIDE	2.2	Not applicable (gas).		**Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: 75 kg **Cargo aircraft** Quantity limitation: 150 kg
TDG Classification	UN1080	SULFUR HEXAFLUORIDE; OR SULPHUR HEXAFLUORIDE	2.2	Not applicable (gas).		**Explosive Limit and Limited Quantity Index** 0.125 **Passenger Carrying Road or Rail Index** 75

Sulfur Hexafluoride						
Mexico Classification	UN1080	SULFUR HEXAFLUORIDE	2.2	Not applicable (gas).		-

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Section 15. Regulatory information

United States

U.S. Federal regulations :

United States inventory (TSCA 8b): This material is listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: sulphur hexafluoride
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: sulphur hexafluoride: Sudden release of pressure

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

State regulations :

Connecticut Carcinogen Reporting: This material is not listed.
Connecticut Hazardous Material Survey: This material is not listed.
Florida substances: This material is not listed.
Illinois Chemical Safety Act: This material is not listed.
Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.
Louisiana Reporting: This material is not listed.
Louisiana Spill: This material is not listed.
Massachusetts Spill: This material is not listed.
Massachusetts Substances: This material is listed.
Michigan Critical Material: This material is not listed.
Minnesota Hazardous Substances: This material is not listed.
New Jersey Hazardous Substances: This material is listed.
New Jersey Spill: This material is not listed.
New Jersey Toxic Catastrophe Prevention Act: This material is not listed.
New York Acutely Hazardous Substances: This material is not listed.
New York Toxic Chemical Release Reporting: This material is not listed.
Pennsylvania RTK Hazardous Substances: This material is listed.
Rhode Island Hazardous Substances: This material is not listed.

Canada

WHMIS (Canada) :

Class A: Compressed gas.

CEPA Toxic substances: This material is listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

United States

Label requirements :

MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
CONTENTS UNDER PRESSURE.

Canada

Label requirements :

Class A: Compressed gas.

Hazardous Material Information System (U.S.A.) :

Health	*	0
Flammability		0
Physical hazards		0

National Fire Protection Association (U.S.A.) :



Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

APPENDIX 4.10-A: BASICS OF NOISE AND VIBRATION

A. Noise and Vibration Terminology

1. Noise

Noise is unwanted sound. Several noise measurement scales are used to describe noise in a specific location. A decibel (dB) is a unit of measurement that indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound pressure that the healthy, unimpaired human ear can detect under controlled conditions. Sound levels in decibels are calculated on a logarithmic basis using the ratio of the assumed or measured sound pressure divided by a standardized, reference pressure (for sound, the reference pressure is 20 µPascals). Each 10 dB increase in sound level is perceived as an approximate doubling of loudness over a fairly wide range of amplitudes.

There are several methods of characterizing sound. The A-scale is a filter system that closely approximates the way the human ear perceives sound at different frequencies. Noise levels using A-weighted measurements are denoted with the abbreviation of "dB(A)" or "dBA." The A-weighting filter system is very commonly used in the measurement and reporting of community noise, as well as in nearly all regulations and ordinances. All sound levels in this report are A-weighted, unless noted otherwise.

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-average or energy-equivalent sound/noise descriptor is abbreviated as L_{eq}. An hour is the most common time period over which energy-average sound is measured, but it can be measured over any duration (and the duration should be specified when the L_{eq} level is reported). Alternately, varying sound levels can be described by their statistical distribution over some fraction of a given observation period. These statistical sound levels are typically abbreviated as "L_n." For example, the L_{50} noise level represents the noise level that is exceeded n=50 percent of the time. That is, half of the time the noise level exceeds this level and half of the time the noise level is less than this level. For practical implementation, this level is representative of the noise that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8, and L_{25} values represent the noise levels that are exceeded n=2, 8, and 25 percent of the time or, equivalently, 1, 5, and 15 minutes in any given hour. These "n" values are typically used to demonstrate compliance for stationary noise sources with a city's noise ordinance, as discussed below. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Sensitivity to noise is subjective and varies from person to person, with the particular setting, and with the time-of-day. Sensitivity to noise typically increases during the evening and nighttime hours, when excessive noise can interfere with at-home activities and the ability to sleep. To account for these day/evening/night differences in sensitivity, 24-hour descriptors have been developed that incorporate artificial noise penalties that are added to quiet-time noise events. The Day/Night Average Sound Level, abbreviated as "L_{dn}" is a measure of the cumulative noise exposure in a community, with a 10 dB addition applied to nocturnal (10:00 p.m. to 7:00 a.m.) noise levels. A similar 24-hour metric is the Community Noise Equivalent Level, or "CNEL," which extends the sensitivity adjustment by also applying a 3 dB addition to noise levels in the evening hours (7:00 p.m. to 10:00 p.m.). For typical community noise environments, the L_{dn} and CNEL levels are nearly always within 1 dB of each other and, therefore, are commonly used interchangeably (as will be the case in this document).

Additional technical terms are defined in Table 4.10-A1.

Table 4.10-A1 Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio. For decibels describing sound pressures, the reference pressure is 20 µPascals.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless noted otherwise.
Statistical Sound Level or n-exceedance Sound Level, L_n (e.g., L_{01}, L_{10}, L_{50}, L_{90})	The fast-response, A-weighted noise levels equaled or exceeded by a fluctuating sound level for n-percent of a stated time period. For example, 1 percent, 10 percent, 50 percent, and 90 percent of the stated period. The L_{10} level is commonly called the 'intrusive sound level' and is near the maximum level in that time period, while the L_{90} is commonly called the 'residual sound level' and is near the minimum level in that period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level*, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the nighttime between 10:00 p.m. and the following 7:00 a.m.
Day/Night Noise Level*, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the nighttime between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast-response time averaging. The L_{max} is equal to the L_0 and the L_{min} is equal to the L_{100}.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time. It is usually a composite of sounds from many sources and from many directions, both near and far, with no particular sound source being dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the increment above the ambient noise level.

Source: Harris, Cyril, 1998. Handbook of Acoustical Measurements and Noise Control. Acoustical Society of America, 3rd Edition.

** Note: L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, CNEL values are considered to be equivalent to and interchangeable with L_{dn} values and are treated as such in this assessment.*

To provide a frame of reference to common experiences, representative outdoor and indoor noise levels are shown in Table 4.10-A2.

Table 4.10-A2 Sound Pressure Levels for Common Sound Sources

Common Outdoor Activities	Noise Level, dBA Perception	Common Indoor Activities
Jet Engine (within 25 feet)	-140- damaging	None
Civil Defense Siren (within 25 feet)	-130- threshold of pain	None
Accelerating noisy motorcycle (within 10 feet)	-120- threshold of feeling	Hard rock band (close to stage)
Power Saw (at 3 feet)	-110- extremely loud	Other concert (close to stage)
Subway; Jet Fly-over (at 100 feet)	-100- very loud	
Gas Lawnmower (at 3 feet)	-95- very loud	Crying Baby (within 3 feet)
Tractor (at 25 feet)	-90- very loud	
Some Construction Equipment (at 50 feet)	-85- loud	Food Blender (at 1 foot)
Diesel Truck going 50 mph (at 50 feet)	-80- loud	Garbage Disposal (at 1 foot)
Noisy Urban Area during Daytime	-75- moderately loud	Busy restaurant
Gas Lawnmower (at 100 feet)	-70- moderately loud	Vacuum Cleaner (at 10 feet)
Commercial Area	-65- moderate	Normal Speech (at 3 feet)
Heavy Traffic (at 300 feet)	-60- moderate	Sewing machine
Air Conditioner	-55- moderate	Large Business Office
Quiet Urban Area during Daytime	-50- quiet	Dishwasher in Next Room
Quiet Urban Area	-45- quiet	Refrigerator
Quiet Urban Area during Nighttime	-40- faint	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime	-35- faint	Average residence (without audio or video systems)
Quiet Suburban Area during Nighttime	-30- very faint	Library
Quiet Rural Area	-25- very faint	Bedroom at Night, Concert Hall (background)
Rustling leaves	-20- very quiet	Broadcast/Recording Studio
Very Quiet Remove Area	-15- extremely quiet	Anechoic chamber or sound testing laboratory
Threshold of Human Hearing	-0-	Threshold of Human Hearing

Sources: California Department of Transportation, Noise, Air Quality, and Hazardous Waste Management Office, *Technical Noise Supplement*, November 2009. Alliance Acoustical Consulting, Inc. reference files.

2. Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several methods are typically used to quantify the amplitude of vibration including Peak Particle Velocity (PPV) and Root Mean Square (RMS) velocity. PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. RMS velocity is defined as the square root of the arithmetic mean (average) of the squares of the original velocity values. PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. Table 4.10-A3 displays human annoyance and the effects on buildings resulting from continuous vibration.

As discussed previously for noise, annoyance to vibration is also subjective and dependent on situational conditions such as the receptor's physical orientation, the frequency content of the vibrational energy, and the impulsiveness of the vibration (described, in part, by the crest factor). Vibrations may be found to be annoying at much lower levels than those shown in the table; depending on the level of activity and/or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying.

Low-level vibrations frequently cause irritating, secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise which causes induced vibration in exterior doors and windows.

