

Tehachapi Renewable Transmission Project

Environmental Impact Report/Environmental Impact Statement

Table of Contents

	Page
VOLUME 1	
Cover Sheet	
Executive Summary	ES-1
1. Introduction	
1.1 Overview of Proposed Project/Action and Alternatives	1-2
1.2 Purpose and Need	1-5
1.3 Agency Use of this Document	1-11
1.4 Overview of the Environmental Review Process.....	1-14
1.5 Reader's Guide to this Document.....	1-16
2. Description of Alternatives, including the Proposed Project	
2.1 Alternative 1: No Project/Action.....	2-3
2.2 Alternative 2: SCE's Proposed Project.....	2-5
2.3 Alternative 3: West Lancaster Alternative.....	2-71
2.4 Alternative 4: Chino Hills Route Alternatives	2-72
2.5 Alternative 5: Partial Underground Alternative.....	2-86
2.6 Alternative 6: Maximum Helicopter Construction in the ANF Alternative	2-97
2.7 Alternative 7: 66-kV Subtransmission Alternative	2-104
2.8 Other Alternatives Considered but Eliminated.....	2-107
2.9 Cumulative Projects	2-112
3. Affected Environment and Environmental Consequences	
3.1 Introduction to Environmental Analysis.....	3.1-1
3.2 Agricultural Resources	3.2-1
3.2.1 Introduction.....	3.2-1
3.2.2 Affected Environment.....	3.2-1
3.2.3 Applicable Laws, Regulations, and Standards	3.2-7
3.2.4 Impact Analysis Approach	3.2-9
3.2.5 Alternative 1: No Project/Action	3.2-11
3.2.6 Alternative 2: SCE's Proposed Project	3.2-13
3.2.7 Alternative 3: West Lancaster Alternative	3.2-22
3.2.8 Alternative 4: Chino Hills Route Alternatives	3.2-24
3.2.9 Alternative 5: Partial Underground Alternative	3.2-27
3.2.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative.....	3.2-30
3.2.11 Alternative 7: 66-kV Subtransmission Alternative	3.2-32
3.2.12 Impact Significance Summary	3.2-34
3.3 Air Quality	3.3-1
3.3.1 Introduction.....	3.3-1
3.3.2 Affected Environment.....	3.3-3
3.3.3 Applicable Laws, Regulations, and Standards	3.3-21
3.3.4 Impact Analysis Approach	3.3-24
3.3.5 Alternative 1: No Project/Action	3.3-29
3.3.6 Alternative 2: SCE's Proposed Project	3.3-30
3.3.7 Alternative 3: West Lancaster Alternative	3.3-44

Table of Contents (continued)

	Page
3.3.8 Alternative 4: Chino Hills Route Alternatives	3.3-46
3.3.9 Alternative 5: Partial Underground Alternative	3.3-49
3.3.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative....	3.3-52
3.3.11 Alternative 7: 66-kV Subtransmission Alternative	3.3-55
3.3.12 Impact Significance Summary	3.3-57
3.4 Biological Resources	3.4-1
3.4.1 Introduction.....	3.4-1
3.4.2 Affected Environment.....	3.4-9
3.4.3 Applicable Laws, Regulations, and Standards.....	3.4-90
3.4.4 Impact Analysis Approach	3.4-103
3.4.5 Alternative 1: No Project/Action	3.4-107
3.4.6 Alternative 2: SCE's Proposed Project	3.4-109
3.4.7 Alternative 3: West Lancaster Alternative	3.4-259
3.4.8 Alternative 4: Chino Hills Route Alternatives	3.4-275
3.4.9 Alternative 5: Partial Underground Alternative	3.4-296
3.4.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative...	3.4-313
3.4.11 Alternative 7: 66-kV Subtransmission Alternative	3.4-334
3.4.12 Impact Significance Summary	3.4-352
3.5 Cultural Resources	3.5-1
3.5.1 Introduction.....	3.5-1
3.5.2 Affected Environment.....	3.5-2
3.5.3 Applicable Laws, Regulations, and Standards.....	3.5-18
3.5.4 Impact Analysis Approach	3.5-22
3.5.5 Alternative 1: No Project/Action	3.5-24
3.5.6 Alternative 2: SCE's Proposed Project	3.5-24
3.5.7 Alternative 3: West Lancaster Alternative	3.5-37
3.5.8 Alternative 4: Chino Hills Route Alternatives	3.5-39
3.5.9 Alternative 5: Partial Underground Alternative	3.5-41
3.5.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative....	3.5-43
3.5.11 Alternative 7: 66-kV Subtransmission Alternative	3.5-45
3.5.12 Impact Significance Summary	3.5-47

VOLUME 2

3.6 Environmental Contamination and Hazards	3.6-1
3.6.1 Introduction.....	3.6-1
3.6.2 Affected Environment.....	3.6-1
3.6.3 Applicable Laws, Regulations, and Standards.....	3.6-27
3.6.4 Impact Analysis Approach	3.6-33
3.6.5 Alternative 1: No Project/Action	3.6-35
3.6.6 Alternative 2: SCE's Proposed Project	3.6-36
3.6.7 Alternative 3: West Lancaster Alternative	3.6-45
3.6.8 Alternative 4: Chino Hills Route Alternatives	3.6-48
3.6.9 Alternative 5: Partial Underground Alternative	3.6-52
3.6.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative....	3.6-54
3.6.11 Alternative 7: 66-kV Subtransmission Alternative	3.6-57
3.6.12 Impact Significance Summary	3.6-59
3.7 Geology, Soils, and Paleontology	3.7-1
3.7.1 Introduction.....	3.7-1
3.7.2 Affected Environment.....	3.7-1

Table of Contents (continued)

	Page	
3.7.3	Applicable Laws, Regulations, and Standards	3.7-51
3.7.4	Impact Analysis Approach	3.7-54
3.7.5	Alternative 1: No Project/Action	3.7-57
3.7.6	Alternative 2: SCE's Proposed Project	3.7-58
3.7.7	Alternative 3: West Lancaster Alternative	3.7-70
3.7.8	Alternative 4: Chino Hills Route Alternatives	3.7-75
3.7.9	Alternative 5: Partial Underground Alternative	3.7-85
3.7.10	Alternative 6: Maximum Helicopter Construction in the ANF Alternative.....	3.7-91
3.7.11	Alternative 7: 66-kV Subtransmission Alternative.....	3.7-96
3.7.12	Impact Significance Summary	3.7-101
3.8	Hydrology and Water Quality	3.8-1
3.8.1	Introduction.....	3.8-1
3.8.2	Affected Environment.....	3.8-3
3.8.3	Applicable Laws, Regulations, and Standards	3.8-19
3.8.4	Impact Analysis Approach	3.8-22
3.8.5	Alternative 1: No Project/Action	3.8-25
3.8.6	Alternative 2: SCE's Proposed Project	3.8-26
3.8.7	Alternative 3: West Lancaster Alternative	3.8-41
3.8.8	Alternative 4: Chino Hills Route Alternatives	3.8-45
3.8.9	Alternative 5: Partial Underground Alternative	3.8-54
3.8.10	Alternative 6: Maximum Helicopter Construction in the ANF Alternative.....	3.8-60
3.8.11	Alternative 7: 66-kV Subtransmission Alternative.....	3.8-65
3.8.12	Impact Significance Summary	3.8-70
3.9	Land Use	3.9-1
3.9.1	Introduction.....	3.9-1
3.9.2	Affected Environment.....	3.9-6
3.9.3	Applicable Laws, Regulations, and Standards	3.9-42
3.9.4	Impact Analysis Approach	3.9-51
3.9.5	Alternative 1: No Project/Action	3.9-52
3.9.6	Alternative 2: SCE's Proposed Project	3.9-55
3.9.7	Alternative 3: West Lancaster Alternative	3.9-78
3.9.8	Alternative 4: Chino Hills Route Alternatives	3.9-81
3.9.9	Alternative 5: Partial Underground Alternative	3.9-89
3.9.10	Alternative 6: Maximum Helicopter Construction in the ANF Alternative.....	3.9-93
3.9.11	Alternative 7: 66-kV Subtransmission Alternative.....	3.9-97
3.9.12	Impact Significance Summary	3.9-100
3.10	Noise	3.10-1
3.10.1	Introduction.....	3.10-1
3.10.2	Affected Environment.....	3.10-1
3.10.3	Applicable Laws, Regulations, and Standards	3.10-16
3.10.4	Impact Analysis Approach	3.10-19
3.10.5	Alternative 1: No Project/Action	3.10-20
3.10.6	Alternative 2: SCE's Proposed Project	3.10-21
3.10.7	Alternative 3: West Lancaster Alternative	3.10-41
3.10.8	Alternative 4: Chino Hills Route Alternatives	3.10-44
3.10.9	Alternative 5: Partial Underground Alternative	3.10-48
3.10.10	Alternative 6: Maximum Helicopter Construction in the ANF Alternative... .	3.10-51
3.10.11	Alternative 7: 66-kV Subtransmission Alternative	3.10-54
3.10.12	Impact Significance Summary	3.10-58

