G. Cumulative Scenario and Impacts – Contents

G. Cumulative Scenario and Impacts

G.1 Introduction and Methodology

Preparation of a cumulative impact analysis is required under both NEPA and CEQA. NEPA identifies three types of potential impacts: direct, indirect, and cumulative. "Cumulative impact" is the impact on the environment which results from the incremental impact of the Proposed Project when considered with other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such other actions.

Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time." 40 CFR §1508.7. Under NEPA, both context and intensity are considered. Among other considerations when considering intensity is "[w]hether the action is related to other actions with individually minor but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts." 40 CFR §1508.27(b)(7).

Under the State CEQA Guidelines, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts." 14 Cal Code Regs §15130(a)(1). An EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects is "cumulatively considerable." 14 Cal Code Regs §15130(a). Such incremental effects are to be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." 14 Cal Code Regs §15164(b)(1). Together, these projects comprise the cumulative scenario which forms the basis of the cumulative impact analysis.

Both the severity of impacts and the likelihood of their occurrence are to be reflected in the discussion, "but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion of cumulative impacts shall be guided by standards of practicality and reasonableness, and shall focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact." 14 Cal Code Regs §15130(b).

CEQA Pub. Res. Code § 21000 *et seq.*, requires that an environmental impact report ("EIR") take into account all "past, present, and reasonably foreseeable future projects." CEQA Guidelines §§ 15355(b), 15130(b)(1)(A). Similarly, the Council on Environmental Quality ("CEQ") recommends that agencies "look for present effects of past actions that are, in the judgment of the agency, relevant and useful because they have a significant cause-and-effect relationship with the direct and indirect effects of the proposal for agency action and its alternatives." Cumulative impacts analysis should highlight past actions that are closely related either in time or location to the project being considered, catalogue past projects and discuss how they have harmed the environment and discuss past actions even if they were undertaken by another agency or another person. The analysis must be in sufficient detail to be useful to the decisionmaker in deciding whether, or how, to alter the program to lessen cumulative impacts. Most of the projects listed in the cumulative projects table (Table G-1) have, are, or will be required to undergo their own independent environmental review under either CEQA or NEPA or both. Significant adverse impacts of the cumulative projects would be required to be reduced, avoided or minimized through the application and implementation of mitigation measures. The net effect of these mitigation

measures is assumed to be a general lessening of the potential for a contribution to cumulative impacts. The key consideration is whether the remaining physical change or effect on the environment represents an adverse environmental impact.

There are two commonly used approaches, or methodologies, for establishing the cumulative impact setting or scenario. One approach is to use a "list of past, present, and probable future projects producing related or cumulative impacts." 14 Cal Code Regs §15130(b)(1)(A). The other is to use a "summary of projects contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact." 14 Cal Code Regs §15130(b)(1)(B).

This EIR/EIS uses the list approach to provide a tangible understanding and context for analyzing the potential cumulative effects of a Project. General plans and other planning documents were used as additional reference points in establishing the cumulative scenario for the analysis.

The project list includes those projects found within a geographic area sufficiently large to provide a reasonable basis for evaluating cumulative impacts. The area over which the cumulative scenario is evaluated may vary by resource, because the nature and range of potential effects vary by resource (e.g., air quality impacts tend to disperse over a large area or region while biological impacts are typically more location specific). This spatial area is identified as the geographic scope for the analysis of cumulative impacts related to a particular resource.

The analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of the analysis is based on the nature of the geography surrounding the Proposed Project and the characteristics and properties of each resource and the region to which they apply. In addition, each project in a region will have its own implementation schedule, which may or may not coincide or overlap with the Proposed Project's schedule. This is a consideration for short-term impacts from the Proposed Project. However, to be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the Proposed Project.

For purposes of analyzing the potential for cumulative effects associated with implementation of the Proposed Project, the methodology described above is applied to the entire Project including elements in Imperial County, as well as, San Diego County.

Applicant Proposed Measures (APMs) include environmental measures that are already required by existing regulations and/or requirements, or are SDG&E's standard practices that would minimize or prevent any potential impacts. APMs are designed to address temporary and/or permanent impacts, as well as impacts anticipated during operations and maintenance of the completed project and would be implemented regardless of any regulatory oversight by the CPUC and BLM. APMs are regarded as design features of the project and are assumed as part of the project itself when reviewing physical changes to the environment and assessing environmental impacts. APMs are integrated into the overall Project design and as such the levels of significance are discussed based on the assumption that these APMs are a part of the project. Therefore, the impact determinations contained herein focus on whether additional project-specific measures are needed to further limit or reduce any potential impacts to less than significant levels. When it is determined that additional project-specific measures are required, these measures are identified as recommended mitigation measures, as appropriate.

G.2 Applicable Cumulative Projects and Projections

G.2.1 Specific Projects

Reasonably foreseeable projects that could contribute to the cumulative effects scenario are listed in Table G-1. The table indicates the project name and project type, as well as its location and status. Each project is identified by a map number, keyed to Figures G-1 through G-7 for the Proposed Project and Figures G-8 through G-10 for alternatives. These figures show the Proposed Project, and indicate projects contributing to the cumulative effects scenario. Collectively, these projects represent known and anticipated activities that may occur in the project vicinity that have the potential to contribute to a cumulative impact on the environment. Because the Sunrise Powerlink (SRPL) Project is a linear alignment with occasional nodal facilities along it length, the projects in Table G-1 interact with the SRPL Project along selected segments of the Proposed Project route. Many projects in the cumulative effects scenario are limited in their geographic extent. For example, a residential subdivision project proposed in Imperial County will have minimal cumulative environmental effects when considered with a Project element located in the City of San Diego. Other projects in Table G-1 are linear in nature and would occur along selected segments of the Proposed Project. Projects included in the cumulative scenario become more or less applicable along the length of the Proposed Project, based on their relative proximity to the Proposed Project. Therefore, the potential for cumulative interactions is similarly variable.

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
Mexico — South of San Diego and Imperial Counties				
LA RUMOROSA WIND AREA: Potential development of over 1000 MW of wind generation south of Jacumba area. Possible transmission connection to Imperial Valley Substation or SWPL.	Public Facilities and Utilities	Northern Mexico	In planning	174
Bureau of Land Management[1] — Imperial Valley Link				
GEOTHERMAL LEASING OF FEDERAL LANDS: Allow for lease of 40,320 acres of lands in the Truckhaven Geothermal Leasing Area, of which 14,731 acres are Federal minerals managed by the BLM. The BLM has received several permit applications for exploratory drilling	Public Facilities and Utilities	Community of Truckhaven; in Imperial County	DEIS dated February 2007	69
NORTH BAJA PIPELINE: expand gas pipeline capacity between Imperial County and Northern Mexico	Public Facilities and Utilities	Imperial County; Mexico	EIS completed	174
Department of the Navy — Central Link				
REMOTE TRAINING SITE AT WARNER SPRINGS: Expand and realign the current 6,158 acres training area to 12,544 acres	Public Facilities and Utilities	Along SR79 approximately 30 miles east of I-15; north of Warner Springs	Environmental assessment phase	75
United States Department of the Interior (Fish and Wildlife Service) — Inland Valley Link[2]				
MONTE VISTA RANCH: Create a 4,000-acre conservation area	Public Facilities and Utilities	Northwest of the Barona Indian Reservation; a portion of the northwest corner of the conservation area could be within the proposed route, Barona Mesa	Approval pending as of November 1, 2006	76
Marine Corps Air Station Miramar[2] — Coastal Link and Reconductoring				
EARLY WARNING CONTROL TRAINING SITE	Public Facilities and Utilities	East of Sycamore Canyon Substation, south of Poway	Under review	70
FAMILY HOUSING: Construct 1,600 dwelling units on 300 acres	Public Facilities and Utilities	North of Mission Trails Regional Park and SR52, approximately four miles south of proposed route (included because of size/regional importance)	Under review	71
FORT ROSECRANS NATIONAL CEMETERY ANNEX: Construct cemetery annex on approximately 323 acres	Public Facilities and Utilities	South of Miramar Road, east of I-805 and north of the San Diego Northern Railway coaster railroad, approximately three miles south of proposed route (included because of size/regional importance), Sorrento Mesa	Under review	72
ENPEX POWER PLANT: Construct a 75-MW plant scalable to 1500 MW	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 6			

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
California Department of Transportation[2] — Coastal Link				
I-15 MANAGED LANES: Construct additional freeway lanes to increase capacity	Public Facilities and Utilities	From SR163 to SR78	Under construction	28
I-5/SR56 INTERCHANGE: New freeway connectors	Public Facilities and Utilities	I-5 and SR56 interchange	Under environmental review	29
I-5 MIDCOAST PROJECT: Construct additional freeway lanes to increase capacity	Public Facilities and Utilities	Between City of Solana Beach and I-8	In planning stage	30
California Department of Transportation[2] — Imperial Valley Link				
RUBBER ASPHALT CHIP SEAL: No details available	Public Facilities and Utilities	Between Brawley and Westmorland from 0.3 miles north of Legion Road to south junction SR78 from Lone Tree	Estimated completion date June 4, 2007	107
California Department of Transportation[2] — Central Link				
WIDEN BRIDGE: San Felipe Creek Bridge improvements	Public Facilities and Utilities	Approximately 12 miles east of Julian, Scissors Crossing	Estimated completion date November 2008	108
County of Imperial[4] — Imperial Valley Link				
STIRLING ENERGY SYSTEMS (SES) AND SDG&E SOLAR POWER PROJECT: Contract between SES and SDG&E to purchase and provide between 300 and 900 MW of solar power from 12,000 solar dishes on approximately 3 square miles	Public Facilities and Utilities	Imperial Valley. Southeast of the Plaster City sheetrock facility and north of I-8; approximately two miles west of the proposed route (included because of size/regional importance)	Application expected to be submitted to BLM in 2007.	77
U.S. GYPSUM MINING PROPOSAL: Proposal to expand active mine for gypsum	Industrial	Approximately 10 miles south of SR78 and five miles south of proposed route (included because of size/regional importance and possible transportation issues)	Approval pending as of November 1, 2006	79
City of El Centro1 — Imperial Valley Link				
CIRCULATION ELEMENT UPDATE: Update Circulation Element of General Plan	N/A	City-wide	City Council/Planning Commission workshop scheduled for 12-11-06	N/A
ZONING/SIGN ORDINANCE UPDATE: Bring Zoning Ordinance into conformance with General Plan and update City's development standards	N/A	City-wide	Preparation of Final Draft	N/A
PARKS MASTER PLAN UPDATE: Update Parks Master Plan	N/A	City-wide	Scheduled for 12-20-06 CC meeting. Item tabled	N/A

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
Imperial Irrigation District[2] — Imperial Valley Link				
SALTON SEA TRANSMISSION LINE: Construct new 230 kV electric transmission line from Midway Substation to Salton Sea area, with possible extension to Bannister Substation, for development of renewable generation projects	Public Facilities and Utilities	Imperial County, east of SR78	Unknown	175
SAN FELIPE SUBSTATION: Construct new 230-500 kV electrical substation on 20 acres	Public Facilities and Utilities	South of SR78, east of existing San Felipe Substation, and southeast of proposed route in the City of Imperial, near County limits	To be completed 2010	57
BANNISTER SUBSTATION: Construct new 230 kV electrical substation on 10 acres	Public Facilities and Utilities	Approximately two miles southwest of SR78–Bannister Road intersection and northeast of proposed route	To be completed 2009	58
EL CENTRO–BANNISTER TRANSMISSION LINE: Upgrade 161 kV transmission line to 230 kV	Public Facilities and Utilities	Approximately two miles southwest of Pellet Road–Harshman Road intersection, adjacent and northeast of proposed route	To be completed 2009	59
BANNISTER–SAN FELIPE TRANSMISSION LINE: Construct new double-circuit 230 kV transmission line	Public Facilities and Utilities	Adjacent to SR78 and approximately five miles west of SR78–SR86 intersection, adjacent and north of proposed route	To be completed 2010	60
IMPERIAL VALLEY AND DIXIELAND SUBSTATIONS: Construct two new 230 kV electrical substations on 10 acres with a 230 kV transmission line connection.	Public Facilities and Utilities	Immediately north of the existing Imperial Valley Substation	To be completed 2012	61
UNIT 3 REPOWER PROJECT: Replace an existing steam-generating unit with a new combustion turbine generator and step-up transformer	Public Facilities and Utilities	485 East Villa Road, in the City of El Centro	Energy Commission found application adequate to begin formal proceedings, as of June 29, 2006	62
NILAND GAS TURBINE PLANT: Develop two natural gas-fired combustion turbine generators and associated support facilities	Public Facilities and Utilities	Northeast of the town of Niland	Approved as of August 2006	63
SALTON SEA UNIT 6 GEOTHERMAL PLANT: 16-mile transmission line expansion of IID power system	Public Facilities and Utilities	Approximately two miles southwest of SR78–Bannister Road intersection; transmission line crosses the proposed route	Approved as of November 1, 2006	78
County of San Diego[3] — Central Link				
HOSKINGS RANCH: TM 5312; subdivide 1,416.5 acres into 33 single-family residential lots of 40 to 62 acres each	Residential	Pine Hills Road at southwest corner of SR78 and SR79 intersection, Pine Hills	DPLU NOP DEIR letter dated August 2003	129

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
WARNER SPRINGS ESTATES: TM 5450; subdivide 150 acres into 28 residential lots	Residential	Los Coyotes Road, Warner Springs	DPLU third iteration review letter	141
RANCHITA SUBDIVISION: TM 5516; subdivide 149.3 acres into 13 residential lots and one 48.93 acres biological and archaeological open space easement	Residential	Montezuma Valley Road at Lease Road, Ranchita	DPLU letter dated February 6, 2007 requesting additional information	142
HOSKINGS RANCH: TPM 20863; subdivide 150.27 acres into three residential lots	Residential	Hoskings Ranch Road	DPLU preliminary review of resources for IS/EA preparation dated August 19, 2004	162
County of San Diego[3] — Inland Valley Link				
RANCHO CAÑADA BED AND BREAKFAST: MUP 02-005; convert 32 acres for use as commercial bed and breakfast, consisting of five existing residences, existing spa and pool with up to 10 guests and two staff	Commercial	22165 San Vicente Road in the community of Ramona, approximately 0.2 miles south of proposed route	MND dated August 20, 2004	38
RANCHO SAN VICENTE: TM 5016; subdivide 847 acres into 241 single-family residential lots, recreational area, and equestrian and pedestrian trail system	Residential	Vista Ramona Road, Ramona	DPLU letter dated May 2, 2000 requesting additional information	130
RANCHO ESQUILAGO ESTATE: TM 5198; subdivide 147 acres into 29 residential lots, 12.8 acres ski lake and 6.7 acres equestrian facility with caretaker residence	Residential	Intersection of Highland Valley Road and Traylor Road, Ramona	Sixth iteration review of draft EIR	172
WESTSIDE KNOLLS: TM 5077; subdivide 19.52 acres into eight residential lots	Residential	Southern terminus of Wyeport Road, Ramona	DPLU approval of project letter dated February 8, 1996	131
MAHOGANY RANCH: TM 5080; subdivide 117.5 acres into 13 single-family residential lots	Residential	North and south sides of Mahogany Ranch Road, approximately 0.5 miles east of Mussey Grade Road, Ramona	MND February 3, 2000	132
OAK CREEK VILLAGE: TM 5098; subdivide 5.04 acres into 46 residential lots	Residential	Southeast corner of H Street and 14th Street, Ramona	DPLU approval of project letter dated September 5, 1996	133
QUISENBERRY: TM 5124; subdivide six acres into ten residential lots	Residential	South and east of the Hanson Way Lane and Hanson Lane intersection, Ramona	MND May 28, 1998	134
BRISSON: TM 5188; subdivide 3.75 acres into 12 residential lots	Residential	North of the San Vicente Road and 11th Street intersection, Ramona	MND February 3, 2003	135
SUNSET VISTAS: TM 5257; subdivide 9.3 acres into eight residential lots	Residential	1454 Ashley Road, Ramona	MND August 3, 2006	136

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
ELLIOT POND: TM 5302; subdivide 20.48 acres into 73 residential lots	Residential	Ramona Street at H Street, Ramona	DPLU letter dated July 11, 2007 requesting additional information	137
MEADOW BUILDERS: TM 5311; subdivide 8.3 acres into 12 residential parcels	Residential	North of Hanson Lane and east of Ashley Road, Ramona	DPLU fourth iteration review letter	138
CUMMINGS RANCH: TM 5344; subdivide 683 acres into 148 residential lots	Residential	Highland Valley Road between SR67 and El Sol Road, Ramona	DPLU DEH letter dated July 30, 2007 requesting additional information	139
ESTATES AT McDONALD PARK: TM 5378; subdivide 12.08 acres into 11 residential lots	Residential	1602 and 1666 Hanson Lane, Ramona	ND November 3, 2005	140
LAKEVIEW DEVELOPERS: TPM 19982; subdivide 19.59 acres into four single-family residential lots	Residential	North of Old Julian Highway and southwest of Elizabeth Lane, Ramona	ND November 18, 1997	143
HALES: TPM 20198; project proposes to move the alignment of a grass-lined drainage swale to alleviate the current flooding problem	Residential	North side of Hanson Lane between Hanson Way and Keyser Road, Ramona	ND January 16, 2003	144
MURADIAN: TPM 20201; subdivide 2.33 acres into four single-family residential lots	Residential	North side of Hanson Lane on the northeast corner of Hanson Lane and Ledesma Lane, Ramona	DPLU environmental conformance letter dated May 18, 2000	145
VENGLER: TPM 20348; subdivide property into four residential lots	Residential	925 Ramona Street, Ramona	DPLU approval of TPM letter dated July 9. 1998	146
BRISSON: TPM 20389; subdivide 27.85 acres into four single-family residential lots	Residential	North side of Creelman Lane and approximately 2,500 feet east of Keyes Road, Ramona	DPLU approval of TPM letter dated August 6, 1999	147
RANGANATHAN: TPM 20391; subdivide 33.9 acres into four lots	Residential	Southeast of the San Diego Country Estates, Ramona	MND November 9, 1998	148
RCDK REALTY II: TPM 20401; subdivide 45.22 acres into four single-family residential lots	Residential	Southeast of SR67 and southwest of Rancho Maria Lane, Ramona	ND dated November 5, 1999	149
McCANDLESS: TPM 20415; subdivide 18.84 acres into four residential parcels	Residential	1550 Keyes Road, Ramona	ND dated February 28, 2000	150
COBLE: TPM 20421; subdivide 24.3 acres into four single-family residential lots	Residential	22544 Tombill Road, Ramona	MND December 19, 2001	151
QUISENBERRY: TPM 20437; subdivide five acres into four single-family residential lots	Residential	207 Old Julian Highway, Ramona	ND dated July 22, 1999	152

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
LANCIONE: TPM 20482; subdivide 4.55 acres into four single-family residential lots	Residential	472 Telford Lane, Ramona	Categorical Exemption dated February 18, 2000	153
HEROLD: TPM 20520; subdivide 0.86 acres into three residential parcels	Residential	11th Street, Ramona, Ramona	DPLU letter requiring environmental review and CEQA compliance and satisfaction of conditions dated April 18, 2002	154
BORYSEWICZ: TPM 20616; subdivide 19.82 acres into two single-family residential parcels	Residential	Mussey Grade Road, Ramona	MND February 3, 2003	155
HUMPHUS: TPM 20656; subdivide 2.53 acres into four lots	Residential	1279 Barnett Road, Ramona	Categorical Exemption dated March 8, 2004	156
HEROLD: TPM 20679; subdivide 4.67 acres into four parcels	Residential	170 Hillcrest Lane, Ramona	DPLU approval of TPM letter dated March 12, 2007	157
QUISENBERRY: TPM 20724; subdivide 1.26 acres into three residential parcels	Residential	815 14th Street, Ramona	MND May 4, 2006	158
TAMBURRINO: TPM 20760; subdivide 2.53 acres into four residential parcels	Residential	1205 Ledesma Lane, Ramona	Categorical Exemption dated May 9, 2005	159
WAKEMANN: TPM 20766; subdivide 21.39 acres into four single-family residential lots	Residential	611 Old Julian Highway, Ramona	MND December 21, 2005	160
YOUNG: TPM 20808; subdivide 1.77 acres into four residential lots	Residential	928 16th Street, Ramona	ND dated September 23, 2005	161
MATTHEW: TPM 20909; subdivide 0.43 acres into two residential lots	Residential	705 12th Street, Ramona	MND January 4, 2007	163
PARKER LANE: TPM 20910; subdivide 0.77 acres into two parcels	Residential	1650 Parker Lane, Ramona	Categorical Exemption dated January 29, 2007	164
COBLE HOMES: TPM 20922; subdivide 0.62 acres into four residential parcels	Residential	Southwest of Hidden View Lane and H Street Intersection, Ramona	DPLU approval of TPM letter dated August 11, 2006	165
ANDERSON: TPM 20940; subdivide 18.9 acres into four residential lots	Residential	Creelman Lane, Ramona	DPLU due date extension approval letter dated June 15, 2007	166

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
ARKEGOS INC. / KEYES ROAD: TPM 20977; subdivide 13 acres into four residential lots and one remainder lot	Residential	1760 Keyes Road, Ramona	DPLU letter dated May 10, 2007 requesting additional information	167
SPITSBERGEN PROJECT: TPM 21042; subdivide 311 acres into four residential parcels	Residential	2857 Southern Oak Road, Ramona	DPLU letter dated May 22, 2007 commenting and requiring additional information on access road	168
AGHA: TPM 21043; subdivide 1.03 acres into two residential parcels	Residential	1219 9th Street, Ramona	DPLU first iteration review letter dated August 8, 2007 requesting additional information	169
ZEIGLER: TPM 21082; subdivide 8.28 acres into two residential parcels	Residential	2126 Boundary Avenue, Ramona	DPLU letter dated October 22, 2007 requesting additional information and guidance through process	170
WOOD: TPM 21083; subdivide 1.28 acres into four single-family residential lots	Residential	854 Rancho Bullard Lane, Ramona	DPLU letter requesting additional information	171
SAN DIEGO COUNTRY ESTATES (SDCE) ELECTRIC GOLF CART STORAGE FACILITY: MUP 72-393; construct a 5,445-sq.ft. one-story golf cart storage facility	Parks and Recreation	24157 San Vicente Road in the community of Ramona, approximately 1.5 miles southeast of proposed route	Approved as of September 14, 2000	31
SALVATION ARMY CAMP EXPANSION: SP 00-06/P70-379; Major Use Permit modification for phased expansion of existing camp, classroom, support, and 275 parking spaces, to capacity of 850 occupants, including 60 resident staff on 578-acre site	Parks and Recreation	14488 Mussey Grade Road in the community of Ramona, more than two miles northwest of proposed route (included because of size/regional importance)	Final EIR certified in 2005	32
ELECTRICAL GENERATING PLANTS: Siting study for two electrical generating plants	Public Facilities and Utilities	First plant to be located between West Sycamore Canyon Road and Sycamore Canyon Road just south of the proposed route, south of Poway; the other plant would be northwest of Santee Lakes Regional Park, approximately two miles south of proposed route (included because of size/regional importance), Santee	Preliminary planning	73

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
CELL SITE: MUP 03-123; construct a 42-foot broad-leaf tree cellular tower (unmanned) with antennas and ground mounted radio equipment housed in equipment shelter	Public Facilities and Utilities	26652 Littlepage Lane in the community of Ramona, approximately 1.25 miles northwest of proposed route	Approval of extension dated August 2004; County letter dated February 2006 indicates project submittals behind schedule (contradictory information states project was complete December 12, 2002)	33
DYE ROAD EXTENSION: Construct a new 5,280-foot extension of Dye Road	Public Facilities and Utilities	South of Warnock Drive between Ramona Street and San Vicente Road in the community of Ramona, approximately one mile north of proposed route	Unknown completion date	44
DYE ROAD: Construct a new 3,200-foot road from Mussey Grade Road/SR67 to Dye Road	Public Facilities and Utilities	Along Dye Road between Mussey Grade Road-SR67 intersection and Dye Road in the community of Ramona, approximately 1.5 miles northwest of proposed route	Unknown completion date	45
RAMONA STREET EXTENSION: Construct a new 1,300-foot extension of Ramona Street	Public Facilities and Utilities	From the Ramona Street/Warnock Drive intersection north to Boundary Avenue in the community of Ramona, approximately one mile north of proposed route	Unknown completion date	46
SAN VICENTE ROAD PHASE I WIDENING AND PATHWAYS: Widen and construct pathways on both sides of San Vicente Road	Public Facilities and Utilities	San Vicente Road between Warnock Drive and 600 feet south of Deviney Lane in the community of Ramona; proposed route crosses San Vicente Road near Deviney Lane	To be completed Summer 2009	47
SAN VICENTE ROAD PHASE II (EAST) WIDENING AND PATHWAYS: Widen and construct pathways on both sides of San Vicente Road	Public Facilities and Utilities	San Vicente Road between Wildcat Canyon Road and about 600 feet south of Deviney Lane in the community of Ramona; proposed route runs adjacent to and under San Vicente Road (approximately 1,200 feet west of Chuck Wagon Road)	Unknown completion date	48
RAMONA SOUTHERN BYPASS: Construct a new road from Warnock Drive–San Vicente Road intersection to SR78	Public Facilities and Utilities	From SR78 along Keyes Road south to San Vicente Road in the community of Ramona, approximately one mile north of proposed route	Unknown completion date	49

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Project	Type	Location	Status	Map ID
SAN VICENTE ROAD PATHWAYS: Construct 2.4 miles of pathways on both sides of San Vicente Road	Public Facilities and Utilities	San Vicente Road between Hanson Lane and Warnock Drive and between Wildcat Canyon Road and Gunn Stage Road in the community of Ramona; proposed route runs under San Vicente Road	To be completed Summer 2012	50
SAN VICENTE ROAD DRAINAGE IMPROVEMENTS: Replace two existing 30-inch by 15-inch culverts with a larger culvert	Public Facilities and Utilities	San Vicente Road south of Caminito Connie in the community of Ramona, approximately two miles north of proposed route (included because of size/regional importance)	Unknown completion date	51
VISTA RAMONA DRAINAGE IMPROVEMENTS: Replace two existing 30-inch corrugated steel pipe with a larger pipe	Public Facilities and Utilities	Vista Ramona Road north of Timber Passing in the community of Ramona, approximately 1.5 miles northwest of proposed route (included because of size/ regional importance)	To be completed Summer 2013	52
SPITZBERGEN PROPERTY: TM 5294 (Part of Holy Oaks SPA); develop 311 acres as part of a two-phase project, consisting of driveway improvements to an existing single-family residence to correct grading violation and construction of 17 single-family residences plus two open space lots over 220 acres	Residential	2857 Southern Oak Road in the community of Ramona, possibly within proposed route	Letter from County dated January 12, 2006 commenting on second iteration and requiring additional studies	34
HUBER: TPM 20650. Subdivide a 12.88 acres into three single-family residential lots	Residential	Northwest corner of Dye Road and Mandez Drive in the community of Ramona, approximately 0.75 miles northwest of proposed route	MND dated August 12, 2003	35
FRIERY MAJOR SUBDIVISION: TM 5172; subdivide 66 acres into 15 residential lots with one single-family residence on each	Residential	Eastern terminus of Tombill Road in the community of Ramona, approximately 0.5 miles southwest of proposed route	MND dated January 2003	36
PARKER MINOR SUBDIVISION: TM 4896; subdivide 27.6 acres for nine single-family residential lots	Residential	South of Tombill Road between Wildcat Canyon Road and the east end of Tombill Road in the community of Ramona, approximately 0.5 miles southwest of proposed route	MND dated March 1991	37
MONTECITO RANCH: TM 5250; construct 417 single-family residential lots, two school sites, and local and historic parks on a 935.5-acre site	Residential	South of SR78 and north of Montecito Way. More than two miles northwest of proposed route in the community of Ramona (included because of size/ regional importance)	Fourth screencheck EIR	39

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
OAK COUNTRY ESTATES: TM 5253; develop 57 single-family residential lots ranging from two to four acres each and 485.2 acres of open space on a 768.5-acre specific planning area	Residential	North of Highland Valley Road and west of Rangeland Road in the community of Ramona, more than two miles northwest of Proposed Project (included because of size/regional importance)	Final EIR dated November 2005	40
STRATTON: TPM 20961; subdivide an 11-acre site into four lots	Residential	3347 Dye Road in the community of Ramona, approximately 2.5 miles northwest of proposed route (included because of size/regional importance)	First review of IS complete (July 2006), letter issued requiring additional studies	41
HEROLD MINOR SUBDIVISION: TPM 20703; construct four single-family residences, including one existing single-family residence on a 2.5-acre site	Residential	1292 Ashley Road in the community of Ramona; more than two miles north of proposed route (included because of size/regional importance)	MND dated January 2006	42
SADDLE CREEK ESTATES: TM 5254; develop 67 residential lots, one open space lot, and six road lots on 319 acres	Residential	East and west of Rainbird Road and north of Rancho Barona Road in the community of Ramona, more than 1.5 miles southeast of proposed route (included because of size/regional importance)	Waiting for second submittal; on hold due to water issues	43
City of Poway[4] –Inland Valley Link				
GATEWAY PLACE: construct a three-phase office project on 26 acres; Phase one is 156,000 sq.ft., Phase two is 160,000 sq.ft., and Phase three is 164,000 sq.ft.	Industrial	North side of Kirkham Way, 500 feet west of Gateway Place, approximately 1.5 miles northeast of proposed route (included because of size/regional importance), Poway	Phase one complete, Phases two and three not yet built	23
DEVELOPMENT REVIEW 60-02: Construct a 46,000 sq.ft. industrial building	Industrial	South side of Kirkham Way, approximately 200 feet west of the intersection with Tech Center Court, approximately 0.75 miles north of the proposed route, Poway	Building and grading plan check underway	24
CEDAR FIRE REBUILDS: Construct two homes on seven acres	Residential	14710 Beeler Canyon Road, approximately two miles northeast of propose route (included because of size/regional importance), Poway	Approved, not yet built	26
City of Poway[4] — Coastal Link				
PERSOPLIS PARTNERS: TM 04-01; five-lot subdivision (10,000 sq.ft. minimum lot size)	Residential	Southern terminus of Old Pomerado Road, approximately 0.5 miles north of proposed route, Poway	Application deemed incomplete	25

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
ROAT/HOFFMAN: Construct a replacement home destroyed by Cedar Fire	Residential	11301 Creek Road, approximately 0.5 miles north of the proposed route, Poway	Project in planning stages; not yet approved	27
City of San Diego[5] — Coastal Link				
TORREY CORNER: Project No. 34992; construct an 18,000 sq.ft. mixed-use retail and office development on a 5.93-acre site	Commercial and Office	Southwest corner of East Ocean Air Drive and Carmel Mountain Road, immediately north of proposed route, Torrey Hills	Draft MND as of July 17, 2006	1
THE GRAND DEL MAR GOLF COURSE: Project No. 106441(formerly The Meadows Del Mar and Del Mar National); Site Development Permit to disturb environmentally sensitive lands for new grass tee boxes, picnic area and revegetation of an existing 210.39-acre golf course	Parks and Recreation	Meadows Del Mar, Carmel Valley	Application under review as of September 3, 2006	2
TAIWANESE LUTHERAN TEMPLE: Project No. 98409; construct a two-story fellowship church building with offices, restrooms, meeting rooms, classrooms, and storage	Public Facilities and Utilities	10075 Azuaga Street, approximately 0.25 miles northeast of proposed route, Rancho Peñasquitos	Application deemed complete as of March 15, 2006	3
NEW HOPE CHURCH: Project No. 104754; construct a 22,719 sq.ft. addition to existing church building on a 4.36-acre site	Public Facilities and Utilities	10330 Carmel Mountain Road, approximately 0.5 miles northeast of proposed route, Rancho Peñasquitos	Permits issued February 14, 2006	4
PINNACLE: Project No. 79476; construct a 5.7-acre, three-story 41,000 sq.ft. healthcare facility with 400 at-grade parking spaces on an 11.4-acre site	Public Facilities and Utilities	16070 Wexford Street, immediately east of proposed route, Scripps Ranch	Application under review as of June 14, 2006	5
TORREY HIGHLANDS: Construct 2,693 residences on 1,134 acres	Residential	West of Rancho Peñasquitos, south of Black Mountain Ranch, east of Pacific Highlands Ranch, and north of Del Mar Mesa in the community of Scripps Ranch, approximately 1.25 miles northwest of proposed route, but southeast portion lies within one mile of proposed route; SR56 traverses the community	As of January 2003, approximately 50 percent of the possible residential building permits issued and approximately 1/3 of residences occupied	13
GOVAR SFR: Project No. 111136; construct a two-story single-family residence containing three-bedrooms, three bathrooms, and a three-car garage	Residential	11875 Tierra Del Sur, approximately 1.25 miles northwest of proposed route (included because of size/regional importance), Torrey Hills	Application under review as of August 16, 2006	14
2003 FIRE 10519: Project No. 111230 (18835); construct a two-story, 2,721 sq.ft., four-bedroom residence to replace fire-damaged house	Residential	10519 Medoc Court in the community of Scripps Miramar Ranch, approximately one mile southwest of proposed route	Project under inspection as of August 17, 2006	15