Table 4.10-A3 Reaction of People and Damage to Buildings for Continuous Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006 to 0.019	Threshold of perception: Possibility of intrusion	Vibration unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk of "architectural" damage to normal dwellings such as plastered walls or ceilings.
0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations	Vibration at this level would cause "architectural" damage and possibly minor structural damage.

Source: Transportation Related Earth-borne Vibrations. Caltrans, Technical Advisory, TAV-02-01-R9601, February 2002.

South Orange County Reliability Enhancement Project

AMBIENT NOISE SURVEY REPORT

CAPISTRANO SUBSTATION NOISE & CORONA NOISE





March 2012

San Diego Gas & Electric Company

Prepared by:

Alliance Acoustical Consulting, Inc.
Irvine, California

Prepared for:

TRC Solutions, Inc.
Irvine, California

TABLE OF CONTENTS

Section **Page**

Executive Summary 1
1.0 Introduction 2
2.0 Overall Project Setting 2
2.1 Capistrano Substation Setting 4
2.2 Transmission Line Setting 5
3.0 Ambient Noise Survey Details – Capistrano Substation 6
3.1 Capistrano Substation Survey Sessions 6
3.2 Capistrano Substation Survey Locations 6
3.3 Capistrano Substation Survey Instrumentation 8
3.4 Capistrano Substation Survey Conditions 8
4.0 Ambient Noise Survey Results – Capistrano Substation 8
4.1 Capistrano Substation General Noise Environment 8
4.2 Capistrano Substation Short-Term Data Results 9
4.2 Capistrano Substation Long-Term Data Results 13
5.0 Ambient Noise Survey Details – Transmission Line Corona 17
5.1 Transmission Line Corona Survey Sessions 17
5.2 Transmission Line Corona Survey Locations 17
5.3 Transmission Line Corona Survey Instrumentation 19
5.4 Transmission Line Corona Survey Conditions 19
6.0 Ambient Noise Survey Results – Transmission Line Corona 19
6.1 Transmission Line Corona General Noise Environment 19
6.2 Transmission Line Corona Short-Term Data Results 20
7.0 Summary of Both Ambient Noise Surveys 22
7.1 Capistrano Substation Summary 22
7.2 Transmission Line Corona Summary 22

LIST OF ATTACHMENTS

Attachment A Ambient Survey Measurement Instrumentation Details

South Orange County Reliability Enhancement Project
Ambient Noise Surveys

Executive Summary

The San Diego Gas and Electric Company (SDG&E) is proposing, via the South Orange County Reliability Enhancement Project (Proposed Project), to bring a new 230 kilo volt (kV) transmission source into the service area and to rebuild the existing 138kV/ 12kV Capistrano substation with a new 230kV/ 138kV/ 12kV substation and to make tie-in modifications/upgrades at the Talega Substation. As part of the Proposed Project design engineering effort, Alliance Acoustical Consulting (AAC) was contracted to document the present noise environments at the existing Capistrano Substation and at selected locations along the transmission line corridor. This report is a summary of an Ambient Noise Survey Study (Study) that was conducted by AAC in June of 2010 (Capistrano Substation portion) and in January of 2012 (transmission line portion).

The Capistrano Substation survey results – including 24-hour monitoring, spectral sampling, and field observations – indicate that the substation site is typical for a suburban residential neighborhood near transportation corridors (Camino Capistrano, the Amtrak rail line, and the Interstate 5 [I-5] freeway). Ambient noise levels are primarily controlled throughout the daytime and nighttime by either the I-5 traffic flows or noise from the existing transformers (or a combination of both). Noise from general urban activities in the adjoining residential neighborhoods also contributed to the overall sound environment. The amount of influence of these sources is dependent on the receptor location, proximity to substation equipment, and local shielding effects. The amplitudes of the energy-average (L_{eq}) levels around the existing Capistrano Substation site were generally confined to fairly narrow ranges, indicating that the average noise environment is fairly steady. Long-term (24-hour) ambient noise measurements were taken from three locations at the existing Capistrano Substation site (LT-1, -2, and -3). Location LT-1 registered in the 40's to 50's dBA, location LT-2 sound levels were generally between 45 and 55 dBA, and location LT-3 levels had the highest recorded noise levels of between 50 and 60 dBA. Single-event sound levels, such as from individual vehicle or train pass-bys, were measured in the low-70's to low-80's dBA maximum sound pressure level (L_{max}).

The transmission line survey results – primarily focusing on establishing the ambient noise from corona effects – indicate that most of the corridor area is fairly quiet for an urbanized area. The dominant evening and early nighttime noise sources were typically roadway and freeway traffic flows from adjacent or distant transportation routes. Although the data were acquired on a humid night that would be conducive for corona noise effects, there was no observed corona noise from the existing transmission lines.

the remainder of this page is intentionally blank

1.0 Introduction

SDG&E is a regulated public utility that provides electric service to three million customers within a 4,100 square mile service area, covering parts of two counties and 25 cities in the southern California area. The Proposed Project is intended to meet the area load growth and service reliability for approximately 118,000 customers within southern Orange County. The Proposed Project will bring a new 230kV transmission source into the service area by upgrading the existing 138kV transmission line with a twin 230 kV circuit between the Capistrano and Talega Substations. Also, SDG&E is proposing to rebuild the existing 138/12kV Capistrano Substation with a new 230/138/12kV substation and to make tie-in modifications/upgrades at the Talega Substation.

As part of its Application for a Certificate of Public Convenience and Necessity (CPCN), to be submitted to the California Public Utilities Commission (CPUC), SDG&E must generate a Proponent's Environmental Assessment (PEA)[1]. This report will serve as documentation of existing conditions for the Capistrano Substation, as well as for portions of the transmission line with respect to corona noise.

2.0 Overall Project Setting

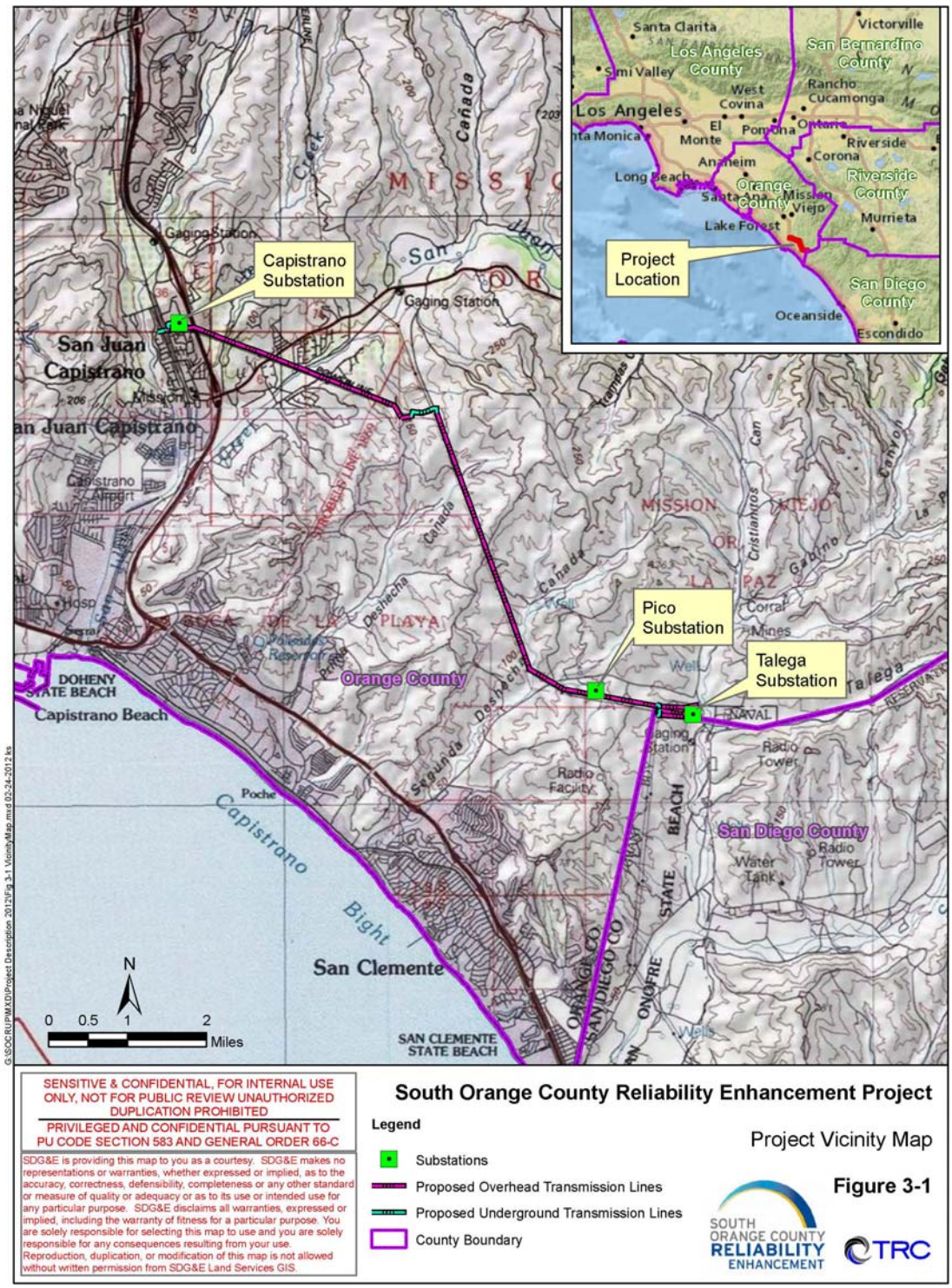
The Proposed Project components are primarily located in portions of the cities of San Juan Capistrano and San Clemente as well as unincorporated area within Orange and San Diego Counties[2]. The Proposed Project and its associated components will be located primarily within existing SDG&E transmission line rights-of-way and substation properties. This area of southwestern Orange County is composed of residential, commercial, recreational, and open-space land uses. The transmission line crosses the I-5 east of the existing Capistrano Substation, then spans San Juan Creek. At the approximate mid-section of the transmission line, the right-of-way is located to the east of the Prima Deshecha Landfill. Near San Juan Hills High School, the transmission line will be placed underground adjacent to existing underground circuits near Vista Montana Street.