Table of Contents (continued)

	Page
3.11 Public Services and Utilities	3.11-1
3.11.1 Introduction.....	3.11-1
3.11.2 Affected Environment.....	3.11-4
3.11.3 Applicable Laws, Regulations, and Standards.....	3.11-15
3.11.4 Impact Analysis Approach	3.11-17
3.11.5 Alternative 1: No Project/Action	3.11-19
3.11.6 Alternative 2: SCE's Proposed Project	3.11-19
3.11.7 Alternative 3: West Lancaster Alternative	3.11-31
3.11.8 Alternative 4: Chino Hills Route Alternatives.....	3.11-35
3.11.9 Alternative 5: Partial Underground Alternative	3.11-41
3.11.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative... 3.11-45	3.11-45
3.11.11 Alternative 7: 66-kV Subtransmission Alternative	3.11-49
3.11.12 Impact Significance Summary	3.11-53
3.12 Socioeconomics	3.12-1
3.12.1 Introduction.....	3.12-1
3.12.2 Affected Environment.....	3.12-1
3.12.3 Applicable Laws, Regulations, and Standards.....	3.12-17
3.12.4 Impact Analysis Approach	3.12-19
3.12.5 Alternative 1: No Project/Action	3.12-19
3.12.6 Alternative 2: SCE's Proposed Project	3.12-20
3.12.7 Alternative 3: West Lancaster Alternative	3.12-32
3.12.8 Alternative 4: Chino Hills Route Alternatives.....	3.12-35
3.12.9 Alternative 5: Partial Underground Alternative	3.12-37
3.12.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative... 3.12-40	3.12-40
3.12.11 Alternative 7: 66-kV Subtransmission Alternative	3.12-42
3.12.12 Impact Significance Summary	3.12-44
3.13 Traffic and Transportation.....	3.13-1
3.13.1 Introduction.....	3.13-1
3.13.2 Affected Environment.....	3.13-1
3.13.3 Applicable Laws, Regulations, and Standards.....	3.13-24
3.13.4 Impact Analysis Approach	3.13-27
3.13.5 Alternative 1: No Project/Action	3.13-28
3.13.6 Alternative 2: SCE's Proposed Project	3.13-29
3.13.7 Alternative 3: West Lancaster Alternative	3.13-43
3.13.8 Alternative 4: Chino Hills Route Alternatives.....	3.13-47
3.13.9 Alternative 5: Partial Underground Alternative	3.13-52
3.13.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative... 3.13-57	3.13-57
3.13.11 Alternative 7: 66-kV Subtransmission Alternative	3.13-62
3.13.12 Impact Significance Summary	3.13-67
3.14 Visual Resources	3.14-1
3.14.1 Introduction.....	3.14-1
3.14.2 Affected Environment.....	3.14-2
3.14.3 Applicable Laws, Regulations, and Standards.....	3.14-88
3.14.4 Impact Analysis Approach	3.14-88
3.14.5 Alternative 1: No Project/Action	3.14-92
3.14.6 Alternative 2: SCE's Proposed Project	3.14-94
3.14.7 Alternative 3: West Lancaster Alternative	3.14-121
3.14.8 Alternative 4: Chino Hills Route Alternatives.....	3.14-126
3.14.9 Alternative 5: Partial Underground Alternative	3.14-132
3.14.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative..3.14-135	3.14-135

Table of Contents (continued)

	Page
3.14.11 Alternative 7: 66-kV Subtransmission Alternative	3.14-141
3.14.12 Impact Significance Summary	3.14-145
3.15 Wilderness and Recreation	3.15-1
3.15.1 Introduction	3.15-1
3.15.2 Affected Environment	3.15-5
3.15.3 Applicable Laws, Regulations, and Standards	3.15-60
3.15.4 Impact Analysis Approach	3.15-66
3.15.5 Alternative 1: No Project/Action	3.15-67
3.15.6 Alternative 2: SCE's Proposed Project	3.15-69
3.15.7 Alternative 3: West Lancaster Alternative	3.15-100
3.15.8 Alternative 4: Chino Hills Route Alternatives	3.15-104
3.15.9 Alternative 5: Partial Underground Alternative	3.15-116
3.15.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative ..	3.15-122
3.15.11 Alternative 7: 66-kV Subtransmission Alternative	3.15-130
3.15.12 Impact Significance Summary	3.15-135
3.16 Wildfire Prevention and Suppression	3.16-1
3.16.1 Introduction	3.16-1
3.16.2 Affected Environment	3.16-1
3.16.3 Applicable Laws, Regulations, and Standards	3.16-18
3.16.4 Impact Analysis Approach	3.16-21
3.16.5 Alternative 1: No Project/Action	3.16-22
3.16.6 Alternative 2: SCE's Proposed Project	3.16-23
3.16.7 Alternative 3: West Lancaster Alternative	3.16-34
3.16.8 Alternative 4: Chino Hills Route Alternatives	3.16-36
3.16.9 Alternative 5: Partial Underground Alternative	3.16-41
3.16.10 Alternative 6: Maximum Helicopter Construction in the ANF Alternative ..	3.16-43
3.16.11 Alternative 7: 66-kV Subtransmission Alternative	3.16-45
3.16.12 Impact Significance Summary	3.16-48
3.17 Electrical Interference and Hazards	3.17-1
3.17.1 Introduction	3.17-1
3.17.2 Affected Environment	3.17-3
3.17.3 Applicable Laws, Regulations, and Standards	3.17-4
3.17.4 Impact Analysis Approach	3.17-5
3.17.5 Alternative 1: No Project/Action	3.17-6
3.17.6 Alternative 2: SCE's Proposed Project	3.17-7
3.17.7 Alternatives 3, 4, 5, 6, and 7	3.17-10
3.17.8 Impact Significance Summary	3.17-11

VOLUME 3

4. Comparison of Alternatives	
4.1 Summary of Alternatives	4-1
4.2 Comparison of Alternatives	4-20
4.3 Conclusion	4-41
5. Other Required NEPA and CEQA Considerations	
5.1 Long-Term Implications	5-1
5.2 Compliance with Applicable Federal Environmental Regulations and Policies	5-9
5.3 Other Considerations	5-25

Table of Contents (continued)

	Page
6. Development of the Tehachapi Wind Resource Area	
6.1 Introduction	6-1
6.2 Wind Development in the TWRA.....	6-4
6.3 Introduction to Environmental Analysis.....	6-15
6.4 Aesthetics.....	6-17
6.5 Agriculture	6-22
6.6 Air Quality	6-29
6.7 Biological Resources	6-44
6.8 Cultural and Paleontological Resources	6-106
6.9 Geology and Soils.....	6-124
6.10 Hazards and Hazardous Materials.....	6-134
6.11 Hydrology and Water Quality	6-147
6.12 Land Use and Planning	6-169
6.13 Mineral Resources	6-172
6.14 Noise	6.179
6.15 Population and Housing.....	6-190
6.16 Public Services	6-195
6.17 Public Utilities	6-202
6.18 Traffic and Transportation.....	6-209
6.19 Wilderness and Recreation	6-217
6.20 Summary of Impacts and Mitigation Measures for the TWRA Study Area.....	6-225
7. Consultation and Coordination	
7.1 Public Participation and Notification	7-1
7.2 Organizations and Persons Consulted	7-12
7.3 Preparers and Contributors	7-14
7.4 Document Distribution List	7-17
8. References	8-1
9. Glossary and Acronyms	
9.1 Glossary of Terms	9-1
9.2 Acronyms and Units	9-6
9.3 Summary of Proposed Project Elements	9-20
10. Index	10-1

VOLUME 4

APPENDICES

- A. Alternatives Screening Report
- B. Notices and Angeles National Forest Contact List
- C. Air Pollutant Emissions Calculations
- D. Project Road Crossings
- E. Summary of the PdV Wind Energy Project EIR
- F. Management Indicator Species Report

Table of Contents (continued)