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
VALLEY RIDGE ESTATES: Project No. 97083; subdivide a 19.61-acre site into 12 lots for residential development, including one open space lot and one lot for private driveway purposes	Residential	6155 Del Mar Mesa Road in the community of Scripps Ranch, approximately 0.75 miles northwest of proposed route	Application under review as of April 17, 2006	16
TORREY HILLS VTM: Project No. 106228; construct 484 multi-family residences and 4,000 sq.ft. of commercial space	Residential	West Ocean Air Drive in the community of Scripps Ranch, approximately 0.75 miles southwest of proposed route	Application under review as of June 2006	17
PEPPERTREE POINT: Project No. 6633; construct 92 multi-family residences on approximately 1.76 acres of a 5.22-acre site, including 181 underground parking spaces, recreational facilities, private driveways, and 3.4 acres of open space	Residential	11911 Carmel Creek Road, approximately 1.5 miles northwest of proposed route (included because of size/regional importance), Torrey Hills	Application under review with project changes as of June 30, 2006	18
CARMEL VIEW TM: Project No. 72282; create eight residential lots on 5.25-acre site	Residential	South of Del Mar Mesa Road and west of Del Vino Court, approximately 0.5 miles northwest of proposed route, Carmel Valley	Application under review as of September 3, 2006	19
SCRIPPS CYPRESS POINT: Project No. 10591; construct 83 single-family residences on 40.26 acres	Residential	11495 Cypress Canyon Road, approximately 0.25 miles south of proposed route, Scripps Miramar Ranch	Project under third review as of April 2007	20
NEXTEL MERCY: Project No. 81062; construct 30-foot-high monopalm supporting 12 antennas and associated equipment in a 232 sq.ft. shelter	Public Facilities and Utilities	12871 Black Mountain Road, Scripps Ranch	Application under review as of March 2007	124
SORRENTO VALLEY TRUNK SEWER: Project No. 46-197; relocate an 18-inch truck sewer out of Los Peñasquitos Lagoon, construct a new underground pump station and emergency storage tank, install secondary force main and sewer main	Public Facilities and Utilities	Between Torrey Pines State Preserve and Sorrento Valley Road, approximately one mile west of proposed route, Torrey Pines	Final phase of construction	21
LOS PENASQUITOS LAGOON BASIN: Project No. 47248; restoration of Los Peñasquitos lagoon	Parks and Recreation	10940 East Ocean Air Drive, north of Sorrento Valley Boulevard, Torrey Hills	Application under review as of December 2005	109
SAN DIEGO JEWISH ACADEMY: Project No. 52184; Relocate gym, redesign north sports field and add additional property to a 58.6-acre site	Public Facilities and Utilities	11860 Carmel Creek Road. 11657 Arroyo Sorrento Place, Torrey Hills	Construction underway.	110
COSTA DEL MAR II: Project No. 17013; create five lots from a 10.22-acre site	Residential	11655 Arroyo Sorrento Place, Torrey Hills	Application under review as of February 2007	111
CARMEL VALLEY COMMUNITY PARK: Project No. 25663; construct a new park including recreation center, restroom and ball field	Public Facilities and Utilities	4770 Fairport Way, Torrey Hills	Project deemed complete as of August 2006	112
TORREY HILLS YMCA: Project 8048; construct a new two-story structure with enclosed pools	Public Facilities and Utilities	4262 Calle Mejillones, Torrey Hills	Application under review as of February 2005	113

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
TORREY HILLS CENTER: Project No. 1119; construct a retail/office center with four commercial lots including a family medical center on a vacant commercial site	Commercial	11185 East Ocean Air Drive; southeast corner of Carmel Mountain Road and East Ocean Air Drive, Torrey Hills	Project decision/ agreement dated March 2006	114
CARMEL VALLEY NEIGHBORHOOD 10: Project No. 72526; subdivide parcel into 136 lots and construct 117 single-family residences	Residential	10504 Gaylemont Lane, Torrey Hills	Application deemed complete as of October 2005	115
LORENZ, SHAW: Project No. 2873; 139-lot, single-family development within the Del Mar Mesa Specific Plan	Residential	4944 Del Mar Mesa Road, Carmel Valley	Application under review as of February 2005	116
SUNSET RANCH: Project No. 3501; create 11 lots for nine single-family residences and two open space lots	Residential	6155 Shaw Ridge Road, Carmel Valley	Application under review as of March 2007	117
DUCK POND RANCH: Project No. 1879; 12 lots	Residential	6305 Shaw Ridge Road, Carmel Valley	Application under review as of March 2007	118
VALLEY RIDGE: Project No. 97083; construct ten custom home parcels with guest quarters and three open space lots on 19.61 acres	Residential	6155 Shaw Ridge Road, Carmel Valley	Application under review as of February 2005	119
CAMPUS AT TORREY VIEW: Project No. 1660; construct two four-story commercial buildings containing approximately 200,000 sq.ft. of floor area and a parking structure	Commercial	4503 Carmel Mountain Road; north side of Carmel Mountain Road between I-5 and Torrey View Court, Torrey Hills	Application closed as of March 2007	120
ZPYSIS: Project No. 3078; Construct an underground parking structure and two three-story buildings	Industrial	3398 Carmel Mountain Road, Torrey Hills	Application closed as of March 2007	121
ENPEX POWER PLANT: Construct a 75 MW plant scalable to 1500 MW	Public Facilities and Utilities	Near the Sycamore Substation, south of Poway	Permit approved for the sale of 60 acres of MCAS Miramar land to applicant; in May 2006, ENPEX announced that it was entering into discussions with NRG in February 2007.	6
CARMEL COUNTRY HIGHLANDS: Develop an 800-acre master planned community	Residential	Heather Ridge Drive, approximately 0.5 miles north of proposed route, Torrey Hills	Application under review as of August 4, 2006	7
NORDSTROM SINGLE-FAMILY RESIDENCE: Project No. 93178; construct a new three-story, five-bedroom, seven-bath single-family residence	Residential	11839 Tierra Del Sur, approximately 1.25 miles northwest of proposed route (included because of size/regional importance), Torrey Hills	Application deemed complete as of January 11, 2006	8

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
PACIFIC HIGHLANDS RANCH: Project No. 109758; develop 473 single-family residences, 96 multi-family residences, a neighborhood park, elementary school, recreation center, and 154.4 acres of open space on 299 acres	Residential	South of Carmel Valley Road and east of Rancho Santa Fe Farms Road; more than one mile north of proposed route (included because of size/regional importance), Carmel Valley	Approved; inspecting Phases 1-9, Phases 2-3 under review	9
2003 FIRE SINGLE-FAMILY RESIDENCE 10374: Project No. 112201; construct a two-story, 3,566 sq.ft., five-bedroom, 3.5-bath single-family residence to replace a fire-damaged home	Residential	10374 Spruce Grove Avenue in the community of Scripps Ranch, approximately 1.25 miles south of proposed route (included because of size/regional importance), Scripps Ranch	Application under review as of August 30, 2006	10
TORREY RANCH. Project No. 110480; construct 73 single-family residences	Residential	Sydney Rae Place, Brooke Vista Lane, and Jake View Lane in the community of Scripps Ranch	Application under review as of August 17, 2006	12
City of San Diego[5] — Inland Valley Link				
RANCHO ENCANTADA. Construct 935 single-family residences on 2,658 acres; approximately 81 percent of the site is designated for parks and open space, 18 percent for residential development, and one percent for elementary school and institutional use	Residential	Stonebridge Parkway east of Pomerado Road in the community of Scripps Ranch, immediately adjacent to proposed route	Rancho Encantada Precise Plan and EIR adopted August 7, 2001; under phased construction as of October 10, 2006	11
City of San Diego Improvement Projects— Coastal Link				
NORTHWESTERN AREA POLICE STATION: Project No. 36-059; construct a police facility on a four-acre site to house a police command and light vehicle maintenance facility	Public Facilities and Utilities	El Camino Real at Elijah Court, Carmel Valley	Construction to be completed in 2007	122
SORRENTO VALLEY ROAD AND I-5 INTERCHANGE: Construct new freeway connectors	Public Facilities and Utilities	Sorrento Valley Road and I-5, Sorrento Valley	Project is ongoing	123
PIPELINE REHABILITATION — PHASE C-1: Project No. 46-050.4; rehabilitate 10.5 miles of sewer pipe to include San Gorion/Kellogg, Mira Mesa Trunk Sewer and High Frequency Maintenance	Public Facilities and Utilities	Several Community Plan Areas including Carmel Mountain Ranch, Carmel Valley, and Mira Mesa	Construction to be completed in August 2007	N/A

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
Vista Irrigation District[2] — Central Link				
WARNER/CARRILLO RANCH HOUSE RESTORATION: No details available	Public Facilities and Utilities	29189 San Felipe Road (S2), east of SR79 in Warner Springs within the community of Julian; more than two miles southwest of proposed route (included because of size/regional importance)	Stabilization of structure is complete; awaiting funding for restoration phase	54
Ramona Municipal Water District[6] — Inland Valley Link				
16-INCH PIPELINE TO SDCE TANK NO. 1: Install a 16-inch water pipeline	Public Facilities and Utilities	On Old Julian Highway from Shady Lane to Vista Ramona Road and along Vista Ramona Road to just east of Arena Way in the community of Ramona; southern terminus of the pipeline lies within one mile of the proposed route	Under construction, will continue through March 2007	53
San Diego County Water Authority[2] — Inland Valley Link				
SAN VICENTE PUMP STATION AND SURGE CONTROL FACILITY: Related to San Vicente Pipeline Project	Public Facilities and Utilities	Adjacent to San Vicente Dam in the community of Lakeside	Approved; construction to start December 2006 and finish August 2009	64
SAN VICENTE PIPELINE PROJECT: 11-mile pipeline connecting San Vicente Reservoir to Second MWD/SDCWA Aqueduct	Public Facilities and Utilities	San Vicente Reservoir to I-15 at Mercy Road	Under construction; to be completed March 2009	65
INTERCONNECTION PIPELINES AT SAN VICENTE: Related to Moreno Lakeside Pipeline Project; pipeline that will connect an existing pipeline to the Helix Water District's R.M. Levy Water Treatment Plant	Public Facilities and Utilities	Adjacent to San Vicente Dam in the community of Lakeside	Under construction; to be completed in 2007.	66
SAN VICENTE PUMP STATION/DAM INTERCONNECTION PIPELINES: Related to San Vicente Pipeline Project	Public Facilities and Utilities	Adjacent to San Vicente Dam in the community of Lakeside	Approved; construction to start August 2007 and finish October 2008	67
SAN VICENTE DAM RAISE PROJECT: Raise existing dam 54 feet for Emergency Storage Project and an additional 63 feet for Carryover Storage Project	Public Facilities and Utilities	San Vicente Reservoir near the community of Lakeside	Construction to begin in 2009 and finish in 2012	68
San Diego County Water Authority[2] — Coastal Link				
SAN VICENTE PIPELINE PROJECT	See San Diego County Water Authority — Inland Valley Link			

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
San Dieguito River Park[2] — Central Link				
SAN DIEGUITO RIVER PARK: Develop a 55-mile regional planning area that includes the regional Coast-to-Crest Trail from Del Mar Beach to Volcan Mountain (concept plan adopted by the Joint Powers Authority Board of Directors in 1994)	Parks and Recreation	Proposed route's north-south alignment crosses the Coast-to-Crest Trail west-east alignment and through Landscape Unit M-Santa Ysabel Valley of the Focused Planning Area just west of SR79 and south of Mesa Grande Road	Approximately 26 miles of Coast-to-Crest Trail is complete, another three miles due to be completed in next two years	55
Santa Ysabel Indian Reservation — Central Link[6]				
SANTA YSABEL CASINO: Construct a 70,000-sq.ft. resort and casino including support offices, restaurants, parking for approximately 600 cars, a wastewater treatment plant, and three outbuildings of 2,000 to 3,500 sq.ft. each for service/support on six acres	Tribal	35 miles east of Escondido, near the junction of SR78 and SR79; approximately two miles east of the proposed route (included because of size/regional importance)	Opened April 11, 2007. Continued improvements to SR79 as of July 2007	74
EPA Network Exchange: Internet connection to tribal facilities, including homes and monitoring devices, within an approximate five-mile radius	Tribal	Santa Ysabel Indian Reservation	Approved by the EPA September 2006; project to continue indefinitely	N/A
SCTDV: Wireless communications using 2.4/5.2/5.3 Gigahertz frequencies over mountains to provide internet service to homes and government offices	Tribal	Los Coyotes and Santa Ysabel Reservations	Approved by all Tribes and County January 2002; project ongoing, with expansion into Riverside County via Los Coyotes Reservation	N/A
City of Chula Vista — South Bay Substation[5]				
CHULA VISTA BAYFRONT MASTER PLAN AND PORT MASTER PLAN AMENDMENT: Allow for development of parkland, open space, environmental buffers, civic/cultural, hotel, office, residential, retail, entertainment, and recreational activities and possible South Bay Power Plant demolition	Public Facilities and Utilities	Marina Parkway, northwest of the I-5 – J Street intersection; approximately 0.50 miles north of the South Bay substation	Draft EIR dated September 2006	101
THE BAYSHORE BIKEWAY: Relocate the Bayshore Bikeway to a new Class I bike path facility along the existing SDG&E utility corridor	Public Facilities and Utilities	Approximately 0.25 miles west of I-5 between E Street and Main Street	Planning stages	102
SBPP AND SDG&E SWITCHYARD RELOCATION: Construct a new power plant to replace existing plant	Public Facilities and Utilities	Approximately 0.50 miles south of Proposed Project	Application submitted in July of 2006	103
UNDERGROUNDING OF TRANSMISSION LINES: Underground SDG&E transmission and distribution lines	Public Facilities and Utilities	Along eastern boundary of Chula Vista Bayfront Master Plan, parallel to I-5	Draft EIR prepared by CPUC in March 2005	104
FORMER GOODRICH SOUTH CAMPUS DEMOLITION: Demolish buildings associated with the former Goodrich South campus	Public Facilities and Utilities	Between I-5 and Marina Parkway; approximately 0.50 miles north of Proposed Project	Demolition has begun	105

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
A & D AUTO REPAIR: Construct a 2,400-sq.ft. auto repair garage	Commercial and Office	1048 Broadway; approximately 0.75 miles southeast of Proposed Project	Approved as of March 22, 2006	106
City of Oceanside — San Luis Rey Substation[5]				
CRICKET COMMUNICATIONS AT MERCADO DE OCEANA: Construct a wireless telecommunications facility	Public Facilities and Utilities	547 Vista Bella; approximately 0.5 miles northeast of Proposed Project	Application review underway, awaiting response to ARC letter as of September 30, 2006	80
FIRE STATION No. 7: Construct a fire station and two well sites for utilities	Public Facilities and Utilities	3350 Mission Avenue; approximately 0.75 miles northwest of Proposed Project	Approved as of July 24, 2006	81
THE PAVILION AT OCEANSIDE: Develop a 87.47-acre community shopping center including a movie theater, health club and three drive-through uses	Commercial and Office	3480 Mission Avenue; approximately 0.75 miles northwest of Proposed Project	Application review underway, awaiting response to ARC letter as of September 30, 2006	82
A-1 STORAGE CINGULAR: Install 12 cellular antennas on an existing building	Public Facilities and Utilities	3036 Oceanside Boulevard; approximately 0.75 miles south of Proposed Project	Application review underway, awaiting response to ARC letter as of September 30, 2006	83
AMBASSADOR FAMILY CHURCH: Construct a church on an approximately 12-acre site	Public Facilities and Utilities	Southeast corner of Oceanside Boulevard and El Camino Real at 1602 El Camino Real; approximately 0.75 miles southeast of Proposed Project	Building permit issued January 29, 2004, finalized on April 10, 2006	84
EL CORAZON: Develop a 465-acre city-owned property with a mixture of land uses, including open space, park areas, native open space greenbelt, community public use, senior citizen center, recreation center, green waste facility, and commercial uses	Public Facilities and Utilities	South of Mesa Drive, east of El Camino Real, west of Rancho Del Oro Road, and north of Oceanside Boulevard; approximately 0.5 miles southeast of Proposed Project	NOP for Draft EIR dated September 1, 2006	85
CHAPARRAL INDUSTRIAL BUILDING: Construct a 12,750-sq.ft. one-story, concrete tilt-up multi-tenant building on 1.19 acres	Industrial	Industry Street near El Camino Real; approximately 0.75 miles south of Proposed Project	Administrative Approval on December 27, 2004	86
LOMA ALTA CREEK SIDE: Construct a 15,301-sq.ft. industrial office building and parking areas	Industrial	South of Oceanside Boulevard, east of El Camino Real, and north of the AT&SF railroad ROW; approximately 0.75 miles southeast of Proposed Project	Application under review as of September 30, 2006	87

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
WILLOW CREEK GENERAL PLAN AMENDMENT AND ZONE AMENDMENT: Re-designate a 29.89-acre site from Limited Industrial to Open Space and Residential Medium Density-B	Residential	South of Oceanside Boulevard and the AT&SF railroad ROW, and east of El Camino Real; approximately one mile southeast of Proposed Project	Application review underway, awaiting response to ARC letter as of September 30, 2006	88
ROBERTSON'S OCEANSIDE: Construct a ready-mix concrete batch and material handling system, and 12,000-gallon aboveground fuel tank	Industrial	2847 Industry Street; approximately 0.75 miles southwest of Proposed Project	Application review underway, awaiting response to ARC letter as of September 30, 2006	89
HYTA PARCEL MAP: Construct four single-family residences	Residential	Barnwell Road, between Mesa Drive and Corto Street; approximately one mile southwest of Proposed Project	Approved as of June 9, 2003; construction commenced as of September 30, 2006	90
MOHSEN MISSION AVENUE: Redevelop and landscape project site, demolish existing structure, and build a new canopy and building on rezoned portion of site; construct a 24-hour gasoline station operation, related retail and a small, drive-through carwash	Commercial and Office	3213 Mission Avenue; approximately 0.75 miles west of Proposed Project	Application review underway, awaiting response to ARC letter; new submittal under review as of September 30, 2006	91
Z-MART: Construct a 6,035-sq.ft. multi-tenant retail building with convenience store to be constructed on existing vacant parcel	Commercial and Office	3200 Mission Avenue; approximately 0.75 miles west of Proposed Project	Building permit issued July 21, 2006	92
LA MISSION VILLAGE: Construct 82 affordable apartment units	Residential	3232 Mission Avenue; approximately 0.75 miles west of Proposed Project	Building Permits issued May 4, 2006 and September 25, 2006; final July 18, 2006	93
OCEAN POINTE: Create 198 condominium units; request to exceed base density by one dwelling unit per acre and to exceed maximum height requirement for retaining walls	Residential	Southeast of SR76 and Stage Coach Road; approximately 0.75 miles northeast of Proposed Project	Application review underway, awaiting response to ARC letter as of September 30, 2006	94
CLEAN ENERGY: Add another CNG fueling dispenser at North County Transit's Maintenance yard, to be integrated into an existing CNG fueling system	Public Facilities and Utilities	305 Via Del Norte, approximately one mile west of Proposed Project	Application review underway, awaiting response to ARC letter as of Sept. 30, 2006	95
MARKET PLACE DEL RIO: Revise the development plan for remodeling the existing Mission Center shopping center	Commercial and Office	Northwest corner of El Camino Real and Mission Avenue, approximately one mile north of Proposed Project	Building permit issued March 17, 2006	96

Table G-1. Proposed Project Cumulative Projects List

Project	Type	Location	Status	Map ID
WALGREENS AT MARKETPLACE DEL RIO: Develop a Walgreens drug store within Market Place Del Rio	Commercial and Office	Northwest corner of El Camino Real and Mission Avenue, approximately one mile north of Proposed Project	Building permits issued July 13, 2006	97
OCEAN RANCH INDUSTRIAL PARK: Subdivide approximately 393 acres into 21 industrial lots to be leased/sold, plus two open space lots; 27 acres are comprised of road ROWs to be dedicated as public streets	Industrial	Between Mesa Drive and Oceanside Boulevard, east of Rancho Del Oro Road; approximately 1.5 miles east of Proposed Project (included because of size/regional importance)	Industrial park approved and lots developed; some lots are still vacant and awaiting application reviews and responses	98
ETERNAL HILLS MEMORIAL PARK: Develop 86.38 acres of vacant undeveloped land into cemetery expansion	Public Facilities and Utilities	1999 El Camino Real, approximately 1.25 miles southeast of Proposed Project	Environmental review underway	99
MISSION AND DOUGLAS CENTER: Construct three freestanding retail buildings totaling approximately 15,500 sq.ft.	Commercial and Office	West side of Douglas Drive, between SR76 and Mission Avenue; approximately one mile northeast of Proposed Project	Approved as of September 25, 2006	100
CHARGERS STADIUM OCEANSIDE	Public Facilities/ Commercial	East of Interstate 5 at Oceanside Boulevard. Site of existing municipal golf course.	Preliminary review and economic feasibility study underway	NA
HYATT HOTEL AT OCEANSIDE PIER	Commercial	Along Highway 101 just South of Loma Alta Creek	Application submitted April 2007	NA

1 Project information obtained through review of agency data posted online.
2 Project information requested via letter sent September 2006, with agency staff responding subsequently.
3 Project information obtained through review of County files as well as site visits by HELIX staff.
4 Project information obtained through contact with agency staff.
5 Project information obtained through review of City files by HELIX staff as well as contact with City staff.
6 Project information obtained through site visits by HELIX staff.
ARC – Application Review Committee; BTR – Biological Technical Report; CEQA – California Environmental Quality Act; CPUC – California Public Utilities Commission; DEIR – Draft Environmental Impact Report; DPLU – Department of Planning and Land Use; EIR – Environmental Impact Report; EIS – Environmental Impact Statement; EPA – Environmental Protection Agency; IS – Initial Study; MND – Mitigated Negative Declaration; NOP – Notice of Preparation

G.2.2 Plans and Projections

As noted above, the cumulative impact analysis relies on a project list approach. However, a number of plans and projections, such as those found in General Plans and other planning and environmental documents, were examined during the course of the development of this EIR/EIS. These provide insight into longer-term expectations regarding development and ultimate buildout scenarios and timelines which are used to inform the cumulative analysis. Table G-2 lists the documents consulted.

Table G-2. Plans and Environmental Documents Consulted in Cumulative Impact Analysis

Federal Plans
BLM – California Desert Conservation Area (CDCA) Plan, 1980, as Amended
BLM – Flat-Tailed Horned Lizard Range wide Management Strategy, 2003 Revision
BLM – Yuha Basin Area of Critical Environmental Concern (ACEC) Management Plan, June 1981
BLM – San Sebastian Marsh Area of Critical Environmental Concern (ACEC) Management Plan and San Felipe Creek Wildlife Habitat Management Plan, October, 1986
BLM – Eastern San Diego County Management Framework Plan, 1981
NPS – Comprehensive Management and Use Plan and Final Environmental Impact Statement, Juan Bautista de Anza National Historic Trail, April 1996
2.4 USFS – Pacific Crest National Scenic Trail
MOU between Department of the Navy & Bureau of Reclamation and BLM with Regard to the Defense-Related Uses of Federal Lands in Conjunction with El Centro Naval Air Facility Ranges Withdrawal
MCAS Miramar Master Plan, March 2006
Marine Corps Air Station, Miramar Air Installations Compatible Use Zones (AICUZ) Update, December 2004 (Revised March 2005)
State Plans
California State Parks – Anza-Borrego Desert State Park (ABDSP) Final General Plan and EIR
Regional and Local Plans
County of Imperial County – County General Plan, 2003
Airport Land Use Compatibility Plan – Imperial County Airports 1996
County of San Diego – County General Plan, 1979 as amended
San Diego County General Plan Part IV Lakeside Community Plan, Adopted December 19, 1975, Amended August 9, 2000
San Diego County – Airport Land Use Compatibility Plan MCAS Miramar, 1977, amended 2004
San Dieguito River Park Joint Powers Authority – San Dieguito River Park Concept Plan (1994, update 2002)
SANDAG – Regional Comprehensive Plan, July 2004
Ramona Community Plan, 1978, amended 2006
Central Mountain Community Plan, San Diego County General Plan
Mountain Empire Subregional Plan, San Diego County General Plan
North Mountain Subregional Community Plan, San Diego County General Plan
Lakeside Community Plan, San Diego County General Plan
Scripps Miramar Ranch Community Plan, City of San Diego
Mira Mesa Community Plan, City of San Diego
Alpine Community Plan, San Diego County General Plan
Rancho Peñasquitos Community Plan, City of San Diego
Miramar Ranch North Community Plan, City of San Diego
Los Peñasquitos Canyon Preserve, City of San Diego
Santa Ysabel Open Space Preserve Draft Resource Management Plan, San Diego County

Table G-2. Plans and Environmental Documents Consulted in Cumulative Impact Analysis

San Diego County – North Mountain Subregional Community Plan, 1979, amended 2002.
City of Poway Comprehensive Plan (1983-2005)
City of San Diego – General Plan and Updates (1979 et seq.)
City of Chula Vista – Municipal Code (Local Coastal Program)
SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region, March 2, 2000
Other Sources
Department of Conservation Division of Land Resource Protection Farmland Mapping and Monitoring Program

Figure G-1. Cumulative Projects: Imperial Valley Link
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Figure G-2. Cumulative Projects: Anza-Borrego Link
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Figure G-3. Cumulative Projects: Central Link
CLICK HERE TO VIEW

Figure G-4. Cumulative Projects: Inland Valley Link
CLICK HERE TO VIEW

Figure G-5. Cumulative Projects: Coastal Link
CLICK HERE TO VIEW

Figure G-6. Cumulative Projects: San Luis Rey Substation
CLICK HERE TO VIEW

Figure G-7. Cumulative Projects: South Bay Substation
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G.3 Cumulative Impact Analysis of the Proposed Project

This section presents an analysis of the potential for the SRPL Project to contribute to significant cumulative effects when considered in conjunction with past, present and reasonably foreseeable projects, including those projects listed in Table G-1. The cumulative impact analysis is undertaken on a resource-by-resource basis and is presented in the same order as the project specific analyses contained in Section D. For each resource area below, specific impacts are identified and analyzed and a significance conclusion (Class I, II, or III) stated. Mitigation is applied, where applicable, to reduce potentially significant cumulative impacts.

G.3.1 Biological Resources

Geographic Extent

The geographic scope for the analysis of cumulative impacts related to biological resources includes the entire region traversed by the Proposed Project, which consists of Imperial and San Diego Counties. The Proposed Project is located near, adjacent to, or crosses through a variety of federal, State, county and other agency parks and preserves that represent components of the regional preserve system, all of which are within Imperial and San Diego Counties. The following are areas of biological significance that have the potential to be affected by the Proposed Project:

- California Desert Conservation Area
- Areas of Critical Environmental Concern
- Flat-Tailed Horned Lizard Management Areas
- Anza-Borrego Desert State Park
- State and BLM Wilderness Areas
- Multiple Species Habitat Conservation Plan Areas
- County and City of San Diego Open Space Preserves
- MCAS Miramar Integrated Natural Resources Management Plan
- San Dieguito River Valley Park
- Designated Critical Habitat area throughout Imperial and San Diego County.

Detailed descriptions of these areas and the biological resources located within or regulated by them, including vegetation communities, wetlands and aquatic resources, wildlife habitats, and special status species, is located in Section D.2.1.2 (Regional Setting).

Existing Cumulative Conditions

Tremendous urbanization, population growth, and continuing development pressures in Imperial and San Diego Counties have brought about substantial changes to, and effects on, natural resources. Consequently, modification, alteration and destruction of habitats and proliferation of non-native species are occurring throughout the region. Furthermore, future growth and development in the analysis area will likely accelerate these impacts. Habitats vary substantially from east to west along the project alignment, from desert scrub, chaparral, juniper-pinyon woodland, and grasslands at lower elevations to mixed hardwood forest, southern oak, southern Jeffrey pine, and southern yellow pine at higher elevations. Along the coast, where limited real estate is highly sought after, salt marshes and lagoons experience increasing encroachment from adjacent land use developments.

Cumulative Impact Analysis

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.2.4.1.

Impact B-1: Construction and maintenance activities would result in temporary and permanent losses of native vegetation (Class I). Despite measures to protect and remediate losses, construction of the Proposed Project would cause both temporary (during construction from vegetation clearing) and permanent (displacement of vegetation with project features such as towers or permanent access roads) significant impacts to vegetation communities as described in Section D.2.5. Most of the projects identified in Table G-1 would result in temporary and permanent losses of native vegetation through grading and clearing activities to construct roads, utility infrastructure, and commercial and residential developments. Some of the projects identified in Table G-1, particularly large scale residential developments and solar projects would require clearance of hundreds, and in some cases thousands, of acres of contiguous land area occupied by both sensitive and non-sensitive species. Furthermore, many parts of the project area, particularly within San Diego County have undergone intensive urbanization which has resulted in the losses of native vegetation over large land areas. Permanent losses of vegetation associated with the Proposed Project combined with losses associated with past, present and future projects are considered significant because they would represent substantial adverse effects to native communities that cannot be fully mitigated. Therefore, impacts of the Proposed Project, when combined with impacts from past, present, and reasonable future projects would be considered cumulatively significant. (Class I). As discussed in Section D.2.5, Mitigation Measures B-1a through B-1c would be implemented to reduce the Proposed Project's effect to native vegetation; however, even with mitigation, incremental impacts would persist and when combined with impacts of past projects, would still be considered significant.

Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II). Since a formal delineation has not yet been conducted, the precise presence and extent of wetlands at this time is unknown. However, as discussed in Section D.2.5, direct and/or indirect impacts to jurisdictional Waters of the U.S. and possibly wetlands (i.e., areas regulated by the ACOE and RWQCB and/or CDFG) would occur from the Proposed Project. A formal delineation for the project will be conducted for the final route selected that includes sited project-specific features and final engineering at the time SDG&E applies for permits from the ACOE, RWQCB, and CDFG. The Proposed Project is likely to have adverse impacts to vegetation communities which occur in jurisdictional wetland areas, such as, Sonoran wash scrub, disturbed wetland, freshwater, non-vegetated channel, freshwater marsh, emergent wetland, mesquite bosque, mule fat scrub, southern willow scrub, tamarisk scrub, arrowed scrub, southern coast live oak riparian forest, southern arroyo willow riparian forest, desert dry wash woodland, southern sycamore–alder riparian woodland, and vernal pools. Past projects such as roads, bridges, and residential developments within five miles of the Proposed Project route occurring near or in jurisdictional waters and wetlands have resulted in similar impacts. Additionally, though formal delineations have not yet been conducted, it is likely that several of the development projects identified in Table G-1 will also be located near enough to jurisdictional waters and wetlands to result in similar impacts. The combined effects of the Proposed Project with those of past, present and future projects would be significant if because they would have adverse effects to jurisdictional waters and wetlands. However, if jurisdictional waters are indeed impacted by the Proposed Project, Mitigation Measures B-1c and B-2a would be implemented to create new jurisdictional habitat. Mitigation ratios would range from 1:1 up to 4:1. With implementation of such measures, the Proposed Project's contribution to a significant cumulative impact to jurisdictional waters would be rendered less

than cumulatively considerable and therefore less than significant (Class II) because after mitigation there would be no net loss of jurisdictional waters or wetlands.