Figure 1 shows the regional setting for the Proposed Project and Figure 2 shows the Project vicinity map, including the proposed structure locations.

---

[1] *These documents fall under the procedures of the California Environmental Quality Act (CEQA), with the CPUC acting as the lead agency for the Proposed Project.*

[2] *The southernmost portions of the transmission line, as well as the Talega Substation are in the County of San Diego and are on the United States Marine Corp Base Camp Pendleton (federal lands), which are leased to the State of California as part of the San Onofre State Beach.*



<u>Figure 1</u> – Regional Setting for the Proposed Project

Source: TRC Solutions and SDG&E

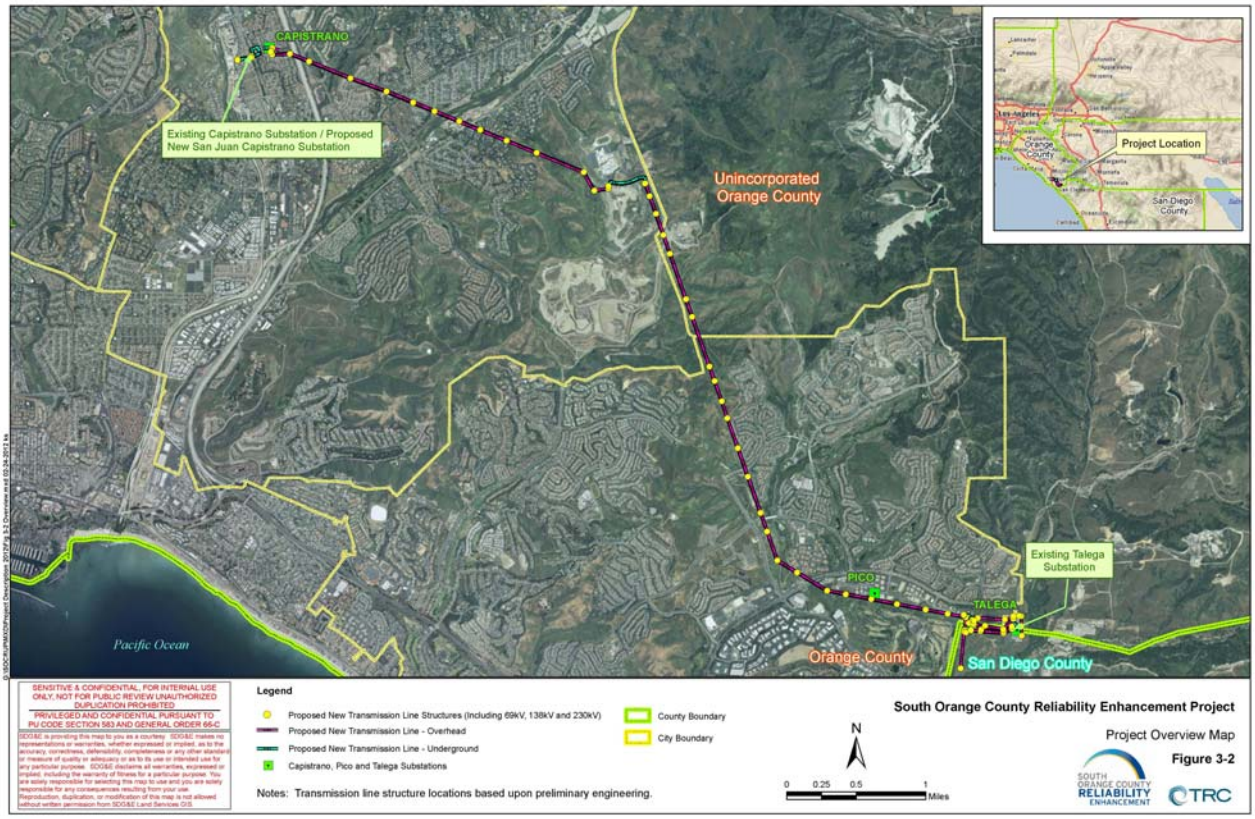


Figure 2 - General Vicinity of the Proposed Project

Source: TRC Solutions and SDG&E

2.1 Capistrano Substation Setting

The Capistrano Substation is located within an urbanized area in the city of San Juan Capistrano in southern Orange County. The 138/12 kV substation was built 60 years ago and contains three 138kV transmission lines, six 12kV circuits, one 138kV capacitor, two 12kV capacitors, two 138/12kV transformers, and a control shelter. The 6.4 acre site is composed of an upper yard and a lower yard. The upper (eastern) yard portion consists of an open rack design for the active 138/12kV substation with structures approximately 30 feet above grade, plus the accompanying transmission and distribution poles. The lower (western) yard contains a building and remnant facilities from an out-of-service switching station. This lower yard is currently being used as a storage area for landscaping products and SDG&E equipment such as distribution and transmission poles. The Capistrano Substation is bounded by a parking/storage lot to the southeast, residential developments to the south and north, and a major street, Camino Capistrano to the west. Further west, across Camino Capistrano, is a rail line for both Amtrak and Metrolink rail services. To the east is Junipero

Serra Park which includes the first portion of the initial transmission line going to Talega Substation. Beyond the park, farther to the east is the I-5 freeway.

2.2 Transmission Line Setting

The Proposed Project transmission lines traverse through several residential, recreational, and open-space areas within San Juan Capistrano, San Clemente, and unincorporated Orange and San Diego Counties. The recreational uses include El Camino Real Park, Junipero Serra Park (near the Capistrano substation), Marbella (golf) Country Club, Arroyo Park (off of Ortega Highway), Russell Cook Park, an equestrian center (Tar Farms Horse Stable located on San Juan Creek Road), and private/community parks and recreation areas located west of the Capistrano Substation site (adjacent to Avenida De La Vista).

The Proposed Project will involve the installation of new 69kV, 138kV, and 230kV poles, overhead conductors, and underground cable. All transmission line work will be completed within SDG&E's existing right-of-way between the Capistrano Substation and the Talega Substation as well as within a small portion of acquired additional ROW near the Talega Substation.

The following sub-sections of this report are divided between the Capistrano Substation Ambient Survey and the Transmission Line Corona Noise Survey.

the remainder of this page is intentionally blank

3.0 Ambient Noise Survey Details – Capistrano Substation

3.1 Capistrano Substation Survey Sessions

The Capistrano Substation site and surroundings were visited beginning on the morning of Wednesday, June 9 and ending in the late afternoon of Thursday, June 10, 2010. A combination of long-term monitoring and short-term sampling was employed to capture overall sound levels, statistical sound levels, and frequency-band data at the various measurement locations.

3.2 Capistrano Substation Survey Locations

During the survey, three long-term (i.e. 24+ hours) sampling locations were chosen along key boundary positions around the substation's upper yard area. These locations were near (or in the direction of) the closest noise-sensitive receptors around the substation property. At each long-term measurement location, various statistical sound levels[3], the minima/maxima, and the energy-average sound levels[4] were acquired over a complete day-night cycle. The long-term location information is summarized in Table 1.

Table 1 - Summary of Capistrano Substation Ambient Noise Long-term Measurement Locations

Loc'n	Description	Start Time	End Time	Latitude	Longitude
LT-1	Northwest	6/9/10 10:21	6/10/10 16:24	N 33° 30.785'	W 117° 40.008'
LT-2	Northeast	6/9/10 09:49	6/10/10 16:11	N 33° 30.785'	W 117° 39.944'
LT-3	Southwest	6/9/10 10:52	6/10/10 16:34	N 33° 30.733'	W 117° 39.963'

Source: Alliance Acoustical Consulting, Inc., 2010, data from a Garmin eTrex handheld GPS unit

In addition, several short-term (i.e. 15-minute duration) samples were made during various times of the day and night to acquire supplemental information about the spectral content of the ambient noise environment and to document the observed noise sources contributing to that environment. These noise data were acquired at four short-term locations, most of which are outside the substation fenceline. The short-term locations are summarized in Table 2. The ambient measurement locations at the Capistrano Substation are shown in Figure 3 on the next page.