	Page
List of Tables	
ES-1	Summary Comparison of Components of the Proposed Project and Alternatives ES-3
ES-2	Environmental Resource/Issue Areas Identified During the Scoping Process..... ES-5
ES-3	Matrix of Proposed Project and Alternatives Direct, Indirect, Cumulative Effects, and Mitigation Measures ES-17
1-1	Required Federal and State Permits and Approvals..... 1-13
1-2	Reader's Guide - General Topics 1-19
1-7	Reader's Guide – Resource/Issue Area Topics 1-20
2.2-1	Summary of Alternative 2 (SCE's Proposed Project) Components 2-5
2.2-2	Proposed Project Estimate of Land Disturbance – Segment 10: New Whirlwind – Windhub 500-kV T/L end of chapter
2.2-3	Proposed Project Estimate of Land Disturbance – Segment 4: Cottonwind– Whirlwind 220-kV T/L end of chapter
2.2-4	Proposed Project Estimate of Land Disturbance – Segment 4: Antelope – Whirlwind 500-kV T/L end of chapter
2.2-5	Proposed Project Estimate of Land Disturbance – Segment 5: Antelope – Vincent No. 2 500-kV T/L end of chapter
2.2-6	Proposed Project Estimate of Land Disturbance – Segment 11: New Mesa – Vincent (Via Gould) 500/220-kV T/L end of chapter
2.2-7	Proposed Project Estimate of Land Disturbance – Segment 6: Rio Hondo – Vincent No. 2 500-kV T/L end of chapter
2.2-8	Proposed Project Estimate of Land Disturbance – Segment 7: New Mira Loma – Vincent 500-kV T/L end of chapter
2.2-9	Proposed Project Estimate of Land Disturbance – Segment 8: New Mira Loma – Vincent 500-kV T/L end of chapter
2.2-10	Estimate of Land Disturbance – Whirlwind Substation Site end of chapter
2.2-11	Proposed Project Construction Equipment and Workforce Estimates By Activity – Segment 10: New Whirlwind – Windhub 500-kV T/L end of chapter
2.2-12	Proposed Project Construction Equipment and Workforce Estimates By Activity – Segment 4: Cottonwind – Whirlwind 220-kV T/L end of chapter
2.2-13	Proposed Project Construction Equipment and Workforce Estimates By Activity – Segment 4: Antelope – Whirlwind 500-kV T/L end of chapter
2.2-14	Proposed Project Construction Equipment and Workforce Estimates By Activity – Segment 5: Antelope – Vincent 500-kV T/L end of chapter
2.2-15	Proposed Project Construction Equipment and Workforce Estimates By Activity – Segment 11: New Mesa – Vincent (Via Gould) 500/220-kV T/L ... end of chapter
2.2-16	Proposed Project Construction Equipment and Workforce Estimates By Activity – Segment 6: New Replacement Rio Hondo – Vincent No. 2 500-kV T/L end of chapter
2.2-17	Proposed Project Construction Equipment and Workforce Estimates By Activity – Segment 7: New Mira Loma – Vincent 500-kV T/L end of chapter
2.2-18	Proposed Project Construction Equipment and Workforce Estimates By Activity – Segment 8: New Mira Loma – Vincent 500-kV T/L end of chapter
2.2-19	Proposed Project Construction Equipment and Workforce Estimates By Activity – Whirlwind Substation end of chapter
2.2-20	Proposed Project Construction Equipment and Workforce Estimates By Activity – Antelope Substation end of chapter
2.2-21	Proposed Project Construction Equipment and Workforce Estimates By Activity – Vincent Substation end of chapter

Table of Contents (continued)

	Page
List of Tables (continued)	
2.2-22	Proposed Project Construction Equipment and Workforce Estimates By Activity – Gould Substation end of chapter
2.2-23	Proposed Project Construction Equipment and Workforce Estimates By Activity – Mesa Substation end of chapter
2.2-24	Proposed Project Construction Equipment Estimates By Activity – Mira Loma Substation end of chapter
2.2-25	Proposed Project Estimated Workforce Requirements for Substation Construction – Segment 9 end of chapter
2.2-26	Proposed Project Estimate of Construction Waste – Segment 10: New Whirlwind – Windhub500-kV T/L end of chapter
2.2-27	Proposed Project Estimate of Construction Waste – Segment 4: Cottonwind – Whirlwind 220-kV T/L end of chapter
2.2-28	Proposed Project Estimate of Construction Waste – Segment 4: Antelope – Whirlwind 220-kV T/L end of chapter
2.2-29	Proposed Project Estimate of Construction Waste – Segment 5: Antelope – Vincent No. 2 500-kV T/L end of chapter
2.2-30	Proposed Project Estimate of Construction Waste – Segment 11: New Mesa – Vincent (Via Gould) 500/220-kV T/L end of chapter
2.2-31	Proposed Project Estimate of Construction Waste – Segment 6: Rio Hondo – Vincent No. 2 500-kV T/L end of chapter
2.2-32	Proposed Project Estimate of Construction Waste – Segment 7: Mira Loma – Vincent 500-kV T/L end of chapter
2.2-33	Proposed Project Estimate of Construction Waste – Segment 8: New Mira Loma – Vincent 500-kV T/L end of chapter
2.2-34	Proposed Project Estimate of Construction Wastes – Whirlwind Substation end of chapter
2.2-35	Proposed Project Estimate of Construction Wastes – Antelope Substation end of chapter
2.2-36	Proposed Project Estimate of Construction Wastes – Vincent Substation end of chapter
2.2-37	Proposed Project Estimate of Construction Wastes – Gould Substation end of chapter
2.2-38	Proposed Project Estimate of Construction Wastes – Mesa Substation end of chapter
2.2-39	Proposed Project Estimate of Construction Wastes – Mira Loma Substation ... end of chapter
2.2-40	Proposed Project Helicopter Staging Areas for Construction of Towers Within the ANF end of chapter
2.2-41	Roads in the ANF to be Utilized by the Proposed Project end of chapter
2.2-42	Alternative 2 (SCE's Proposed Project) Helicopter Trip Estimate..... end of chapter
2.2-43	Proposed Project Construction Schedule end of chapter
2.2-44	Scenic Integrity Objectives and Definitions end of chapter
2.2-45	Scenic Integrity Objectives by Mile for Alternative 2 (SCE's Proposed Project)end of chapter
2.2-46	Scenic Integrity Objective Amendments to the 2005 Forest Plan end of chapter
2.2-47	RCA Crossing Points Summary – Alternative 2 (SCE's Proposed Project).... end of chapter
2.4-1	Alternative 4A Construction Equipment and Workforce Estimates by Activity – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.4-2	Alternative 4A Estimate of Land Disturbance – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.4-3	Alternative 4A Estimate of Construction Waste – Segment 8: New 500-kV T/L and Switching Station end of chapter

Table of Contents (continued)

	Page
List of Tables (continued)	
2.4-4	Alternative 4B Construction Equipment and Workforce Estimates by Activity – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.4-5	Alternative 4B Estimate of Land Disturbance – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.4-6	Alternative 4B Estimate of Construction Waste – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.4-7	Alternative 4C Construction Equipment and Workforce Estimates by Activity – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.4-8	Alternative 4C Estimate of Land Disturbance – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.4-9	Alternative 4C Estimate of Construction Waste – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.4-10	Alternative 4D Construction Equipment and Workforce Estimates by Activity – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.4-11	Alternative 4D Estimate of Land Disturbance – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.4-12	Alternative 4D Estimate of Construction Waste – Segment 8: New 500-kV T/L and Switching Station end of chapter
2.5-1	Alternative 5 (Partial Underground) Construction Equipment and Workforce Estimates by Activity – Segment 8: New 500-kV T/L end of chapter
2.5-2	Alternative 5 (Partial Underground) Estimate of Surface Land Disturbance – Segment 8: New 500-kV T/L end of chapter
2.6-1	Alternative 6 Helicopter Staging Areas for Construction of Towers Within the ANF end of chapter
2.6-2	Alternative 6 (Maximum Helicopter Construction in the ANF) Helicopter Trip Estimate end of chapter
2.6-3	Alternative 6 (Maximum Helicopter Construction in the ANF) Estimate of Land Disturbance – Segment 11: New Mesa – Vincent (Via Gould) 500/220-kV T/L end of chapter
2.6-4	Alternative 6 (Maximum Helicopter Construction in the ANF) Estimate of Land Disturbance – Segment 6: Rio Hondo – Vincent No. 2 500-kV T/L end of chapter
2.6-5	Scenic Integrity Objective Amendments to the 2005 Forest Plan for Alternative 6 (Maximum Helicopter Construction in the ANF) end of chapter
2.6-6	RCA Crossing Points – Alternative 6 (Maximum Helicopter Construction in the ANF) end of chapter
2.9-1	Wind Generation Projects in Early Planning Stages end of chapter
2.9-2	California Independent System Operator - Kern County Wind Generation Queue end of chapter
2.9-3	BLM Solar Energy Applications end of chapter
2.9-4	Summary of Cumulative Projects by Jurisdiction end of chapter
2.9-5	Other Notable Projects in the Project Vicinity end of chapter
2.9-6	Cumulative Projects on NFS Lands end of chapter
2.9-7	Plans and Environmental Documents Consulted in Cumulative Impact Analysis end of chapter
2.9-8	Kern County Population Projections end of chapter
2.9-9	Kern County Employment Projections end of chapter
2.9-10	Los Angeles County Population Projections end of chapter

Table of Contents (continued)