Impact B-3: Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species (Class II). As discussed in Section D.2.5, Proposed Project construction and operation/maintenance activities would result in ground disturbance which has the potential to result in the introduction of invasive, non-native, and noxious plant species. Invasive, non-native, or noxious plant species exist within the counties affected by the Proposed Project, as a result of natural events such as wildfires as well as from past and ongoing residential, commercial and industrial development. Many of the development projects identified in Table G-1, particularly residential development projects that would clear dozens to hundreds of acres of native vegetation would result in similar impacts, which when combined with impacts of the Proposed Project would be significant. However implementation of Mitigation Measures B-1a, B-2a, and B-3a, which include habitat restoration/compensation, a pre-construction weed inventory, and a Weed Control Plan would render the project's contribution to this significant impact less than cumulatively considerable (Class II) by preventing invasive and non-native species from being introduced as a result of the Proposed Project.

Impact B-4: Construction activities would create dust that may result in degradation of vegetation (Class III). As discussed in Section D.2.8, Proposed Project construction activities such as grading, tower footing excavation, and driving of heavy equipment on unpaved roadways would result in increased levels of airborne dust that may settle on surrounding vegetation. Increased levels of dust on plants can significantly impede the plants' photosynthetic capabilities and degrade the overall vegetation community. Project construction practices such as regular watering to control dust during clearing, grading, earth-moving, excavation, or other construction activities, establishing a 15-mile-per-hour speed limit on dirt access roads would reduce the amount of dust settling on surrounding vegetation. Several of the projects identified in Table G-1 that would be in close proximity to the Proposed Project route, including the San Felipe Substation, Bannister Transmission Line, Bannister Substation, El Centro–Bannister Transmission Line, and the Torrey Corner Mixed Use Development would also involve dust-generating construction activities. If construction at these adjacent locations were to occur at the same time as construction of the Proposed Project, dust from those projects and the Proposed Project would combine to significantly impact plants' photosynthetic capabilities and degrade the overall vegetation community in those areas if the amount of dust leaving were to be inordinately and substantially large. Given the nature of construction of linear projects such as the Proposed Project, construction activities would not occur at any one location for an extended period of time. Furthermore, construction of the Bannister Substation and El Centro–Bannister Transmission Line are scheduled to be completed by 2009 and are thus unlikely to be undergoing substantial dust-generating activities concurrently with the Proposed Project. The likelihood that intensive dust generating activities of adjacent projects would occur concurrently with those of the Proposed Project is considered low based on the nature of construction of linear projects as well as the currently estimated construction schedules of the Proposed Project and cumulative projects. Therefore the potential for impacts of the Proposed Project to combine with those other projects to result in a cumulative significant impact is also considered low and therefore less than significant (Class III).

Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I). As discussed in Section D.2.9, impacts to listed or sensitive plant species would be caused by direct loss of known locations of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during Proposed Project construction. Plant species that are listed or considered to be sensitive are already considered to be compromised, partly or completely (depending on the species) as a

result of past and continued human activity and development throughout the region. As such any activities that would considerably contribute to adverse affects on these plant species would be considered significant. Therefore, when combined with similar impacts of past and future projects, these incremental impacts would create a cumulative impact. The Proposed Project's contribution to this impact would be cumulatively considerable and thus significant (Class I). Implementation of Mitigation Measures B 1a, B 1c, B 2a, and B 5a would minimize the Proposed Project's contribution to this impact, but not to less than significant levels. No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impact B-6: Construction activities, including the use of access roads, would result in disturbance to wildlife and could result in wildlife mortality (Class III). As discussed in Section D.2.10, direct impacts to wildlife anticipated as a result of the Proposed Project include the temporary loss of wildlife habitat along with the displacement and/or potential mortality of resident wildlife species that are poor dispersers such as snakes, lizards, and small mammals. Other past and future projects that have been or would be implemented in undeveloped areas have resulted, and would have the potential to result, in similar impacts. However, the combined effect of impacts to non-sensitive/threatened wildlife from the Proposed Project and impacts of past and future projects is not considered to be significant because these species are common and wide-ranging over the entire project area and are expected to recover from these losses given the large numbers of the overall regional populations. Additionally, displaced wildlife would be expected to return to the Proposed Project alignment after vegetation is allowed to recover upon completion of construction activities. Therefore, the Proposed Project's contribution to a cumulative impact would be less than significant (Class III).

Impact B-7 (B-7A through B-7N): Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I). As discussed in Section D.2.11, construction of the Proposed Project would result in impacts to listed or sensitive wildlife species. Potentially affected species include: the flat-tailed horned lizard, Peninsular bighorn sheep, burrowing owl, least Bell's vireo, southwestern willow flycatcher, desert pupfish, desert tortoise, golden eagle, bald eagle, quino checkerspot butterfly, arroyo toad, Stephens' kangaroo rat, coastal California gnatcatcher, and San Diego fairy shrimp (and/or Riverside fairy shrimp). Impacts to these species would be caused by direct loss of known locations of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during Proposed Project construction. With implementation of Mitigation Measures B-1c and B-7a through B-7l as recommended in Section D.2.11, impacts of the Proposed Project to burrowing owls, least Bell's vireo, southwestern willow flycatcher, desert pupfish, desert tortoise, bald eagle, arroyo toad, Stephens' kangaroo rat, coastal California gnatcatcher, and San Diego fairy shrimp would be considered less than significant. However, wildlife species that are listed or considered to be sensitive are already considered to be compromised, partly or completely (depending on the species) as a result of past and continued human activity and development throughout the region. Therefore, a cumulative impact is created as a result of the Proposed Project in combination with other past, present and future projects causing related impacts. As such, any activities that would considerably contribute to adverse affects on these wildlife species would be considered significant. Therefore, although localized impacts of the Proposed Project to some of the above species would be considered to be less than significant, when combined with similar impacts of past and future projects, these impacts would considerably contribute to a cumulative impact (Class I) for all of the species listed above. Implementation of the mitigation measures recommended in Section D.2.11 would reduce the Proposed Project's contribution to this impact, but not to less than significant levels. No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impact B-8: Construction Activities would result in a potential loss of nesting birds (Violation of the Migratory Bird Treaty Act) (Class II). As discussed in Section D.2.12, Proposed Project construction activities such as vegetation clearing and tree trimming would have the potential to result in the killing of migratory birds or caused the destruction or abandonment of migratory bird nests and/or eggs. Several of the development projects identified in Table G-1 would result in similar impacts to nesting birds. Some of the projects identified in Table G-1, particularly large scale residential developments and solar projects would require clearance of hundreds, and in some cases thousands, of acres of contiguous land area occupied by trees and other vegetation with the potential to house nesting birds. Furthermore, many parts of the project area, particularly within San Diego County have undergone intensive urbanization which has resulted in similar impacts to nesting birds. Potential losses of nesting birds associated with the Proposed Project, when combined with losses associated with past, present and future projects are considered significant because they would represent substantial adverse effects to nesting birds. However, as discussed in Section D.2.12, Mitigation Measure B-8a includes conditions such as requiring vegetation clearing and tree trimming activities to occur outside general avian and raptor breeding seasons, performing pre-construction surveys, construction monitoring, and stopping and deferring work if impacts to nestlings cannot be avoided, that would prevent adverse impacts to nesting birds from occurring as a result of the Proposed Project. Therefore, the Proposed Project's contribution to a cumulative impact to nesting birds would be rendered less than cumulatively considerable and therefore is not significant (Class II).

Impact B-9: Adverse effects to Linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class II). As discussed in Section D.2.13, the Proposed Project would have no impact on wildlife movement corridors and would therefore not have the potential to combine with impacts to wildlife corridors from other projects to result in a cumulative significant impact. As discussed in Section D.2.13, the Proposed Project has the potential to adversely affect bat nursery colonies. Unmitigated, these impacts would have the potential to combine with impacts of other current and future development projects that would be implemented near bat nurseries. However Mitigation Measure B-9a would include methods to avoid impacts to bat nursery colonies during construction through such measures as halting any construction activity that would cause falling rock, substantial vibration impacts, or any other construction-related impact to a nursery colony as determined by an approved biologist, until the colony is inactive. Therefore, the Proposed Project's contribution to a cumulative impact to bat nursery colonies would be rendered less than cumulatively considerable and therefore not significant (Class II).

Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species (No Impact [electrocution] and Class I [collision]). As discussed in Section D.214, Biological Resources, the Proposed Project would have no impact with regard to bird electrocution and therefore is not cumulatively considerable. Project components such as transmission towers and conductors would pose collision risks to birds. Several of the projects listed in Table G-1, including all the transmission line projects, electrical generation plants, and substations, would involve construction of structures of sufficient height with which birds to collide as would several other transmission lines that currently exist within San Diego and Imperial Counties. As discussed in Section D.2.14, research shows that large numbers of birds collide with such structures annually. Therefore, impacts of the Proposed Project, when combined with impacts from past, present, or reasonable future projects would create a cumulative impact. The Proposed Project contribution to this impact would be cumulatively considerable and thus significant (Class I). Implementation of Mitigation Measure B-10a would reduce the Proposed Project's contribution to this impact, but not to less than significant levels. No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impact B-11: Presence of transmission lines may result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (Class I). The new towers from the Proposed Project would result in an increase in potential nesting and perching sites for common ravens in the desert region (Imperial Valley and Anza-Borrego Links) where the desert tortoise and flat-tailed horned lizard occur. The common raven is a predator of these special-status species, and the provision of additional perching and nesting sites could increase the presence of the raven, and therefore increase potential predation on these species. As discussed in Section D.2, Biological Resources, populations of common ravens in the Colorado Desert region, particularly near human development, increased almost five-fold between 1969 and 1988. Although this population increase is attributable to other factors such as availability of water and human development, transmission towers have been implicated as contributors to the increase. Implementation of Mitigation Measures B-11a and B-11b, which include nesting deterrents and nest removal, would reduce the effects of the Proposed Project; however, they are unlikely to completely eliminate the potential for predation of listed species along the transmission line ROW. Therefore, the Proposed Project would contribute an incremental impact to predation of listed and sensitive species that, when combined with similar effects of past and Proposed Projects (including hundreds of miles of transmission lines throughout the project area) that would be significant (Class I). Implementation of Mitigation Measures B-11a and B-11b would reduce the Proposed Project's contribution to this impact, but not to less than significant levels. No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class I). As discussed in Section D.2.16, maintenance, including such activities as the use of existing access roads or regular brush clearing around Proposed Project features, would result in disturbance to and potential mortality of wildlife (including listed or sensitive wildlife). As discussed above for Impact B-7, wildlife species that are listed or considered to be sensitive are already considered to be compromised, partly or completely (depending on the species) as a result of past and continued human activity and development throughout the region. Therefore, the loss of sensitive or listed species as a result of the Proposed Project in combination with other past and Proposed Projects causing related impacts, such as the Bannister Transmission Line, El Centro–Bannister Transmission Line, and the existing 69 kV transmission line located within the Coastal Link, would create a cumulative impact. Although implementation of Mitigation Measures B-1b, B-7b, B-7c, B-7g, B-7h, and B-12a through B-12c would reduce impacts to nesting birds and other sensitive species, impacts to Peninsular bighorn sheep would remain significant. No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

G.3.2 Visual Resources

Geographic Extent

Cumulative impacts to visual resources would occur where project facilities occupy the same field of view as other built facilities or impacted landscapes. In some cases, a cumulative impact would also occur if a viewer perceives that the general visual quality of a localized area is diminished by the proliferation of visible structures or construction effects, even if the changes are not within the same field of view as existing structures or facilities, but are nearby. Most cumulative impacts would occur within two miles of the Proposed Project. Beyond two miles, structures become less distinct or even not visible if they blend sufficiently with background forms, colors, and textures. Also, beyond two miles it is likely that sightlines will become impaired or blocked by intervening terrain and vegetation. In some cases, the expansiveness or openness of a landscape or the availability of vista viewpoints and overlooks

greatly expand the viewshed for a portion of the project to distances of five miles or more. From these locations, the geographic scope of the cumulative analysis would increase commensurately. Examples of viewing areas and viewpoints where sightlines can exceed five miles include:

- I-8 in Imperial Valley
- SR78 and SR86 in Imperial Valley
- SR78 in ABDSP
- Font's Point in ABDSP
- Kenyon Overlook in ABDSP
- Yaqui Pass Road (S3) in ABDSP
- Montezuma Valley Road (S22) in ABDSP
- I-8 in San Diego County
- Cuyamaca Peak in Cuyamaca State Park
- San Felipe Road (S2)
- Henshaw Overlook in Cleveland National Forest.

Existing Cumulative Conditions

A wide range of existing, cumulative visual conditions occur within this geographic extent, mainly due to varied geography and landscape types and the multiple types of land uses that are traversed by the Proposed Project. Dramatic visual changes to the natural landscape character have been occurring due to ongoing land development projects needed to accommodate a growing regional population. Short-term cumulative impacts may occur if other projects in close proximity (viewable from the site of project construction) are constructed at the same time as the Proposed Project. In these cases, construction activities and/or equipment associated with more than one project may be visible within the same field of view and at the same time, and therefore would create significant, unavoidable (Class I) impacts to the visual environment. Taking into consideration the impacts of the Proposed Project, and in conjunction with all past, present and reasonably foreseeable actions within the geographic scope of the particular impact, as a result, visual impacts to the landscape from construction and operation of the Proposed Project are cumulatively considerable. Dramatic visual changes to the natural landscape character are associated with development of agricultural fields, hillsides into commercial uses and residential subdivisions. Dramatic visual changes to the natural landscape character have been occurring and ongoing development has impacted existing landscape character, scenic vistas, and existing visual resources. The siting of new residential, commercial, and industrial land uses is often located in existing natural-appearing open space areas, and has also extended across existing agricultural fields, especially in Imperial County. The aesthetic character of the ABDSP remains primarily intact. Relatively undeveloped valleys and hillsides are currently being developed into high-density residential communities. Consequently, the impacts of additional development projects that permanently alter existing landscape character, scenic vistas, and visual resources would be cumulatively considerable.

Cumulative Impact Analysis

Industrial projects with tall, highly visible vertical elements differ from ground-level projects in terms of their potential visibility and their visual character. There are several cumulative energy infrastructure projects that would share many of the same characteristics of the Proposed Project, and could be within the same field of view as the Proposed Project. These projects would exhibit similar vertical structural form, structural complexity, and industrial character as the Proposed Project. The projects include:

- Stirling Energy Power Plant 4,500-acre solar generating station
- El Centro–Bannister 230 kV Transmission Line
- Bannister–San Felipe 230 kV Transmission Line
- Salton Sea Unit 6 Geothermal Transmission Line.

A substantial increase in industrial character, structure prominence, and view blockage could occur in the vicinity of the project with construction of the project and other cumulative projects. In each case, the Proposed Project and the cumulative projects combined would result in a perceived increase in industrialization of the landscape, diminution of visual quality, and increase in visual contrast. A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.3.4.2.

Impact V-1: Short-term visibility of construction activities, equipment, and night lighting (Class I). Several of the projects identified in Table G-1 would be in close proximity to the Proposed Project route, including the San Felipe Substation, Bannister Transmission Line, Bannister Substation, El Centro–Bannister Transmission Line, and the Torrey Corner Mixed Use Development. If construction at these adjacent locations were to occur at the same time as, or consecutively before or after construction of the Proposed Project, construction activities, equipment and night lighting from these sites would combine with such activities and equipment from the Proposed Project site. Given the nature of construction of linear projects such as the Proposed Project, construction activities would occur at any one location for an extended period of time. However, construction of the Proposed Project and the other transmission projects identified within the same ROW would lead to the presence of construction equipment within the Imperial Valley Link intermittently for several years (at least 2008 through 2012), a significant impact. Therefore Proposed Project impacts, when combined with impacts of other past, present, and reasonably foreseeable projects would be significant (Class I).

Impact V-2: Long-term visibility of land scars in arid and semi-arid landscapes (Class I). The Proposed Project would result in scarring from use of staging areas and construction yards, construction of new access and spur roads, and activities adjacent to construction sites and along the entire project ROW. Past projects within the Proposed Project area that have resulted in similar impacts include roads, residential developments, agricultural fields and access roads, transmission lines and access roads, and railroads. Several of the reasonably foreseeable projects identified in Table G-1 would result in similar impacts, including the San Felipe Substation, Bannister Transmission Line, Bannister Substation, El Centro–Bannister Transmission Line, San Vicente Road Improvements, I-15 Lane Improvements and the residential developments planned within the Imperial Valley, Central, Inland Valley, and Coastal Links of the Proposed Project. Although this Proposed Project impacts would be minimized through implementation of APMs and mitigation measures, when combined with similar impacts of past, present, and reasonably foreseeable projects, these impacts would be significant (Class I) because land scars are currently and will continue to be visible throughout the Proposed Project. No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impacts V-3, V-4, V-7, V-2FT, and V-25 through V-33 Increased structure contrast, industrial character, view blockage, and skylining (Class I). Proposed Project structures (transmission towers and substations) would be prominently visible from many locations throughout the Proposed Project area and would introduce additional industrial character wherever they are viewable. A cumulatively considerable impact would occur if the structure contrast, industrial character, view blockages, and skylining introduced by the Proposed Project combined with similar effects from past, present and reasonably foreseeable projects within viewing distance of the Proposed Project. A review of past development along the Proposed Project route as well as the reasonably foreseeable projects identified in Table G-1 above shows that when combined with the effects of other projects, the Proposed Project would contribute to a significant impact (Class I) within the Imperial Valley and Coastal Links. Within the Imperial Valley Link, the industrial character of the Proposed Project would combine with similar effects from the Stirling Energy Project, San Felipe Substation, Bannister Transmission Line, Bannister

Substation, and the El Centro–Bannister Transmission Line to increase the effect of this industrial character in this area. Within the Coastal Link, the industrial character of the Proposed Project would combine with similar effects from the existing transmission line parallel to which the Proposed Project would be constructed, the I-15 freeway, and the existing Penasquitos Substation to increase the effect of this industrial character in this area. No past or reasonably foreseeable projects that could combine with the effects of the Proposed Project have been identified within the Anza Borrego, Central, or Inland Valley Links. No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impacts V-5, V-6, V-1CA through V-4CA Inconsistency with Interim BLM VRM Class III management objective due to increased structure contrast, industrial character, view blockage, and skylining (Class I). Portions of the Proposed Project route within the Imperial Valley Link would be constructed on or within viewing distance of BLM lands. Presence of Proposed Project structures would introduce structural contrast and a visual character to these lands. The industrial character of the Proposed Project would combine with similar effects from the Stirling Energy Project, the San Felipe Substation, Bannister Transmission Line, the Bannister Substation, and the El Centro–Bannister Transmission Line to increase the effect of this industrial character viewable from BLM lands in this area. When combined, the resulting structural visual contrast (for form and line) would range from moderate-to-strong to strong and the overall level of change would be moderate-to-high, resulting in a significant impact (Class I). Implementation of Mitigation Measure V-3a would minimize the project's impact, but not to a level of less than considerable. No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

G.3.3 Land Use

Geographic Extent

The geographic extent for the analysis of cumulative impacts associated with land use are the communities that would be traversed by or adjacent to the Proposed Project or alternatives, including:

- Bureau of Land Management (BLM)
- BIA (Santa Ysabel Band)
- Cleveland National Forest (U.S. Forest Service)
- MCAS Miramar
- Naval Air Facility (NAF) El Centro
- ABDSP (State Parks)
- Pacific Crest Trail (Pacific Crest Trail Association)
- Caltrans
- Imperial County
- San Diego County (Ramona, Santa Ysabel Ranchita, Warner Springs, Mesa Grande)
- City of San Diego (Black Mountain Ranch
- Carmel Mountain, Miramar/Miramar Ranch North
- Mira Mesa, Rancho Peñasquitos
- Scripps Ranch Torrey Highlands)
- City of Poway
- City of El Centro (near proposed route)
- Imperial Irrigation District
- Vista Irrigation District
- S.D. County Water Authority
- Ramona Municipal Water District (San Vicente WTP)

This is defined as the geographic extent because many of these areas have been characterized by rapid growth, which results in the development of new residential, commercial, and industrial land uses. New development affects existing land uses (i.e., open space, low-density uses) within the communities that are traversed by the project.

Existing Cumulative Conditions

The projects considered in evaluating cumulative land use impacts are shown on Figures G-1 through G-7 and described in Table G-1. In addition to the specific projects identified in Table G-1, relevant planning and environmental documents listed in Table G-2 were considered when identifying activities that could potentially contribute to cumulative land use impacts. Imperial and San Diego Counties continue to experience population growth and increased urbanization in all links of the project with the exception of the ABDSP. City and County General Plans guide the location and types of development in the context of long-term physical development of the jurisdiction. Because much of the project would be located within existing SDG&E rights-of-way, land use impacts of the project have been minimized.

The criteria by which land use impacts would be considered cumulatively significant are the same as those considered for the Proposed Project and are discussed in Section D.4.4.1. [1]

Cumulative Impact Analysis

Impact L-1: Construction would temporarily disturb land uses at or near the alignment (Class II). Section D.4 (Land Use) discusses the impacts from construction and operation of the Proposed Project on existing residential and commercial land uses. Several residential and commercial/industrial developments have been proposed or are currently under construction within two miles of the Proposed Project route, including Torrey Corner, Torrey Hills Center, the Sptizbergen Property, and Rancho Cañada Bed and Breakfast. Some of these new development projects would be directly adjacent to and/or traversed by the Proposed Project, particularly within the Inland Valley and Coastal Links of the Proposed Project area.

Development has been and continues to occur rapidly in Imperial and San Diego Counties, within both the cities and the surrounding unincorporated areas of the counties. Much of this development is located in areas that are adjacent to existing residential and commercial development. Such development is beneficial to the growing populations within the cities and surrounding communities that require housing, and in particular are seeking a variety of housing opportunities. New development also benefits existing businesses that target the surrounding communities as their customer base. As such, the existing cumulative conditions have created beneficial impacts for residential and business opportunities.

Construction of the Proposed Project would likely occur between the years 2010 to 2012. A definitive construction schedule is not currently available for all of the proposed residential and commercial/industrial projects listed in Table G-1. However, it is assumed that construction of some of these projects would overlap with construction of the Proposed Project. The construction of multiple projects within the same area could create a potentially significant impact to adjacent residential land uses in the form of noise, dust, traffic and general neighborhood disruption as a result of heavy construction equipment, trenching activities associated with the undergrounding of a portion of the proposed transmission line, and moving building materials to and from construction staging areas, particularly within the residential neighborhoods of Santa Ysabel, Ramona, San Diego Country Estates, Rancho Peñasquitos, and

[1] Whether the project would conflict with applicable land use plans, policies, or regulations in a cumulatively considerable manner is not considered in this section. Rather, Appendix 2 presents a Policy Screening Report, in which plans and policies are evaluated for their relevance to the Proposed Project and alternatives. Analysis of consistency with plans and policies is presented in Section D.16. Discussion and analysis of proposed amendments to plans is provided in Section D.17. Therefore, discussion of this significance criterion has been addressed fully in those parts of the EIR/EIS.

Torrey Hills, where the transmission line is proposed to be underground within roadways and would require trenching. Also, commercial land uses would be impacted if access to a business was affected or precluded during construction activities from the projects occurring simultaneously in close proximity to the Proposed Project.

The Proposed Project would be designed and constructed such that transmission towers would be located to maximize avoidance of sensitive land uses. In addition, mitigation measures that would reduce noise, traffic, and air quality impacts are presented in Sections D.8 (Noise), D.9 (Transportation and Traffic) and D.11 (Air Quality), respectively, but these measures would not eliminate the disturbance to land use. While this disturbance would be short-term and temporary, given the existing cumulative land use impact that would occur from the construction of multiple projects, the impact would be significant if construction is not carefully managed and area users kept informed. Implementation of Mitigation Measure L-1a (Prepare Construction Notification Plan) would reduce the Proposed Project's contribution to this impact to less than cumulatively considerable (Class II) because affected property and business owners would be informed of potential disturbances.

Impact L-2: Presence of a transmission line or substation would disrupt land uses at or near the alignment (No Impact). As discussed in Sections. D.4.5 through D.4.10, the Proposed Project would have no impacts with respect to disrupting land uses as a result of project operation. Therefore the Proposed Project would not have the potential to combine with impacts of other projects to result in a cumulatively considerable impact (No Impact).

G.3.4 Wilderness and Recreation

Geographic Extent

The geographic extent for the analysis of cumulative impacts associated with wilderness and recreation includes the wilderness areas (the entire wilderness area, not just the portion directly affected by the project) and recreation facilities that would be traversed by or adjacent to the Proposed Project as well as the viewsheds of these affected wilderness and recreation areas. These areas consider both direct and indirect impacts to wilderness and recreation areas. This geographic scope is appropriate because it considers the effects of other projects within this region on the resources impacted by the Proposed Project.

Existing Cumulative Conditions

Wilderness and recreation resources in these areas are managed by the following jurisdictions: Bureau of Land Management, U.S. Forest Service, and U.S. Fish and Wildlife Service; California Department of Parks and Recreation and California Department of Fish and Game; Imperial and San Diego Counties; and the Cities of El Centro, Poway, and San Diego.

In addition to the projects listed in Table G-1, plans and environmental documents listed in Table G-2 were considered when identifying development activities that could contribute to cumulative wilderness and recreation impacts.

Cumulative Impact Analysis

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.5.4.1. In addition to

these criteria, the cumulative loss of State Park land or reduced/diminished quality of recreation experience on State Park land due to development is addressed below under Impact WR-5. For this impact, a cumulative impact would occur if two or more projects resulted in the loss of State Park lands specifically designated for the preservation and conservation of wildlife and/or public, or the diminished quality of recreational experience on State Park Lands.

Impact WR-1: Construction activities would temporarily reduce access and visitation to recreation or wilderness areas (No Impact). Past projects would not currently be under construction and would therefore not have the potential to contribute to this impact, therefore only current and reasonably foreseeable projects are considered for analysis of cumulative impacts of Impact WR-1. As discussed in Section D.5.5, there are several recreational uses within the Imperial Valley Link that would be affected by Proposed Project construction activities. Projects considered for consideration of cumulative impacts in this area include the Bannister–San Felipe Transmission Line, San Felipe Substation, Imperial Valley Substation, Bannister Substation, Stirling Energy Plant, El Centro–Bannister Transmission Line, Bannister Substation, and the Salton Sea Geothermal Plant. If construction of these current and reasonably foreseeable projects in this area were to occur concurrently with construction of the Proposed Project, impacts of the Proposed Project and these other projects could combine to result in a significant impact. However, construction of the Proposed Project would preclude construction of these other projects at the same time and the same location which would therefore eliminate the potential for impacts of these projects to combine with those of the Proposed Project. The Stirling Energy Plant would be located near but not on or within the Dunaway Camp and would not affect access to the camp. Therefore impacts of this project would not have the potential to combine with impacts of the Proposed Project to this camp. Therefore, impacts of the Proposed Project would not combine with impacts of other current and reasonably foreseeable projects in the Imperial Valley Link (No Impact).

No current or reasonably foreseeable projects have been identified within the Anza Borrego Link. Therefore, the Proposed Project would not have the potential to combine with impacts of other projects to result in a cumulative impact within this Link (No Impact).

There is only one project within the Central Link with whose impacts the Proposed Project would combine. However, this project, the San Dieguito River Park is currently under construction and is expected to be completed in 2008, prior to construction activities of the Proposed Project would begin. Therefore, impacts of the Proposed Project would not have the potential to combine with impacts of other projects to result in a cumulative impact within this Link (No Impact).

There are no current or reasonably foreseeable projects within the Inland Valley Link that would be located close enough to the recreation areas impacted by the Proposed Project to combine with Proposed Project impacts. Therefore, impacts of the Proposed Project would not have the potential to combine with impacts of other projects to result in a cumulative impact within this Link (No Impact).

Within the Coastal Link, only one project, the I-15 expansion project, would be located close enough the recreation areas affected by the Proposed Project to combine with Proposed Project impacts. The I-15 expansion project is currently under construction and is likely to be completed prior to construction of the Proposed Project begins. Therefore, impacts of the Proposed Project would not have the potential to combine with impacts of other projects to result in a cumulative impact within this Link (No Impact).

Impact WR-2: Presence of a transmission line would change the character of a recreation area, diminishing its recreational value (Class I). Several past, present and reasonably foreseeable projects within the Imperial Valley Link, including the Bannister–San Felipe Transmission Line, San Felipe

Substation, Imperial Valley Substation, Bannister Substation, Stirling Energy Plant, El Centro–Bannister Transmission Line, Bannister Substation, and the Salton Sea Geothermal Plant would place industrial structures and features within viewing distance of recreation areas described in Section D.5.5. When combined with impacts of the Proposed Project, these projects would substantially change the character of these recreation areas, resulting in a significant and unavoidable impact (Class I). Mitigation Measures V-3a and N-3a would be implemented to minimize the Proposed Project's contribution to this impact, but not to a less than significant level.

There are no past, present or reasonably foreseeable future projects within the Anza Borrego, Central, and Inland Valley Links of the Proposed Project that would impact the wilderness and recreation areas affected by Impact WR-2 of the Proposed Project. Therefore, impacts of the Proposed Project would not have the potential to combine with impacts of other projects to result in a cumulative impact within these links (No Impact).

Several past, present and reasonably foreseeable projects, including the I-15 and I-805 freeways, residential and commercial development, and the existing utility corridor in which the Proposed Project would be constructed have resulted in diminished recreational value of the recreation and wilderness areas identified in this area in Section D.5.9. Implementation of the Proposed Project would further contribute to this diminished condition. Therefore impacts of the Proposed Project, when combined with impacts of past, present and reasonably foreseeable projects within this Link, would result in a significant impact (Class I).

Impact WR-3: Presence of a transmission line would permanently preclude recreational activities (No Impact). Placement of Proposed Project structures on nature trails would permanently preclude the use of some trails and campgrounds. Past projects throughout the project area, including construction of roads and freeways, as well as residential, industrial and commercial development have permanently precluded use of various areas throughout the Proposed Project area. None of the current and reasonably foreseeable projects identified in Table G-1 are expected to permanently preclude use of recreation areas within the Proposed Project area. Although it is unknown to what extent past projects have precluded recreational activities, it is conservatively assumed that further restriction of recreational activities from implementation of the Proposed Project would combine with past projects to result in a significant impact. However, Mitigation Measure WR-3a would render the Proposed Project's contribution to this impact less than considerable by placing structure in locations such that permanent restriction of use of recreation facilities would not occur (Class II).

Impact WR-4: Presence of a transmission line in a designated wilderness or wilderness study area would result in the loss of wilderness land (No Impact). As discussed in Sections D.5.5 through D.5.8, the Proposed Project would have no impact with regard to loss of wilderness land in the Imperial Valley, Central, Inland Valley and Coastal Links of the Proposed Project. Therefore the Proposed Project would not have the potential to contribute to a cumulative impact in these areas (No Impact). The Proposed Project would result in a loss of wilderness in the Anza Borrego Link; however, no other past, present or reasonably foreseeable projects that would result in similar impacts in this area have been identified. Therefore impacts of the Proposed Project in the Anza Borrego Link would not have the potential to combine with other projects in this area to result in a cumulative impact (No Impact).