---

[3] *The sound pressure level, denoted L_x, that is the statistical indicator of the time-varying noise signal that is equaled or exceeded x % of the stated sampling time. For example, the L_{10} metric represents the sound level which is exceeded 10 percent of the sampled time period (commonly called the "intrusive noise level" or the 'effective maximum noise level'). Likewise, the L_{100} metric is the level equaled or exceeded 100% of the stated sampling time – i.e. it is always exceeded, thus making this value equivalent to the minimum noise level or L_{min}.*

[4] *The single-number noise descriptor that represents the energy-average sound levels over a given time period, where the actual sound level varies with time. That is, if the varying sound level were constant for the specified time, that level would be the L_{eq}.*

Table 2 - Summary of Capistrano Substation Ambient Noise Short-term Measurement Locations

Loc'n	Latitude	Longitude	Description
ST-1	N 33° 30.791'	W 117° 39.976'	North (between LT-1 and LT-2)
ST-2	N 33° 30.775'	W 117° 39.897'	Northwest corner of Serra Park
ST-3	N 33° 30.745'	W 117° 39.870'	At sign of Serra Park
ST-4	N 33° 30.708'	W 117° 39.925'	Calle Bonita and Via El Rosario

Source: Alliance Acoustical Consulting, Inc., 2010, positional data from a Garmin eTrex handheld GPS unit and Google Earth



Figure 3 - Ambient Noise Measurement Locations at the Capistrano Substation
[Long-term locations shown in yellow, short-term locations shown in green]
Source: Google Earth

3.3 Capistrano Substation Survey Instrumentation

All noise measurements were conducted in general accordance with industry standards and guidelines for the engineering evaluation of exterior noise sources. Instrumentation made by Brüel and Kjær, Larson-Davis, and Norsonics were used to conduct the noise measurements. The data acquisition systems meet the requirements set forth in the American National Standards Institute (ANSI) S1.4-1983 Standards for Type I quality and accuracy. Each instrument was field calibrated and operated according to the manufacturer's specifications. The sound level meters were operated to sample noise using the A-weighting filter and the slow metering response. Measurements included the acquisition of time history data, frequency-band data (in one-third-octave bands), and statistical sound level data at selected locations. A windscreen was used on each instrument during all sampling periods and all measurements were conducted with the microphone height approximately 5 feet (1.5m) above ground level. Additional instrumentation details are provided in Attachment A.

3.4 Capistrano Substation Survey Conditions

Site conditions and meteorological conditions were noted during the field survey[5] and can generally be described as mild and are considered as being a bit cooler than typical for this time of year in the area. The air temperature during the daytime was typically in the low-60's to low-70's degrees Fahrenheit (°F) with relative humidity between 70 and 85%. During the evening and nighttime sessions, the temperature was in the low-60's °F with humidity in the upper 80's%. For the survey, the barometric pressure was generally centered about 29.9 (± 0.2) inches of mercury. Skies were noted as being partly cloudy during the daytime hours. The nighttime skies were overcast with the moon being in its waning crescent phase (9% illumination)[6].

During the survey, the typical wind conditions were from calm to a very light breeze (i.e. 2 to 5 mph) and no wind gusts were noted. Overnight and morning winds were generally calm or just a 'whisper'. Winds, when present, were generally from the west.

All these meteorological conditions were within appropriate ranges for acceptable outdoor noise measurements per ANSI S1.13.

4.0 Ambient Noise Survey Results – Capistrano Substation

4.1 Capistrano Substation General Noise Environment

As the Proposed Project site is located in a suburban area near major roadways, the major noise sources were either from traffic flows or general urban activities in the adjoining residential neighborhoods. During the ambient survey, the following local noise sources were noted by the field engineer:

---

[5] *Field meteorological data was acquired with a tripod-mounted Kestrel 4500 NV weather instrument, with supplemental data from www.wunderground.com.*

[6] *Sunset on 6/9/10 was at 20:00; moonrise was at 03:54 on the morning of 6/10; sunrise was later that morning at 05:40.*

- Car and truck vehicle movements on the adjacent Camino Capistrano roadway, local side streets, and the I-5 freeway to the east;
- General urban noises in the neighborhoods (music, talking, tools, church bells, etc.);
- Birds (during the daytime) and crickets (during the evening and late-night hours);
- Dogs barking;
- Substation transformer hum (depending on location, conditions, and other sources);
- Occasional rustling of vegetation during periods of light winds;
- Occasional train pass-bys on the Amtrak line across Camino Capistrano; and
- Occasional aircraft overflights in the distance.

4.2 Capistrano Substation Short-Term Data Results

The short-term noise samples, made during several times of the day and night, are summarized in Table 3, which provides the minimum, maximum, and energy-average sound levels over each 15-minute sample.

Table 3 - Summary of Ambient Noise Short-term Measurements

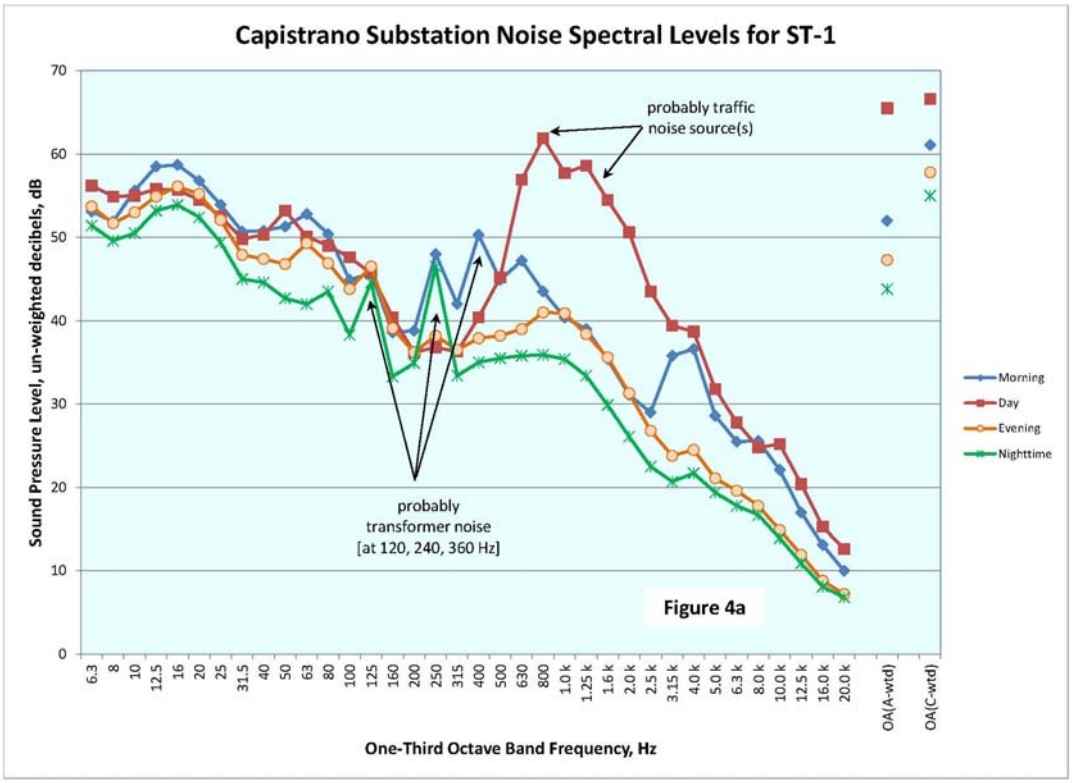
Location	Date	Time	Period	A-weighted Sound Pressure Level in decibels, dBA		
				L_{min}	L_{eq}	L_{max}
ST-1	6/9/2010	10:06:48	Morning	43.9	52.0	70.8
	6/9/2010	16:40:14	Day	43.0	65.5	82.7
	6/9/2010	22:04:46	Evening	42.9	47.3	50.9
	6/10/2010	3:31:27	Nighttime	40.5	43.8	48.0
ST-2	6/9/2010	11:10:40	Morning	42.4	55.8	76.8
	6/9/2010	15:57:00	Day	47.2	54.5	72.8
	6/10/2010	3:07:22	Nighttime	38.0	44.4	54.4
	6/10/2010	20:12:44	Evening	49.5	54.0	67.1
ST-3	6/9/2010	11:28:01	Morning	48.1	52.2	62.5
	6/9/2010	15:34:38	Day	49.3	52.3	63.0
	6/9/2010	21:15:54	Evening	46.5	51.9	66.0
	6/10/2010	2:49:15	Nighttime	40.7	46.5	53.6
ST-4	6/9/2010	11:48:00	Morning	44.3	54.8	72.4
	6/9/2010	16:17:40	Day	45.5	56.2	71.3
	6/10/2010	19:50:18	Evening	45.1	53.4	71.1
	6/9/2010	22:31:19	Late Evening	44.4	50.5	66.7
	6/10/2010	2:26:21	Nighttime	39.1	44.7	62.9