	Page
List of Tables (continued)	
2.9-11	Los Angeles County Employment Projections end of chapter
2.9-12	Cumulative Projects by Jurisdiction end of chapter
3.1-1	Topics Addressed in the Impact Analysis 3.1-1
3.2-1	Summary Comparison of Environmental Issues/Impacts – Agricultural Resources 3.2-2
3.2-2	Overview of Important Farmland and Williamson Act Land in Los Angeles, Kern, and San Bernardino Counties 3.2-3
3.2-3	Farmland Traversed by Segment 3.2-3
3.2-4	Kern County Farmland, Grazing Lands, and Williamson Act Contract Lands Traversed by Alternative 2 3.2-4
3.2-5	Los Angeles County Farmland, Grazing Lands, and Williamson Act Contract Lands Traversed by Alternative 2 3.2-4
3.2-6	San Bernardino County Farmland, Grazing Lands, and Williamson Act Contract Lands Traversed by Alternative 2 3.2-5
3.2-7	San Bernardino County Farmland, Grazing Lands, and Williamson Act Contract Lands Traversed by Alternative 4 3.2-6
3.2-8	Applicant-Proposed Measures – Agricultural Resources 3.2-10
3.2-9	Impacts Applicable to Agricultural Resources 3.2-13
3.2-10	Summary of Impacts and Mitigation Measures – Agricultural Resources 3.2-34
3.3-1	Summary Comparison of Environmental Issues/Impacts – Air Quality 3.3-2
3.3-2	Monthly Average Temperatures and Precipitation 3.3-4
3.3-3	Wilderness Areas, Jurisdiction, and Nearest Project Segment 3.3-4
3.3-4	National and California Ambient Air Quality Standards 3.3-5
3.3-5	Attainment Status for the Mojave Desert Air Basin and South Coast Air Basin 3.3-6
3.3-6	Ozone Air Quality Summary 1997-2007 3.3-9
3.3-7	Carbon Monoxide Air Quality Summary 1997-2007 3.3-12
3.3-8	Nitrogen Dioxide Air Quality Summary 1997-2007 3.3-13
3.3-9	Particulate Matter (PM10) Air Quality Summary 1997-2007 3.3-14
3.3-10	Fine Particulate Matter Air Quality Summary 1999-2007 3.3-17
3.3-11	Sulfur Dioxide Air Quality Summary 1997-2007 3.3-18
3.3-12	California Greenhouse Gas Emissions 3.3-20
3.3-13	Air Quality Regional Thresholds 3.3-24
3.3-14	Localized Significant Thresholds for the South Coast AQMD 3.3-25
3.3-15	Applicable SCAQMD LST Emission Thresholds 3.3-26
3.3-16	General Conformity Applicability Emission Levels 3.3-27
3.3-17	Applicant-Proposed Measures – Air Quality 3.3-27
3.3-18	Alternative 2 Construction Emission/Air District Regional Emission Threshold Comparison 3.3-31
3.3-19	Alternative 2 Operating Emission/Air District Regional Emission Threshold Comparison 3.3-35
3.3-20	Alternative 2 Localized Impact Emissions Comparison 3.3-36
3.3-21	Alternative 2 Emissions/General Conformity Emissions Threshold Comparison 3.3-38
3.3-22	Alternative 2 Construction GHG Emission Estimate 3.3-40
3.3-23	Alternative 2 Direct and Indirect Operating GHG Emission Estimate 3.3-41
3.3-24	Alternative 5 Localized Impact Comparison – Additional Construction 3.3-50
3.3-25	Alternative 6 Emissions/General Conformity Emissions Threshold Comparison 3.3-53
3.3-26	Summary of Impacts and Mitigation Measures – Air Quality 3.3-57

Table of Contents (continued)

	Page
List of Tables (continued)	
3.4-1	Summary Comparison of Environmental Issues/Impacts – Biological Resources 3.4-2
3.4-2	Vegetation Types Occurring in the Northern Region 3.4-14
3.4-3	Impacts to Management Indicators and Management Indicator Species for the ANF.... 3.4-20
3.4-4	Vegetation Types Occurring in the Central Region 3.4-20
3.4-5	Vegetation Types Occurring in the Southern Region 3.4-24
3.4-6	Special-Status Plants with the Potential to Occur in the Project Area 3.4-27
3.4-7	Special-Status Wildlife with the Potential to Occur in the Project Area 3.4-52
3.4-8	Vegetation Types Occurring in the Alternative 3 Re-Route 3.4-83
3.4-9	Vegetation Types Occurring in the Alternative 4A Re-Route 3.4-84
3.4-10	Vegetation Types Occurring in the Alternative 4B Re-Route 3.4-85
3.4-11	Vegetation Types Occurring in the Alternative 4C Re-Route 3.4-86
3.4-12	Vegetation Types Occurring in the Alternative 4D Re-Route 3.4-86
3.4-13	Vegetation Types Occurring in the Alternative 5 Re-Route 3.4-87
3.4-14	Vegetation Types Occurring in Alternative 6 3.4-88
3.4-15	Vegetation Types Occurring in the Alternative 7 Re-Routes 3.4-89
3.4-16	Applicant-Proposed Measures – Biological Resources 3.4-104
3.4-17	Impacts to Vegetation Communities and Required Mitigation- Proposed Project Area Excluding NFS Lands 3.4-111
3.4-18	Impacts to Vegetation Communities and Required Mitigation – Proposed Project Area within the Angeles National Forest..... 3.4-113
3.4-19	RCA Crossing Points Summary..... 3.4-127
3.4-20	General Effects of Herbicides on Plant and Wildlife Species..... 3.4-136
3.4-21	Vegetation Communities within the Proposed Project Potentially Supporting Candidate, Sensitive, or Special-status Plant Species 3.4-194
3.4-22	Estimated Loss of Suitable Habitat for Special-Status Mammals Within the Proposed Project Area..... 3.4-219
3.4-23	Alternative 2 Impacts to Management Indicators and Management Indicator Species for the ANF 3.4-232
3.4-24	Cumulative Impacts for Biological Resources – Alternative 2 3.4-241
3.4-25	Development projects proposed, in progress, or recently completed within the Antelope Valley of Kern and Los Angeles Counties, California 3.4-243
3.4-26	Residential Development Projects Proposed, in Progress, or Recently Completed within the Chino and Puente Hills 3.4-244
3.4-27	Summary of Impacts and Mitigation Measures – Biological Resources..... 3.4-253
3.5-1	Summary Comparison of Environmental Issues/Impacts – Cultural Resources..... 3.5-3
3.5-2	Cultural Resources Inventory: Alternative 2 3.5-10
3.5-3	Additional Cultural Resources Along Alternative 4..... 3.5-13
3.5-4	Cultural Resources Avoided as a Result of Alternative 4 Reroutes 3.5-14
3.5-5	Cultural Resources within or Immediately Adjacent to Alternative 6 Helicopter Staging Areas..... 3.5-15
3.5-6	Additional Cultural Resources at Alternative 7 3.5-17
3.5-7	Applicant-Proposed Measures – Cultural Resources..... 3.5-23
3.5-8	Alternative 2 (SCE's Proposed Project) Potentially Affected Cultural Resources..... 3.5-26
3.5-9	Additional Potentially Affected Cultural Resources, Alternative 4 3.5-39
3.5-10	Additional Potentially Affected Cultural Resources, Alternative 6 3.5-44
3.5-11	Summary of Impacts and Mitigation Measures – Cultural Resources 3.5-48

Table of Contents (continued)