Impact WR-5: Cumulative loss of State Park land or reduced/diminished quality of recreation experience on State Park land due to development. (Class I). The Proposed Project would require expansion of SDG&E's existing easement throughout ABDSP, and in some locations, a larger portion of the ROW would be located within wilderness areas. The additional ROW width through Grapevine

Canyon would require the use of approximately 50.2 acres of State Wilderness within the Pinyon Ridge Wilderness Area and Grapevine Mountain Wilderness Area. Construction of the Proposed Project would alter the character of these lands through placement of industrial structures, which would change the experience of recreationists who use these lands. Many past, present, and reasonably foreseeable projects throughout California have had and will have similar effects to State Park lands. For example, a six-lane toll road is currently planned to be constructed adjacent to the entire length of San Onofre State Beach. Such a project would directly and indirectly impact this park as well as the people who use it. Likewise, the Tulare County Board of Supervisors approved the proposal for two dairy farms to be located directly adjacent to Colonel Allensworth State Historic Park. Placement of dairy farms adjacent to this park would greatly diminish the experience of outdoor activities at the park. California State Parks were created to provide areas available for recreation and protection of natural and historical resources. However, each of these projects, including the Proposed Project, represents a threat to a respective State Park, through land acquisition, physical alteration, or indirect effects. According to the California State Parks Association, there are approximately 100 such threats in 73 different State Parks. Though it is likely that many of these projects ultimately not be approved or completed, it is reasonably to assume that many of these projects will be implemented. The permanent long-term effects of these projects on State Park lands throughout California would be significant. Therefore, Proposed Project impacts, when combined with similar impacts of past, present and reasonably foreseeable projects would result in a significant cumulative impact (Class I).

G.3.5 Agriculture

Geographic Extent

The geographic extent for the analysis of cumulative impacts associated with agricultural resources consists of San Diego and Imperial Counties, throughout which agricultural land is being converted to other land uses. Cumulative impact analysis for agricultural resources has been conducted using the projects in Table G-1, and data obtained from the Department of Conservation Division of Land Resource Protection Farmland Mapping and Monitoring Program.

Existing Cumulative Conditions

Imperial County and San Diego County maintain extensive existing rural land uses, including agriculture (see Section D.6). While both counties are experiencing continued agricultural conversion pressures, Agricultural Lands occur in all of the identified Proposed Project Links except the Anza-Borrego Link. The Proposed Project would traverse a total of approximately 44.6 linear miles of Agricultural Land. Of the 44.6 linear miles of Agricultural Land, approximately 30.3 linear miles are active agricultural operations, 29.4 linear miles are DOC Farmlands, and 19.8 miles are Williamson Act lands. The impacts of additional development projects in Imperial County and San Diego County that convert Farmland to non-agricultural use and conflict with agricultural operations would be cumulatively considerable over time.

Cumulative Impact Analysis

The construction and operation of the Proposed Project would make an incremental contribution to existing and anticipated cumulative effects on agricultural resources. Impacts to agricultural resources would occur where project structures would occupy agricultural land that includes Farmland (Prime Farmland, Farmland of Statewide Importance, and Unique Farmland), Williamson Act lands, or agricultural operations. Table G-1 lists projects included in the cumulative agriculture analysis because they have the

potential to adversely affect agricultural resources. A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.6.4.1.

Impact AG-1: Construction activities would temporarily interfere with Active Agricultural Operations (No Impact). The Proposed Project would temporarily interfere with active agricultural operations by impeding access to certain fields or plots of land, obstructing farm vehicles and equipment, and disrupting grazing activities, all of which could result in the temporary reduction of agricultural productivity. Proposed Project impacts would be significant when combined with impacts of current and future projects if those projects would interfere with operations to the same agricultural lands at the same time as the Proposed Project. However, based on the locations of the current and reasonably foreseeable projects (as presented in Figures G-1 through G-7) and the relatively small number of agricultural lands that would be affected by them or the Proposed Project, it is unlikely any of those projects would impact the same farmland at the same time as the Proposed Project. Therefore, Proposed Project impacts would not combine with impacts from other current and reasonably foreseeable projects to result in a cumulative impact (No Impact).

Impact AG-2: Operation would permanently convert DOC Farmland to non-agricultural use (Class I). Conversion of agricultural lands has been ongoing throughout most areas of the Proposed Project for several decades. According to the DOC Division of Land Resource Protection Farmland Mapping and Monitoring Program, in the period from 2002 to 2004, approximately 8,500 acres of DOC farmland in San Diego and Imperial Counties was converted to other uses, primarily urbanization. A review of data collected since 1984 shows the conversion of DOC Farmland to non-agricultural uses is an annually consistent trend throughout California, including San Diego and Imperial Counties that is likely to continue. The Proposed Project would convert more than 60 acres of DOC Farmland to non-agricultural use. Although it is currently unknown whether any of the reasonably foreseeable would convert DOC Farmland to non-agricultural uses, given the large number of large residential and public works projects, it is reasonable to assume that some DOC Farmland would be converted. Therefore, when combined with similar impacts from past, present, and reasonably foreseeable projects would be significant (Class I) and no feasible mitigation measures exist to mitigate this impact to a less than considerable.

Impact AG-3: Operation would permanently interfere with Active Agricultural Operations (Class I). Residential, commercial, and industrial developments including roads, electrical transmission lines, and residential neighborhoods have interfered with agricultural operations throughout most areas of the Proposed Project for several decades. The Proposed Project would also result in this impact. Across all links, the entire Proposed Project would remove over 100 acres of land under Active Agricultural Operation. As discussed above, the conversion of agricultural land to non-agricultural uses is an annually consistent trend throughout California, including San Diego and Imperial Counties that is likely to continue. Although it is currently unknown whether any of the reasonably foreseeable would convert DOC Farmland to non-agricultural uses, given the large number of large public works and infrastructure projects, including the Bannister and San Felipe Transmission Lines, it is reasonable to assume that some agricultural land would be permanently converted. Therefore, impacts of the Proposed Project, when combined with impacts from past, present, and reasonably foreseeable projects, would be significant (Class I), and no feasible mitigation measures exist to mitigate this impact to a less than considerable.

Impact AG 4: Operation would permanently convert Williamson Act lands to non-agricultural use (Class I). Conversion of agricultural lands has been ongoing throughout most areas of the Proposed

Project for several decades. During this time, well over 10 acres of Williamson Act lands have been converted to non-agricultural uses. As discussed in Section D.6.5, the Proposed Project would also convert over 120 acres of Williamson Act lands to non-agricultural uses. Although it is currently unknown whether any of the reasonably foreseeable would convert Williamson Act lands to non-agricultural uses, given the large number of large public works and infrastructure projects, including the Bannister and San Felipe Transmission Lines, it is reasonable to assume that some agricultural land would be permanently converted. Therefore, when combined with similar impacts from past, present, and reasonably foreseeable projects would be significant (Class I) and no feasible mitigation measures exist to mitigate this impact to a less than considerable.

G.3.6 Cultural and Paleontological Resources

Geographic Extent

The geographic scope for the analysis of cumulative impacts on cultural and paleontological resources is all of Imperial and San Diego Counties. The proximity of cultural and paleontological resources to the Proposed Project would be of interest only to the extent that proximity would considerably affect the context or integrity of the resource. This wide geographic scope is appropriate because it is likely that cultural resources similar to those in the Proposed Project's Area of Potential Effect are present throughout this area.

Existing Cumulative Conditions

Cultural resources, including archaeological sites and historical structures, are impacted by ground disturbing activities associated with development. Current air photos show that development has modified much of the land within the project area, particularly within the Imperial Valley, Inland Valley, and Coastal Links of the Proposed Project. Cultural resources, such as prehistoric and historic archaeological sites and historic structures, that were located within this developed area, as indicated by the records search results for the Proposed Project, have been significantly impacted (likely destroyed). Grading and other ground disturbing activities associated with land development can destroy archaeological sites, which are usually on the surface or within three feet below surface.

Cumulative Impact Analysis

As described in Table G-1, there are numerous projects in the planning or construction phase within Imperial and San Diego Counties that have the potential to adversely affect cultural and paleontological resources.

The actual number and type of resources that might be adversely affected by the cumulative scenario projects is unknowable without a comprehensive inventory of the area within the geographic scope of the cumulative analysis. Development of such an inventory is beyond the reasonable scope of this analysis. Typically, cultural and paleontological resources are identified as part of the permitting process for individual undertakings, and often are discovered only during ground disturbing activities. Applicable laws and regulations, as discussed in Section D.7.7, afford specific protections to discovered resources.

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.7.4.1.

Impact C-1: Construction of the project could cause an adverse change to known historic properties (Class II). As currently mapped, there are 97 cultural resources that are potentially NRHP/CRHR-eligible, NRHP/CRHR-eligible and/or NRHP/CRHR-listed within the five Links of the Proposed Project area that are located in areas of direct impact. Several of these resources include resources determined to be NRHP-eligible/CRHR-listed or NRHP/CRHR-listed. Past projects, such as the existing ROWs in which the Proposed Project would be constructed, as well as current and reasonably foreseeable projects, including the San Felipe Substation, Bannister Transmission Line, Bannister Substation, El Centro–Bannister Transmission Line, that would be constructed within the same corridor as the Proposed Project would affect the same resources directly affected by the Proposed Project. Without mitigation, these resources would likely be destroyed through construction activities of these projects, resulting in a significant impact. However, Mitigation Measures C-1a through C-1f would reduce the Proposed Project's contribution to this impact to less than considerable (Class II) through data-recovery excavations to capture important data from the affected resources.

Impact C-2: Construction of the project could cause an adverse change to sites known to contain Native American human remains (Class I). Eight archaeological sites known to contain Native American human remains may be adversely and directly affected by construction of the Proposed Project (Table Ap.9B-29). Past projects, such as the existing ROWs in which the Proposed Project would be constructed, as well as current and reasonably foreseeable projects, including the San Felipe Substation, Bannister Transmission Line, Bannister Substation, El Centro–Bannister Transmission Line, that would be constructed within the same corridor as the Proposed Project would affect the same resources directly affected by the Proposed Project. Proposed Project impacts, when combined with impacts of past, present and reasonably foreseeable projects would be significant because any adverse effect to human remains is considered a significant (Class I) impact. Implementation of Mitigation Measures C-1b through C-1f and C-2a would minimize impacts of the Proposed Project, but not to a less than considerable level. No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impact C-3: Construction of the project could cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains (Class III). Unknown, unrecorded cultural resources may be found at nearly any development site. As they are discovered, sites are recorded and information retrieved. If the nature of the resource requires it, the resource is protected. When discovered, cultural resources are treated in accordance with applicable federal and State laws and regulations as well as the mitigation measures and permit requirements applicable to a project. It is not known what cultural resources, if any, would be affected by development of all present and future projects within San Diego and Imperial Counties; however, given the density of past development in these areas and the large number of reasonably foreseeable projects listed in Table G-1, it is reasonable to assume that resources exist and would be expected to be uncovered at several of these sites. As would be done during Proposed Project construction through Mitigation Measure C-1c, C-1d, C-1f, C-2a, and C-3a, should resources be discovered during construction of current and future projects, they would be subject to legal requirements designed to protect them, thereby reducing the effect of impacts. Therefore Proposed Project impacts, when combined with impact from past, present and reasonably foreseeable projects would not be significant (Class III) and no additional mitigation measures are necessary.

Impact C-4: Construction of the project could cause an adverse change to Traditional Cultural Properties (Class I). One TCP potentially eligible for listing on the NRHP has been identified within the Anza-Borrego Link of the Proposed Project. However, no past or reasonably foreseeable projects have been identified within this Link which would have the potential to combine with impacts of the

Proposed Project to result in a significant impact. Within the Central Link, the Proposed Project would impact the Chapel of Santa Ysabel. However, no past or reasonably foreseeable projects have been identified within this Link which would have the potential to combine with impacts of the Proposed Project to result in a significant impact. Within the Imperial Valley Link of the Proposed Project no specific TCPs have been identified; however, lands sacred to Native Americans have been identified as present in the vicinity of the SRPL Project area in an undisclosed location. Ongoing consultation will determine whether there are TCPs that would be affected within this segment. If so, impacts would be significant. Potential impacts would include physical disturbance or alteration directly as a result of construction activities or diminished visual character of the site due to presence of industrial structures. Since several reasonably foreseeable projects would result in similar impacts as the Proposed Project in the same location as the Proposed Project, including the San Felipe Substation, Bannister Transmission Line, Bannister Substation, El Centro–Bannister Transmission Line, any TCPs affected by impacts of the Proposed Project area would very likely combine with impacts of these projects to result in a significant impact. Therefore, if TCPs that would be affected by the Proposed Project are identified, a cumulative significant impact (Class I) would result. If impacts to TCPs would occur, Mitigation Measure C-4a would be implemented to minimize Proposed Project impacts. However since the extent of potential impacts and effectiveness of potential mitigation are still unknown, it is conservatively assumed that the Proposed Project's contribution to this impact would be significant and unavoidable (Class I).

Impact C-5: Project operation and maintenance could cause an adverse change to known historic properties (Class II). Direct impacts would result from maintenance or repair activities, while increased erosion would result as an indirect project impact. Operation of the past, present, and reasonably foreseeable projects, including the San Felipe Substation, Bannister Transmission Line, Bannister Substation, and El Centro–Bannister Transmission Line would have similar impacts. When combined with impacts of these projects, Proposed Project impacts would be significant. However, the site protection measures and monitoring procedures that would be implemented through Mitigation Measure C-5a, C-2a, and C-4a would render the Proposed Project's contribution to this impact to less than considerable (Class II) by protecting register-eligible properties from impacts of the Proposed Project.

Impact C-6: Long-term presence of the project could cause an adverse change to known historic architectural (built environment) resources (Class I). Known historic resources within the Anza-Borrego and Central Links of the Proposed Project would be impacted by long-term presence of the Proposed Project. The Imperial Link of the Proposed Project crosses the NRHP-listed Fages–De Anza Trail–Southern Emigrant Road. Presence of Proposed Project structures would result in a visual intrusion to this resource. Known resources exist within the Imperial Valley Link of the Proposed Project at currently undisclosed locations. Ongoing consultation will determine whether these resources would be affected within this segment. If so, impacts would be significant. Potential impacts would include physical disturbance or alteration directly as a result of construction activities or diminished visual character of the site(s) due to presence of industrial structures. Several past and reasonably foreseeable projects in this area, including the San Felipe Substation, Bannister Transmission Line, Bannister Substation, El Centro–Bannister Transmission Line would result in similar impacts as, and in the same location as the Proposed Project. Additionally, it is very likely that the extensive residential, commercial, and infrastructure development throughout San Diego and Imperial Counties has impacted some of these same resources. Therefore, Proposed Project impacts, when combined with impacts of these past and reasonably foreseeable projects would be significant (Class I). Mitigation Measure C-6a would be implemented to minimize Proposed Project impacts. However since the extent of potential impacts and effectiveness of potential mitigation are still unknown, it is conservatively assumed that the Proposed Project's contribution to this cumulative impact would remain significant and unavoidable (Class I).

Impact PAL-1: Construction of the transmission line could destroy or disturb significant paleontological resources (Class III). Unknown, unrecorded paleontological resources may be found at nearly any development site. As they are discovered, sites are recorded and information retrieved. If the nature of the resource requires it, the resource is protected. When discovered, paleontological resources are treated in accordance with applicable federal and State laws and regulations as well as the mitigation measures and permit requirements applicable to a project. It is not known what paleontological resources, if any, would be affected by development of all present and future projects within San Diego and Imperial Counties; however, given the density of past development in these areas and the large number of reasonably foreseeable projects listed in Table G-1, it is reasonable to assume that resources exist and would be expected to be uncovered at several of these sites As would be done during Proposed Project construction through Mitigation Measure PAL-1a through PAL-1e, should resources be discovered during construction of current and future projects, they would be subject to legal requirements designed to protect them, thereby reducing the effect of impacts. Therefore Proposed Project impacts, when combined with impact from past, present and reasonably foreseeable projects would not be significant (Class III) and no additional mitigation measures are necessary.

G.3.7 Noise

Geographic Extent

The geographic extent for the analysis of cumulative impacts related to noise is generally limited to areas within approximately one-quarter mile of the Proposed Project route or activity. This area is defined as the geographic extent of the cumulative noise impact area because noise impacts would generally be localized, mainly within approximately 500 feet from any noise source; however, it is possible that noise from different sources within one-quarter mile of each other could combine to create a significant impact to receptors at any point between the projects. At distances greater than one-quarter mile, impulse or helicopter noise would be briefly audible and steady construction noise from the Proposed Project would generally dissipate into quiet background noise levels. The baseline for assessing cumulative noise impacts includes the noise sources associated with other projects in the immediate vicinity of the Proposed Project (Table G-1) and the existing and future sensitive receptors near project-related activities or noise sources.

Existing Cumulative Conditions

Ambient Noise Levels. Cumulative noise levels within the Counties of Imperial and San Diego and throughout the incorporated cities include and will continue to include an expanded number of sources of man-made noise, mainly due to increased roadway traffic, air traffic, and other human activity including construction projects and an expanded geographic area of impact as urbanization spreads and population grows. Approved, pending and reasonably foreseeable projects, listed in Table G-1 and growth projections and land use plans contained in Table G-2 would add to the future expected noise levels throughout the geographic area. However, varying noise levels would continue to occur depending on the proximity to human activity. Rural communities or unpopulated lands will remain the quietest.

Noise Sensitive Receptors. Cumulative conditions will introduce new residences or other sensitive receptors to areas near the Proposed Project. Approved, pending and reasonably foreseeable projects, listed in Table G-1 and growth projections and land use plans contained in Table G-2 would bring an increased number of Noise Sensitive uses to the area.

The significance criteria identified in Section D.8.4.1 are used to characterize the cumulative impacts.

Cumulative Impact Analysis

Impact N-1: Construction noise would substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances (Class I). Proposed Project construction would temporarily substantially increase ambient noise levels in the vicinity of the line, along the route, and along all transport access routes. Projects identified in Table G-1 and plans in Table G-2 would also involve construction activities that would in some instances occur concurrently with construction of nearby portions of the Proposed Project. Because of variability in project timelines, many of the projects would not likely contribute to overlapping noise impacts in the cumulative scenario. However, there is the possibility that a variety of projects would occur at the same time as project construction. In the areas where project construction may occur simultaneously with other development, the combined effects of noise generated by the project and other development would adversely impact noise-sensitive receptors cumulatively.

Some of the projects identified in Table G-1 and plans in Table G-2, including Torrey Corner, Torrey Hills Center, the Sptizbergen Property, and Rancho Cañada Bed and Breakfast, would bring new noise-sensitive receptors closer to the Proposed Project. The impact at each new receptor would be identical to that identified in this analysis for existing noise-sensitive receptors. SDG&E would implement NOI-APM-1 to notify sensitive receptors. However, this cumulative impact would be significant without additional measures.

Therefore, impacts of the Proposed Project, when combined with impacts from past, present, and reasonable future projects would be considered cumulatively significant (Class I). As discussed in Sections D.8.5 through D.8.13, Mitigation Measures L-1a and N-1a would be implemented to reduce the Proposed Project's construction noise impacts. Specifically, Mitigation Measure N-1a, in combination with the notification required by Mitigation Measure L-1a (see Section D.4, Land Use), would reduce the project's construction noise impact to the extent feasible. However even with mitigation, the Proposed Project's incremental impacts would persist and would still be considered significant and unavoidable.

Impact N-2: Construction activity would temporarily cause groundborne vibration (Class II). A groundborne vibration impact would occur in the immediate vicinity of construction sites and any areas of blasting. Projects identified in Table G-1 and plans in Table G-2 that may involve blasting, rock drilling, or trucks traveling on uneven surfaces would also generate construction vibration. Absent advance notification, a nuisance or annoyance could occur with perceptible vibration, and damage to existing nearby vulnerable structures could occur. The notification process suggested in NOI-APM-1 would inform residents of pending vibration-generating activities, but the impact of potential physical damage to vulnerable structures would be significant. However, implementation of Mitigation Measure N-2a would render impacts of the Proposed Project to less than considerable (Class II) by either disallowing blasting near structures that could be damaged and/or repairing any damage to structures that occurs as a result of the Proposed Project.

Impact N-3: Permanent noise levels would increase due to corona noise from operation of the transmission lines and noise from other project components (Class I). Operational noise from the corona effect would cause a substantial permanent increase of more than 5 dBA within 500 feet of the 500 kV portions of the project transmission line alignment in natural areas where existing noise levels could be as low as 35 dBA. Some of the projects identified in Table G-1 and plans in Table G-2, particularly for residential developments and expansion of residential land uses such as the Torrey Corner, Torrey Hills Center, the Sptizbergen Property, and Rancho Cañada Bed and Breakfast, would bring new noise-

sensitive receptors closer to the Proposed Project. The impact at each new receptor would be identical to that identified in this analysis for existing noise-sensitive receptors. Impacts of the Proposed Project, when combined with impacts from past, present, and reasonable future projects would be considered cumulatively significant (Class I). As discussed in Sections D.8.5 through D.8.13, Mitigation Measure N-3a would be implemented to reduce the Proposed Project's corona noise impacts; however, even with mitigation, the Proposed Project's incremental impacts would persist and would still be considered significant and unavoidable.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels (Class I). Helicopter and ground-level inspection and maintenance, including occasional emergency response, would cause noise at levels similar to transmission line construction. Some of the projects identified in Table G-1, such as the Torrey Corner, Torrey Hills Center, the Sptizbergen Property, and Rancho Cañada Bed and Breakfast, and plans in Table G-2, particularly for residential developments and expansion of residential land uses, would bring new noise-sensitive receptors closer to the Proposed Project. The impact at each new receptor would be identical to that identified in this analysis for existing noise-sensitive receptors. Impacts of the Proposed Project, when combined with impacts from past, present, and reasonable future projects would be considered cumulatively significant (Class I). As discussed in Sections D.8.5 through D.8.13, the need for emergency response cannot be predicted. As such providing advance notification or restricting the noise from work to daytime hours would not be practical, and the Proposed Project's incremental impacts would be considered significant and unavoidable.

G.3.8 Transportation and Traffic

Geographic Extent

After construction, the Proposed Project would have little transportation or traffic associated with it other than for routine inspection and maintenance activities and operations. Therefore, the only opportunity for cumulatively significant transportation and/or traffic impacts to occur would be during the approximate two-year construction phase of the project. Construction-related traffic impacts would mostly result from lane closures that would occur within the immediate vicinity of the Proposed Project. Therefore, the geographic extent for the analysis of cumulative traffic and transportation impacts is defined as the area up to three miles from the Proposed Project. This scope is appropriate because traffic impacts caused by the Proposed Project would be limited to local streets and would be of short duration (with the exception of undergrounding activities) and based on the project impact analysis presented in Section D.9, are unlikely to cause substantial delays or traffic congestion.

Existing Cumulative Conditions

The character of the area along the project route varies from rural to urbanized. The most urbanized areas along the Proposed Project route are within the Coastal and Inland Valley Links. Development is occurring throughout the project study area and as a result traffic increases are anticipated. Although IVAG and SANDAG and other transportation planning and management entities are developing additional roadways, roadway widening and transit projects, it is anticipated that the roadways in the project area will continue to experience increased levels of traffic congestion as additional future land use developments are approved and population growth occurs.

Cumulative Impact Analysis

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.9.4.1.

Impact T-1: Construction would cause temporary road and lane closures that would temporarily disrupt traffic flow (Class III). Construction of the Proposed Project would cause temporary lane roadway closures for a few minutes at a time at locations where construction activities, especially transmission line stringing, would be located within ROWs of public streets and highways. Such closures are regulated by the applicable jurisdictional agency through encroachment permits which require specific measures to minimize disruption to local traffic flow. All projects requiring work within ROWs of public streets and highways are required to obtain encroachment permits. In order for a cumulative impact to occur, lane closures from different projects would have to occur at the same time and on the same road or a connecting road within close proximity to the lane closure from the Proposed Project. Past projects in the project area would not combine with impacts of the Proposed Project because construction of those projects is complete and lane closures associated with such construction would no longer be necessary. Reasonably foreseeable projects that would require lane closures in the immediate vicinity of the Proposed Project route include the I-15 Managed Lanes Project, San Vicente Road Widening, and San Vicente Road Pathways Project. Some of the other development projects located in the immediate vicinity of the Proposed Project route may also require lane closures, but it is currently unknown to what extent such closures would be likely or necessary or if they would occur at the same time as lane closures associated with the Proposed Project. If lane closures of current and future projects were required for extended for durations (as for the I-15 and San Vicente Road projects) traffic flow would be disrupted. However, since closures associated with the Proposed Project would be of very short duration and would be regulated by encroachment permits from the applicable jurisdictional agencies, the incremental effect from such lane closures would not be cumulatively considerable (Class III).

Impact T-2: Construction would temporarily disrupt the operation of emergency service providers (Class III). Lane closures associated with construction of the Proposed Project could disrupt the routes traveled by emergency providers. Other current and reasonably foreseeable projects would have the same potential to restrict emergency service provider routes, especially the I-15 Managed Lanes Project, San Vicente Road Widening, and San Vicente Road Pathways Project. If these and other projects required lane closures in the same vicinity of and at the same time as the Proposed Project impacts to emergency service providers would be significant. However, T-APM-4a, which would be implemented as part of the Proposed Project, requires construction activity to be coordinated in advance with emergency service providers to avoid restricting movements of emergency vehicles. Additionally lane closures associated with the Proposed Project would be of very short duration. Therefore, the Proposed Project's contribution to a potential significant impact would be less than cumulatively considerable (Class III).

Impact T-3: Construction would temporarily disrupt bus transit services (Class III). Lane closures associated with construction of the Proposed Project could disrupt the routes traveled bus transit services. Other current and reasonably foreseeable projects would have the same potential to restrict transit service routes, especially the I-15 Managed Lanes Project, San Vicente Road Widening, and San Vicente Road Pathways Project. If these and other projects required lane closures in the same vicinity of and at the same time as the Proposed Project impacts to transit service providers would be significant. However, T-APM-5a, which would be implemented as part of the Proposed Project, requires construction activity to be coordinated in advance with school districts and transit providers. Additionally

lane closures associated with the Proposed Project would be of very short duration. Therefore, the Proposed Project's contribution to a potential significant impact would be less than considerable (Class III).

Impact T-4: Construction would temporarily disrupt pedestrian and/or bicycle movement and safety (Class II). Pedestrian and bicycle circulation could be affected by transmission line construction activities if pedestrians and bicyclists were unable to pass through the construction zone or if established pedestrian and bike routes were blocked. If concurrent construction projects restricted pedestrian and/or bicycle movement within the immediate vicinity of such restrictions associated with the Proposed Project, impacts would be significant. However, implementation of Mitigation Measure T-4a and WR-1b, would render impacts of the Proposed Project less than cumulatively considerable (Class II) by requiring establishment of alternative pedestrian and bicycle routes around the Proposed Project construction zone for safe passage as well as temporary detours for trail users.

Impact T-5: Construction vehicles and equipment would potentially cause physical damage to roads in the project area (Class II). There is potential for unexpected damage to roads by vehicles and equipment to occur from construction vehicles. Other development projects that require heavy equipment to use the same roads utilized by Proposed Project construction vehicles could result in similar damage to roads. If left unmitigated, road damage caused by the Proposed Project, when combined with unprepared road damage from past, present, and reasonably foreseeable projects would combine to be significant. However, Mitigation Measure T-5a would render the Proposed Project's contribution to less than cumulatively considerable (Class II) because it would require repair of roads damaged by Proposed Project construction activities.

Impact T-6: Construction activities would cause a temporary disruption to rail traffic or operations (No Impact). The Proposed Project would cross Union Pacific Railroad ROW and could disrupt rail traffic. However, T-APM-8a would be implemented as part of the Proposed Project, which would require a permit from railroad companies to enter railroad ROWs. Compliance with railroad permit requirements would ensure that Proposed Project construction activities would not disrupt rail traffic. Therefore, impacts of the Proposed Project would not have the potential to combine with impacts of other reasonably foreseeable projects to result in a cumulative impact (No Impact).

Impact T-7: Construction would result in the short-term elimination of parking spaces (No Impact). Construction activities would result in short-term elimination of a limited amount of parking spaces immediately adjacent to the construction ROW. It is possible that concurrent construction projects located within close proximity to the Proposed Project would also result in temporary elimination of parking spaces. If several projects were to concurrently eliminate parking spaces at the same time and same location as the Proposed Project, a cumulative impact would occur. However there is only one area along the Proposed Project route where several reasonably foreseeable projects would occur within close enough proximity to result in this impact. This area is between MP 120 and MP 123 and includes the San Vicente Road Widening Project. However, San Vicente Road is paralleled by dirt shoulders and designated parking spaces do not exist along this portion of the road, therefore Proposed Project construction activities would not result in elimination of parking spaces in this area. Therefore, impacts of the Proposed Project would not have the potential to combine with similar impacts of other past, present and reasonably foreseeable projects to result in a significant impact (No Impact).

Impact T-8: Construction would conflict with planned transportation projects (No Impact). The Proposed Project and any other project that would interface with a roadway or other transportation facility would be required to obtain an encroachment permit or other such agreement from the applicable jurisdictional agency. Complying with local permits and agreements would ensure appropriate

coordination between project applicants and the affected agencies so that conflicts would be avoided or minimized. Therefore, impacts of the Proposed Project would not have the potential to combine with similar impacts of other past, present and future projects to result in a significant impact (No Impact).

Impact T-9: Construction would generate additional traffic on the regional and local roadways (Class II). Construction of the Proposed Project would temporarily increase traffic (through project trip generation) on the regional and local roadways. Past development within the Coastal and Inland Valley Links of the Proposed Project has substantially contributed to congestion on area roadways. Current and reasonably foreseeable projects in these areas would also temporarily increase traffic in these areas during construction. There are several current and future residential developments in these areas, including Torrey Highlands, Valley Ridge Estates, Torrey Hills VTM, Peppertree Point, etc. that, when completed, will contribute to congestion in this area. It is reasonable to assume that some of the many residential and commercial developments in these areas would be completed and partially occupied by the time Proposed Project construction in this area. Traffic associated with these future residential developments would contribute to congestion on area roadways. Temporary roadway congestion resulting from lane closures associated with construction of the Proposed Project would combine with congestion resulting from past, present and future residential and commercial development to result in a cumulative significant impact. However, Mitigation Measure T-9a would minimize the Proposed Project's contribution to this impact, Therefore, the Proposed Project's contribution to a significant cumulative impact to congestion on regional and local roadways would be rendered less than cumulatively considerable and therefore less than significant (Class II).

Impact T-10: Underground Construction Could Restrict Access to Properties and Businesses (No Impact). Underground construction activities would temporarily restrict access to properties and other neighboring roadways. In addition, trenching operation may disrupt State Park officials from accessing portion of Anza Borrego Desert State Park. However, underground construction activities would preclude other projects from being constructed in the same area and therefore from restricting access to these properties and businesses. Therefore, impacts of the Proposed Project would not have the potential to combine with impacts of other reasonably foreseeable projects to result in a cumulative impact (No Impact).

G.3.9 Public Health and Safety

Geographic Extent

Contamination. For purposes of the cumulative analysis, the excavation, removal, and treatment/ disposal of contaminated soil is considered the only public health and safety issue. Impacts would only have the potential to occur during construction and would be limited to the areas where concurrent construction is occurring. The geographic scope for the cumulative impact analysis is the actual area of disturbance created by a project, including the project alignment, substation, staging and laydown areas. Furthermore, issues related to air quality and water resources are discussed in their respective sections.

Field-Related Concerns. Electric power facility projects can create both safety and nuisance issues related to radio/television/electronic equipment interference; induced currents and shock hazards and potential effects on cardiac pacemakers. These effects would only be cumulative within the immediate area of the Proposed Project, because the electric fields from a transmission line cannot create impacts at a distance greater than approximately 500 feet from the corridor.