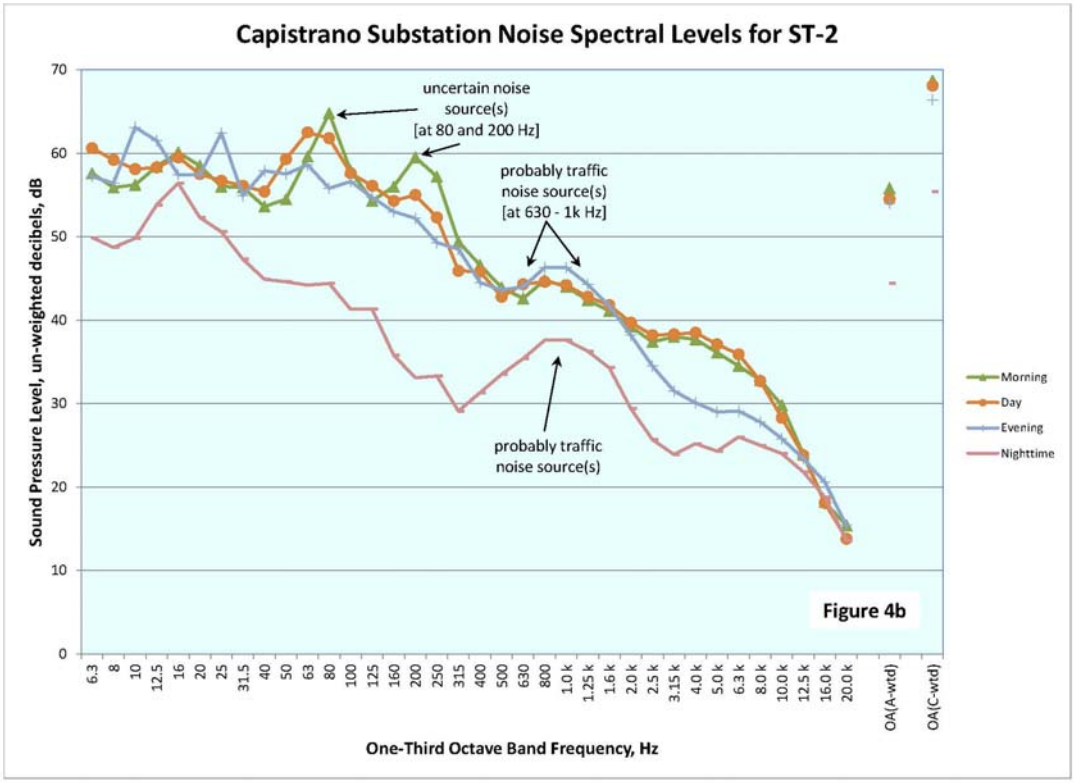
Source: Alliance Acoustical Consulting, Inc., 2010

The short-term results and field notes indicate that the existing noise environments were controlled by various sources, depending on the time of day and the measurement location. The nighttime conditions were dominated by traffic noise from the freeway with some

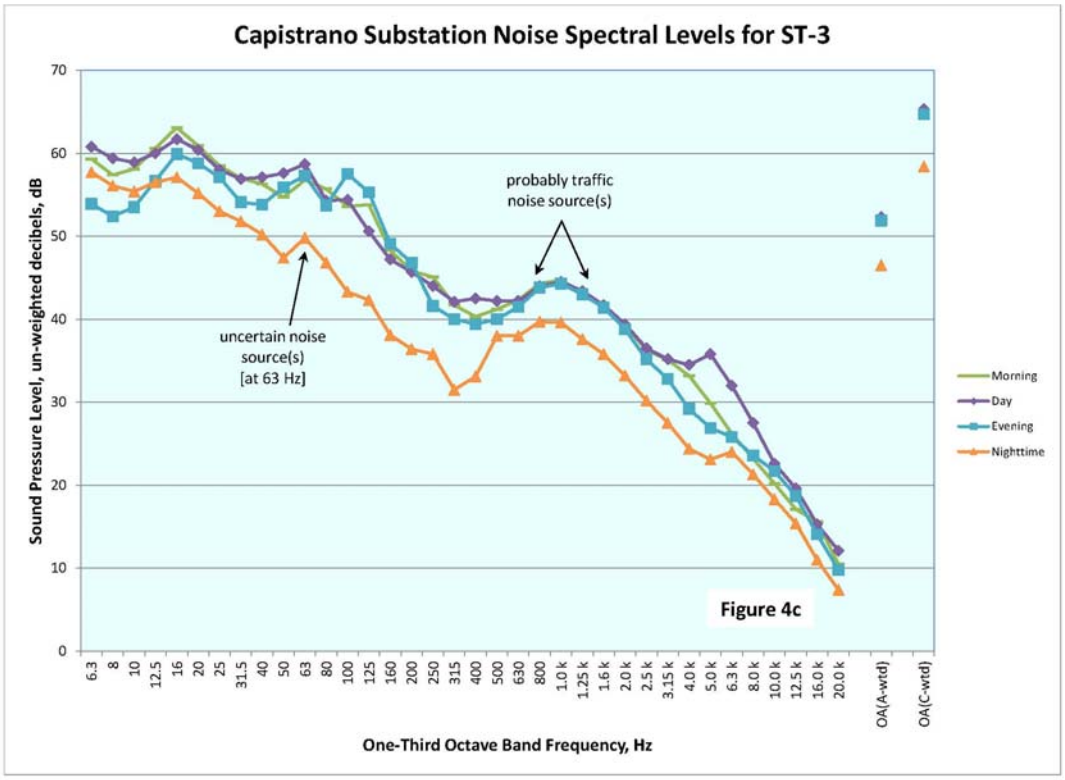
influences from transformer 'hum' at the substation. The measured noise spectral levels (sound levels versus frequency) are shown in Figures 4a – 4d.

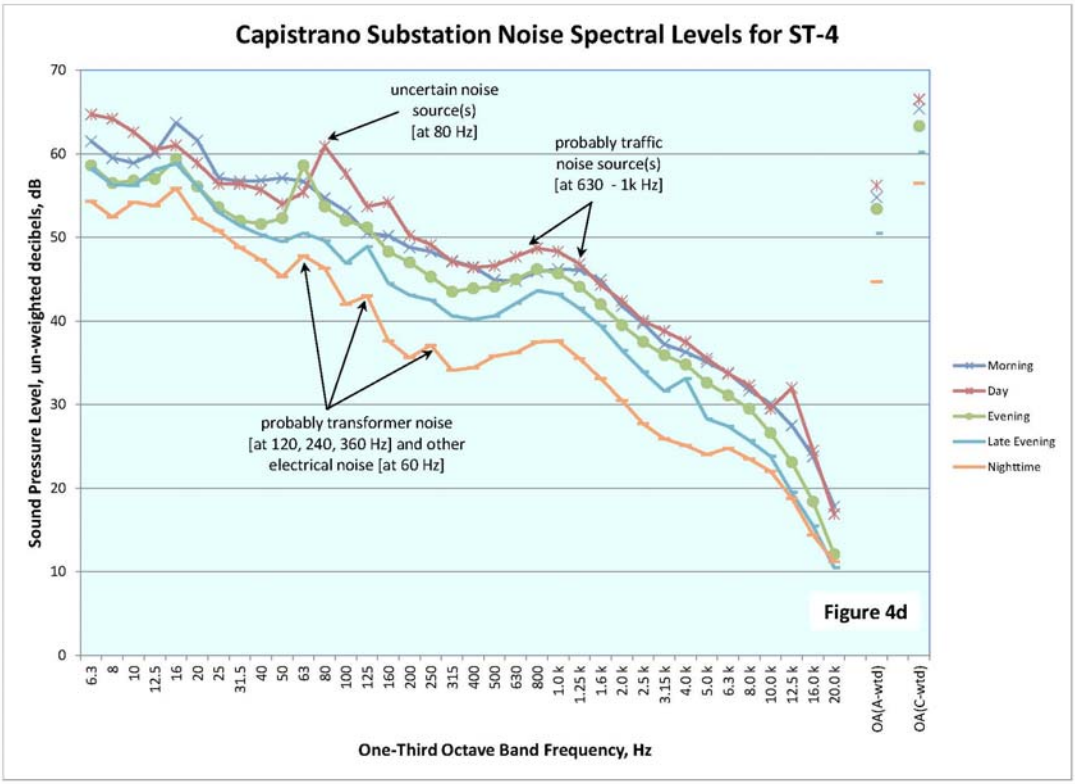
the remainder of this page is intentionally blank





<u>Figure 4a-b</u> – Capistrano Substation Ambient Noise Spectral Samples
Source: Alliance Acoustical Consulting, Inc., 2010





<u>Figure 4c-d</u> – Capistrano Substation Ambient Noise Spectral Samples
Source: Alliance Acoustical Consulting, Inc., 2010