	Page
List of Tables (continued)	
3.6-1	Summary Comparison of Environmental Issues– Environmental Contamination and Hazards 3.6-2
3.6-2	Contaminated Sites within 0.25 mile of the Alignment Segment 10..... 3.6-5
3.6-3	Contaminated Sites within 0.25 mile of the Alignment Segment 5 3.6-5
3.6-4	Contaminated Sites within 0.25 mile of the Alignment Segment 11..... 3.6-6
3.6-5	Contaminated Sites within 0.25 mile of the Alignment Segment 6 3.6-12
3.6-6	Contaminated Sites within 0.25 mile of the Alignment Segment 7 3.6-13
3.6-7	Contaminated Sites within 0.25 mile of the Alignment Segment 8A 3.6-17
3.6-8	Contaminated Sites within 0.25 mile of the Alignment Segment 8B 3.6-20
3.6-9	Contaminated Sites within 0.25 mile of the Alignment Segment 8C 3.6-21
3.6-10	Contaminated Sites within 0.25 mile of Segment 9 Substations..... 3.6-22
3.6-11	Contaminated Sites within 0.25 mile of the Alternative 4 - Route C Alignment 3.6-25
3.6-12	Contaminated Sites within 0.25 mile of the Alternative 4 - Route D Alignment 3.6-26
3.6-13	Applicant-Proposed Measures – Environmental Contamination and Hazards..... 3.6-34
3.6-14	Summary of Impacts and Mitigation Measures – Environmental Contamination & Hazards 3.6-60
3.7-1	Summary Comparison of Environmental Issues/Impacts – Geology, Soils, and Paleontology 3.7-2
3.7-2	Significant Active and Potentially Active Faults in the Project Area..... 3.7-12
3.7-3	Peak Ground Accelerations along Project Segments 3.7-14
3.7-4	Significant Historic Earthquakes 3.7-14
3.7-5	Modified Mercalli Scale for Earthquake Intensity 3.7-16
3.7-6	Geology along Segments 10, 4, and 5 of Proposed Project Route 3.7-21
3.7-7	Geology along Segments 6, 7, and 11 of Proposed Project Route 3.7-24
3.7-8	Geology along Segments 8A, 8B, and 8C of Proposed Project Route 3.7-32
3.7-9	Applicant-Proposed Measures – Geology, Soils, and Paleontology 3.7-55
3.7-10	Cumulative Impacts for Geology, Soils, and Paleontology– Alternative 2 3.7-67
3.7-11	Summary of Impacts and Mitigation Measures – Geology, Soils, and Paleontology .. 3.7-101
3.8-1	Summary Comparison of Environmental Issues/Impacts – Hydrology and Water Quality 3.8-2
3.8-2	State of California Watershed Hierarchy Classifications 3.8-4
3.8-3	Applicant-Proposed Measures – Hydrology and Water Quality 3.8-23
3.8-4	Summary of Impacts and Mitigation Measures – Hydrology and Water Quality 3.8-71
3.9-1	Summary Comparison of Environmental Issues/Impacts – Land Use 3.9-2
3.9-2	Existing Land Use Classification Scheme 3.9-4
3.9-3	Summary of General Plan Land Use Designations..... 3.9-7
3.9-4	Land Use Zones Within the ANF..... 3.9-10
3.9-5	Special Designation Overlays Within the Angeles National Forest..... 3.9-11
3.9-6	Incorporated Cities of the South Region 3.9-11
3.9-7	Land Uses: North Region..... 3.9-13
3.9-8	Summary of Large Development and Specific Plans Crossed by or Within ½ Mile of the Proposed Project..... 3.9-17
3.9-9	Places Traversed By or Within ½ Mile of Segments 6 and 11 – ANF..... 3.9-20
3.9-10	Approximate ANF Acreages and ANF Acreage Percentages for Places, Land Use Zones, Special Designation Overlays and Land Ownership Within ½ Mile of Segments 6 and 11 3.9-21

Table of Contents (continued)

	Page
List of Tables (continued)	
3.9-11	Summary of Designated Inventoried Roadless Areas Within ½ Mile of Segments 6 and 11 3.9-22
3.9-12	Land Uses: South Region 3.9-27
3.9-13	Land Uses: Chino Hills Route Alternatives 3.9-36
3.9-14	Land Uses: Alternative 6 Helicopter Staging Areas 3.9-40
3.9-15	Summary of Estimated Construction-Related Staging Areas and Wire Setup Sites 3.9-56
3.9-16	Summary of Temporary and Permanent Land Disturbances 3.9-57
3.9-17	Summary of Residential Uses By Region 3.9-58
3.9-18	Summary of Estimated Tower Heights By Segment 3.9-64
3.9-19	New and Expanded ROW and Substation Sites 3.9-65
3.9-20	Consistency with Applicable Land Use Plans and Policies – Proposed Project 3.9-70
3.9-21	Consistency with Applicable Land Use Plans and Policies – Alternative 4 3.9-86
3.9-22	Summary of Impacts and Mitigation Measures – Land Use 3.9-100
3.9-23	Applicable Policies, Goals, and Objectives 3.9-101
3.10-1	Summary Comparison of Environmental Issues/Impacts – Noise 3.10-2
3.10-2	Ambient Noise Levels along Proposed Project Route 3.10-4
3.10-3	Existing Audible Corona Noise along Proposed Project Route 3.10-6
3.10-4	Estimated Construction Equipment Noise Levels Versus Distance 3.10-10
3.10-5	Modeled Future Audible Corona Noise along Proposed Project Route 3.10-11
3.10-6	Examples of Protective Noise Levels Recommended by U.S. EPA 3.10-17
3.10-7	Land Use Compatibility for Community Noise Environment 3.10-18
3.10-8	Applicant-Proposed Measures – Noise 3.10-20
3.10-9	Noise Policy Compliance Table - Construction 3.10-24
3.10-10	Noise Policy Compliance Table – Operation 3.10-34
3.10-11	Alternative 4 Noise Policy Compliance Table - Construction 3.10-45
3.10-12	Alternative 4 Noise Policy Compliance Table – Operation 3.10-46
3.10-13	Summary of Impacts and Mitigation Measures – Noise 3.10-58
3.11-1	Summary Comparison of Environmental Issues/Impacts – Public Services and Utilities 3.11-2
3.11-2	Potentially Affected Fire Protection Services 3.11-5
3.11-3	Potentially Affected Police Services 3.11-8
3.11-4	Potentially Affected Public Schools (by District) 3.11-9
3.11-5	Potentially Affected Healthcare Facilities 3.11-10
3.11-6	Potentially Affected Public Works Maintenance Yards 3.11-11
3.11-7	Potentially Affected Annual Water Supply 3.11-12
3.11-8	Solid Waste Providers by Jurisdiction 3.11-13
3.11-9	Solid Waste Capacity 3.11-14
3.11-10	Applicant-Proposed Measures – Public Services and Utilities 3.11-18
3.11-11	Summary of Impacts and Mitigation Measures – Public Services and Utilities 3.11-54
3.12-1	Summary Comparison of Environmental Issues/Impacts - Socioeconomics 3.12-2
3.12-2	North Region: Population Characteristics, 2000-2030 3.12-4
3.12-3	North Region: Housing Characteristics, 2000-2030 3.12-4
3.12-4	North Region: Labor Force Characteristics, 2006 3.12-4
3.12-5	North Region: Major Industry Sector Characteristics by County, 2002-2012 3.12-5
3.12-6	Central Region: Population Characteristics, 2000-2030 3.12-6
3.12-7	Central Region: Housing Characteristics, 2000-2030 3.12-7
3.12-8	Central Region: Labor Force Characteristics, 2006 3.12-7

Table of Contents (continued)

	Page	
List of Tables (continued)		
3.12-9	South Region: Population Characteristics, 2000-2030.....	3.12-8
3.12-10	South Region: Housing Characteristics, 2000-2030	3.12-10
3.12-11	South Region: Labor Force Characteristics, 2006	3.12-10
3.12-12	South Region: Major Industry Sector Characteristics by County, 2002-2012.....	3.12-11
3.12-13	North Region, Alternative 2: Applicable Jurisdictions by Milepost	3.12-12
3.12-14	Central Region: Applicable Jurisdictions by Milepost.....	3.12-13
3.12-15	South Region: Applicable Jurisdictions by Milepost.....	3.12-14
3.12-16	Issues of Concern and Associated Impacts – Socioeconomics.....	3.12-20
3.12-17	Summary of Impacts and Mitigation Measures – Socioeconomics.....	3.12-45
3.13-1	Summary Comparison of Environmental Issues/Impacts – Traffic and Transportation .	3.13-2
3.13-2	NFS Roads to be Used by the Proposed Project or Alternatives	3.13-6
3.13-3	Traffic Service Levels for NFS Roads	3.13-7
3.13-4	Northern Region Major Road Crossings.....	3.13-12
3.13-5	Central Region Major Road Crossings.....	3.13-11
3.13-6	Transit Routes in the Vicinity of Segment 7	3.13-13
3.13-7	Transit Routes in the Vicinity of Segment 11.....	3.13-14
3.13-8	Southern Region Major Road Crossings.....	3.13-15
3.13-9	Transit Routes in the Vicinity of Segment 8	3.13-16
3.13-10	Alternative 4 Southern Region Major Road Crossings	3.13-18
3.13-11	Biking and Hiking Trails within One Mile of Alternative 4, Route A	3.13-19
3.13-12	Biking and Hiking Trails within One Mile of Alternative 4, Route B.....	3.13-20
3.13-13	Biking and Hiking Trails within One Mile of Alternative 4, Route C	3.13-20
3.13-14	Biking and Hiking Trails within One Mile of Alternative 4, Route D	3.13-21
3.13-15	Applicant-Proposed Measures – Traffic and Transportation.....	3.13-28
3.13-16	Summary of Impacts and Mitigation Measures – Traffic and Transportation.....	3.13-67
3.14-1	Summary Comparison of Environmental Issues/Impacts – Visual Resources.....	3.14-3
3.14-2	General Guidance for Review of Visual Impact Significance for Non-NFS Lands	3.14-8
3.14-3	Scenic Integrity Objectives and Definitions for NFS Lands	3.14-10
3.14-4	Scenic Integrity Objectives by Mile for Alternative 2 (SCE's Proposed Project)	3.14-11
3.14-5	Scenic Integrity Amendments to the 2005 Forest Plan	3.14-12
3.14-6	Applicant-Proposed Measures – Visual Resources.....	3.14-90
3.14-7	Summary of Impacts and Mitigation Measures – Visual Resources	3.14-145
3.15-1	Summary Comparison of Environmental Issues/Impacts – Wilderness and Recreation .	3.15-2
3.15-2	Los Angeles County Multi-Use Trails	3.15-7
3.15-3	Recreation Opportunity Spectrum (ROS) Objectives for Land Use Zones in the ANF	3.15-10
3.15-4	High Impact Recreation Areas in the Wilderness and Recreation Study Area	3.15-11
3.15-5	HIRA Developed Recreational Resources in the Project Area	3.15-12
3.15-6	Forest Roads Operational Maintenance Level (OML) Guidelines for the ANF	3.15-12
3.15-7	Popular Multi-Use Trail Routes in the ANF, Central Region	3.15-14
3.15-8	Campgrounds, Picnic Areas, and Trailheads in Central Region HRAs	3.15-17
3.15-9	Incorporated Cities of the Southern Region	3.15-21
3.15-10	Alternative 2 (Proposed Project) Components per Region.....	3.15-25
3.15-11	North Region Recreational Resources within One-Half Mile of Alternative 2.....	3.15-25
3.15-12	Forest Service ROS Objectives Traversed by Mile Post	3.15-29
3.15-13	Summary of Forest Service ROS Objectives Traversed by the Project	3.15-30