Existing Cumulative Conditions

Contamination. The project area includes both rural and urban areas and includes land utilized for a variety of uses including: open-space recreation and preserve, agricultural, rural and suburban residential housing, recreational, and commercial businesses. Existing and past land use activities are used as potential indicators of hazardous material storage and use. Many industrial and military sites, historic and current, have soil or groundwater contaminated by hazardous substances such as, heavy metals, and vehicle fuels; additionally military sites may also have known or unknown unexploded ordinance in areas used for target practice and ordinance storage. Other hazardous materials sources include leaking underground tanks in commercial, rural and agricultural areas. Contaminated surface runoff may occur from polluted sites and agricultural fields that have been treated with pesticides, herbicides, and fumigants. In areas of past and current industrial use, contaminated groundwater plumes could exist along the transmission line routes. The continued development of lands within the Counties of Imperial and San Diego will result in the continued potential for public health and safety risk factors.

Field-Related Concerns. These effects result from electric transmission and distribution lines, and occur only in proximity to the lines themselves. No other facilities create similar effects, so the area of potential cumulative effect remains within and immediately adjacent to the corridor.

Cumulative Impact Analysis

Contamination

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.10.4.1.

Impact P-1: Improper handling and/or storage of hazardous materials during construction could cause soil or groundwater contamination (Class II). The Proposed Project could contaminate soil or groundwater through accidental releases of hazardous materials used during construction. Water Quality APMs WQ-APM-8, WQ-APM-9, and WQ-APM-11, as well as APMs HS-APM-1, HS-APM-2, HS-APM-3, HS-APM-8, and HS-APM-10 would be implemented as part of the Proposed Project to decrease the potential for accidental releases to occur and to clean up potentially harmful materials in the unlikely event of a release. Impacts to groundwater are unlikely to occur primarily because groundwater in the Imperial Valley and Ocotillo-Clark basins at the location of the project is typically deeper than the expected depth of excavation (excavation will be less than 40 feet in comparison to at least 40 feet depth for groundwater), resulting in little chance for direct contamination. However, this impact could occur along the Coastal Link where shallow groundwater may exist. Commercial and mixed use development projects listed in Table G-1 that are located in this area, including Torrey Corner, Torrey Hills YMCA, and Torrey Hills Center would require grading and excavation and would have similar impacts as the Proposed Project. Impacts to soil could occur along the entire route. The combined effect of impacts to soil and groundwater from these projects and the Proposed Project would result in a cumulative impact. However, Mitigation Measures H-1b, P-1a, and P-1b would render impacts of the Proposed Project less than cumulatively considerable (Class II) by requiring construction in this area to the dry season and implementing a monitoring program and maintaining emergency spill supplies onsite, thereby precluding potential impacts to groundwater and soil from the Proposed Project.

Impact P-2: Residual pesticides and/or herbicides could be encountered during grading or excavation in agricultural areas (No Impact). The presence of residual pesticide and herbicide contamination of the soil and/or groundwater in the agricultural areas along the alignment (MP 5 to MP 20) could

result in potential health hazards to construction workers and the public due to exposure to contaminated soil and/or groundwater. As shown in Table G-1 and Figure G-3, there are no current or reasonably foreseeable projects in this area of the Proposed Project (between MP 5 and MP 20). While past projects in the area may have encountered pesticides during grading or excavation, the exposure from those activities to workers or the public would most likely have ended upon completion of construction activities. Therefore, impacts of the Proposed Project do not have the potential to combine with similar impacts of past, present, or reasonably foreseeable projects to result in a cumulatively considerable impact (No Impact).

Impact P-3: Unanticipated preexisting soil and/or groundwater contamination could be encountered during excavation or grading (No Impact). Encountering preexisting soil and groundwater contamination during Proposed Project construction would result in exposure of construction workers to potential health hazards. Such exposure would be hazardous to people in the immediate vicinity of the contamination since the contaminant would either be limited to the medium in which it is discovered or would volatilize and become airborne. If fumes from potential contamination volatilized, risk of exposure would decrease as distance from the source of contamination increased due to dispersal of the fumes. Additionally, the Proposed Project includes APMs HS-APM-15, -16 and -17 which would require stopping work if suspected contamination is identified, cordoning off suspected areas of contamination cordoned and taking appropriate health and safety measures. These activities would reduce the risk of exposure to potential contaminants. Although concurrent construction at projects located immediately adjacent to the Proposed Project would be subject to the same risk of encountering unknown contaminants and exposing workers to health hazards, such exposure is not likely to combine with effects of the Proposed Project to result in a significant impact because of the extremely localized nature of exposure to such contaminants. Therefore, this impact of the Proposed Project would not combine with similar impacts of past, present and reasonably foreseeable projects to result in a cumulatively considerable impact (No Impact).

Impact P-4: Unexploded ordinance encountered during construction could explode and injure workers or the public (No Impact). Segments of the project route cross adjacent to military land that has been used for bombing and other weapons training for many decades. However, prior to the start of construction, SDG&E would perform a survey of identified FUDS database sites as well as other areas along the project transmission line ROW with historical military activities. The survey would include identification of potential unexploded ordinance (UXO) locations. The appropriate contractor would then perform an extensive survey of identified location(s) and the removal of any UXO, if found (SDG&E, 2006, Chapter 5.13). Trained experts shall be used to investigate and remove unexploded ordnance in known and potential military areas prior to the start of construction (HS-APM-6). In addition, the UXO contractor would provide training to construction contractor's personnel involved in grading and excavation-related to the identification of UXO prior to start of work (HS-APM-7). Therefore, this impact of the Proposed Project would not have the potential to combine with similar impacts of past, present, and reasonably foreseeable projects to result in a cumulatively considerable impact because UXO would be identified and removed prior to construction (No Impact).

Impact P-5: Soil or groundwater contamination could result from accidental spill or release of hazardous materials during operation and maintenance (Class III). The Proposed Project could contaminate soil or groundwater through accidental releases of hazardous materials used operation and maintenance activities. APMs HS-APM-1, HS-APM 3, and HS-APM 10 would be incorporated into the Proposed Project to decrease the potential for accidental releases to occur and to clean up potentially harmful materials in the unlikely event of a release. These measures would greatly reduce the likelihood of a release as well as the potentially harmful effect of a release.

Impacts to groundwater area unlikely to occur primarily because groundwater in the Imperial Valley and Ocotillo-Clark basins at the location of the project is typically deeper than the expected depth of excavation (excavation will be less than 40 feet in comparison to at least 40 feet depth for groundwater), resulting in little chance for direct contamination. However, this impact could occur along the Coastal Link where shallow groundwater may exist. Past, present and reasonably foreseeable commercial, residential and mixed use development projects, including Torrey Corner, Torrey Hills YMCA, and Torrey Hills Center are located in this area. These types of developments do not typically use or require substantial quantities of hazardous materials but do require small amounts of common hazardous materials such as gasoline, oils, grease, and solvents which can be accidentally released from vehicles, residences, businesses, and non-point sources. Substantial accidental releases from the Proposed Project, when combined with substantial releases from other past, present and reasonably foreseeable projects would result in a cumulatively considerable impact. However, since measures would be in place to greatly reduce the likelihood of a release as a result of Proposed Project activities, the Proposed Project's contribution to this impact would be less than cumulatively considerable (Class III).

Impact P 6: Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers (Class III). Application of herbicides around Proposed Project towers could result in adverse health effects to the public and maintenance workers. Impacts from herbicides applied to past, present and reasonably foreseeable projects located in close proximity (less than 0.25 miles) to the Proposed Project route would have the potential to combine with impacts of the Proposed Project. However, considering the generally low toxicity of herbicides used for the Proposed Project, their restricted use at project structures, and the non-routine access of these areas by maintenance workers and the general public, the Proposed Project's contribution to such an impact would be less than cumulatively considerable (Class III).

Impact P-7: Excavation or grading could result in mobilization of existing soil or groundwater contamination from known sites (No Impact). Encountering preexisting soil and groundwater contamination during Proposed Project construction would result in exposure of construction workers to potential health hazards. Such exposure would be hazardous to people in the immediate vicinity of the contamination since the contaminant would either be limited to the medium in which it is discovered or would volatilize and become airborne. If fumes from potential contamination volatilized, risk of exposure would decrease as distance from the source of contamination increased due to dispersal of the fumes. Additionally, the Proposed Project includes APMs HS-APM-15, -16 and -17 which would require stopping work if suspected contamination is identified, cordoning off suspected areas of contamination cordoned and taking appropriate health and safety measures. These activities would reduce the risk of exposure to potential contaminants. Although concurrent construction at projects located immediately adjacent to the Proposed Project would be subject to the same risk of encountering known contaminants and exposing workers to health hazards, such exposure is not likely to combine with effects of the Proposed Project to result in a significant impact because of the extremely localized nature of exposure to such contaminants. Therefore, this impact of the Proposed Project would not combine with similar impacts of past, present and reasonably foreseeable projects to result in a cumulatively considerable impact (No Impact).

Electric & Magnetic Field-Related Concerns

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.10.24.

Impact PS-1: Transmission line operation causes radio and television interference (Class II). Corona or gap discharges related to high frequency radio and television interference impacts are very localized, if they occur at all. Along different portions of the route, the Proposed Project would be constructed adjacent to existing transmission lines. In addition, other new transmission line projects, including the Bannister–San Felipe Transmission Line, the El Centro–Bannister Transmission Line, and Salton Sea Transmission Line (project Numbers 57 through 63 in Table G-1), would similarly expand the area potentially affected by interference effects. Therefore, these effects have the potential to be cumulatively considerable.

However, in all cases, the individual sources of adverse radio/television interference impacts can be located and corrected by making adjustments to the power lines themselves. The potential magnetic field interference of transmission lines with electronic equipment such as computer monitors can be corrected through the use of software, shielding or changes at the monitor location. Depending on the proximity of residences and businesses to multiple sources of radio and television interference, the incremental effect of radio and television interference from the Proposed Project, when combined with the effects of other new transmission lines in the area, would be significant. However, implementation of Mitigation Measures PS-1a and PS-1b would reduce the interference from the Proposed Project. As a result, the Proposed Project's contribution to Impact PS-1 would be less than cumulatively considerable (Class II).

Impact PS-2: Transmission line operation causes induced currents and shock hazards in joint use corridors (Class II). Induced currents and voltages on conducting objects near the proposed transmission lines represent a potential significant impact, but these impacts do not pose a threat to safety if the conducting objects are properly grounded. Like radio/television interference, the addition of new transmission lines through the region is expanding the area potentially at risk for shock hazards, and other nearby existing and reasonably foreseeable transmission lines like those discussed above for Impact PS-1, contribute to this expansion. The cumulative impact of such projects would be significant, and the project's contribution to this impact would be cumulatively considerable. However, Mitigation Measure PS-2a would require grounding of nearby objects that that have the potential for induced voltages. Therefore, implementation of this mitigation measure would render the Proposed Project's contribution to Impact PS-2 to less than cumulatively considerable (Class II).

Impact PS-3: Electric fields can affect cardiac pacemakers (No Impact). The electric fields associated with the Proposed Project's transmission lines may be of sufficient magnitude to impact operation of a few older model pacemakers resulting in them reverting to an asynchronous pacing. This impact would not combine with impacts of other projects in the area because it would occur only in the immediate area of the transmission line and the addition of other new lines would not change the level of effect at any specific location. Therefore, Proposed Project impacts would not have the potential to combine with impacts of other past, present, or reasonably foreseeable projects (No Impact).

Impact PS-4: Transmission line structures can be affected by wind and earthquakes (No Impact). This impact describes effect of local environment on the project, rather than the project's effect on the environment. Therefore, Impact PS-4 cannot combine with other projects and cannot create a cumulatively considerable impact.

G.3.10 Air Quality

Geographic Extent

The geographic extent of the cumulative impact area for air quality focuses on the Imperial County and San Diego County air basins, the location of project-related activities. Cumulative impacts could extend over the entire project route; however, the shared nature of air resources warrants consideration of emissions occurring outside of the local air basins. Project-related changes in power plant emissions would occur across the western U.S., Mexico, and Canada. Emissions occurring in any location are considered in the analysis of cumulative impacts.

Existing Cumulative Conditions

Air quality management in Imperial County is the responsibility of the Imperial County Air Pollution Control District (ICAPCD), and for San Diego County, the San Diego Air Pollution Control District (SDAPCD) is responsible. Past development and population growth within the cities and unincorporated portions of Imperial and San Diego Counties contribute to increased activity of stationary and mobile sources of air emissions throughout the Imperial and San Diego County air basins. Most cumulative projects shown on Table G-1 contribute incrementally to short-term and long-term air emissions through construction activities and operational emissions. The air quality management plans for the ICAPCD and SDAPCD (identified in Section D.11.3.3) are periodically updated to adjust the emissions inventories that are closely dependent on economic development and population growth. Updates to the air quality management plans account for development as planned for and outlined in the plans and programs listed in Table G-2.

Cumulative Impact Analysis

The significance criteria identified in Section D.11.4.1 are used to characterize the cumulative impacts.

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I). Construction activities would cause emissions of criteria pollutants, odors, and toxic air contaminants in all areas of the project. Projects identified in Table G-1 and plans in Table G-2 would cause similar new emissions from increased economic development and population growth, which leads to increased emissions from stationary and mobile sources throughout the Imperial and San Diego County air basins. Some residential and commercial development projects such as Torrey Corner, Torrey Hills Center, the Sptizbergen Property, and Rancho Cañada Bed and Breakfast, could also bring new sensitive receptors closer to areas of dust and exhaust emissions caused by Proposed Project construction. The impact at each new receptor would be identical to that identified in Section D.11 for existing sensitive receptors (Section D.11.1.5). Impacts of the Proposed Project, when combined with impacts from past, present, and reasonably foreseeable projects would be considered cumulatively significant (Class I). As discussed in Sections D.11.5 through D.11.13, Mitigation Measures AQ-1a and AQ-1b would be implemented to reduce the Proposed Project's construction dust and exhaust impacts, and Mitigation Measure AQ-1h would offset the overall criteria pollutant impacts. However even with mitigation, incremental impacts would persist and when combined with impacts of past projects, would still be considered significant and cumulatively considerable (Class I).

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III). Once Proposed Project construction is complete, operational emissions would result from vehicle use that would be necessary for

periodic maintenance, repair, and inspection of the project components. The projects identified in Table G-1 and plans in Table G-2 would cause new emissions from increased economic development and population growth, which leads to increased emissions from stationary and mobile sources throughout the Imperial and San Diego County air basins. Some projects such as Torrey Corner, Torrey Hills Center, the Sptizbergen Property, and Rancho Cañada Bed and Breakfast, could also bring new sensitive receptors closer to areas of dust and exhaust emissions related to operation, maintenance, and inspection of the Proposed Project. The impact at each new receptor would be identical to that identified in Section D.11 for existing sensitive receptors. Minor and occasional increases in dust and exhaust emissions would occur as a result of the Proposed Project; however, these emissions would occur at levels that would be less than the thresholds for operation significance in Table D.11-8. The emissions occurring under the cumulative conditions would be forecast, managed, and planned for through the local air quality rules, regulations, and attainment plans established by the ICAPCD and SDAPCD. The air quality management plans for the ICAPCD and SDAPCD (identified in Section D.11.3.3) illustrate how each area would eventually achieve attainment of the federal and California ambient air quality standards. Cumulative projects subject to local rules and regulations would be consistent with the applicable air quality management plans. Because operation, maintenance, and inspection impacts of the Proposed Project would not exceed thresholds, when combined with impacts from past, present, and reasonably foreseeable projects would be considered less than cumulatively considerable (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class I). Impacts related to power generated during transmission line operation would cumulatively affect air quality inside and outside the region. Projects identified in Table G-1 and plans in Table G-2 would cause new emissions from increased economic development and population growth, which leads to increased emissions from stationary and mobile sources throughout the Imperial and San Diego County air basins. The emissions occurring under the cumulative conditions would be forecast, managed, and planned for through the local air quality rules, regulations, and attainment plans established by the ICAPCD and SDAPCD. The air quality management plans for the ICAPCD and SDAPCD (identified in Section D.11.3.3) illustrate how each area would eventually achieve attainment of the federal and California ambient air quality standards. A project may be deemed inconsistent with applicable air quality plans if it would result in stationary sources that would not comply with local rules and regulations or if it would induce population and/or employment growth exceeding the growth estimates included in the attainment plans. Project-related power plant emissions would need to be within existing permitted emission levels that have been previously licensed by local air management agencies, with U.S. EPA oversight, and at these levels, the emissions would be consistent with applicable air quality management plans. As discussed in Section D.11.13, the Proposed Project and new renewable energy resources would result in a reduction of emissions from power plants inside the region and increased emissions from power plants outside the region. Because the project-related power plant emissions would overlap with emissions generated by past, present, and reasonably foreseeable projects, the cumulative impacts of the Proposed Project would be cumulatively considerable (Class I).

Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions (Class I). Global warming and climate change impacts would occur because the Proposed Project would cause an overall net increase of greenhouse gas emissions. Past projects that have also caused increased greenhouse gas emissions include most development within Imperial and San Diego Counties. All of the present and reasonably foreseeable projects identified in Table G-1 would require construction activities that would also result in increased greenhouse gas emissions. When combined with impacts of past, present, and reasonably foreseeable projects, the Proposed Project would result in a significant impact (Class I). Even with mitigation, incremental impacts would persist and would be cumulatively considerable.

G.3.11 Water Resources

Geographic Extent

The geographic scope of the cumulative impact analysis includes two primary Hydrologic Regions: the Colorado River Hydrologic Region governed by the Colorado River Regional Water Quality Control Board (Colorado RWQCB) and the San Diego Hydrologic Region governed by the SDRWQCB. Although these regions contain watercourses that are not crossed by the project, they represent both the geographic and administrative units for water quality control and protection of beneficial uses through which the project would pass. Cumulative impacts such as potential impacts on flooding and erosion, could result from related impacts cause by other past, present and reasonably foreseeable future projects throughout numerous watersheds in Imperial County and San Diego County. These counties, together with the cities contained within, are the administrative units responsible for floodplain and flood hazard administration. Projects resulting in impacts related to hydrology and water resources consist of all development, construction and agricultural projects within the geographic areas of consideration.

Existing Cumulative Conditions

The project area includes the Colorado River Hydrologic Region and the San Diego Hydrologic Subregion of the South Coast Hydrologic Region Each of these regions is divided into groundwater basins, which are described further in Section D.12.2 of the EIR/EIS. A wide variety of past, present, and reasonably foreseeable future development projects contribute to the cumulative conditions for hydrology and water quality in the project area. Population growth and land development activities in the project area have caused significant alterations to natural water systems in the project area. Hydrology and water quality are affected by two main types of projects: (1) water projects such as dams and diversions for the purpose of generating supply; and (2) development projects, such as homes, businesses, and roadways, which alter the physical features of an area. Ongoing development throughout the Colorado River Hydrologic Region and the San Diego Hydrologic Region is dominated by residential developments, clustered in and around established community areas. This trend in residential development is also representative of reasonably foreseeable future projects in the cumulative effects area, as supported by expected population growth forecast (San Diego County, 1999). Therefore, the impacts to hydrology and water quality from past and ongoing projects, as described above, are expected to continue and increase in the future.

Cumulative Impact Analysis

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.12.4.1.

Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation (Class I). Proposed Project construction activities would include grading and excavation activities that could degrade water quality due to soil erosion and sedimentation during periods of extended rainfall while such activities are ongoing. Surface waters throughout the project area have experienced varying amounts of sedimentation as a result of erosion from past projects and are likely to experience similar impacts from other Proposed Projects that would require substantial grading. However, potential impacts from erosion and sedimentation are regulated by multiple entities including Regional Water Quality Control Boards, the Clean Water Act, U.S. Army Corps of Engineers, California Department of Fish and Game, etc., depending on the size and location of the project. Construction projects that involve ground disturbance are required to comply with various permits and regulatory requirements

that require implementation of specific measures to prevent soil erosion and sedimentation from entering local waterways. Such measures include stoppage of work and use of physical barriers to prevent sedimentation from flowing off-site during periods of extended rainfall. Although these measures would reduce the impact of individual projects to less than significant levels, it is likely that minor amounts of sedimentation would occur. Over time sediment from multiple projects would be expected to eventually accumulate in downstream water-bodies, such as Los Peñasquitos Lagoon, which is listed as water quality limited for sedimentation and siltation. Therefore, the Proposed Project, when combined with the effects of other past and reasonably foreseeable project, would considerably contribute to a cumulative impact (Class I). No mitigation measures are available to reduce the Proposed Project's contribution to this impact.

Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials (Class III). The Proposed Project could degrade surface or groundwater quality through accidental releases of hazardous materials used during construction, such as diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. Water Quality APMs WQ-APM-8, WQ-APM-9, and WQ-APM-11 would be implemented as part of the Proposed Project to decrease the potential for accidental releases to occur and to clean up potentially harmful materials in the unlikely event of a release. Additionally, APMs WQ-APM-1, WQ-APM-2 and WQ-APM-15 situate construction activities away from streams where possible. Surface and groundwater throughout the project area has been subject to similar impacts through decades of residential, commercial, utility, and roadway construction. As described in Section D.12.5, Water Resources, several water receiving waters of streams within the project are considered polluted or threatened by such agents as nutrients, salinity and other pollutants originating from industrial point sources, agricultural return flow and out-of-state sources. Due to the currently compromised condition of water quality in the project area, any action that substantially degrades water quality should be considered significant. However, as discussed in Section D.12.5, the dry nature of the surface streams that could be affected by an accidental release during Proposed Project construction is such that should material spills occur, these could easily be cleaned up prior to water quality being contaminated. Therefore, the Proposed Project's contribution to this significant impact would be less than cumulatively considerable (Class III).

Impact H-3: Excavation for the project including the substations could degrade groundwater quality in areas of shallow groundwater (Class II). Excavation for tower foundations in areas with shallow groundwater could contaminate groundwater through accidental material spills. This impact is unlikely to occur primarily because groundwater in the Imperial Valley and Ocotillo-Clark basins at the location of the project is typically deeper than the expected depth of excavation (excavation will be less than 40 feet in comparison to at least 40 feet depth for groundwater), resulting in little chance for direct contamination. However, this impact could occur along the Coastal Link where shallow groundwater may exist. Commercial and mixed use development projects listed in Table G-1 that are located in this area, including Torrey Corner, Torrey Hills YMCA, and Torrey Hills Center would require grading and excavation and would have similar impacts as the Proposed Project. The combined effect of impacts to groundwater from these projects and the Proposed Project would result in a cumulative impact. However, Mitigation Measure H-1b would render impacts of the Proposed Project less than cumulatively considerable (Class II) by requiring construction in this area to the dry season, thereby precluding potential impacts to groundwater from the Proposed Project.

Impact H-4: Groundwater dewatering for project construction could deplete local water supplies. (Class III). Dewatering for tower construction in the Imperial Valley and Ocotillo-Clark groundwater basins could result in a local and temporary drawdown of groundwater levels which could temporarily

reduce the yield of nearby water supply wells. Water supply wells are typically deeper than the proposed maximum excavation depth of 40 feet, so a temporary drawdown limited to that depth would not affect water yield. Dewatering for tower construction in the Borrego Valley and Yaqui Well Area groundwater basins could result in a local and temporary drawdown of groundwater levels which could temporarily reduce the yield of nearby water supply wells. Table G-1 includes a large number of residential development projects. Such projects would increase the need for drinking water throughout the project area which would increase usage groundwater. This increased demand, in addition to current demand from past residential, commercial and agricultural development, when combined with impacts from groundwater dewatering from project construction would result in a significant cumulative impact. However, WQ-APM-6, which would require provision of alternate water supplies in areas where local water supplies could be depleted, would be implemented during project construction. With implementation of this measure, the Proposed Project's contribution to a cumulative impact would be rendered less than cumulatively considerable and therefore is not significant (Class III).

Impact H-5: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream (Class III). Construction of substations, tower foundations and access roads could result in additional runoff through creation of impervious areas and compaction of soils. Surface runoff can carry pollutants such as nutrients, phosphates, oil, grease, and other pollutants associated with human development into nearby waterways. Although the volume of new runoff attributable to the Proposed Project would be very small in comparison to the total watershed, due to the currently compromised condition of water quality in the project area, any action that substantially degrades water quality should be considered significant. However, much of the Proposed Project area is comprised of vast areas of open space and agricultural development which has comparatively little impervious surface. Additionally, most of the projects identified in Table G-1 are large residential development projects which would be required by the relevant regulatory agency (Regional Water Quality Control Board, county or municipal water/flood protection district) to include features such as stormwater detention basins to ensure adequate drainage and prevent flooding. This practice has been implemented in areas of intense development throughout San Diego County. Therefore a cumulative impact is unlikely to occur. Additionally, the amount of new impervious surface created by the Proposed Project would be negligible in comparison to the amount of permeable surface throughout the watersheds as well as in comparison to future development. Therefore, even if impacts from past and future projects combined to create a significant impact, the Proposed Project's contribution would be less than cumulatively considerable.

Impact H-6: Transmission towers or other aboveground project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion (Class II). Encroachment of Proposed Project structures into a flow path could result in erosion damage to the encroaching structure, diversion of flows and increased flood risk for adjacent property, and/or increased erosion on adjacent property. Other past, present and reasonably foreseeable projects, such as the existing and proposed transmission lines that have been/will be constructed within the same ROW as the Proposed Project would have similar effects. Effects of the Proposed Project would combine with those of past and reasonably foreseeable projects to divert flood flows and substantially increase erosion within the ROW and on adjacent properties, resulting in a significant impact. However, implementation of Mitigation Measure H-6a would render the Proposed Project's contribution to this impact to less than considerable (Class II) by avoiding bank erosion and effects to adjacent properties.

Impact H-7: Accidental releases of contaminants from project facilities could degrade water quality (Class I). Oil and other contaminants from new electrical equipment at project substations could be released accidentally and contaminate local surface water or groundwater. Although such releases are

unlikely since the substations do not normally contain hazardous materials, the substations would present the possibility of releases to occur. Surface and groundwater throughout the project area has been subject to similar impacts through decades of residential, commercial, utility, and roadway construction. As described in Section D.12, Water Resources, several water receiving waters of streams within the project are considered polluted or threatened by such agents as nutrients, salinity and other pollutants originating from industrial point sources, agricultural return flow and out-of-state sources. Due to the currently compromised condition of water quality in the Coastal Link of the project area, any action that substantially degrades water quality should be considered significant. Past and future projects within this portion of the Proposed Project area include residential, office, and mixed-use development. These types of developments do not typically use or require substantial quantities of hazardous materials but do require common hazardous materials such as gasoline, oils, grease, and solvents which can be accidentally released from vehicles, residences, businesses, and non-point sources. Therefore, the incremental impact of a release of contaminants from the Proposed Project, when combined with similar impacts of other past, current, and reasonably foreseeable projects would be significant (Class I). Mitigation Measure H-7a, described in Section D.12.5, requires development of a Hazardous Substance Control and Emergency Response Plan for project operation. Mitigation Measure H-7a would minimize the project's contribution to this cumulative impact, but not to a level of less than significant (Class I).

Impact H-8: Underground portions of the power line could be subject to damage from stream scour at locations where the line crosses stream channels (No Impact). This impact describes the effect of the localized environment on Proposed Project structures, rather than the effect of the project on the natural environment. Therefore, the effect of this impact would not have the potential to combine with similar effects of other projects and is not cumulatively considerable.

G.3.12 Geology, Mineral Resources, and Soils

Geographic Extent

The geographic scope for considering cumulative impacts to Geology, Mineral Resources, and Soils is the Proposed Project corridor itself (including proposed substations). This is because geologic materials, minerals, and soils occur at specific locales and are unaffected by activities not acting on them directly and any impacts of the Proposed Project would be site-specific.

Existing Cumulative Conditions

Past and ongoing development throughout the Proposed Project area has resulted in substantial alterations to the natural landscape. Past, existing, and future projects could contribute to the cumulative effects of geology and soils creating any of the following conditions: triggering or acceleration of erosion or slope failures; groundshaking, earthquake-induced ground failure, and fault rupture. These conditions would be limited to the areas within and adjacent to the boundaries of individual projects. In order to be cumulatively considerable, such conditions would have to occur at the same time and in the same location as the same or similar conditions of the Proposed Project. Seismic impacts (groundshaking, earthquake-induced ground failure, and fault rupture) from the numerous local and regional faults comprise an impact of the geologic environment on individual projects and would not introduce cumulatively considerable impacts.

Cumulative Impact Analysis

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.13.1.

Impact G-1: Erosion could be accelerated due to construction activities (No Impact). The potential for this impact to combine with similar effects of other projects would only occur if other projects were implemented in the same area at the same time as the Proposed Project. However, construction of the Proposed Project would preclude other projects from being implemented concurrently in the same location. Furthermore measures would be implemented to reduce or prevent erosion impacts during construction. Therefore Proposed Project impacts would not have the potential to combine with similar effects from other projects and would not be cumulatively considerable.

Impact G-2: Unique geologic features would be damaged due to construction activities (Class II). Construction activities such as grading and excavation from the Proposed Project could cause damage to desert pavement, a unique geologic feature takes thousands of years to form and protects the underlying silty and sandy soils from excessive wind and water erosion. Other projects in this area of the Proposed Project route, including San Felipe Substation, Bannister Substation, Bannister–San Felipe Transmission Line, El Centro–Bannister Transmission Line, Stirling Energy Solar Power Project, and the Salton Sea Unit 6 Geothermal Plant would likely result in similar impacts. Damage to desert pavement could result in extreme acceleration of erosion as well as damage a unique geologic feature. This effect of the Proposed Project, when combined with the effects of the projects referenced above, would contribute to a significant cumulative impact. However, implementation of Mitigation Measure G-2a, which would minimize and avoid grading in areas of desert pavement, would render the Proposed Project's contribution to this impact less than cumulatively considerable (Class II).

Impact G-3: Project structures could be damaged by problematic soils exposing people or structures to substantial adverse effects (Class II). Unidentified expansive and corrosive soils could damage project structures and facilities potentially resulting in collapse of such structures, which could result in power outages, damage to nearby roads or structures, and injury or death to nearby people. Past and future projects located in close proximity to project structures on the same soil types would be exposed to the same conditions and therefore the same impacts. Collapse of project structures and adjacent structures would combine to result in a significant impact where such structures are in close proximity to other structures or people, such as the residential and commercial developments located adjacent to the project route within the Coastal and Inland Valley Links. However, implementation of Mitigation Measure G-3a, which would require designing project features to avoid damage from problematic soils, would render the Proposed Project's contribution to this impact less than cumulatively considerable (Class II).

Impact G-4: Project structures could be damaged by seismically induced groundshaking and/or ground failure (Class II). As discussed in Section D.13.5, this impact could result in collapse of Proposed Project structures in the event of severe groundshaking. Collapse of project structures could result in power outages, damage to nearby roads or structures, and injury or death to nearby people. Past and future projects located in close proximity to project structures would be exposed to the same conditions and therefore the same impacts. Collapse of project structures and adjacent structures would combine to result in a significant impact where such structures are in close proximity to other structures or people, such as the residential and commercial developments located adjacent to the project route within the Coastal and Inland Valley Links. However, implementation of Mitigation Measure G-4a and G-4b, which

would require designing project features to avoid damage from groundshaking, would render the Proposed Project's contribution to this impact less than cumulatively considerable (Class II).

Impact G-5: Project structures could be damaged by surface fault rupture at crossings of active faults (Class II). As discussed in Section D.13.5, this impact could result in collapse of Proposed Project structures in the event of surface fault rupture at crossings of active faults. Collapse of project structures could result in power outages, damage to nearby roads or structures, and injury or death to nearby people. Past and future projects located in close proximity to project structures would be exposed to the same conditions and therefore the same impacts. Collapse of project structures and adjacent structures would combine to result in a significant impact where such structures are in close proximity to other structures or people, such as the residential and commercial developments located adjacent to the project route within the Coastal and Inland Valley Links. However, implementation of Mitigation Measure G-5a, which would require project structures be placed outside of active fault zones, would render the Proposed Project's contribution to this impact less than cumulatively considerable (Class II).