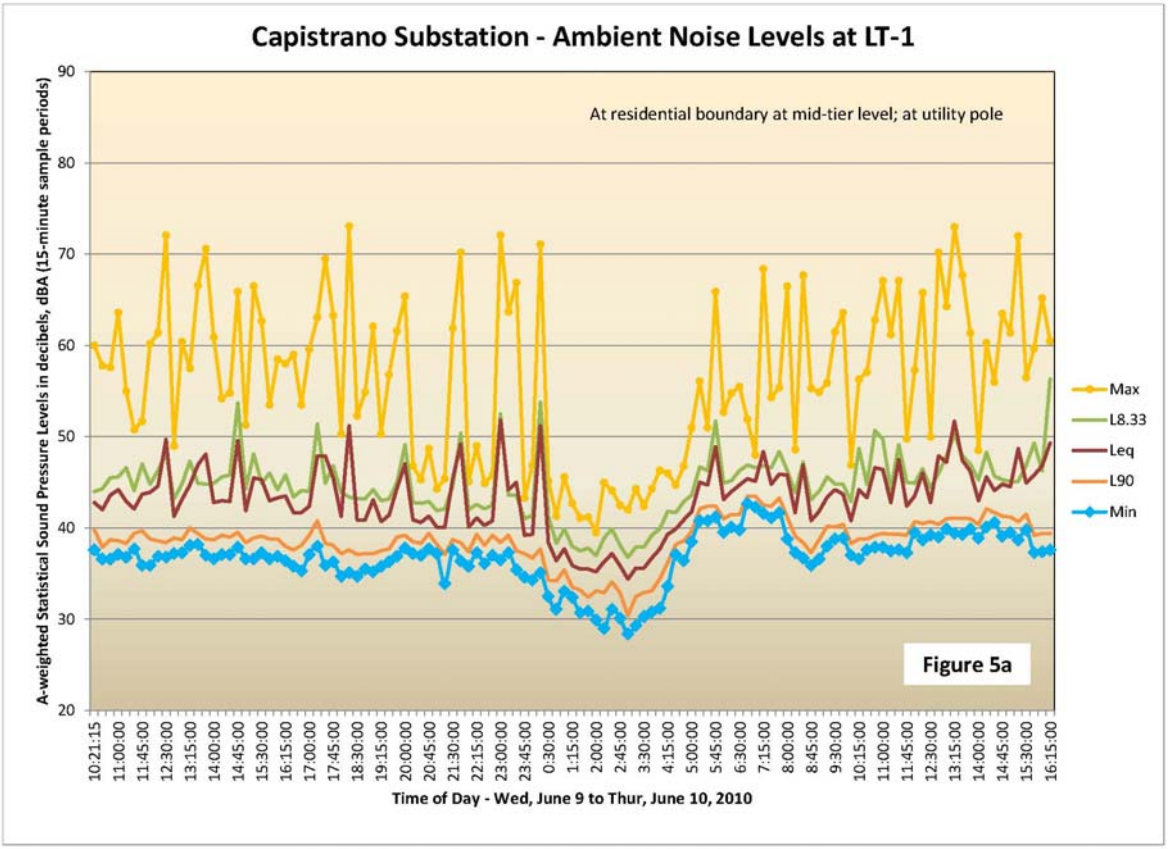
These spectra show the general influence of traffic sources throughout most periods of the day and night. Also, there is some evidence of low-frequency tones; most often at 80 hertz (Hz). At Locations ST-1 and ST-4, there are tones in the bands that would be characteristic of transformer-produced noise; that is, in the 125, 250, and 400 Hz bands. These transformer tones were typically most evident at the quietest periods.

4.2 Capistrano Substation Long-Term Data Results

In addition to the short-term data, three long-term monitoring stations were set to acquire data over a 24-hour period to investigate the day-to-night changes in the area's ambient noise conditions. These monitors were set to obtain and process noise data in continuous 15-minute samples at positions along the northwest, northeast, and southwest boundaries of the substation site.

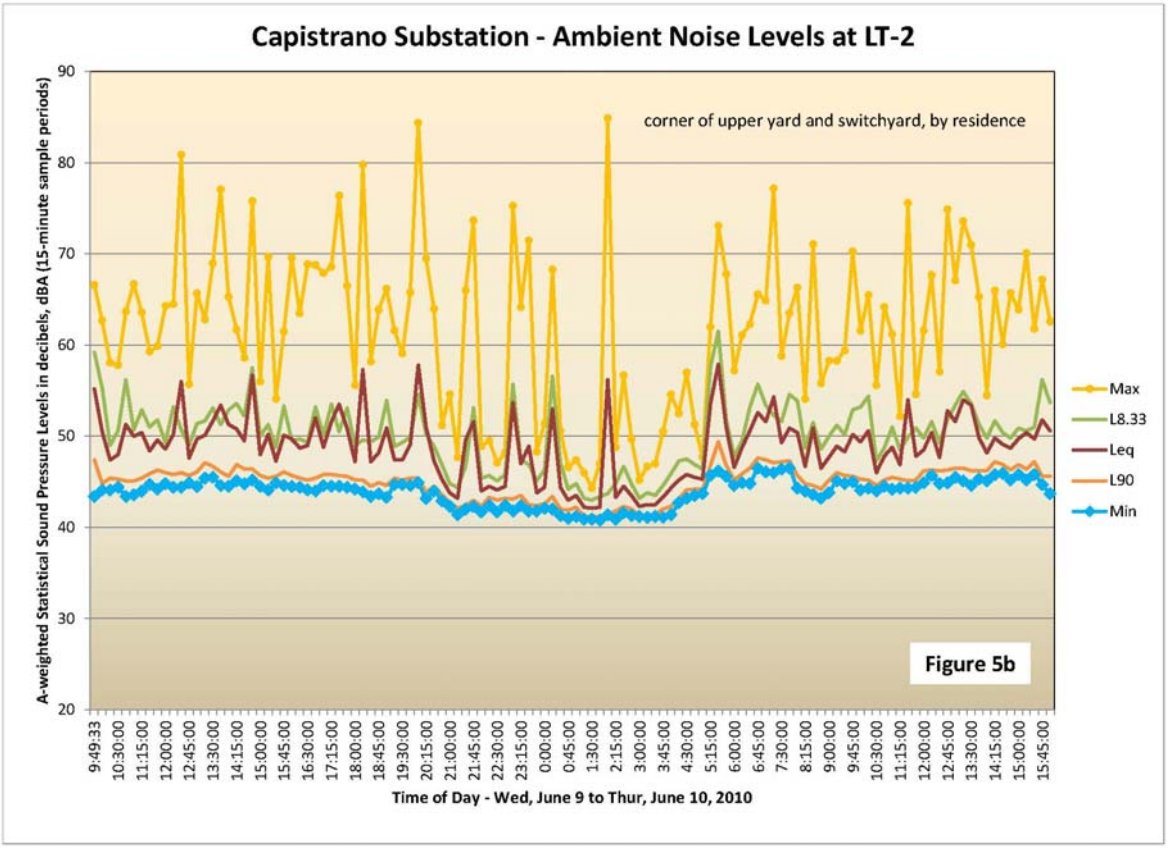
These long-term noise data results are shown in Figures 5a through 5c with associated explanatory notes following each plot.

the remainder of this page is intentionally blank



<u>Figure 5a</u> - 24-hour Ambient Record for the Northeast part of the Capistrano Substation
Source: Alliance Acoustical Consulting, Inc., 2010

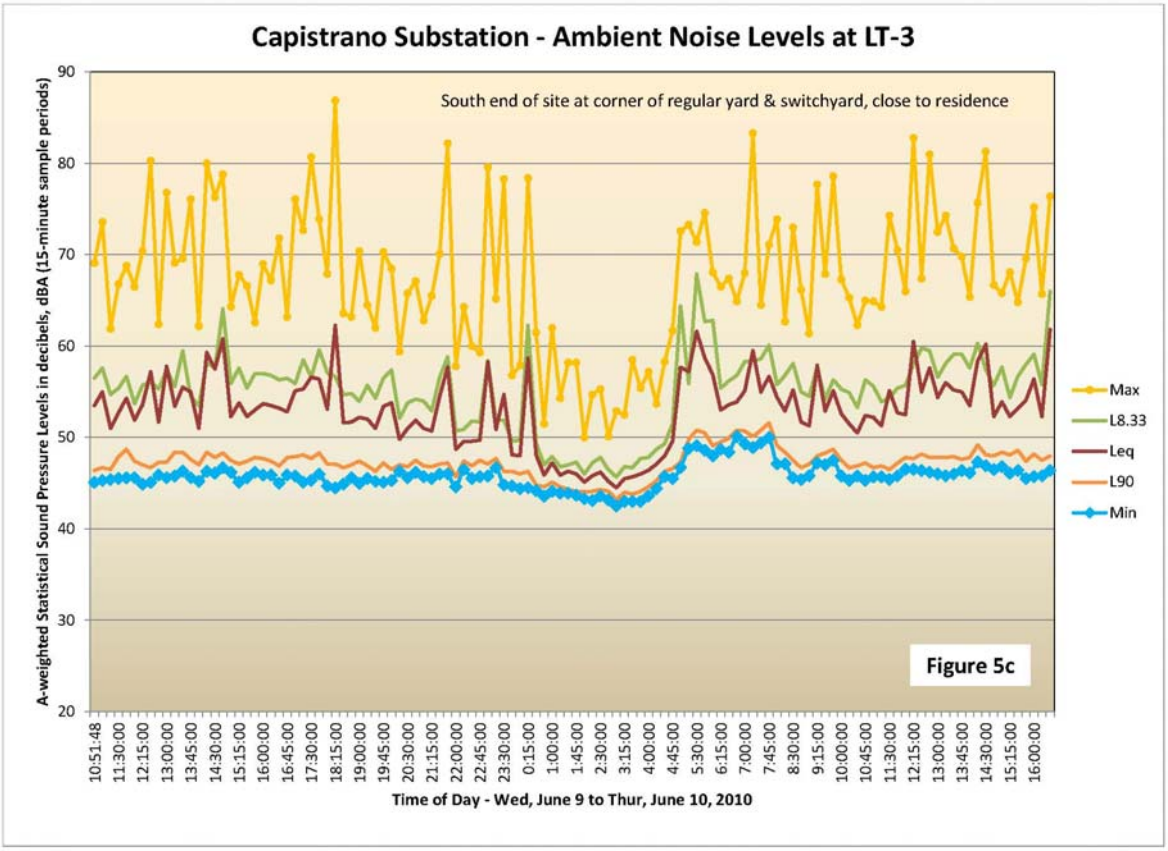
The northeast measurement location is toward the mid-point of the northern boundary of the substation site and has visual access to nearly all of the upper and lower yard areas. This plot of sound levels over the 24-hour period shows a fairly steady residual noise environment (exemplified by the L_{90} noise metric). The plot shows a common drop-off in sound levels overnight; between the hours of midnight and 5 a.m. Outside of these quietest, nighttime hours, the energy-average sound levels (L_{eq}) stayed in a consistent 10 dB-wide band (40 to 50 dBA) throughout all the daytime and evening periods. Excursions in the L_{max} metric are indicative of short-term noise events; most likely from individual car and train pass-bys on Camino Capistrano and the adjacent rail line. Traffic noise from local roadways and the freeway was noted as being the primary noise source at this location. The existing transformers were just audible, but were not a dominant source in the ambient session.