Table of Contents (continued)

	Page	
List of Tables (continued)		
3.15-14a	Developed Recreational Resources within One-Half Mile of Alternative 2 in the Central Region	3.15-31
3.15-14b	Dispersed Recreation Opportunities within One-Half Mile of Alternative 2 in the Central Region	3.15-36
3.15-15	Forest System Roads Relevant to Recreational Resources and Opportunities within One-Half Mile of Alternative 2 in the Central Region	3.15-39
3.15-16	Alternative 2 Helicopter Staging Areas – ROS Designations and Affected Environment	3.15-40
3.15-17	South Region Recreational Resources within One-Half Mile of Alternative 2	3.15-45
3.15-18	Recreational Resources within One-Half Mile of Alternative 4, Route A	3.15-53
3.15-19	Recreational Resources within One-Half Mile of Alternative 4, Route B	3.15-54
3.15-20	Recreational Resources within One-Half Mile of Alternative 4, Route C	3.15-55
3.15-21	Recreational Resources within One-Half Mile of Alternative 4, Route D	3.15-56
3.15-22	Alternative 6 Helicopter Staging Areas—ROS Designations and Affected Environment	3.15-57
3.15-23	Part 1 of the 2005 FLMP: Goals and Objectives Relevant to Wilderness and Recreation for the Proposed Project.....	3.15-61
3.15-24	Part 2 of the 2005 FLMP: Management Strategies Relevant to Wilderness and Recreation for the Proposed Project.....	3.15-63
3.15-25	Part 3 of the 2005 FLMP: Design Criteria Standards Relevant to Wilderness and Recreation for the Proposed Project.....	3.15-64
3.15-26	CHSP General Plan: Goals and Guidelines Relevant to Wilderness and Recreation for the Project.....	3.15-65
3.15-27	Applicant-Proposed Measures – Wilderness and Recreation	3.15-67
3.15-28	Significance Criteria and Impacts – Wilderness and Recreation	3.15-70
3.15-29	Wilderness and Recreation Impacts Applicable to Resources in the North Region	3.15-71
3.15-30	Wilderness and Recreation Impacts Applicable to Developed Resources in the Central Region	3.15-71
3.15-31	Wilderness and Recreation Impacts Applicable to Resources in the South Region....	3.15-74
3.15-32	Cumulative Impacts for Wilderness and Recreation – Alternative 2	3.15-97
3.15-33	Resources that would be Avoided by the Alternative 4 Routing Options	3.15-105
3.15-34	Impacts Applicable to Recreational Resources along Alternative 4, Route A.....	3.15-106
3.15-35	Impacts Applicable to Recreational Resources along Alternative 4, Route B	3.15-107
3.15-36	Impacts Applicable to Recreational Resources along Alternative 4, Route C	3.15-107
3.15-37	Impacts Applicable to Recreational Resources along Alternative 4, Route D.....	3.15-108
3.15-38	Wilderness and Recreation Impacts Applicable to Resources along the Underground Portion of Alternative 5	3.15-117
3.15-39	Alternative 6 Wilderness and Recreation Impacts Applicable to Developed Resources in the Central Region	3.15-122
3.15-40	Summary of Impacts and Mitigation Measures – Wilderness and Recreation.....	3.15-136
3.16-1	Summary Comparison of Environmental Issues/Impacts – Wildfire Prevention and Suppression	3.16-2
3.16-2	Tehachapi Fireshed Surface Fuel Cover	3.16-6
3.16-3	Tehachapi Fireshed 50-year Fire History.....	3.16-8
3.16-4	Applicant-Proposed Measures – Wildfire Prevention and Suppression	3.16-21
3.16-5	Summary of Impacts and Mitigation Measures – Wildfire Prevention and Suppression	3.16-48

List of Tables (continued)

3.17-1	Summary Comparison of Environmental Issues/Impacts – Electrical Interference and Hazards	3.17-2
3.17-2	Summary of Impacts and Mitigation Measures–Electrical Interference and Hazards ..	3.17-12
4.1-1	Features of Alternative 2 (SCE's Proposed Project) Components	4-3
4.1-2	Features of Alternative 3 (West Lancaster) Components.....	4-5
4.1-3	Features of Alternative 4A (Chino Hills Route A) Components	4-6
4.1-4	Features of Alternative 4B (Chino Hills Route B) Components.....	4-7
4.1-5	Features of Alternative 4C (Chino Hills Route C) Components	4-8
4.1-6	Features of Alternative 4D (Chino Hills Route D) Components	4-10
4.1-7	Features of Alternative 5 (Partial Underground) Components	4-11
4.1-8	Features of Alternative 6 (Maximum Helicopter Construction in the ANF) Components.	4-11
4.1-9	Features of Alternative 7 (66-kV Subtransmission) Components	4-13
4.1-10	Summary Comparison of Components of the Proposed Project and Alternatives	4-14
4.2-1	Summary Comparison of Environmental Issues	4-21
4.2-2	Summary of Alternative Comparisons	4-49
5.2-1	Classification Criteria for Recreational River Areas in the National Wild and Scenic River System	5-15
5.2-2	Year 2000 North Region Low Income and Minority Population Characteristics	5-16
5.2-3	Year 2000 Central Region Low Income and Minority Population Characteristics	5-17
5.2-4	Year 2000 South Region Low Income and Minority Population Characteristics	5-17
5.2-5	Year 2000 Low Income and Minority Population Characteristics of Census Tracts Traversed and Within One-Half Mile of Proposed Project ROW	5-18
5.2-6	Year 2000 Low Income Characteristics of Census Tracts Within One-Half Mile of Proposed Project ROW Impacted by Visual Resource Impact V-4	5-23
5.2-7	Year 2000 Low Income Characteristics of Census Tracts Within One-Half Mile of Proposed Project ROW Impacted by Visual Resource Impact V-6	5-24
5.3-1	Electric and Magnetic Fields – Existing Environmental Setting	5-27
5.3-2	EMF Regulated Limits (by State).....	5-30
5.3-3	Typical Electric Field Values for Appliances, at 12 Inches.....	5-32
5.3-4	Magnetic Field from Household Appliances	5-32
5.3-5	Applicant-Proposed Measures – Electric and Magnetic Fields	3-35
5.3-6	Magnetic Fields – SCE's Proposed Project	3-36
6.2-1	Acreages of TWRA Study Area	6-6
6.2-2	Kern County Wind Projects in the CA-ISO Controlled Grid Generation Queue	6-7
6.5-1	Important Farmland and Williamson Act Land Kern County (acres)	6-23
6.5-2	Important Farmland and Williamson Act Land in TWRA (acres)	6-23
6.6-1	Monthly Average Temperatures and Precipitation	6-30
6.6-2	National and California Ambient Air Quality Standards	6-30
6.6-3	Attainment Status for Kern County - MDAB	6-31
6.6-4	Ozone Air Quality Summary 1995-2005.....	6-32
6.6-5	Carbon Monoxide Air Quality Summary 1996-2005	6-33
6.6-6	Nitrogen Dioxide Air Quality Summary 1996-2005	6-34
6.6-7	Particulate Matter Air Quality Summary 1996-2005.....	6-35
6.6-8	Fine Particulate Matter Air Quality Summary 1999-2004	6-35
6.7-1	Special Status Plant Species with the Potential to Occur in the TWRA	6-53
6.7-2	Special Status Wildlife Species with the Potential to Occur in the TWRA	6-58

Table of Contents (continued)