Impact G-6 Excavation or grading during construction could cause slope instability (No Impact). The potential for this impact to combine with similar effects of other projects would only occur if other projects were implemented on the same slopes at the same time as the Proposed Project. However, construction of the Proposed Project would preclude other projects from being implemented concurrently in the same location. Therefore Proposed Project impacts would not have the potential to combine with similar effects from other projects and would not be cumulatively considerable.

Impact G-7: Project structures could be damaged by landslides, earthflows, debris flows and/or rock fall (Class II). As discussed in Section D.13.5, this impact could result in collapse of Proposed Project structures in the event of landslides, earthflows, debris flows and/or rock fall. Collapse of project structures could result in power outages, damage to nearby roads or structures, and injury or death to nearby people. Past and future projects located in close proximity to project structures would be exposed to the same conditions and therefore the same impacts. Collapse of project structures and adjacent structures would combine to result in a significant impact where such structures are in close proximity to other structures or people. However, implementation of Mitigation Measure G-7a would protect project structures from landslides, earthflows, debris flows and/or rock fall, which would render the Proposed Project's contribution to this impact less than cumulatively considerable (Class II).

Impact G 8: Substation structures could be damaged by surface fault rupture at crossings of active and potentially active faults exposing people or structures to substantial adverse effects (No Impact). If facilities at the proposed East Central Substation straddled unmapped but active strands of this fault, they could be damaged by rupture propagated along the fault. However the area in which this substation would be constructed is currently vacant and surrounded by open space. As shown in Table G-1 and Figure G-3, no current or reasonably foreseeable projects are planned. Therefore Proposed Project impacts would not have the potential to combine with similar impacts of other projects to result in a significant cumulative impact (No Impact).

G.3.13 Socioeconomics

Geographic Extent

The geographic scope for the analysis of impacts on socioeconomics consists of both Imperial County and San Diego County and the cities contained therein. This geographic extent is appropriate because socioeconomic factors such as public services and utilities are provided by local jurisdictions or dis-

tricts, and the local labor force is expected to come primarily from within these counties although proximity to the U.S./Mexico border may result in spillover effects and housing prices in San Diego County have affected the workforce by partially displacing workers to adjacent Riverside County where housing remains relatively more affordable. Table G-1 provides a list of projects for the socioeconomics cumulative scenario, and Table G-2 identifies applicable plans and projections.

Existing Cumulative Conditions

Past development and population growth within both Imperial and San Diego Counties have impacted employment, public services, utilities, and housing demands. As the population increases through an indirect and direct influence of development, housing demands and workforce expand to serve the growing population and development needs. This in turn stresses existing public services and utility systems. Continued development thus results in more infrastructure being built and changes to employment opportunities. Section D.14 describes existing socioeconomic, public services, and utilities conditions within the affected counties and cities. Development of the Proposed Project in conjunction with the projects described in Table G-1 and the overall continued development of the Region will continue to result in the potential for increased job opportunities, increased housing, public services and utilities demands, and land use development impacts, including redevelopment, expansion of facilities, and displacement.

The criteria by which socioeconomic, public services and utilities impacts would be cumulatively considered significant are the same as those considered for the Proposed Project, which are discussed in Section D.14.4.1.

Cumulative Impact Analysis

Most socioeconomic impacts associated with transmission lines and towers along the proposed route have been accounted for in various local and regional plans and projections (see Table G-2). As discussed in Section D.14, the Proposed Project would not cause existing housing or persons to be displaced, necessitating the construction of replacement housing elsewhere. In addition, there would be no impact from construction workers requiring housing that exceeds the supply of local housing or temporary housing facilities no changes in the demand for labor or in local employment. As growth has been accounted for in various local and regional plans and projections and no impacts would occur along the Proposed Project at any point, displacement of and demand for housing and changes in the local labor market would not be considered as cumulative impacts and they are not discussed further. A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.14.4.1.

Impact S-1: Project construction would cause a substantial change in revenue for businesses, tribes, or governments (Class II, Class III, Class IV)

Revenue from Business Operations. Socioeconomic impacts to local businesses adjacent to the project corridor or along construction transportation routes would result from visual impacts, vehicular or pedestrian access impacts, land use impacts, or health and safety concerns (such as EMF and air emissions). The cumulative effects of the Proposed Project in combination with past, present and reasonably foreseeable projects on each of these resource areas are analyzed in this chapter in Sections G.3.2 (Visual Resources), G.3.8 (Transportation and Traffic), G.3.3 (Land Use), and G.3.9 (Public Health and Safety), respectively. As discussed in the listed sections above, where the cumulative contribution of the Proposed Project to any of short-term visual, traffic, land use, noise, emissions, or safety

impacts for these issue areas are found to be less than significant or have been mitigated to less than significant levels (Class II or III), any associated short-term loss of local business revenue impacts would not be cumulatively considerable (Class III).

Revenue from Agricultural Operations. The restriction of crop production or damage to crops would potentially decrease revenues for the agricultural landowners whose crops would be affected by project activities. The addition of other projects that would affect the agricultural resources of the same landowners also affected by the proposed route or to overall agricultural resources in the region would potentially create a significant cumulative farming revenue impact. Many of the other cumulative projects, such as housing and commercial developments, could contribute to loss of farmland and agricultural resources. However, based on the locations of the current and reasonably foreseeable projects (as presented in Figures G-1 through G-7) and the relatively small number of agricultural lands that would be affected by them and/or the Proposed Project, it is unlikely any of those projects would impact the same farmland at the same time as the Proposed Project. In addition, project design, timing, and avoidance of agricultural operations (Mitigation Measure AG-1a) would minimize any lost crop revenues associated with the Proposed Project to less than considerable (Class II).

On the other hand, operation of the project along with the cumulative projects would create significant impacts associated with loss of DOC Farmland, Williamson Act land, and Active Agricultural Operations (see Section G.3.5). However, because farmers would be compensated for any lost crops (APM LU-3) as part of project design in the event that the design and mitigation do not avoid operations, the project would not contribute to cumulative revenue impacts (Class III).

Economic Benefit. Employment of construction personnel for both the Proposed Project and any or all of the cumulative projects listed in Table G-1 would be beneficial to local businesses and the regional economy through increased expenditure of wages for goods and services. It is assumed that personnel for construction of the cumulative projects listed in Table G-1 would be drawn from local populations in Imperial and San Diego Counties, creating new temporary and permanent employment in these counties and economic benefit to the local economy (Class IV).

Impact S-2: Construction would disrupt the existing utility systems or cause a co-location accident (Class II). Table G-1 identifies those projects that could result in cumulative impacts if constructed in conjunction with the Proposed Project. Only those cumulative projects located within the Proposed Project ROW are considered for collocation impacts. Construction of any project that penetrates the ground could disrupt utility systems if such activities cut or disturb underground utilities during construction of the project. Prior to ground penetration, contractors obtain information on the location of underground utilities, thereby reducing the risk of disruption. The potential for disruption is project-specific and not cumulative.

As none of these projects, such as the Bannister–San Felipe Transmission Line and various pipeline projects, has been constructed, there is no existing cumulative effect in the Proposed Project corridor. However, the siting of the Proposed Project in addition to the other transmission and pipeline projects would significantly increase the potential for a collocation accident or a disruption to the utility system in the future. It is likely that construction of some of these projects would occur shortly before or after construction of the Proposed Project. Consequently, the Proposed Project would have a potentially significant incremental contribution to potential utility disruptions from future collocation projects.

Under PSU-APM-1, SDG&E would coordinate with all utility providers with facilities located within or adjacent to the project to ensure that design does not conflict with other utilities. With implementation

of PSU-APM-2, Underground Service Alert would be notified a minimum of 48 hours in advance of earth-disturbing activities in order to identify any buried utility lines. Compliance with the California Government Code 4216-4216.9 (see Anza–Borrego Link impact discussion in Section D.14.5 for more detail), GO-128, and APMs PSU-APM-1 and PSU-APM-2 would reduce the likelihood of accidental disruptions; however, accidental disruptions could still occur (especially during underground segments). This impact is considered potentially significant, but can be mitigated to less than significant levels (Class II) for the Proposed Project with the implementation of Mitigation Measure S-2b (Protection of Underground Utilities).

For the other collocated projects, the California Government Code 4216-4216.9 requires contractors working on any of the cumulative projects listed in Table G-1 to contact a regional notification center at least two days prior to excavation of any subsurface installation. This required action would result in Underground Service Alert notifying the utilities that may have buried lines within 1,000 feet of the project and would reduce the impacts from other cumulative projects that require excavation (see Table G-1). Therefore, Mitigation Measures AG-2a, S-2a, and S-2b for the Proposed Project, as well as adherence to this Code by all contractors would serve to reduce the cumulative effects from collocation of proposed utility projects to a less than significant level.

Impact S-3: Project construction would increase the need for public services and facilities (Class II, Class III).Water and Sewer and Solid Waste

The Proposed Project would require water for dust control and concrete production during construction and periodic conductor cleaning during operation. project construction would generate waste largely in the form of soil from earthwork, grading and excavations, and from the removal of existing structures. As a result, related projects in conjunction with the Proposed Project construction would place demands on local water or solid waste services during similar construction activities.

The project vicinity and geographic region is experiencing and will continue to experience significant demands for public services and utilities as a result of continued growth. Agencies with development approval authority review individual project consistency with existing local and regional plans and programs. California State laws require specific plans, projects, and planning and development programs to be consistent with local general plans. Therefore, when development proposals are consistent with local general plans, and those, in turn, are consistent with County and Regional Plans, the goals and policies of County and Regional Plans are implemented through the local actions on development proposals. As a consequence, if reasonably foreseeable development projects in the cumulative area of impact are consistent with the applicable local government plan and policy documents, then the impacts of those projects have already been anticipated and accounted for and are, therefore, consistent with the plans and policies listed in Table G-2.

As a part of these plans, local planning agencies augment or develop water, wastewater and solid waste facilities to meet the anticipated needs of population projected for the region. The water, wastewater, and solid waste needs related to the Proposed Project are expected to be within the parameters of regional capacities, projections, and plans applicable to the geographic extent of the cumulative impact area. Impact S-3 (Project construction and operation would increase the need for public services and facilities) was found to be less than significant with the Proposed Project (Class III). In addition, implementation of Mitigation Measures S-3a (Recycle Construction Waste) and S-3b (Use Reclaimed Water), as described in Section D.14 (Socioeconomics), would further reduce all water supply and solid waste impacts of the Proposed Project, thus ensuring that the project would not cumulatively contribute to a significant impact with the addition of other reasonably foreseeable projects. Therefore, the current cumu-

lative impact of all development projects within the cumulative area of impact on water and solid waste facilities serving the areas is less than significant (Class II) with the implementation of mitigation and because the impacts of growth have already been anticipated and accommodated in approved plans.

Public Services. *Construction Workers Demands*. As discussed in Section D.14, the large available labor pool in San Diego and Imperial Counties and nearby areas means that few construction workers are expected to temporarily or permanently relocate to the area. Therefore, construction workers would not generate additional population that along with other cumulative projects in the area would exceed the capacity of local public service providers listed in Table D.14-2. Therefore, the temporary addition of cumulative construction personnel would not substantially increase any demands on schools or hospitals or lower the level of service for fire protection or police protection and impacts, because it would not require construction or expansion of facilities or services. Accordingly, the Proposed Project will have no significant incremental effect on impacts to public services from past, present and reasonably foreseeable projects (Class III).

Fire Hazards. As described in Section D.15 (Fire and Fuels Management), construction activities would result in an increase in potential fire hazards and would increase the need for emergency services and first responders due to accidents caused by construction personnel or equipment. The presence of construction equipment (vehicles, generators, tools, etc.) and personnel may increase the likelihood of a wildland fire. The addition of the IID Bannister–San Felipe transmission project would be located in Imperial County in an area of low fire risk and the addition of a new shorter line with smaller towers would not create a significant obstacle or increase the probability of ignitions. Overgrown and untended vegetation may be present in or near the construction areas and could be ignited by a spark or heat-related incident due to the operation of construction equipment or construction activities. In addition, the presence of construction personnel increases the potential for wildland fires through the increase of human influenced ignition (smoking, use of flammables, etc.). This increase in potential fire hazards resulting from construction with the addition of other projects along the route as well would increase temporary demands for fire protection services and is discussed in Section D.15 (Fire and Fuels Management) and not within this section.

Emergency Services. Construction of the project and equipment would impede emergency access through the area. With implementation of APM PSU-APM-3, SDG&E would be required to coordinate construction schedules, lane closures, and other activities associated with installation of the Proposed Project with emergency and police services to ensure that disruption to response times and access is minimized as not to significant affect response times. Impacts to emergency access are discussed under Section D.9 (Transportation and Traffic), which concludes that such impacts would be less than significant. Because the project would not preclude emergency access, the addition of past, present and future projects would not cumulatively contribute to impact response times. Therefore, impacts to emergency access and/or public services and facilities would be less than significant (Class III) and no mitigation is required.

Impact S-4: Property tax revenues and/or fees from project presence would substantially benefit public agencies (Class IV). Local property tax revenues are a function of tax rates levied within the affected jurisdictions. SDG&E's property taxes would increase as a result of the Proposed Project. All other cumulative projects on private lands would likewise increase property tax revenues for public agencies. Any increase in property tax revenue as a result of the Proposed Project plus other cumulative projects would be a beneficial impact to the local economy and would not result in an adverse change in public resource revenue (Class IV). Therefore, socioeconomics Impact S-4 when combined with impacts from past, present, or reasonably foreseeable future projects would have a beneficial cumulative impact (Class IV).

Impact S-5: Presence of the project would decrease property values (Class III). Impact S-5 under the Imperial Valley Link (see Section D.14.5.1) addresses in detail the issues associated with the potential for impacts on property values from industrial facilities such as transmission lines. Additionally, as discussed in Section D.14.5.1, numerous studies conclude that any property value effects are usually smaller than anticipated and essentially impossible to generally quantify due to the individuality of properties/neighborhoods, differences in personal preferences of individual buyers/sellers, and the weight of other factors that contribute to a person's decision to purchase a property. Other factors (e.g., neighborhood factors, square footage, size of lot, irrigation potential) are much more likely than overhead transmission lines to be major determinants of the sales price of property (Kroll and Priestley, 1992). Most of the projects identified in Table G-1 are residential and commercial developments that would provide housing and services for the local communities and would not decrease property values. However, there are several past, present, and future industrial projects and/or other projects perceived to negatively affect property values in combination with the Proposed Project. These projects would likewise result in smaller than anticipated effects that would be essentially impossible to generally quantify based on individual preferences and other factors discussed above. In addition, across the board, studies have generally concluded that over time any adverse property value impacts diminish and within five years the change is negligible most likely due to increased screening as trees and shrubbery grow and/or diminished sensitivity to the line proximity in the absence of adverse publicity. As a result, any changes in property values would not be a substantial decrease and this impact is considered to be less than significant (Class III). Although not required, it should be noted that implementation of mitigation measures in the Visual Resources section (Section D.3), such as Mitigation Measures V-3a (Reduce visual contrast of towers and conductors) and other visual resources mitigation specific to Key Viewpoints, would help to reduce the cumulative visual impacts, which is one of the components perceived to affect property values.

G.3.14 Fire and Fuels Management

Geographic Extent

The geographic extent for the analysis of cumulative impacts related to fire and fuels management includes the area within the six project firesheds identified in Section D.15. Firesheds are regional landscapes that are delineated based on fire history, fire regime, vegetation, topography, and potential wildfire behavior. Figure D.15-2, Sunrise Powerlink Proposed Project and Alternative Firesheds, shows fireshed boundaries along the Proposed Project route west of the Narrows Substation (MP 70). Wildfire risk in the Imperial Valley Link and eastern Anza-Borrego Link (east of Narrows Substation) is minimal with and without the Proposed Project due to the desert climate that supports minimal wildfire fuels, and these link segments are therefore not evaluated for cumulative project impacts related to fire and fuels management.

Existing Cumulative Conditions

Human-ignited Wildfires. Most wildfires (at least 83%) in San Diego County are human-ignited wildfires (see Section D.15.2). Ignitions often occur along transportation routes through wildland areas and at the wildland-urban interface (WUI), where human development is interspersed with or adjacent to wildlands. Construction projects that occur in wildland areas in the county make a major contribution (at least 17%) to total human-caused ignitions (see Section D.15.2). Large wildfires have damaging effects on air quality, biological resources, and water quality (see Section D.15.2.1 for a detailed description of these effects).

Landscape-level Obstacles to Firefighting. Ground-based firefighting near transmission lines is hazardous because heavy smoke can conduct electricity and cause an arc from the transmission line to the ground, creating an extremely hazardous working space for firefighters. Firefighting suppression tactics, maneuverability and approach distances are greatly restricted by the indefensible island created between collocated and parallel transmission lines in otherwise defensible landscapes. This indefensible island is a swath of land where firefighting is tactically very difficult or simply too dangerous (due to a combination of minimum approach distances and rates of wildfire spread that can reach up to 300 feet per minute).

Non-native Plants' Effect on Fire Behavior. Non-native plants are spread across the landscape primarily via transportation corridors, by humans, equipment, and in soil transported from one place to another. Transportation of people and goods between continents and states introduces non-native plants to novel places. Creation of new roads and an increased frequency of transportation of people and goods contribute to the spread of non-native plants across the landscape. Non-native plants can become invasive, nuisance species especially in disturbed environments like agricultural fields and ranches, but they can also invade natural and backcountry areas. Invasive plants, such as cheatgrass (*Bromus tectorum*), Saharan mustard (*Brassica tournefortii*), and medusa head (*Taeniatherum caput-medusae*) can impact fire behavior and increase fire ignition potential and rate of spread. Cheatgrass and medusa head, for example, dry out earlier in the season than native grasses creating fine fuels that are easily ignited. These fine fuels contribute to wildfires igniting earlier in the year and an increased level of fire recurrence. In addition, non-native grasslands have a 'spotting' effect during a wildfire, where embers from these grasslands are blown ahead of the fire line, contributing to an increased rate of fire spread. Invasive annual grasses also influence fire spread by creating a fine fuel continuum between patchy, perennial shrubs allowing wildfires to expand further into otherwise sparsely vegetated wildlands (USGS, 2007).

Changing Fire Regime. Periodic wildfire maintains the integrity and species composition of many ecosystems. Fire is a natural process in San Diego County and has played an important role shaping the ecology and evolution of species (Pyne et al., 1996; Bond and Keeley, 2005). Periodic wildfire maintains the integrity and species composition of many ecosystems, particularly those in which species have developed strategic adaptations to fire (Pyne et al., 1996; Savage et al., 2000; Pausas et al., 2004).

Human activities have altered natural fire regimes relative to their historic range of variability (Syphard et al., 2007). The two primary influences on fire regimes are fire suppression and increased human ignitions, though climate change, vegetation manipulation, and other indirect factors may also play a role (Lenihan et al., 2003; Sturtevant et al., 2004). California chaparral shrublands have experienced such substantial human population growth and urban expansion that the increase in ignitions, coupled with the most severe fire weather in the country (Schroeder et al., 1964), have acted to offset the effects of suppression to the point that fire frequency exceeds the historic range of variability (Keely et al., 1999). Impacts to ecosystems, communities, and species are possible if a disturbance regime, like wildfire, exceeds its natural range of variability (Landres et al., 1999; Dale et al., 2000). For example, too-frequent fire can result in habitat loss and fragmentation, shifting plant community composition, reduction of small-mammal populations, and accompanying loss of predator species (Barro and Conard, 1991; DellaSalla et al., 2004).

These land-use changes and fire frequency increases have lead to vegetation type conversion[2] of the native shrubland systems into primarily non-native grasslands in many areas of San Diego County. These non-native grassland systems dry out earlier in the season and are more easily ignited than native shrublands, thus their presence increases the potential for fire occurrence and fire frequency even as they may locally reduce fire intensity by replacing hot, woody fuels with cool, fast-burning fuels.

More frequent fires also increase the total number of homes and businesses lost to wildfires over time, as most structures are rebuilt after being damaged or destroyed in a wildfire.

Cumulative Impact Analysis

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.15.4.1. Two of these impacts (F-5, The presence of the overhead transmission line would alter historic fire regimes, and F-6, Project-caused wildfires would adversely affect natural resources), would only occur as cumulative impacts and are not addressed in Section D.15.

Impact F-1: Construction and/or maintenance activities would significantly increase the probability of a wildfire (Class I). Numerous construction activities are currently underway adjacent to wildland areas throughout San Diego County, and numerous others — including residential development and road and infrastructure expansion — are reasonably foreseeable in the near future (Table G-1). These construction projects increase the level of human influence adjacent to wildlands, thereby increasing human-caused wildfire ignitions. Other phenomena, such as increased travel on wildland-adjacent roadways also contribute to wildfire ignitions that result in widespread damages. Construction of the Proposed Project would also increase wildfire ignitions in fuel-laden wildlands, and these can have especially devastating consequences during severe fire weather conditions. Therefore, the Proposed Project's incremental contribution to increased probability of human-caused wildfire ignitions in the six project firesheds across San Diego County would be cumulatively considerable.

Mitigation Measures F-1a, Develop and implement a Construction Fire Prevention Plan, F-1b, Finalize and implement SDG&E 2006 Draft Fire Plan for Electric Standard Practice, F-1c, Ensure coordination for emergency fire suppression. F-1d, Remove hazards from the work area, and F-1e, Contribute to defensible space grants fund, would help reduce the severity of project-level impacts from wildfire ignition. However, even a single ignition that escapes containment in the highly fire-prone region of San Diego County could have devastating effects on communities, firefighter health and safety, and natural resources, and these mitigation measures would not ensure prevention or containment of all ignitions. Therefore, Proposed Project impacts, when combined with similar impacts from past, present and reasonably foreseeable projects would be significant (Class I). No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impact F-2: Presence of the overhead transmission line would significantly increase the probability of a wildfire (Class I). The presence of the overhead transmission line would create an ongoing source of potential wildfire ignitions for the life of the project. Line faults can be caused by such unpredictable events as conductor contact by floating debris, gun shots, and helicopter collisions; these events are rare but would be unavoidable. Past present and reasonably foreseeable projects that have been/would be constructed near fuel-laden wildlands, including many of the residential develop-

[2] Type conversion occurs when the dominant vegetation community is gradually replaced with a new community. Section D.2.5 presents a further discussion of vegetation type conversion.

ments and electrical infrastructure projects identified in Table G-1 would also increase the probability of igniting a wildfire that would result in widespread damages. Therefore, the incremental contribution of project operation and maintenance activities to an increased probability of human-caused wildfire ignitions — resulting in damage to communities, firefighters, and natural resources— in the six project firesheds across San Diego County would be cumulatively considerable. Although Mitigation Measures F-2a, Establish and maintain adequate line clearances, F-2b, Install existing conductors on steel poles, and F-1e, Contribute to defensible space grants fund, would reduce the probability of igniting a wildfire and reduce the impacts of fires when they occur, the potential for wildfire ignition from unpredictable events would still exist, and even a single ignition that escapes containment in the highly fire-prone region of San Diego County could have devastating effects on communities, firefighter health and safety, and natural resources, and these mitigation measures would not ensure prevention or containment of all ignition. Therefore, Proposed Project impacts, when combined with similar impacts from past, present and reasonably foreseeable projects would be significant (Class I). No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impact F-3: Presence of the overhead transmission line would reduce the effectiveness of firefighting (Class I). As discussed in Section D.15.6 through D.15.11, the addition of the aboveground segments of the Proposed Project would reduce the effectiveness of firefighting activities within the affected firesheds. Where the overhead transmission line would be collocated with an existing transmission line in an expanded ROW, the linear swath of terrain that firefighters must avoid would be expanded. This effect would become increasingly severe as additional Future Transmission System Expansion lines are collocated with existing lines or located within one mile of existing lines (see Section B.2.7 for a description of the Future Transmission System Expansion projects).

Firefighting suppression tactics, maneuverability and approach distances are greatly restricted by the indefensible island created between collocated and parallel transmission lines in otherwise defensible landscapes. This indefensible island is a swath of land where firefighting is tactically very difficult or simply too dangerous (due to a combination of minimum approach distances and rates of wildfire spread that can reach up to 300 feet per minute). Where the Proposed Project's overhead ROW would be located within one mile of another transmission line ROW (existing or future) in an otherwise defensible landscape, the space located between the two transmission lines would be rendered an extremely difficult space in which to fight fires. When the interstitial space between two transmission line ROWs is a wildland area, the indefensible space can fuel wildfires to uncontrollable levels of severity.

Significant conflicts to wildfire containment created by the addition of the Proposed Project to landscapes currently occupied by other transmission lines would be created at MP 85-86.5, MP 90-92, MP 104-105.5, MP 110-112.5, MP 114-115.5, MP 126-128.5, MP 130.5-131.5, and MP 131.5-133 (see Section D.15.4.3 for methods). Transmission line undergrounding could mitigate this cumulative effect to a less than significant level; however, undergrounding is not feasible along the entire length of the Proposed Project and Future Transmission System Expansion routes. Mitigation Measures F-3a, Construct and maintain fuelbreaks, and F-3b, Prepare and implement a Multi-agency Fire Prevention MOU, would reduce, to the extent feasible, the severity of the conflict. However, the creation of these conflict areas would be significant and unavoidable (Class I). Therefore, the Proposed Project's incremental effect would be cumulatively considerable.

The Proposed Project impacts, when combined with the effects of other past, present and reasonably foreseeable transmission and distribution line projects would be significant (Class I). No additional miti-

gation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impact F-4: Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread (Class I). Mitigation measures targeted at the prevention and management of invasive plants can reduce project-level impacts on the spread of invasive species across the six project firesheds, which in turn reduces the effect of non-native plant cover on exacerbating wildfire behavior. Similar mitigation measures would be expected to be implemented for many of the reasonably foreseeable projects in the six project firesheds that have the potential to introduce and spread non-native species, such as housing development projects and public works projects, reducing the cumulative impact of invasive plant cover on wildfire behavior to a less than significant level. However, not all activities that result in non-native plant introductions and spread are regulated, nor can they be easily regulated due to their dispersed nature. These activities include such things as human travel on roadways and recreational hiking in wildland areas, both of which can transport non-native plant seeds in soils compacted in tire treads and on the soles of hiking boots.

Because invasive plant introductions to wildland areas is reasonably foreseeable despite best efforts at mitigation, and because Mitigation Measure B-3a, Prepare and implement a Weed Control Plan, cannot reduce the risk of non-native species introduction and spread to zero, the incremental effects of the Proposed Project on non-native species introduction that adversely affect wildfire behavior is considered cumulatively considerable. The cumulative impact is significant (Class I), and no additional mitigation is available to further reduce the level of impact.

Impact F-5: The presence of the overhead transmission line would alter historic fire regimes (Class I). Population growth and development along the WUIs within the six project firesheds across San Diego County has altered the natural background fire regime (frequency of fire occurrence). A change in frequency of this natural process can have adverse impacts not only on ecosystems and species, but on communities located at the WUI. A change in the fire regime is a landscape-level phenomenon that takes place over a long temporal scale. The presence of the project would incrementally contribute to this ongoing fire regime change by introducing equipment and personnel to wildland areas and increasing the probability of wildfire ignitions. The incremental effects of the Proposed Project, when combined with the effects of past development and the reasonably foreseeable projects identified in Table G-1 that occur along the WUI, including Future Transmission System Expansion projects, would be significant (Class I). No additional mitigation measures are available to reduce the Proposed Project's contribution to this impact to less than considerable.

Impact F-6: Project-caused wildfires would adversely affect natural resources (Class I). Although fires are a natural process in the chaparral ecosystems in San Diego County, wildfires can have damaging effects on natural resources including air quality, biological resources, and water quality. These effects would be worse as the frequency of large fires increases.

Air Quality. Smoke from wildfires can elevate levels of particulate matter and ozone in urban and suburban areas to hazardous levels. The effects on air quality from fires would be worse as fire extent and frequency increase, emitting larger quantities of pollutants over shorter periods of time, and increasing the number of days of poor air quality in the air basin. The high concentrations of pollutants would lead to adverse health effects and diminished visibility. The Proposed Project would incrementally increase the frequency of fires through ignitions related to construction, operation, and maintenance activities.

Wildfires also release large quantities of carbon dioxide in smoke. The potentially large short-term release of carbon dioxide from wildfires is offset over longer time scales (decades) by the uptake of atmospheric carbon associated with forest or shrubland regrowth. Increased fire frequency postpones carbon sequestration by cutting short vegetation regrowth, resulting in a net increase in atmospheric carbon from fire until shrubland biomass has an opportunity to regrow. Large fires that result from Proposed Project ignitions would incrementally increase fire frequency, resulting in a short- or medium-term net increase in atmospheric carbon emissions from fire over the life of the project.

Biological Resources. Chaparral shrublands that dominate San Diego County are characterized by frequent large wildfire; however, increasingly frequent large fires would result in impacts to biological resources. Chaparral is highly tolerant to the disturbance fire provides, and will generally dominate a burned site several decades after a fire. Early successional plant species, including native and non-native grasses and herbs will generally dominate a burned site for the first several years after a fire. Thus, increased fire frequency on the same site tends to favor vegetative type conversion to early successional species such as native and non-native grasses and herbs. Changes in dominant vegetation communities dramatically affect habitats for plant and animal species, and may impact special status species. For example, the coastal California gnatcatcher is dependent primarily on coastal sage scrub vegetation which, if burned too many times, can convert to non-native grassland or disturbed habitat that would preclude its use by the gnatcatcher. In many desert and semi-desert habitats where fire historically burned infrequently because of sparse fuels, invasion of weedy species has changed the vegetation so that burns occur much more frequently. Many species in desert ecosystems are poorly adapted to avoid fire or use resources in post-fire communities.

These potentially significant impacts to biological resources would be more severe as the frequency and extent of fires increase. The Proposed Project would incrementally increase fire frequency due to ignitions from project construction, operation, and maintenance resulting in potentially significant impacts to biological resources.

Water Quality. Water quality can be impacted as a result of the occurrence of fire through increased rates of erosion and sedimentation from denuded hillsides, increased water temperature from decreased vegetative stream shade, increases in chemical pollutants from deposition of ash, and impacts to aquatic biota from deposition of fire retardant. These potentially significant impacts to water quality would be more severe as the extent and frequency of fires increase. The Proposed Project would incrementally increase the frequency of fires through ignitions related to construction, operation, and maintenance activities resulting in potentially significant impacts to water quality.

Of the wildfire ignitions in San Diego County over the last 13 years, 1% of these were caused by power lines (see Table D.15-1 in Section D.15.2.1). SDG&E data for the last three years (2004-2006) demonstrate that, of the power line ignitions in the SDG&E service area, 99% (96 ignitions) were distribution and low-voltage transmission system ignitions, and 1% (1 ignition) was higher voltage transmission system ignitions (see Section D.15.1.1). The contribution of the Proposed Project to these unavoidable ignitions would therefore be incremental compared with the ignitions of large wildfires that currently occur in San Diego County. Even a very small increase in ignitions could result in catastrophic effects if it were to occur during Santa Ana winds, and therefore the incremental contribution of the Proposed Project to impacts to air quality, biological resources, and water quality would be cumulatively considerable (Class I).

Mitigation Measures F-1a, Develop and implement a Construction Fire Prevention Plan, F-1b, Finalize and implement SDG&E 2006 Draft Fire Plan for Electric Standard Practice, F-2a, Establish and main-

tain adequate line clearances, F-2b, Install existing conductors on steel poles, F-1c, Ensure coordination for emergency fire suppression, F-1d, Remove hazards from the work area, would reduce project-related ignitions to the extent feasible, but the cumulative impacts to air quality, biological resources, and water quality would remain cumulatively considerable.