Source: Alliance Acoustical Consulting, Inc., 2010

<u>Figure 5b</u> - 24-hour Ambient Record for the Northeast part of the Capistrano Substation

The northeast measurement location was at the closest residential receptor to the main substation yard, adjacent to that yard's entrance gate. Future, project-related construction and rebuilt substation operations noise levels would be expected to be the highest (relative to other residential neighbors) at this location, due to its proximity to the main, upper yard sources. This location had the least variation in the range of residual sound levels throughout the 24-hour session (i.e., the L_{min} and L_{90} sound levels stayed within a relatively narrow 5-dB band for the entire measurement session). This result is most likely due to this measurement location being shielding from I-5 traffic noise by intervening houses and retaining walls, as well as experiencing the steady noise from the existing transformers throughout the 24-hour period. The Leq metric was generally confined to the 45 to 55 dBA range. As with the results for LT-1, there is evidence in the L_{max} results of many short-term noise events. This location generally overlooks and is up-slope from Camino Capistrano and the adjacent rail line and would experience the car, truck, and train pass-by events.



Source: Alliance Acoustical Consulting, Inc., 2010

Figure 5c - 24-hour Ambient Record for the Southwest part of the Capistrano Substation

The southwest measurement location was similar to the northwest location with respect to the day-to-night pattern of the sound levels. Again, there is a notable decrease in the L_{max} through L_{eq} sound levels late at night (i.e., 1 a.m. to 5 a.m.), along with evidence of numerous, short-lived noise events (such as local vehicle pass-bys). This location had the highest sound levels of the three monitoring locations as it is exposed to both I-5 freeway noise and noise from the substation transformers. Like the other plots, though, the L_{eq} metric stayed within a relatively narrow range of approximately 10 dB (typically from 50 to 60 dBA). As this location is the closest to existing transformers, they were noted as being the dominant background noise source, regardless of the time of day.

5.0 Ambient Noise Survey Details – Transmission Line Corona

5.1 Transmission Line Corona Survey Sessions

A survey to collect corona-influenced noise data was made on the evening of Saturday, January 14, 2012 between the hours of 9:00 P.M. and 11:00 P.M. Short-term sampling, typically 15 minutes in duration, was employed to capture overall sound levels, statistical sound levels, and frequency-band data at the various measurement locations.

5.2 Transmission Line Corona Survey Locations

During the corona survey, locations along the transmission line were selected to (a) focus on residential areas that are close to the corridor towers and power lines or (b) away from extraneous sources, in an effort to isolate line-dominated noise. For the former, the locations near transmission line Pole Nos. 8, 11, and 29 were very close to residential areas. For the latter, the location near Pole No. 28 was removed from nearby houses, roadways, or other major non-line noise sources. This part of the transmission line, near Pole No. 28, was also chosen to attempt making noise attenuation-with-distance measurements as the corridor access/maintenance roadway runs perpendicular to the transmission line corridor for several hundred feet. The corona survey location information is summarized in Table 4. The corona noise survey locations are shown in Figure 6 on the next page.

Table 4 - Summary of Corona Noise Measurement Locations
[All data acquired on January 14, 2012 (Saturday)]

Loc'n	Description	Latitude	Longitude	Start Time
Pole 8	In Arroyo Park; houses on either side of parkway strip	N 33° 30.444'	W 117° 38.825'	20:59
Pole 11	Next to homes by Juliana Farms Road	N 33° 30.275'	W 117° 38.352'	21:29
Pole 29	Near homes off Avenida Fresas	N 33° 28.440'	W 117° 36.436'	22:39
Pole 28	Removed from homes off Avenida Fresas	N 33° 28.623'	W 117° 36.527'	22:56

Source: Alliance Acoustical Consulting, Inc., 2012, Position data from Google Earth

the remainder of this page is intentionally blank



"Pole No. 8"

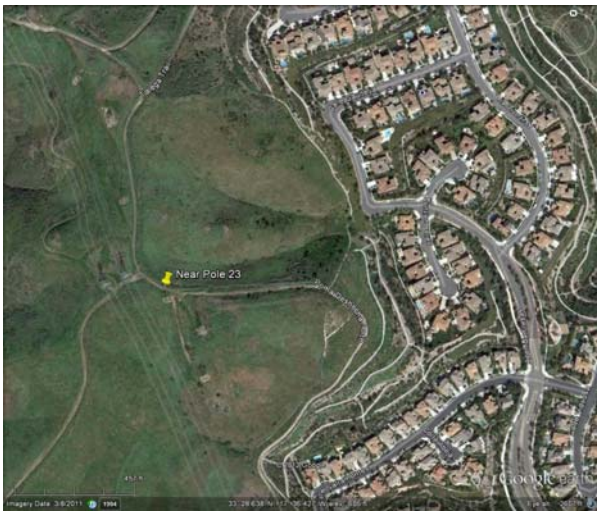
"Pole No. 11"





"Pole No. 29"

"Pole No. 28"



<u>Figure 6</u> – Corona Noise Survey Locations

Source: Google Earth

5.3 Transmission Line Corona Survey Instrumentation

All noise measurements were conducted in general accordance with industry standards and guidelines for the engineering evaluation of exterior noise sources. Instrumentation made by Brüel and Kjær and Norsonics were used to conduct the noise measurements. The data acquisition systems meet the requirements set forth in the ANSI S1.4-1983 Standards for Type I quality and accuracy. Each instrument was field calibrated and operated according to the manufacturer's specifications. The sound level meter was operated to sample noise using the A-weighting filter and the slow metering response. Measurements included the acquisition of time history data, frequency-band data (in one-third-octave bands), and statistical sound level data at selected locations. A windscreen was used on the instrument during all sampling periods and all measurements were conducted with the microphone height approximately 5 feet (1.5 meters) above ground level. Additional instrumentation details are provided in Attachment A.

5.4 Transmission Line Corona Survey Conditions

Site conditions and meteorological conditions were noted during the field survey[7] and can generally be described as mild and are considered as being a bit cooler than typical for this time of year in the area. The air temperature during the survey was typically in the low- to mid-40's °F with relative humidity around 63%. The barometric pressure was generally centered about 30.08 (± 0.01) inches of mercury and the winds were calm. The nighttime skies were completely clear and the moon was in its waning gibbous phase (67% illumination), but only visible at the very end of the survey[8].

All these meteorological conditions were within appropriate ranges for acceptable outdoor noise measurements per ANSI S1.13.

6.0 Ambient Noise Survey Results – Transmission Line Corona

6.1 Transmission Line Corona General Noise Environment

As the Proposed Project area is located among developed, suburban areas, the major noise source was predominantly traffic-related; mostly from major arterials or freeways in the distance. It is important to note that corona noise was *not* experienced at any location during the survey. During the corona survey, the following local noise sources were noted by the field engineer:

- Vehicle movements on distant roadways (e.g., I-5 freeway, Ortega Highway, San Juan Creek Road, and Calle Saluda);
- Occasional dogs barking or other wildlife (i.e., coyotes) in the distance;
- Occasional rustling of vegetation during periods of very light winds (at Pole No. 8 only);

[7] *Field meteorological data was taken from www.wunderground.com.*

[8] *Sunset on 1/14/12 was at 17:04; moonrise was at 23:08, per http://aa.usno.navy.mil/cgi-bin/aa_pap.pl.*

- Infrequent train movements in the distance; and
- Residential equipment (e.g., pool pumps or water features) in the distance.