	Page	
List of Tables (continued)		
6.8-1	Generalized Description of Rock Types and Fossil Sensitivity.....	6-112
6.8-2	Fossil-bearing Formations Nearby the TWRA	6-113
6.9-1	Summary of Major Soils Units in the TWRA.....	6-125
6.11-1	State of California Watershed Hierarchy Classifications	6-148
6.11-2	Best Management Practices – Hydrology and Water Quality.....	6-156
6.13-1	Permitted and Historic Mines	6-174
6.14-1	Estimated Construction Equipment Noise Levels vs. Distance.....	6-181
6.15-1	Population Trends Based on U.S. Census Bureau Data	6-191
6.15-2	Population Trends Based on California Department of Finance Population Estimates and Projections	6-191
6.15-3	Housing Trends Based on U.S. Census Bureau Data	6-192
6.15-4	Housing Trends Based on California Department of Finance Population Estimates and Projections	6-192
6.15-5	Employment Profile.....	6-192
6.15-6	Employment Industries in Kern County	6-193
6.16-1	Schools that can be Utilized by the TWRA	6-198
6.18-1	Existing Roadways.....	6-210
6.20-1	Summary of Impacts and Mitigation Measures for the TWRA Study Area	6-225
7-1	Public Scoping and Alternatives Meetings	7-4
7-2	Newspaper Advertisements	7-4
7-3	Alternatives Suggested During Scoping.....	7-7
7-4	Public Repository Sites.....	7-10
7-5	Organizations and Persons Consulted	7-12
7-6	Lead Agency Project Team.....	7-14
7-7	EIR/EIS Preparers and Reviewers.....	7-15

Table of Contents (continued)

	Page
List of Figures	
2.1-1	Project Location Map..... end of chapter
2.2-1a-y	Detailed Proposed Project Location Strip Maps..... Map & Figure Series Volume
2.2-2	Segment 4 ROW Cross-Section (S4 MP 0.0 to S4 MP 5.1)..... end of chapter
2.2-3	Segment 4 ROW Cross-Section (Northern Portion)..... end of chapter
2.2-4	Segment 4 ROW Cross-Section (Middle Portion)..... end of chapter
2.2-5	Segment 4 ROW Cross-Section (Southern Portion)..... end of chapter
2.2-6	Segment 5 ROW Cross-Section (S5 MP 0.0 to S5 MP 1.85)
2.2-7	Segment 5 ROW Cross-Section (S5 MP 1.85 to S5 MP 5.85)
2.2-8	Segment 5 ROW Cross-Section (S5 MP 5.85 to S5 MP 15.9)
2.2-9	Segment 5 ROW Cross-Section (S5 MP 15.9 to S5 MP 17.8)
2.2-10	Segment 6 ROW Cross-Section (S6 MP 0.0 to S6 MP 0.8)..... end of chapter
2.2-11	Segment 6 ROW Cross-Section (S6 MP 0.8 to S6 MP 2.2)..... end of chapter
2.2-12	Segment 6 ROW Cross-Section (S6 MP 2.2 to S6 MP 2.45)
2.2-13	Segment 6 ROW Cross-Section (S6 MP 2.45 to S6 MP 3.25)
2.2-14	Segment 6 ROW Cross-Section (S6 MP 3.25 to S6 MP 4.8)
2.2-15	Segment 6 ROW Cross-Section (S6 MP 4.8 to S6 MP 6.85)
2.2-16	Segment 6 ROW Cross-Section (S6 MP 6.85 to S6 MP 7.75)
2.2-17	Segment 6 ROW Cross-Section (S6 MP 7.75 to S6 MP 9.5)
2.2-18	Segment 6 ROW Cross-Section (S6 MP 9.5 to S6 MP 26.9)
2.2-19	Segment 7 ROW Cross-Section (S7 MP 1.0 to S7 MP 1.2)..... end of chapter
2.2-20	Segment 7 ROW Cross-Section (S7 MP 1.2 to S7 MP 1.7)..... end of chapter
2.2-21	Segment 7 ROW Cross-Section (S7 MP 1.7 to S7 MP 4.3)..... end of chapter
2.2-22	Segment 7 ROW Cross-Section (S7 MP 4.3 to S7 MP 5.1)..... end of chapter
2.2-23a	Segment 7 ROW Cross-Section (S7 MP 5.1 to S7 MP 8.3)..... end of chapter
2.2-23b	Segment 7 ROW Cross-Section (S7 MP 8.3 to S7 MP 10.1)
2.2-24	Segment 7 ROW Cross-Section (S7 MP 10.1 to S7 MP 10.5)
2.2-25	Segment 7 ROW Cross-Section (S7 MP 10.5 to S7 MP 10.95)..... end of chapter
2.2-26a	Segment 7 ROW Cross-Section (S7 MP 10.95 to S7 MP 11.8)..... end of chapter
2.2-26b	Segment 7 ROW Cross-Section (S7 MP 11.8 to S7 MP 13.4)
2.2-27	Segment 7 ROW Cross-Section (S7 MP 13.4 to S7 MP 13.7)
2.2-28	Segment 7 ROW Cross-Section (S7 MP 13.7 to S7 MP 15.8)
2.2-29	Segment 8 ROW Cross-Section (S8A MP 2.2 to S8A MP 4.2)..... end of chapter
2.2-30	Segment 8 ROW Cross-Section (S8A MP 4.2 to S8A MP 4.4)..... end of chapter
2.2-31	Segment 8 ROW Cross-Section (S8A MP 4.4 to S8A MP 5.85)
2.2-32	Segment 8 ROW Cross-Section (S8A MP 5.85 to S8A MP 8.1)
2.2-33	Segment 8 ROW Cross-Section (S8A MP 8.1 to S8A MP 9.0)..... end of chapter
2.2-34	Segment 8 ROW Cross-Section (S8A MP 9.0 to S8A MP 9.5)..... end of chapter
2.2-35	Segment 8 ROW Cross-Section (S8A MP 9.5 to S8A MP 11.2)
2.2-36	Segment 8 ROW Cross-Section (S8A MP 11.2 to S8A MP 13.3)..... end of chapter
2.2-37	Segment 8 ROW Cross-Section (S8A MP 13.3 to S8A MP 13.4)..... end of chapter
2.2-38	Segment 8 ROW Cross-Section (S8A MP 13.4 to S8A MP 13.55)
2.2-39	Segment 8 ROW Cross-Section (S8A MP 13.55 to S8A MP 19.2)
2.2-40	Segment 8 ROW Cross-Section (S8A MP 19.2 to S8A MP 22.9)..... end of chapter
2.2-41	Segment 8 ROW Cross-Section (S8A MP 22.9 to S8A MP 26.4)..... end of chapter
2.2-42	Segment 8 ROW Cross-Section (S8A MP 26.4 to S8A MP 26.8)..... end of chapter
2.2-43	Segment 8 ROW Cross-Section (S8A MP 26.8 to S8A MP 27.55)

Table of Contents (continued)