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G.4 Cumulative Impact Analysis of Alternatives

This section presents the cumulative impact analysis for the alternatives to the Proposed Project that were analyzed in Section D and Section E.

Reasonably foreseeable projects that could contribute to the cumulative effects scenario for alternatives are listed in Table G-3. The tables indicate the project name and project type, as well as its location and status. Each project is identified by a map number, keyed to Figures G-1 through G-10. These figures show the alternative routes, and indicate projects contributing to the cumulative effects scenario. Collectively, these projects represent known and anticipated activities that may occur in the vicinity of each alternative route that have the potential to contribute to a cumulative impact on the environment. Many projects in the cumulative effects scenario are limited in their geographic extent. For example, a residential subdivision project proposed in Imperial County will have minimal cumulative environmental effects when considered with a project element or alternative located in the City of San Diego. Other projects in Table G-3 are linear in nature and would occur along selected alternatives or segments of an alternative route. Projects included in the cumulative scenario become more or less applicable along the length of the alternative routes, based on their relative proximity to the route. Therefore, the potential for cumulative interactions is similarly variable.

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
Imperial Valley Link Alternatives				
FTHL EASTERN ALTERNATIVE				
NORTH BAJA PIPELINE: expand gas pipeline capacity between Imperial County and Northern Mexico	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 174			
IMPERIAL VALLEY SUBSTATION: Construct new 230 kV electrical substation on 10 acres	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 61			
SDG&E WEST OF DUNAWAY ALTERNATIVE				
STIRLING ENERGY POWER PLANT: Construct a 4,500-acre solar generating station	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 77			
SDG&E WEST MAIN CANAL–HUFF ROAD MODIFICATION ALTERNATIVE				
NONE				
Anza-Borrego Link Alternatives				
PARTIAL UNDERGROUND 230 kV ABDSP SR78 TO S2 ALTERNATIVE (with All Underground Option)				
GEOTHERMAL LEASING OF FEDERAL LANDS: Allow for lease of 7,050 acres of lands in the Truckhaven Geothermal Leasing Area	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 69			
WIDEN BRIDGE: Make San Felipe Creek Bridge improvements	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 108			
WARNER/CARRILLO RANCH HOUSE RESTORATION	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 54			
OVERHEAD 500 kV ABDSP WITHIN EXISTING ROW ALTERNATIVE (with East of Tamarisk Grove Campground Option)				
NONE				
Central Link Alternatives				
SANTA YSABEL EXISTING ROW ALTERNATIVE, SANTA YSABEL ALL UNDERGROUND ALTERNATIVE, MESA GRANDE ALTERNATIVES				
SANTA YSABEL CASINO: Constructed a 70,000-sq.ft. resort and casino, including support offices, restaurants, parking for approximately 600 cars, a wastewater treatment plant, and 3 outbuildings of 2,000 to 3,500-sq.ft. each for service/support on 6 acres	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 74			
SAN DIEGUITO RIVER PARK: Develop a 55-mile regional planning area that includes the regional Coast to Crest Trail from Del Mar Beach to Volcan Mountain (concept plan adopted by the JPA Board of Directors in 1994).	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 55			

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
Santa Ysabel Partial Underground				
SAN DIEGUITO RIVER PARK: Develop a 55-mile regional planning area that includes the regional Coast to Crest Trail from Del Mar Beach to Volcan Mountain (concept plan adopted by the JPA Board of Directors in 1994).	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 55			
HOSKINGS RANCH: TPM 20863; subdivide 150.27 acres into three residential lots	Refer to Table F-1 Proposed Project Cumulative Project List Map ID 162			
Inland Valley Link Alternatives				
CNF EXISTING 69 kV ROUTE ALTERNATIVE				
CELL SITE: MUP 03-123; construct a 42-foot broad-leaf tree cellular tower (unmanned) with antennas and ground mounted radio equipment housed in equipment shelter	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 33			
OAK HOLLOW ROAD UNDERGROUND ALTERNATIVE				
16-INCH PIPELINE TO SDCE TANK NO. 1: Install a 16-inch water pipeline	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 53			
SAN VICENTE TRANSITION ALTERNATIVE				
RANCHO CAÑADA BED AND BREAKFAST: MUP 02-005; convert 32 acres for use as commercial bed and breakfast, consisting of five existing residences, existing spa and pool with up to 10 guests and two staff	Refer to Table F-1 Proposed Project Cumulative Project List Map ID 38			
SAN VICENTE ROAD PHASE II (EAST) WIDENING AND PATHWAYS: Widen and construct pathways on both sides of San Vicente Road	Refer to Table F-1 Proposed Project Cumulative Project List Map ID 48			
SAN VICENTE ROAD PHASE I WIDENING AND PATHWAYS: Widen and construct pathways on both sides of San Vicente Road	Refer to Table F-1 Proposed Project Cumulative Project List Map ID 47			
PARKER MINOR SUBDIVISION: TM 4896; subdivide 27.6 acres for nine single-family residential lots	Refer to Table F-1 Proposed Project Cumulative Project List Map ID 37			
COBLE: TPM 20421; subdivide five acres into four single-family residential lots	Refer to Table F-1 Proposed Project Cumulative Project List Map ID 151			
CHUCK WAGON ROAD ALTERNATIVE				
MONTE VISTA RANCH: Create a 4,000-acre conservation area	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 76			
SPITZBERGEN PROPERTY: TM 5294 (Part of Holy Oaks SPA); develop 311 acres as part of a two-phase project, consisting of driveway improvements to an existing single-family residence to correct grading violation and construction of 17 single-family residences plus two open space lots over 220 acres	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 34			

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
RANCHO CAÑADA BED AND BREAKFAST: MUP 02-005; develop 32 acres for use as commercial bed and breakfast, consisting of five existing residences, existing spa and pool with up to ten guests and two staff	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 38			
SAN VICENTE ROAD PHASE II (EAST) WIDENING AND PATHWAYS: Widen and construct pathways on both sides of San Vicente Road	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 48			
COBLE: TPM 20421; subdivide five acres into four single-family residential lots	Refer to Table F-1 Proposed Project Cumulative Project List Map ID 151			
SPITSBERGEN PROJECT: TPM 21042; subdivide 311 acres into four residential parcels	Refer to Table F-1 Proposed Project Cumulative Project List Map ID 168			
Coastal Link Alternatives				
POMERADO ROAD TO MIRAMAR AREA NORTH				
ARJONS DRIVE MAP WAIVER: Project No. 35318; Map Waiver Application to waive the requirements for a TM to create two commercial condominium units	Commercial	7945 Arjons Drive, Miramar	Application deemed complete May 2004	78
MONARCH: Project No. 6285; develop three parcels from one 15.6-acre site with an existing 60,000-sq.ft. office building and 262-unit apartment complex and develop a proposed second 60,000-sq.ft. office building	Industrial	10776 Scripps Ranch Boulevard, Scripps Ranch	Application closed as of March 2007	77
SCRIPPS POMERADO: Project No. 3116; construct 29 single-family residential lots on 3.73 acres	Residential	Pomerado Road, Scripps Miramar Ranch (APN 320-240-31)	Application active as of March 2007	74
STONE CREEK: Project No. 67943; construct 9,800 residences and up to 730,000-sq.ft. of commercial space	Residential	10050 Black Mountain Road, Miramesa	Application under review as of March 2007	73
CHABAD HEBREW ACADEMY: Project No. 6691; Expansion of existing pre-school, K-12 school and University with more University structures and student/faculty housing on parcel two		Pomerado Road, Scripps Miramar Ranch (APN 354-102-18)	Application under review as of February 2007	72
SCRIPPS CYPRESS POINT: Project No. 10591; construct 83 single-family residences on 40.26 acres	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 20			
2003 FIRE 10519: Project No. 111230 (18835); construct a two-story, 2,721 sq. ft., 4-bedroom residence to replace fire-damaged house	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 15			
2003 FIRE SFR 10374: Project No. 112201; construct a two-story, 3,566 sq. ft., five-bedroom, 3-1/2-bath single-family residence to replace a fire-damaged home	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 10			
TORREY HILLS VTM: Project No. 106228; construct 484 multi-family residences and 4,000 sq. ft. of commercial space	Refer to Table G-1 Proposed Project Cumulative Project List Map ID 17			

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
SORRENTO VALLEY TRUNK SEWER: Project No. 46-197; relocate an 18-inch truck sewer out of Peñasquitos Lagoon, construct a new underground pump station and emergency storage tank, install a secondary force main and sewer main	Refer to Table G-1 *Proposed Project Cumulative Project List*			Map ID 21
I-5 MIDCOAST PROJECT: Construct additional freeway lanes to increase capacity	Refer to Table G-1 Proposed Project Cumulative Project List			Map ID 30
TORREY HILLS YMCA: Project 8048; construct a new two story structure with enclosed pools	Refer to Table G-1 Proposed Project Cumulative Project List			Map ID 113
SORRENTO VALLEY ROAD AND I-5 INTERCHANGE: Construct new freeway connectors	Refer to Table G-1 Proposed Project Cumulative Project List			Map ID 123
SORRENTO VALLEY MAP WAIVER: Project No. 45813; Coastal Development Permit and Map Waiver application to waive the requirements for a TM to create three commercial condominium units	Commercial	4125 Sorrento Valley Boulevard, Sorrento Valley	Application deemed complete September 2004	80
ED EX-AURORA BIOSCIENCES: Project No. 3217; lay foundation and construct structural steel frame for a two story above grade and one story below grade research and development building	Industrial	4031 Sorrento Valley Boulevard, Sorrento Valley	Application closed as of March 2007	79
LOS PEÑASQUITOS CANYON PRESERVE–MERCY ROAD				
SAN VICENTE PIPELINE PROJECT: Construct an 11-mile pipeline connecting San Vicente Reservoir to Second Aqueduct at I-15/Mercy Road	Refer to Table G-1 Proposed Project Cumulative Project List			Map ID 65
I-15 MANAGED LANES: Construct additional freeway lanes to increase capacity	Refer to Table G-1 Proposed Project Cumulative Project List			Map ID 28
LOS PENASQUITOS RANGER STATION: Project No. 70692; public project assessment for a 60-foot by 24-foot pre-fabricated building to be used as a ranger station for five rangers	Public Facilities and Utilities	Corner of Mercy Road and Black Mountain Road, Peñasquitos	Application under review as of March 2007	75
MED-IMPACT: Project No. 1053; construct six office buildings with daycare facility and surface parking	Industrial	10531 Scripps Poway Parkway, Scripps Ranch	Application closed as of March 2007	76
BLACK MOUNTAIN TO PARK VILLAGE ROAD				
NEXTEL MERCY: Project No. 81062; construct 30-foot-high monopalm supporting 12 antennas and associated equipment in a 232 sq.ft. shelter	Refer to Table G-1 *Proposed Project Cumulative Project List*			Map ID 124
COASTAL LINK SYSTEM UPGRADE				
NONE				

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
Substation Alternatives				
TOP OF THE WORLD SUBSTATION ALTERNATIVE				
SANTA YSABEL CASINO: Construct a 70,000-sq.ft. resort and casino, including support offices, restaurants, parking for approximately 600 cars, a wastewater treatment plant, and 3 outbuildings of 2,000 to 3,500-sq.ft. each for service/support on 6 acres	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 74			
Southwest Powerlink Alternatives				
INTERSTATE 8 ALTERNATIVE (INCLUDING ALL OPTIONS)				
Mexico — South of San Diego and Imperial Counties				
LA RUMOROSA WIND AREA: Potential development of over 1000 MW of wind generation south of Jacumba area. Possible transmission connection to Imperial Valley Substation or SWPL.	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 173			
San Diego County				
STIRLING ENERGY POWER PLANT: Construct a 4,500-acre solar generating station	Refer to Table F-1 *Proposed Project Cumulative Project List* Map ID 77			
KETCHUM RANCH: TM 5524; subdivide 1,250 acres into 2,125 residential units, retail commercial development, elementary school site, public park, recreational center, open space, and associated infrastructure and utilities	Residential	South of I-8, north of Old Highway 80 and west of Carrizo Gorge Road	DPLU letter dated July 2007 requesting an EIR	94
LISA ELDER: TPM 20981; subdivide 109 acres into five single-family residential lots	Residential	South of Old Highway 80 and west of McCain Valley Road	First DEIR was submitted in February 2006 and is currently under DPLU review	95
GOLDEN ACORN CASINO AND TRAVEL CENTER: SCH No. 2007071097; 33-acre expansion consisting of 150-room hotel, 900-space parking garage, surface parking, RV park, casino expansion, bowling alley, arcade, offices, retail, restaurants/food service, wind turbines, water and wastewater improvements in three phases.	Commercial	South of I-8 at Crestwood	Draft off-reservation Environmental Evaluation complete. Public review ended August 2007	96
OLIVER: TM 4918; subdivide 148 acres into 47 lots	Residential	East of Pine Valley, Pine Valley	USFWS Arroyo toad survey letter dated July 22, 2004	98
SUN RIVER: TM 4941; subdivide 13.44 acres into 70 single-family residential lots	Residential	South side of Alpine Boulevard at East Victoria Drive, Alpine	DPLU approval of grading plan letter dated September 8, 1998	99

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
MAGGIO RANCH: TM 5017; subdivide 105.5 acres into 37 residential lots, equestrian facility, percolation pond and wastewater treatment facility	Residential	Intersection of Viejas Boulevard and SR79, Descanso	Final EIR dated August 2000	100
CHOCOLATE MOUNTAIN: TM 5144; subdivide 245 acres into 96 single-family residential estate lots	Residential	Chocolate Summit Drive, Alpine	DPLU letter requesting additional information dated March 26, 2007	102
ROBLE GRANDE ESTATES: TM 5426; subdivide 8.26 acres into six residential lots	Residential	1735 Roble Grande Road, Alpine	DPLU approval of TM letter dated November 3, 2006	104
SCHMIDT: TM 5434; subdivide 112 acres into 14 residential lots	Residential	West side of SR67 and approximately 0.25 miles south of Foster Truck Trail, Lakeside	DPLU scoping letter requesting additional information dated October 16, 2006	105
MUCHO: TM 5454; subdivide 33.1 acres into ten residential lots	Residential	Boulder Oaks Lane and South Grade Road, Alpine	DPLU letter requesting additional information dated November 11, 2005	106
FLINN SPRINGS: TM 5470; subdivide 50 acres into 15 single-family residential lots	Residential	Southwest corner of Blossom Valley Road and Flinn Springs Road, El Cajon	DPLU letter requesting additional information dated May 1, 2007	107
SUNSET VIEW ESTATES: TM 5522; subdivide 5.75 acres into 21 single-family residential lots	Residential	2800 block of Eltinge Drive and west of Bay Meadows, Alpine	DPLU letter requesting additional information dated January 24, 2007	108
MAGNOLIA COURTS: TM 5541; subdivide 5.19 acres into 38 residential lots and 5,000 square feet of commercial space	Residential	9317 Lake Jennings Park Road, El Cajon	DPLU project application dated July 27, 2007	109
FOLAND: TM 5285; subdivide 12.89 acres into four residential parcels	Residential	27350 Guatay View Lane, Pine Valley	MND June 3, 2004	103
KEMERKO: TPM 20716; subdivide 94.06 acres into four single-family residential lots	Residential	Mountain View Road, Descanso (APN 399-030-29)	BTR dated December 2005	85
RALPHS: TPM 20252; subdivide 48.6 acres into four residential lots	Residential	South of Shasta Way and 1.6 miles west of Tierra Del Sol, Boulevard	ND dated December 24, 1996	112
FIELD: TPM 20543; subdivide 1.05 acres into three residential parcels	Residential	14652 Old Highway 80, Descanso	DPLU approval of TPM letter dated August 8, 2001	114
ELTINGE DRIVE: TPM 20549; subdivide 2.3 acres into three single-family residential lots	Residential	Eltinge Drive between Marshal Road and South Grade Road, Alpine	MND March 4, 2002	115

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
SMITH: TPM 20578; subdivide 3.95 acres into three single-family residential lots	Residential	2255 Tavern Road, Alpine	ND dated March 28, 2002	116
MILLER: TPM 20586; subdivide 2.27 acres into two residential lots	Residential	East side of Yucca Hill Drive just north of South Grade Road	DPLU letter requesting additional information dated February 2, 2001	117
GARZA: TPM 20777; subdivide 53.33 acres into four parcels	Residential	Shasta Way, Boulevard	DPLU eighth iteration review letter	120
BENNETT: TPM 20784; subdivide 47.53 acres into four parcels	Residential	Shasta Way, Boulevard	DPLU fifth iteration review letter	121
BENNETT: TPM 20798; subdivide 40 acres into four residential lots	Residential	Shasta Way, Boulevard	DPLU fifth iteration review letter dated May 18, 2006	123
KENYON: TPM 20857; subdivide 15.88 acres into three parcels	Residential	8579 Pine Creek, Pine Valley	DPLU letter requesting additional information dated November 16, 2005	124
BLANCK: TPM 20867; subdivide 13 acres into four lots	Residential	10225 Silva Road, El Cajon	DPLU letter requesting additional information dated October 21, 2004	125
LOMAS: TPM 20888; subdivide 10.13 acres into four residential parcels	Residential	14896 Quail Valley Way, Lakeside	Categorical Exemption dated April 20, 2006	126
PULLI: TPM 20937; subdivide 2.83 acres into two parcels	Residential	11623 Hi Ridge Road, Lakeside	DPLU letter requesting additional information dated May 9, 2007	127
TOP OF THE PINES: TPM 20951; subdivide 17.4 acres into four residential lots	Residential	Corte Madera Road, Pine Valley	DPLU extension approval letter dated April 24, 2007	128
SAN VICENTE AVENUE II: TPM 21009; subdivide 10.06 acres into four residential lots	Residential	San Vicente Avenue and SR67, Lakeside	DPLU letter requesting additional information dated June 6, 2006	129
LANDSTEDT: TPM 21026; subdivide 6.45 acres into four residential parcels	Residential	Eastern terminus of Boulder Pass Road, east of Tavern Road, Alpine	DPLU second iteration review letter	130
McKANY: TPM 21044; subdivide 1.43 acres into four residential lots and one remainder lot	Residential	South side of Alpine Boulevard between Hia Leah Lane and Louise Drive, Alpine	DPLU first iteration review letter dated October 12, 2007	131

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
NEUERBURG: TPM 21064; subdivide 5.05 acres into three single-family residential lots	Residential	West Victoria Drive and Old Stage Coach Road, Alpine	DPLU letter requesting additional information and guidance through process dated July 11, 2007	132
BONGIOVANNI MONTANA SERENA: TPM 21080; subdivide 16.76 acres into four lots	Residential	15030 Montana Serena Road, Alpine	DPLU letter requesting additional CEQA information and guidance through process dated August 24, 2007	133
ALBERS: TPM 20843; subdivide 2.3 acres into four residential lots	Residential	1987 Via Corina, Alpine	DPLU letter requesting additional information dated June 26, 2007	137
ELDER: TPM 20981; subdivide 109.3 acres into four residential parcels and one remainder lot	Residential	Old Highway 80, south of Evening Shadow, Boulevard	DPLU extension approval letter dated September 6, 2007	138
JAPATUL VALLEY ROAD SUBDIVISION: TM 4711; construct a low-density subdivision with four-to eight-acre lots	Residential	Northeast of the I-8 and Japatul Valley Road (SR79) intersection, Descanso	DEIR dated March 1990	1
PINE CREEK RANCH: TM 5236; subdivide 109 acres into 19 single-family residential lots and one 6.4-acre lot leased by Pine Valley Municipal Water District	Residential	East side of Old Highway 80, just north of Pine Valley Road, Pine Valley	DPLU incomplete letter dated April 2003	2
BUCKMAN SPRINGS ROAD BRIDGE: Construct a new 450-foot bridge over Cottonwood Creek	Public Facilities and Utilities	Southwest of I-8, north of Morena Stokes Valley Road, Campo	Estimated completion date Summer 2010	71
PINE VALLEY ESTATES: TM 5318; subdivide a total of 38 acres into 20 single-family residential lots on 9.1 acres	Residential	Pine Valley Boulevard, Pine Valley (APN 410-120-19)	DPLU extension approval letter dated September 2006	81
ED FOLAND: TPM 20344; subdivide 23.9 acres into five single-family residential lots	Residential	27350 Old Highway 80 on north side, Guatay	MND November 1998	3
SAKSA: TPM 20128; subdivide 2.3 acres into three lots	Residential	15275 Old Highway 80, Descanso	DPLU letter dated October 1998 stating completion of initial study review	4
COSTA: TPM 20053; subdivide 2.7 acres into four single-family residential lots	Residential	14419 Old Highway 80, Descanso	MND dated November 1998. DPLU letter dated May 1993 stating approval of TPM	5

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
THE SLOPE: TPM 20765; subdivide 31.2 acres into four single-family residential lots	Residential	Southeast of Pine Creek Road–Old Highway 80 intersection, Pine Valley	DPLU letter dated June 2006 providing information to applicant about technical requirements	6
BRAR: TPM 20649; subdivide 1.15 acres into two single-family residential lots	Residential	South side of Alpine Boulevard, east of East of East Victoria Drive, Alpine	Categorical Exemption dated July 2002	8
DAOUD: TPM 20832; subdivide 24.19 acres into three single-family residential lots	Residential	0.5 miles south of Alpine Blvd–Dunbar Lane exit, El Cajon	MND dated September 2005	9
CROCKER: TPM 20743; subdivide 4.33 acres into two single-family residential lots	Residential	393 Galloway Valley Court, Alpine	MND December 2006	10
SHUFELDT: TPM 20597; subdivide 10.33 acres into five single-family residential lots	Residential	3029 Victoria Drive, Alpine	ND dated May 2003	11
ALPINE VILLAGE CENTER: TPM 20877; subdivide 9.8 acres into four single-family residential lots	Residential	Southeast corner of Alpine Boulevard and South Grade Road, Alpine	MND dated June 2005	13
DUQUETTE: TPM 20704; subdivide 1.02 acres into three single-family residential lots and one existing single-family residence	Residential	14648 Old Highway 80, Descanso	Categorical Exemption dated May 2004	14
TAVELMAN: TPM 20920; subdivide 6.61 acres into four single-family residential lots	Residential	3426 East Victoria Drive, Alpine	DPLU due date extension approval letter dated August 2006	15
DART: TPM 20675; subdivide 33.46 acres into three lots, two single-family residential lots and one commercial lot	Residential	West side of Ribbonwood Road, between Roadrunner Lane and I-8, near Live Oak Springs	MND dated November 2006	16
ERDMANN: TPM 20698; subdivide 101.6 acres into four single-family residential lots and one remainder 48.5-acre lot	Residential	Between Ribbonwood Road and McCain Valley Road, just north of I-8, near Live Oak Springs	MND November 2004	18
MAURIS: TPM 20645; subdivide 35 acres into two single-family residential lots	Residential	2945 Ribbonwood Road, Boulevard	ND payment receipt dated November 2003	19
HARBISON CANYON: TPM 20815; subdivide two acres into three lots	Residential	8657 Harbison Canyon Road at Galloway Place, near Alpine Heights	DPLU due dated extension approval letter dated March 2005	21
McCAIN VALLEY ROAD: TPM 20719; subdivide 248.21 acres into five single-family residential lots	Residential	McCain Valley Road and Old Highway 80, bordered to the north by I-8, near Boulevard	MND dated June 2006	22

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
VICTORIA ESTATES: TM 5431; subdivide 83.13 acres into 37 single-family residential lots	Residential	2683 Country Meadows Road; easterly terminus of Country Meadows Road, Alpine	DPLU letter dated November 2006 requesting additional information	23
ALPINE RANCH ESTATES WEST II: TM 5063; construction of 67 single family residential lots ranging in size from one to 20+ acres	Residential	South of I-8 and Arnold Way at west end of Alpine Heights Road, Alpine Heights	EIR-1999	24
CRESTLAKE ESTATES: TM 5082; develop 74 lots with 69 lots for residential use.	Residential	South of I-8 at Arnold Way and Harbison Canyon Road, Glen Oaks	DPLU letter requesting additional information for December 2005 Draft EIR	25
PETERSON SUBDIVISION: TM 5210; subdivide 63 acres for 18 single-family residences	Residential	South of the current terminus of Tompau Road, Alpine	MND dated November 2001	26
DOLORES HILL SUBDIIVISON: TM 4893; subdivide 20 acres into 14 residential lots	Residential	915 Alpine Heights Road, between Denova Drive and Willits Road, Alpine Heights	Project approved, IS expired March 2000	27
NICHOLAS: TM 4939; subdivide 10.5 acres into 18 residential lots	Residential	East side of South Grade Road between Highlands View Road and Alpine Boulevard, Alpine	IS dated December 1997; DPLU TM extension letter dated January 1998	28
HIGHLAND VISTA: TM 5044; subdivide 163 acres into 37 residential lots	Residential	Victoria Terrace between Puetz Valley Road and Sneath Way, north of Old Stage Coach Run, Alpine	MND dated April 1999	29
LANDSTEDT: TM 5074; subdivide 8.2 acres into eight residential lots	Residential	North of South Grade Road and east of DeLand Drive, Alpine	ND dated July 1995	30
CARROLL: TPM 20530; subdivide 17.3 acres into two single-family residential lots	Residential	15672 Broad Oaks Road, east of El Capitan Real, in the Los Coches Hills	MND dated April 2003	62
ROJAS: TPM 20647; subdivide 3.17 acres into two single-family residential lots	Residential	11561 Johnson Lake Road, Lakeside	ND July 2002	63
KING SUBDIVISION: TM 5160; subdivide 13.7 acres into four single-family lots	Residential	East side of Rancho Judith Road, just north of Big Red Road, Alpine	ND dated February 2001	31
ALPINE 10 RESIDENTIAL SUBDIVISION: TM 5259; subdivide 30.9 acres into ten residential lots	Residential	Along and to the west of Old Tavern Road approximately 0.5 miles south of Alpine Heights	MND dated February 2003	32
ALPINE INN CONDOMINIUMS: TM 5377; convert 57 apartments to condominiums on 1.71 acres	Residential	1434 Marshall Road, Alpine	Approved by DPLU on April 2005	33

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
PONDEROSA ESTATES: TM 5142; subdivide seven acres into 24 residential lots	Residential	South of Alpine Boulevard, west of Marshall Road, Alpine	MND dated June 2003	34
AUGUST RESIDENTIAL SUBDIVISION: TM 5262; subdivide 21.02 acres into 16 residential lots	Residential	616 Alpine Heights Road, Alpine Heights	DPLU letter dated January 2007 requesting additional information	35
ALPINE RANCH: TM 5322; subdivide 254 acres into 25 residential lots, four open space lots totaling 152.38 acres, and a 3.71 acres water reservoir site	Residential	Peutz Valley Road, Alpine (APN 402-261-01)	DPLU letter dated September 2005 requesting additional information	82
VIEJAS HILLS ESTATES: TM 5245; subdivide 180 acres into 25 single-family residential lots and a 70 acres remainder parcel	Residential	West Victoria Drive and along north side of Otto Avenue, Alpine	DPLU letter dated May 2005 requesting additional information for public review of DEIR	36
ENNISS INDUSTRIAL PARK: TM 5101; construction of 31 buildable lots and two lots for private road easements	Industrial	North and south sides of Vigilante Road, east of intersection with SR67, Lakeside	ND dated January 1997	64
SKY MESA RANCH: TM 5118; subdivide 48.61 acres into 24 single-family residential lots	Residential	Silva Road between Broad Oaks Road and Dunbar Lane, north of Old Highway 80, El Cajon	ND February 1998	37
HONEY HILLS RANCH ROAD: TM 5437; subdivide 4.2 acres into seven single-family residential lots	Residential	3087 Honey Hill Ranch Road, Alpine	MND November 2006	38
PARK ALPINE: TM 5433; subdivide 142 acres into 41 single-family residential lots and three open space lots	Residential	2480 South Grade Road, between Boulder Pass and Boulder Oaks, Alpine	DPLU letter dated January 2007 requesting additional information	39
VICTORIA RANCH: TM 5438; subdivide 6.31 acres into six single-family residential lots	Residential	West terminus of Victoria Place, Alpine	DPLU letter dated February 2007 requesting additional information	40
KASITL TM: TM 5435; subdivide 1.30 acres into seven single-family residential lots	Residential	1417 Tavern Road and Tavern Court, Alpine	DPLU letter dated January 2007 requesting additional information	41
BLOSSOM VALLEY RANCH: TM 5197; subdivide 65.3 acres into 25 single-family residential lots	Residential	Northwest side of Blossom Valley Road between Flynn Springs Road and Red Pony Lane, El Cajon	MND March 2003	65

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
ALPINE GLEN OAKS: TM 5425; subdivide 15.76 acres into 12 single-family residential lots	Residential	410 Arnold Way, Alpine	DPLU extension approval letter dated June 2006	42
DICK CON CORPORATION: TM 4978; subdivide 61.5 acres into 25 lots. (37-acre development with a 24-acre remainder parcel)	Residential	North of Otto Avenue and east of East Victoria Drive, approximately a half mile north of I-8, Alpine	MND dated September 2001	43
QUAIL CANYON: TM 5202; subdivide 256.1 acres into 21 single-family residential lots	Residential	North of Quail Canyon Road between Furnace Creek Road and Tombstone Creek Road, El Cajon	DPLU fifth iteration review letter dated January 2005; approved FPP	66
BLOSSOM VALLEY ESTATES: TM 5108; subdivide 319 acres of 605 acres into 97 single-family residential lots and one open space lot	Residential	Southeast of El Monte County Park, El Cajon	Approved EIR dated May 1999	67
LAKESIDE RANCH: TM 5317; subdivide 462.19 acres into 123 single-family residential lots and four open space lots	Residential	South of San Vicente Reservoir between Moreno Avenue and Wildcat Canyon Road, Lakeside (APN 329-120-19)	DPLU extension for project submittal letter dated July 2006	83
LAKESIDE DOWNS: TM 5314; subdivide 412 acres into 140 residential lots and seven open space lots	Residential	Moreno Avenue and Vigilante Road, Lakeside	Completion of environmental documentation dated June 2005	68
OAKMONT II: TM 5421; subdivide 103 acres into 20 single-family residential lots	Residential	Old Highway 80 and Flynn Springs Road, El Cajon (APN 396-020-13)	DPLU CEQA IS – Environmental Checklist form dated March 2005	84
ALPINE OAKS: TPM 20330; subdivide 1.1 acres into two single-family residential lots	Residential	South of Arnold Way between Midway Drive and Krysten Terrace, Alpine	ND dated March 1999	44
ROGER MILLER: TPM 20342; subdivide 38.5 acres into five single-family residential lots	Residential	South end of Tavern Road, Alpine	DPLU approval of TPM May 1999	45
STROUD: TPM 20325; subdivide 3.3 acres into two single-family lots	Residential	2342 Victoria Meadows Drive, Alpine	NM February 1998	46
CONWAY: TPM 20436; subdivide 12.6 acres into five single-family residential lots	Residential	North side of Boulder Oaks Lane, west of South Grade Road, Alpine	ND April 2001	47
KNIFFING: TPM 20422; subdivide 8.52 acres into three single-family residential lots	Residential	Via Corina, Alpine	ND June 2000	48
BOERNER: TPM 20329; subdivide 8.3 acres into three single-family residential lots	Residential	Dell View Road, between Hawley Road and Silva Road; approximately two miles north of I-8, El Cajon	ND December 1997	49