6.2 Transmission Line Corona Short-Term Data Results

The short-term noise samples, made during several times of the day and night, are summarized in Table 5, which provides the minimum, maximum, and energy-average sound levels over each 15-minute sample.

Table 5 - Summary of Corona Noise Measurement Data
[All data acquired on January 14, 2012 (Saturday)]

Location	Time	Period	A-weighted Sound Pressure Level in decibels, dBA		
			L_{min}	L_{eq}	L_{max}
"Pole 8"	20:59	Evening	47.5	50.7	54.8
"Pole 11"	21:29	Late Evening	45.0	49.7	54.2
"Pole 28"	22:39	Early Night	30.1	36.4	50.3
"Pole 29"	22:56	Early Night	25.6	30.5	40.3

Source: Alliance Acoustical Consulting, Inc., 2012

The short-term results and field notes indicate that the existing noise environments were controlled by typical suburban noise sources; primarily vehicle movements on major streets or highways. No corona noise effects were experienced; even at the very quiet Pole No. 28 location.

The measured noise spectral levels (sound levels versus frequency) are shown in Figure 7.

the remainder of this page is intentionally blank

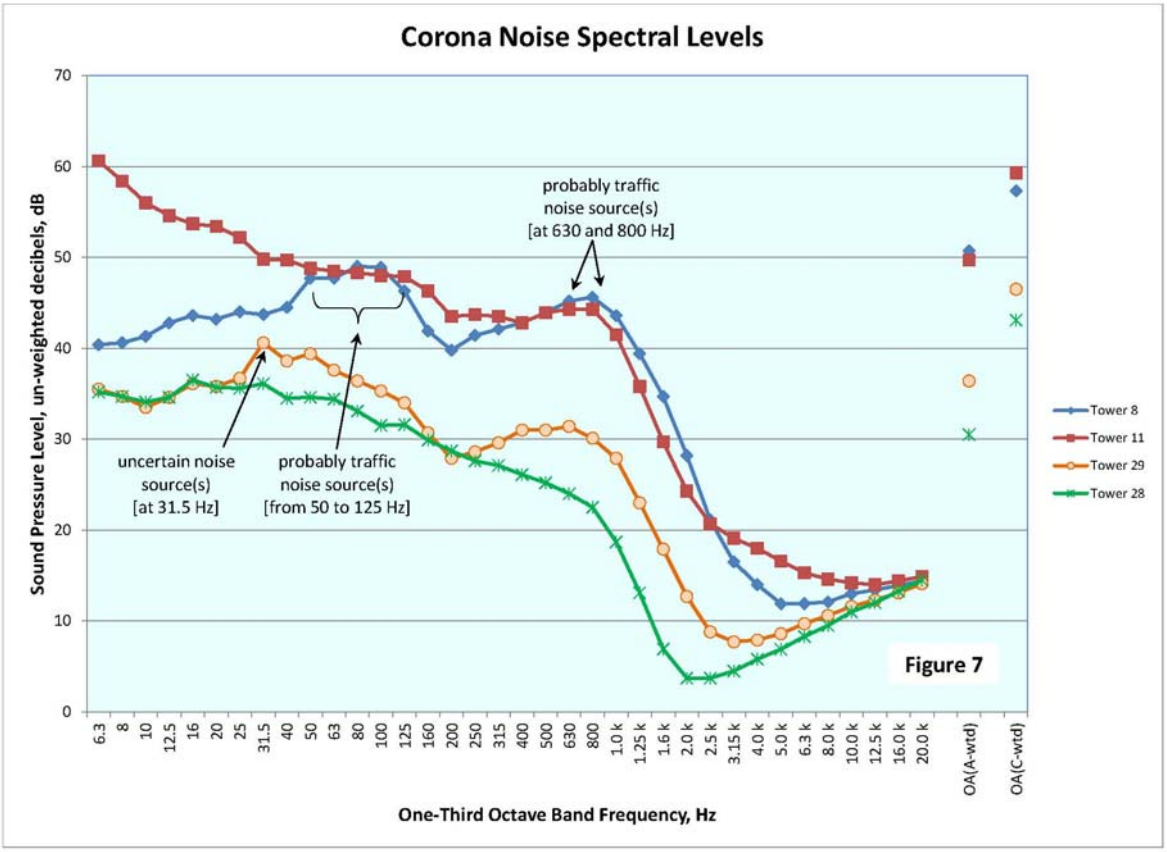


Figure 7 - Ambient Noise Spectral Samples
Source: Alliance Acoustical Consulting, Inc., 2012

These spectra are generally consistent and show typical influences from traffic-related noise sources; particularly at the Pole Nos. 8 and 11 locations, which were relatively close to major roadways.

the remainder of this page is intentionally blank

7.0 Summary of Both Ambient Noise Surveys

7.1 Capistrano Substation Summary

In general, the long-term noise level records show a significant amount of variability, in terms of the fluctuations in the maximum sound levels from period to period. This is due to the intermittent vehicle and train movements along the Camino Capistrano corridor and at local streets adjacent to the substation site. The data record and field notes also showed consistent influences from traffic on the I-5 and from the existing transformers, depending on measurement location, proximity to substation equipment, and local shielding effects. The L_{eq} levels around the existing Capistrano Substation site generally stayed in fairly narrow, 10-dB bands with LT-1 registering in the 40's to 50's dBA, LT-2 generally between 45 and 55 dBA, and LT-3 having the highest noise levels (between 50 and 60 dBA).

7.2 Transmission Line Corona Summary

While data were taken on an evening when corona noise effects might be expected to be readily apparent[9], no corona noise effects were experienced; either in the data or in the observations of the field engineer. Thus, the baseline conditions for the existing transmission line facilities include no corona noise effects.

[9] *The survey evening was chosen during a cool time of the year and on an evening shortly following a mild winter storm which left the humidity level relatively high….all conditions that are conducive for corona noise emissions.*

Attachment A

Ambient Survey Measurement Instrumentation Details

The following instruments were used in the noise measurements:

1. Norsonics model N-118 Integrating Sound Level Meter
2. Larson-Davis model 814 Sound Level Meters
3. Norsonics model 1206 Preamplifier
4. Larson-Davis model 904 Preamplifiers
5. Larson-Davis, Norsonics, G.R.A.S., and Brüel and Kjær ½" Microphones
6. Larson Davis model CAL200 (primary) and Brüel and Kjær 4230 (spare) Acoustic Calibrators

Additional details are as follows:

Field Instrumentation Documentation

Capistrano Substation Noise Survey of June 2010

System	Component	Manufacturer	Model	S/N	Last Calib	Calib due
System 1	SLM/Analyzer	Larson-Davis	814	152	3/28/2011	3/28/2012
	Preamp	Larson-Davis	904	101	3/28/2011	3/28/2012
	Mic	Bruel & Kjaer	2560	2036	3/28/2011	3/28/2012
System 2	SLM/Analyzer	Larson-Davis	814	156	3/28/2011	3/28/2012
	Preamp	Larson-Davis	904	126	3/28/2011	3/28/2012
	Mic	Bruel & Kjaer	2560	2306	3/28/2011	3/28/2012
System 3	SLM/Analyzer	Larson-Davis	814	153	3/28/2011	3/28/2012
	Preamp	Larson-Davis	904	139	3/28/2011	3/28/2012
	Mic	GRAS	2560	2958	3/28/2011	3/28/2012
System 4	SLM/Analyzer	Larson-Davis	814	124	3/28/2011	3/28/2012
	Preamp	Larson-Davis	904	134	3/28/2011	3/28/2012
	Mic	Bruel & Kjaer	2559	1782	3/28/2011	3/28/2012
System 5	SLM/Analyzer	Larson-Davis	814	164	3/28/2011	3/28/2012
	Preamp	Larson-Davis	904	385	3/28/2011	3/28/2012
	Mic	Larson-Davis	2560	2880	3/28/2011	3/28/2012
Short-term	SLM/Analyzer	Norsonic	N-118	28106	3/28/2011	3/28/2012
Sampling	Preamp	Norsonic	1206	27572	3/28/2011	3/28/2012
	Mic	Norsonic	1225	41498	3/28/2011	3/28/2012
All	Calibrator	Larson-Davis	CAL200	2367	3/28/2011	3/28/2012
All	*Calibrator**	*Bruel & Kjaer*	*4231*	*1795555*	*1/19/2009*	*1/19/2010*
Weather	Pocket Tracker	Kestrel	4500 NV	593031	n/a	n/a

** spare*

Field Instrumentation Documentation

Transmission Line Corona Noise Survey of January 2012

System	Component	Manufacturer	Model	S/N	Last Calib	Calib due
Short-term	SLM/Analyzer	Norsonic	N-118	28106	3/28/2011	3/28/2012
Sampling	Preamp	Norsonic	1206	27572	3/28/2011	3/28/2012
	Mic	Norsonic	1225	41498	3/28/2011	3/28/2012
All	Calibrator	Larson-Davis	CAL200	2367	3/28/2011	3/28/2012
All	*Calibrator**	*Bruel & Kjaer*	*4231*	*1795555*	*1/19/2009*	*1/19/2010*

** spare*