	Page	
List of Figures (continued)		
2.2-44	Segment 8 ROW Cross-Section (S8A MP 27.55 to S8A MP 28.3)	end of chapter
2.2-45	Segment 8 ROW Cross-Section (S8A MP 28.3 to S8A MP 29.2).....	end of chapter
2.2-46	Segment 8 ROW Cross-Section (S8B MP 0.35 to S8B MP 0.75)	end of chapter
2.2-47	Segment 8 ROW Cross-Section (S8A MP 29.2 to S8A MP 34.0).....	end of chapter
2.2-48	Segment 8 ROW Cross-Section (S8B MP 0.75 to S8B MP 5.05)	end of chapter
2.2-49	Segment 8 ROW Cross-Section (S8B MP 5.05 to S8B MP 5.65)	end of chapter
2.2-50	Segment 8 ROW Cross-Section (S8A MP 34.0 to S8A MP 34.15)	end of chapter
2.2-51	Segment 8 ROW Cross-Section (S8A MP 34.15 to S8A MP 34.4)	end of chapter
2.2-52	Segment 8 ROW Cross-Section (S8A MP 34.4 to S8A MP 34.5).....	end of chapter
2.2-53	Segment 8 ROW Cross-Section (S8A MP 34.5 to S8A MP 35.0).....	end of chapter
2.2-54	Segment 8 ROW Cross-Section (S8A MP 35.0 to S8A MP 35.2).....	end of chapter
2.2-55	Segment 8 ROW Cross-Section (S8B MP 6.0 to S8B MP 6.8)	end of chapter
2.2-56	Segment 11 ROW Cross-Section (S11 MP 0.0 to S11 MP 0.9).....	end of chapter
2.2-57	Segment 11 ROW Cross-Section (S11 MP 0.9 to S11 MP 2.5).....	end of chapter
2.2-58	Segment 11 ROW Cross-Section (S11 MP 2.5 to S11 MP 4.0).....	end of chapter
2.2-59	Segment 11 ROW Cross-Section (S11 MP 4.0 to S11 MP 18.7)	end of chapter
2.2-60	Segment 11 ROW Cross-Section (S11 MP 18.7 to S11 MP 18.85)	end of chapter
2.2-61	Segment 11 ROW Cross-Section (S11 MP 18.85 to S11 MP 26.2)	end of chapter
2.2-62	Segment 11 ROW Cross-Section (S11 MP 26.2 to S11 MP 35.8).....	end of chapter
2.2-63	Segment 11 ROW Cross-Section (S11 MP 35.8 to S11 MP 36.2).....	end of chapter
2.2-64	Typical 220-kV Single-Circuit Lattice Steel Tower.....	end of chapter
2.2-65	Typical 500-kV Single-Circuit Lattice Steel Tower.....	end of chapter
2.2-66	Typical 500-kV Single-Circuit Tubular Steel Pole	end of chapter
2.2-67	Typical 500-kV Double-Circuit Tubular Steel Pole.....	end of chapter
2.2-68	Typical 500-kV Double-Circuit Lattice Steel Tower	end of chapter
2.2-69	Typical 220-kV Double-Circuit Lattice Steel Tower	end of chapter
2.2-70	Typical 66-kV Double-Circuit Tubular Steel Pole	end of chapter
2.2-71	Typical 220-kV Double-Circuit 3-Pole Steel Dead-End	end of chapter
2.2-72	Typical 66-kV Light Weight Steel Pole.....	end of chapter
2.2-73	Typical 220-kV Double-Circuit Tubular Steel Pole	end of chapter
2.2-74	Typical 220-kV Single-Circuit Tubular Steel Pole	end of chapter
2.2-75	Proposed New Whirlwind Substation	end of chapter
2.2-76	Proposed Upgrades to Antelope Substation	end of chapter
2.2-77	Proposed Upgrades to Vincent Substation	end of chapter
2.2-78	Typical Road Cross-Section (Full Cut with Bench)	end of chapter
2.2-79	Grouted Rock Wet Crossing (Typical Installation).....	end of chapter
2.2-80	Overside Drains-Water Bars.....	end of chapter
2.2-81	Pipe Culvert Installation.....	end of chapter
2.2-82	Hilfiker Retaining Wall (Typical Section)	end of chapter
2.2-83	Alternative 2 Helicopter Towers & Staging Areas within the ANF	end of chapter
2.2-84	Helicopter Use for Lattice Steel Tower Erection.....	end of chapter
2.2-85	Typical Lattice Steel Tower Assembly Area	end of chapter
2.2-86	Typical Freeway Net System.....	end of chapter
2.2-87	Typical Guard Structure Railroad Crossing (H-Frame Configuration with Net) end of chapter	
2.2-88	Typical Guard Structure Low Voltage or Street Crossing	end of chapter
2.3-1	West Lancaster Alternative	end of chapter
2.4-1	Chino Hills Route A Alternative	end of chapter

Table of Contents (continued)

	Page
List of Figures (continued)	
2.4-2	Chino Hills Route B Alternative end of chapter
2.4-3	Chino Hills Route C Alternative end of chapter
2.4-4	Chino Hills Route D Alternative end of chapter
2.5-1	Partial Underground Alternative Segment 8A – Chino Hills end of chapter
2.5-2	Typical GIL Enclosure Section end of chapter
2.5-3	Conceptual Plan View of a 500-kV GIL Transition Station end of chapter
2.5-4	GIL Transition Station – Side Elevation end of chapter
2.5-5	Partial Underground – Side Elevation Along Segment 8A end of chapter
2.6-1	Candidate Helicopter Staging Areas in ANF Alternative 6 end of chapter
2.7-1	Alternative 7: Duck Farm 66-kV Underground end of chapter
2.7-2	Alternative 7: Whittier Narrows 66-kV Underground & Overhead Re-Routes end of chapter
2.9-1a-d	TRTP Cumulative Projects by Jurisdiction end of chapter
2.9-2	TRTP Cumulative Project on the ANF end of chapter
3.2-1	Kern County Agricultural Lands Traversed by Alternative 2 3.2-35
3.2-2a	Northern Los Angeles County Agricultural Lands Traversed by Alternative 2 3.2-36
3.2-2b	Northern Los Angeles County Agricultural Lands Traversed by Alternative 2 3.2-37
3.2-3	San Bernardino County Agricultural Lands Traversed by Alternative 2 3.2-38
3.2-4	San Bernardino County Agricultural Lands Traversed by Alternative 4 3.2-39
3.3-1	Air Quality Jurisdictions 3.3-59
3.4-1	Northern Region Project Location 3.4-359
3.4-2	Central Region Project Location Map 3.4-360
3.4-3	Southern Project Location Map 3.4-361
3.4-4	Vegetation Communities (Map & Figure Series Volume)
3.4-5	Special-Status Species Locations (Map & Figure Series Volume)
3.4-6	RCA Crossing Points on Angeles National Forest (Map & Figure Series Volume)
3.7-1	Regional Active Faults and Historic Earthquakes 3.7-103
3.7-2	Regional Geologic Map A 3.7-104
3.7-3	Segment 5 Active Fault Crossing 3.7-105
3.7-4	Regional Geologic Map B 3.7-106
3.7-5	Segment 6 Active Fault Crossings 3.7-107
3.7-6	Segment 7 Active Fault Crossings 3.7-108
3.7-7a	Segment 11 Active Fault Crossings 3.7-109
3.7-7b	Segment 11 Active Fault Crossings 3.7-110
3.7-8	Regional Geologic Map C 3.7-111
3.7-9	Segment 8A Active Fault Crossing 3.7-112
3.8-1	Hydrologic Boundaries within the TRTP Area 3.8-73
3.8-2	100-Year Floodplains within the Northern Region 3.8-74
3.8-3	Groundwater Basin Boundaries within the TRTP Area 3.8-75
3.8-4	100-Year Floodplains within the Central Region 3.8-76
3.8-5	100-Year Floodplains within the Southern Region 3.8-77
3.9-1	Land Use Study Area 3.9-105
3.9-2	ANF Land Use Zones, Places, and Roadless Areas 3.9-106
3.9-3a-i	Existing Land Uses (Map & Figure Series Volume)
3.9-4a-i	General Plan Land Use Designations (Map & Figure Series Volume)
3.9-5	West Lancaster Alternative 3 and Chino Hills Alternatives 4 3.9-107
3.10-1	Typical Range of Common Sounds Heard in the Environment 3.10-60

Table of Contents (continued)

	Page
List of Figures (continued)	
3.10-2	Outdoor Day/Night Sound Levels in Different Areas 3.10-61
3.12-1	North Region Population and Housing Trends, 2000-2030 3.12-3
3.12-2	Central Region Population and Housing Trends, 2000-2030 3.12-6
3.12-3	South Region Population and Housing Trends, 2000-2030 3.12-8
3.13-1	TRTP Site Location Map 3.13-69
3.14-all	Visual Simulations (Map & Figure Series Volume)
3.15-1	Wilderness and Recreation Study Area 3.15-137
3.15-2	Pacific Crest National Scenic Trail Crossings in the North and Central Regions 3.15-138
3.15-3	Recreation Opportunity Spectrum Objectives for NFS Lands in the Central Region 3.15-139
3.15-4	Recreational Resources in the South Region 3.15-140
3.16-1	Tehachapi Fireshed 3.16-51
3.16-2	Tehachapi Fireshed Surface Fuels 3.16-52
3.16-3	Tehachapi Fireshed: Cumulative Acres Burned per Decade, 1957-2006 3.16-8
6.2-1	Regional Map 6-239
6.2-2	TWRA Study Area 6-241
6.5-1	TWRA Study Area Agriculture 6-243
6.6-1	Normalized Maximum Short-term Historical Air Pollutant Concentrations in Mojave (imbedded) 6-32
6.7-1	TWRA Study Area Ecological Regions 6-244
6.7-2	TWRA Study Area Critical Habitat 6-245
6.11-1	TWRA Watershed Areas and Flood Hazard Zones 6-246
6.11-2	TWRA Surface Water 6-247
6.11-3	TWRA Groundwater Basins 6-248
6.13-1	TWRA Study Area Permitted and Historic Mines 6-249
6.13-2	TWRA Study Area Mineral and Petroleum General Plan Land Use Designation 6-250
6.19-1	TWRA Study Area Recreational Resources 6-251

MAP & FIGURE SERIES VOLUME

1. Detailed Proposed Project Location Strip Maps
(Figures 2.2-1a to 2.2-1y)
2. Vegetation Maps
(Figures 3.4-8a to 3.4-8u; 3.4-9a to 3.4-9r; 3.4-10a to 3.4-10z)
3. Sensitive Species Locations and Stream Crossings
(Figures 3.4-5a to 3.4-5d; 3.4-6a to 3.4-6c; 3.4-7a to 3.4-7d; 3.4-11a to 3.4-11g)
4. Land Use Maps

Existing Land Uses Proposed Project (Alternative 2) Maps
(Figures 3.9-3a to 3.9-3i)

General Plan Land Use Designations – Proposed Project (Alternative 2) Maps
(Figures 3.9-4a to 3.9-4i)
5. Visual Simulations
(Figures 3.14-1 to 3.14-83b)
6. Project Segment Detail Maps