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
MYRMEL: TPM 20160; subdivide 36 acres into four single-family residential lots	Residential	Approximately 600 feet north of Johnson Lake Road and approximately 300 feet west from Hi Ridge Road, Lakeside	Previously adopted ND dated August 1998	69
SIGNORELLI: TPM 20657; subdivide 5.42 acres into five single-family residential lots	Residential	940 Alpine Heights Road, Alpine Heights	MND dated February 2003	50
County of San Diego Improvement Projects				
OLD HIGHWAY 80 AND PINE CREEK ROAD INTERSECTION IMPROVEMENTS: Improvements to the intersection of Old Highway 80 and Pine Creek Road	Public Facilities and Utilities	North of I-8 at the Old Highway 80–Pine Creek Road intersection, Pine Valley	Estimated completion date Summer 2011	51
TAVERN ROAD WIDENING: Widen 600-foot of Tavern Road from Arnold Way to Tavern Court	Public Facilities and Utilities	South of Alpine Boulevard along Tavern Road between Arnold Way and Tavern Court, Alpine	Estimated completion date Spring 2011	52
ALPINE TRUNK SEWER IMPROVEMENTS: Approximately 5,400 feet of trunk sewer improvements	Public Facilities and Utilities	Multiple locations south of I-8	Estimated completion date Summer 2011	70
BROAD OAKS ROAD EXTENSION: Construct a new 1,250-foot road from Silva Road to Dunbar Lane	Public Facilities and Utilities	Broad Oaks Road between Silva Road and Dunbar Lane, El Cajon	Unknown completion date	53
ALPINE BLVD: Reconfigure alignment of Alpine Boulevard from Tavern Road to East Victoria Drive. Alpine Boulevard will become a Town Collector	Public Facilities and Utilities	Alpine Blvd south of I-8 and between Tavern Road and East Victoria Drive, Alpine	Unknown completion date	54
WILLOWS ROAD/VIEJAS GRADE ROAD INTERSECTION IMPROVEMENTS: Willows Road and Viejas Grade Road intersection improvements	Public Facilities and Utilities	North of I-8 at the intersection of Willows Road and Viejas Grade Road, Alpine	Estimated completion date Spring 2007	55
WILLOWS ROAD BRIDGE REPAIR: Scour repair work at foundations of the Willows Road bridge over Viejas Creek	Public Facilities and Utilities	North of I-8 and east of Willows Road–Viejas Grade Road intersection, over Viejas Creek, Alpine	Estimated completion date Winter 2008-2009	56
RIBBONWOOD ROAD SIGHTLINE IMPROVEMENT: Approximately 270-foot improvement to sightline on a horizontal curve	Public Facilities and Utilities	North of I-8 along Ribbonwood Road approximately 0.25 miles south of Opalocka Road, near Boulevard	Estimated completion date Spring 2009	57
RIVERSIDE DRIVEBRIDGE SIDEWALK: Construct a new 184-foot sidewalk on the Riverside Drive bridge	Public Facilities and Utilities	North of SR79 along Riverside Drive, over the Sweetwater River, Descanso	Estimated completion date Spring 2009	58
VIEJAS Boulevard BRIDGE: Construct a 627-foot new bridge over the Sweetwater River	Public Facilities and Utilities	Viejas Boulevard west of Mizpah Lane, over the Sweetwater River, Descanso	Estimated completion date Fall 2008	59
ALPINE CREEK IMPROVEMENTS: 1,700-foot flow capacity improvement to Alpine Creek	Public Facilities and Utilities	Alpine Creek from Alpine Boulevard to Tavern Road, Alpine	Unknown completion date	97

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
Caltrans				
SIGNAL AND RAMP IMPROVEMENTS: Install a new signal and widen ramp	Public Facilities and Utilities	0.25 miles west of Tavern Road overcrossing to 0.1 miles east of Tavern Road overcrossing, Alpine	Estimated completion date April 2007	60
BCD ALTERNATIVE				
BIG COUNTRY RANCH: TM 5133; subdivide 2,280 acres into 71 residential lots	Residential	Ribbonwood Road, Boulevard	DPLU letter requesting additional information dated August 29, 2001	101
BCD SOUTH OPTION				
VOLLI: TPM 20889; subdivide 40 acres into four single-family residential lots	Residential	Old Highway 80 and La Posta Road, near Boulder Oaks	DPLU letter dated December 2004 requesting additional information and guidance for further processing of application	20
ROUTE D ALTERNATIVE				
None				
ROUTE D ALTERNATIVE: CENTRAL SOUTH SUBSTATION				
CELL SITE: MUP 03-123; construct a 42-foot broad-leaf tree cellular tower (unmanned) with antennas and ground mounted radio equipment housed in equipment shelter	Refer to Table G-1 *Proposed Project Cumulative Project List* Map ID 33			
MODIFIED ROUTE D ALTERNATIVE				
County of San Diego				
LEGACY RANCH ESTATES: TM 5371; subdivide 160 acres into eight single-family residential lots and one 80.77-acre remainder parcel.	Residential	La Posta Road, near Boulder Oaks	DPLU extension approval letter dated March 2005	12
VAUGHN: TM 5417; subdivide 81.24 acres into 13 residential lots	Residential	West of Buckman Springs Road and East of Lake Morena Drive	DPLU first iteration review letter dated October 17, 2006	135
STAR RANCH: TM 5459; subdivide 2,160.1 acres into 460 single-family residential lots, commercial uses, equestrian facility, helipad, water treatment facility and wastewater treatment facility.	Residential	South of Big Potrero and west of Buckman Springs Road	DPLY meeting comment letter dated July 18, 2007 requesting additional information	136
McCLINTOCK: TPM 20755; subdivide ten acres into two single-family residential lots and one existing single family residence	Residential	2493 Bass Road, Campo	ND dated July 2005	17

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
SERIO: TPM 20407; subdivide 26.8 acres into three residential lots	Residential	East side of Buckman Springs Road between SR94 and Morena Drive, Campo	DPLU TPM approval dated January 3, 2000	113
TIBBOT: TPM 20686; subdivide 35.31 acres into four single-family residential lots	Residential	Bee Valley Road at Deerhorn Valley Road–Deerhorn Oaks intersection, Jamul	MND dated October 2006	86
VAN CLEAVE: TPM; subdivide 51.87 acres into two single-family residential lots	Residential	19491 Deerhorn Valley Road, Jamul	MND dated August 2004	87
LEGACY RANCH ESTATES: TM 5371; subdivide 160 acres into nine single-family residential lots	Residential	Lake Morena–Campo (APN 606-180-04)	DPLU extension approval letter dated March 2005	88
ROBNETT: TPM 20726; subdivide 85.61 acres into five single-family residential lots	Residential	Honey Springs Road, Jamul	DPLU application amendment form dated May 2006	89
HARVEST GLEN: TM 5366; subdivide 286.68 acres into 40 single-family residential lots	Residential	Buckman Springs Road and Lake Morena Drive, Campo	DPLU extension approval letter dated January 2006	90
SERIO: TPM 20393; subdivide 46.8 acres into five single-family residential lots	Residential	La Posta Road, between SR94 and Campo Truck Trail, Campo	MND dated August 1999	91
CARPENTER: TPM 19716; subdivide 44.6 acres into four residential lots	Residential	South side of Deerhorn Valley Road and 1,500 feet east of Honey Springs Road, Jamul	DPLU approval dated July 27, 1993	110
VAN CLEAVE: TPM 20702; subdivide 51.9 acres into two residential parcels	Residential	19491 Deerhorn Valley Road, Jamul	MND August 17, 2004	118
BARTLETT: TPM 20754; subdivide 164.7 acres into four lots	Residential	1827 Lake Morena Drive, Campo	DPLU approval of TPM letter dated December 30, 2005	119
BRAUNLICH: TPM 20786; subdivide 43.69 acres into four residential parcels	Residential	1718 Wide Oak Road, Jamul	DPLU letter requesting additional information dated July 1, 2005	122
DAVIS-INMAN: TPM 21081; subdivide 96.23 acres into four residential lots	Residential	32062 Highway 94, Campo	DPLU letter requesting additional information dated August 27, 2007	134

Table G.3. Project Alternatives Cumulative Project List

Project	Type	Location	Status	Map ID
BLACKWATER: MUP 06-069; Construction of a paramilitary training facility including helipad, tactical driving track and skid pad, urban simulation training area, carbine and pistol ranges, and a live fire tactical training area.	Public Facilities and Utilities	1876 Round Potrero Road, Potrero	NOP of EIR dated April 2007	93
Department of the Navy				
LA POSTA MOUNATIN WARFARE TRAINING FACILITY: Construction of a special warfare operation and training facility on approximately 2,250 acres	Public Facilities and Utilities	La Posta Road, south of I-8, Campo	Final Environmental Assessment dated September 2007	139
MODIFIED ROUTE D: STAR VALLEY OPTION				
Blackwater USA: Military training facility, Potrero	Private	Adjacent to Forest and BLM land	NOP for EIR issued by San Diego County	n/a
System Alternatives				
500 kV FULL LOOP				
NONE				
LEAPS PROJECT				
NONE				

1 Project information obtained through review of agency data posted online.
2 Project information requested via letter sent September 2006, with agency staff responding subsequently.
3 Project information obtained through review of County files as well as site visits by HELIX staff.
4 Project information obtained through contact with agency staff.
5 Project information obtained through review of City files by HELIX staff as well as contact with City staff.
6 Project information obtained through site visits by HELIX staff.

PC = Planning Commission; TM = Tentative Map; TPM = Tentative Parcel Map; CUP = Conditional Use Permit; NOP = Notice of Preparation; SFR = Single Family Residence

G.4.1 Cumulative Impact Analysis of Northern Route Alternatives

This section addresses potential cumulative effects that would occur as a result of implementation of the Northern Route Alternatives to the Proposed Project. These alternatives consist of transmission line reroutes (ranging in length from 0.5 to 38 miles) of portions of the Proposed Project route. Each alternative was developed to avoid or reduce project impacts to a particular resource and/or location. The remainder of each alternative (which totals approximately 150 miles) would be identical to that of the Proposed Project and would therefore result in substantially similar or identical impacts as the Proposed Project for many of the project impacts addressed in Sections D.2 through D.15. As shown in Figures G-1 through G-7, the rerouted portions of the Northern Route Alternatives route generally parallel the Proposed Project route at distances that range from directly adjacent to the Proposed Project route to four miles from the Proposed Project route. As a result, these alternatives traverse the same or similar land uses as the portion of the Proposed Project route they are proposed to replace, would require the same types of construction activities to build, and would result in the same or similar operational capacity as the Proposed Project.

Cumulative impacts to which the Proposed Project would have a significant contribution (Class I) are listed in Table G-4. Based on the substantial similarity of the Northern Route Alternatives to the Proposed Project (for example, the FTHL Eastern Alternative is comprised of a 4.6-mile reroute and a 141-mile segment of the Proposed Project route), each alternative's contribution to cumulative impacts would be similar or identical to that of the Proposed Project for most impact criteria. However, when compared to the Proposed Project, each alternative's contribution to certain cumulative impacts (as identified in Section G.3 for the Proposed Project) may be incrementally increased or decreased as a result of the rerouted portion of the alternative. Such increases or decreases would result from: 1) the nature of the alternative (underground or overhead); 2) the location of the alternative with respect to land uses and specific resources; or 3) the location of past, present, or reasonably foreseeable projects with which impacts of the alternative route would have the potential to combine (i.e., the other projects are located such that their impacts would or would not combine with impacts of the alternative, as compared to the Proposed Project).

Methodology

To determine if an alternative's contribution to a cumulative impact would differ from that of the Proposed Project, the impacts of each alternative (as presented in Sections D.2 through D.15) were reviewed in the context of the Comparison of Alternatives presented in Section H and the Cumulative Analysis for the Proposed Project presented above in Section G.3. As part of this analysis, the following questions were considered for each impact identified for each alternative:

- Would the overall effect of the alternative's impact be the same, greater, or, less than that of the Proposed Project? For example, would implementation of the alternative:
    - Avoid impacts to a particular resource or sensitive receptor?
    - Impact a resource or sensitive receptor that would not be affected by implementation of the Proposed Project?
    - Impact a resource or receptor for a longer or shorter duration than the Proposed Project?
- Based on the alternative route's distance to past, present and reasonably foreseeable projects that would have similar impacts, would the alternative's potential to combine with impacts of these projects be substantially different than that of the Proposed Project?

Table G-4. Significant Unavoidable (Class I) Cumulative Impacts of the Proposed Project

Impact No.	Impact Statement
B-1	Construction activities would result in temporary and permanent losses of native vegetation.
B-5	Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants.
B-7	Direct or indirect loss of sensitive/listed species.
B-10	Presence of transmission lines may result in collisions by and/or electrocution of listed or sensitive bird species.
B-11	Presence of transmission lines may result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers.
B-12	Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality.
V-1	Short-term visibility of construction activities, equipment and night lighting.
V-2	Long-term visibility of land scarring in arid and semi-arid landscapes.
V-3,V-4,V-7, V-2FT, & V-25 through V-33	Increased structure contrast, industrial character, view blockage, and skylining.
V-5, V-6, V-1CA through V-4CA	Inconsistency with Interim BLM VRM Class III management objective due to increased structure contrast, industrial character, view blockage, and skylining.
WR-2	Presence of a transmission line or substation would permanently change the character of a recreation area, diminishing its recreational value.
WR-5	Cumulative loss of State Park land or reduced/diminished quality of recreation experience on State Park land due to development.
AG-2	Operation would permanently convert DOC Farmland to non-agricultural use.
AG-3	Operation would permanently interfere with Active Agricultural Operations.
AG-4	Presence of the transmission line would convert Williamson Act lands.
C-2	Construction of the project could cause an adverse change to sites known to contain Native American human remains.
C-4	Construction of the project could cause an adverse change to Traditional Cultural Properties.
C-6	Long-term presence of the project could cause an adverse change to known historic architectural (built environment) resources.
N-1	Construction noise would substantially disturb sensitive receptors and violate local rules, standards, and/or ordinances.
N-3	Permanent noise levels would increase due to corona noise from operation of the transmission lines and noise from other project components.
N-4	Routine inspection and maintenance activities would increase ambient noise levels.
AQ-1	Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.
AQ-3	Power generated during transmission line operation would cause emissions from power plants.
AQ-4	Project activities would cause a net increase of greenhouse gas emissions.
H-1	Construction activity could degrade water quality due to erosion and sedimentation.
H-7	Accidental releases of contaminants from project facilities could degrade water quality.
F-1	Construction and/or maintenance activities would significantly increase the probability of a wildfire.
F-2	Presence of the overhead transmission line would significantly increase the probability of a wildfire.
F-3	Presence of the overhead transmission line would reduce the effectiveness of firefighting.
F-4	Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread.
F-5	The presence of overhead transmission line could alter historic fire regimes.
F-6	Project-caused wildfires would adversely affect natural resources.

- Is there anything else about the alternative route that would reduce or increase the type, intensity, or duration of impacts (e.g., alternative is underground or traverses different land uses or types of land than the Proposed Project)?

Sections G.4.1.1 through G.4.1.5 below identify the differences and similarities in each alternative's contribution to cumulative impacts as compared to that of the Proposed Project, based on the methodology presented above. The list of cumulative projects in Table G-3 and illustrated on Figures G-1 through G-7 also apply to this analysis.

G.4.1.1 Imperial Valley Link Alternatives

As described in Section C.4, the following three alternatives within the Imperial Valley Link have been analyzed in this EIR: the FTHL Eastern Alternative, the SDG&E West of Dunaway Road Alternative, and the SDG&E West Main Canal–Huff Road Modification Alternative. All three alternative routes are located parallel to the Proposed Project route within 1.5 miles (as shown on Figure G-1) and range in length from 4.6 to 6.1 miles. The FTHL Eastern and the SDG&E West of Dunaway Road Alternatives would traverse active agricultural land and consequently would have greater potential to contribute to significant cumulative impacts (Class I) AG-2, AG-3, and AG-4. The SDG&E West Main Canal–Huff Road Modification Alternative would mostly traverse undisturbed desert land. The FTHL Eastern Alternative would traverse a smaller portion of the FTHL Management Area in this area and the SDG&E West of Dunaway Alternative would traverse a larger portion of the FTHL Management Area (compared to the Proposed Project). As presented in Table H-3, each alternative would cross a different number of streams which would incrementally increase or decrease the alternative's potential for degrading water quality (Impact H-1). These alternatives would have no impact on known Native American human remains.

The geographic extent of the cumulative analysis and existing cumulative conditions for each issue area for the Imperial Valley Link Alternatives would be the same as those identified for the Proposed Project in Section G.3. Additionally, each of the Imperial Valley Link Alternatives would be within the same relative proximity to the past, present, and reasonably foreseeable projects identified in Table G-3, with the following exceptions: the FTHL Eastern Alternative would be located approximately 1.5 miles farther away from the Stirling Energy Power Plant than the Proposed Project route and the SDG&E West of Dunaway Alternative would be located 1.5 miles closer to the Stirling Energy Power Plant than the Proposed Project route.

Table G-5 presents the results of the analysis of how the Imperial Valley Link Alternatives would affect the project's contributions to the significant cumulative impacts (Class I) identified for the Proposed Project. When combined with the effects of similar impacts of past, present and reasonably foreseeable projects, the Imperial Valley Link Alternatives would not result in the elimination of any of the cumulative impacts identified for the Proposed Project, nor would they result in any new cumulative impacts. There would be no change in the contribution by alternatives to the significant cumulative impacts identified for the Proposed Project in Table G-4, or in the potential to combine with other projects to result in cumulative impacts for the following issue areas: visual resources, land use, wilderness and recreation, paleontological resources, noise, transportation and traffic, environmental contamination, air quality, geology, mineral resources, and soils, socioeconomics, public services and utilities, and fire and fuels management. Therefore, they have not been included in Table G-5.

Table G-5. Imperial Valley Link Alternatives' Incremental Effects on Class I Cumulative Impacts Identified for the Proposed Project*

Issue Area	FTHL Eastern Alternative	SDG&E West of Dunaway Alternative	SDG&E West Main Canal–Huff Road Modification Alternative
Biology	Decreased contribution to Impact B-7a, because would reduce impacts to FTHL Management Area.	Increased contribution to Impact B-7a, because would traverse most FTHL Management Area and native habitat.	NC
Agricultural Resources	Increased contribution to Impacts AG-2, AG-3, AG-4 due to a greater impacts to agricultural lands/operations.	NC	Increased contribution to Impacts AG-2, AG-3, AG-4 due to a greater impacts to agricultural lands/operations.
Cultural Resources	Decreased contribution to Impact C-2 because shorter route and fewer resources impacted.	Increased contribution to Impact C-2 because greater length of route and number of resources affected.	NC
Water Resources	Increased contribution to Impact H-1 due to a greater number of water crossings.	Increased contribution to Impact H-1 due to a greater number of water crossings.	Increased contribution to Impact H-1 due to a greater number of water crossings.

* NC = No Change in contribution to the significant cumulative impacts identified for the Proposed Project in Table G-4, or in the potential to combine with other projects to result in cumulative impacts.

G.4.1.2 Anza-Borrego Link Alternatives

As described in Section C.4, the following alternatives within the Anza-Borrego Link have been analyzed in this EIR: the Partial Underground 230 kV ABDSP SR78 to S2 Alternative and the Overhead 500 kV ABDSP within Existing ROW Alternative, which are shown on Figure G-2.

Partial Underground 230 kV ABDSP SR78 to S2 Alternative

The Partial Underground 230 kV ABDSP SR78 to S2 Alternative (with and without the All Underground Option) includes installation of a double-circuit bundled 230 kV line (as opposed to 500 kV with the Proposed Project) that would be installed underground in SR78 through ABDSP. This alternative would be constructed within an existing roadway and would therefore reduce the Proposed Project's contribution to biology impacts related to land disturbance (Impacts B-1 and B-5). Along SR78, this alternative would be underground immediately south of the Yaqui Well Primitive Camp Area and Tamarisk Grove Campground. Near the junction of SR78 and S2 the transmission line would transition to overhead in order to span the Earthquake Valley Fault Zone (with the All Underground Option the line would remain underground). Several towers along this approximately one-mile overhead segment would be constructed within Grapevine Mountain Wilderness Area across the Pacific Crest Trail (PCT), and would therefore incrementally increase Impact WR-2 (the All Underground Option would eliminate this impact). This alternative would transition underground at the intersection of SR78 and S2 and be constructed within S2 for three miles before transitioning overhead to follow the east side of S2 and rejoining the Proposed Project route at MP 92.6 (again, the All Underground Option would remain underground). Construction activities required to install an underground transmission line would be more intensive and of longer duration than those for construction of an overhead line, which would result in increased air quality emissions from construction equipment than that of the Proposed Project. This alternative would also result in incremental decreases to long-term fire and fuels management impacts (F-2 F-3, F-5, and F-6) related to operation of the transmission line

Overhead 500 kV ABDSP within Existing ROW Alternative

The Overhead 500 kV ABDSP within Existing ROW Alternative is 22.5 miles long, would be constructed within a 100-foot corridor along the existing ROW, would follow a largely similar route as the Proposed Project and existing 69 kV ROW, would not require the additional 50-foot expansion needed by the Proposed Project, and would therefore result in a smaller area of land disturbance than the Proposed Project. Likewise the East of Tamarisk Grove Campground 150-Foot ROW Option would be an option to this alternative that would occur along the portion of ABDSP that is east of Tamarisk Grove Campground. The route option would be in close proximity to both the Overhead 500 kV ABDSP within Existing ROW Alternative and the Proposed Project.

As discussed for the Proposed Project, there are no past, present or reasonably foreseeable projects located along this portion of the route with whose impacts project impacts could combine. Therefore the Overhead 500 kV ABDSP within Existing ROW Alternative would not substantially affect the project's contribution to cumulative impacts for most issue areas except for Impacts B-1, B-7B, and B-7H, based on this alternative's reduced area of impact and distance from golden eagle nests.

The geographic extent of the cumulative analysis and existing cumulative conditions for each issue area for the Anza-Borrego Link Alternatives would be the same as those identified for the Proposed Project in Section G.3. Table G-6 presents the results of the analysis of how the Anza-Borrego Link Alternatives would affect the project's contributions to the significant cumulative impacts (Class I) identified for the Proposed Project. When combined with the effects of similar impacts of past, present and reasonably foreseeable projects, the Anza-Borrego Link Alternatives would not result in the elimination of any of the cumulative impacts identified for the Proposed Project, nor would it result in any new cumulative impacts.

G.4.1.3 Central Link Alternatives

As described in Section C.4, the following four alternatives within the Central Link have been analyzed in this EIR: the Santa Ysabel Existing ROW Alternative, the Santa Ysabel Partial Underground Alternative, the Santa Ysabel All Underground Alternative, and the SDG&E Mesa Grande Alternative. All four alternatives generally parallel the Proposed Project route within 2.4 miles (as shown on Figure G-3) and range in length from 1.8 to 9.0 miles.

Santa Ysabel Existing ROW Alternative

The Santa Ysabel Existing ROW Alternative is a 9-mile route that would replace 9.4 miles of the Proposed Project. This alternative would be located in an existing 69 kV transmission line ROW located adjacent to and east of SR79. Since this alternative would be located within an existing ROW, it would result in a smaller area of land disturbance than the Proposed Project, including a reduced contribution to biology impacts related to land disturbance (Impacts B-1 and B-5). However, this alternative is located closer to golden eagle nests than the Proposed Project and would therefore incrementally increase the project's contribution to Impact B-7. This alternative would cross the Vista Loop Trail (Impact WR-2) and would be located closer to the Chapel of Santa Ysabel (Impact C-4).

Santa Ysabel All Underground Alternative

The Santa Ysabel All Underground Alternative would involve undergrounding approximately nine miles of the 230 kV transmission line within a 60-foot ROW within SR79 through Santa Ysabel. While this alternative would increase project contributions to cumulative construction impacts to air quality and noise, it would reduce long-term impacts related to biology, cultural resources, wilderness and recreation, visual resources, and fire and fuels management.

Table G-6. Anza-Borrego Link Alternatives' Incremental Effects on Class I Cumulative Impacts Identified for the Proposed Project*

Issue Area	Partial Underground 230 kV ABDSP SR78 to S2 Alternative (and All Underground Option)	Overhead 500 kV ABDSP within Existing ROW Alternative (and East of Tamarisk Grove Campground 150-Foot ROW Option)
Biology	Decreased contribution to Impacts B-1 and B-5 due to a portion of the route located in roadways (All Underground Option would be entirely within roadways).	Increased contribution to Impacts B-1, B-7B, and B-7H due to a greater number of towers and ground disturbance.
Visual Resources	NC	NC
Land Use	NC	NC
Wilderness & Recreation	Decreased contribution to Impact WR-2 because all but one mile of line would be undergrounded within ABDSP (All Underground Option would be entirely underground).	NC
Agricultural Resources	NC	NC
Cultural Resources	NC	Increased contribution due to direct impacts on major cultural site in Grapevine Canyon (better avoided by Proposed Project).
Paleontological Resources	NC	NC
Noise	NC	NC
Transportation & Traffic	NC	NC
Environmental Contamination	NC	NC
Air Quality	Increased contribution to Impacts AQ-1 and AQ-4 due to increased ground disturbance for trenching.	NC
Water Resources	NC	NC
Geology, Mineral Resources & Soils	NC	NC
Socioeconomics, Public Services & Utilities	NC	NC
Fire & Fuels Management	Decreased contribution to Impacts F-2, F-3, F-5, F-6 due to undergrounding of transmission line.	NC

* NC = No Change in contribution to the significant cumulative impacts identified for the Proposed Project in Table G-4, or in the potential to combine with other projects to result in cumulative impacts.

Santa Ysabel Partial Underground Alternative

The Santa Ysabel Partial Underground Alternative would begin at MP 105.5 where the proposed route would join Mesa Grande Road at the base of the hills along the western side of the Santa Ysabel Valley. The alternative would transition to underground at the southern side of Mesa Grande Road and would travel underground a short distance to the roadway, where it would turn southeast for 1.3 miles to the Mesa Grande Road/SR79 intersection. Once this alternative turns south in SR79, it would be the same as the Santa Ysabel All Underground Alternative. Therefore, this alternative would have similar contributions to cumulative impacts as described for the Santa Ysabel All Underground Alternative. However, since the Partial Underground Alternative is approximately four miles shorter than the All Underground Alternative, its increases and decreases to project contributions to significant impacts would be incrementally less than those described for the All Underground Alternative.

SDG&E Mesa Grande Alternative

The SDG&E Mesa Grande Alternative route would diverge from the Proposed Project route at MP 101.5 and would travel southeast for approximately 0.7 miles. At MP 102.2 it would turn southwest and rejoin the Proposed Project at MP 103.5, on the southerly side of Mesa Grande Road. Therefore, this alternative would replace a one-mile portion of the proposed overhead 230 kV route and would reduce visibility of the overhead line west of Mesa Grande Road. Although this alternative would reduce visual impacts in this location, it would not substantially increase or decrease project contributions to cumulative impacts.

The geographic extent of the cumulative analysis and existing cumulative conditions for each issue area for the Central Link Alternatives would be the same as those identified for the Proposed Project in Section G.3. Additionally, each of the Central Link Alternatives would be within the same relative proximity to the past, present, and reasonably foreseeable projects identified in Table G-3.

Table G-7 presents the results of the analysis of how the Central Link Alternatives would affect the project's contributions to the significant cumulative impacts (Class I) identified for the Proposed Project. When combined with the effects of similar impacts of past, present and reasonably foreseeable projects, the Central Link Alternatives would not result in the elimination of any of the cumulative impacts identified for the Proposed Project, nor would it result in any new cumulative impacts.

G.4.1.4 Inland Valley Link Alternatives

As described in Section C.4, the following four alternatives within the Inland Link have been analyzed in this EIR: the CNF Existing 69 kV Route Alternative, the Oak Hollow Road Underground Alternative, the San Vicente Transition Alternative, and the Chuck Wagon Road Alternative. All four alternatives generally parallel the Proposed Project route within 1.5 miles (as shown on Figure G-4) and range in length from 0.7 to 3.0 miles.

CNF Existing 69 kV Route Alternative

The CNF Existing 69 kV Route Alternative is a 1.3-mile reroute that would diverge from the Proposed Project route at MP 111.3 and continue within the existing 69 kV ROW through Cleveland National Forest, to rejoin the Proposed Project route at MP 111.8. This alternative is 0.5 miles longer than the segment of the Proposed Project it would replace and would avoid land use and visual impacts to scattered single-family residences along State Route 78 and Deer Canyon Drive. Since this alternative would occur within existing ROW, long-term impacts related to land disturbance (B-1 and B-5) would be incrementally decreased compared to the Proposed Project. Although this alternative would result in slightly reduced impacts related to land disturbance and visual impacts in this location, it would not substantially increase or decrease project contributions to cumulative impacts.

Oak Hollow Road Underground Alternative

The Oak Hollow Road Underground Alternative consists of extending the approximately five-mile underground segment of the Proposed Project by an additional 0.7 miles. This alternative would be located within Oak Hollow Road and would thereby reduce visual impacts to residential neighborhoods and agricultural operations in this area. However, increasing the length of the underground segment would result in a longer duration of construction-related air quality (AQ-1) and noise impacts (N-1). This alternative would also result in incremental decreases to long-term biological resources (B-10, B-11, and B-12), agriculture (AG-2, AG-3, and AG-4), noise (N-3), and fire and fuels management impacts (F-2 F-3, F-5, and F-6) related to operation of the transmission line.

Table G-7. Central Link Alternatives' Incremental Effects on Class I Cumulative Impacts Identified for the Proposed Project*

Issue Area	Santa Ysabel Existing ROW Alternative	Santa Ysabel All Underground Alternative	Santa Ysabel Partial Underground Alternative	SDG&E Mesa Grande Alternative
Biology	Decreased contribution to Impacts B-1 and B-5, and increased contribution to Impact B-7H.	Decreased contribution to Impacts B-1, B-5, B-7H, B-10, B-11, and B-12 because would be located underground in roadways.	Decreased contribution to Impacts B-1, B-5,B-7H, B-10, B-11, and B-12, because a portion of the route in the Santa Ysabel Valley would be underground in roadways.	NC
Visual Resources	NC	Decreased contribution to operational impacts due to underground line.	Decreased contribution to operational impacts due to underground line.	NC
Land Use	NC	NC	NC	NC
Wilderness & Recreation	Increased contribution to Impact WR-2 due to greater impacts to SYOSP and SDRP.	Decreased contribution to Impact WR-2 due to underground line, which would eliminate operational recreation impacts.	Decreased contribution to Impact WR-2 due to the partially underground line, which would eliminate operational recreation impacts.	NC
Agricultural Resources	NC	NC	NC	NC
Cultural Resources	Increased contribution to Impact C-4, because would pass adjacent to the Chapel of Santa Ysabel along SR79.	Increased contribution to Impact C-4, because would pass adjacent to the Chapel of Santa Ysabel.	Decreased contribution to Impact C-4, because would pass adjacent to the Chapel of Santa Ysabel.	NC
Paleontological Resources	NC	NC	NC	NC
Noise	NC	Increased contribution to Impact N-1 due to increased trenching, but operational noise would decrease the contribution of N-3.	Increased contribution to Impact N-1 due to increased trenching, but operational noise would decrease the contribution of N-3.	NC
Transportation & Traffic	NC	NC	NC	NC
Environmental Contamination	NC	NC	NC	NC
Air Quality	NC	Increased contribution to Impact AQ-1 due to greater ground disturbance with underground line.	Increased contribution to Impact AQ-1 due to greater ground disturbance with underground line.	NC
Water Resources	NC	NC	NC	NC
Geology, Mineral Resources, & Soils	NC	NC	NC	NC
Socioeconomics, Public Services, & Utilities	NC	NC	NC	NC
Fire & Fuels Management	NC	Decreased contribution to Impacts F-2, F-3, F-5, F-6 due to underground line.	Decreased contribution to Impacts F-2, F-3, F-5, F-6 due to underground line.	NC

* NC = No Change in contribution to the significant cumulative impacts identified for the Proposed Project in Table G-4, or in the potential to combine with other projects to result in cumulative impacts.

San Vicente Transition Alternative

The San Vicente Transition Alternative would move the transition structure from its proposed location along San Vicente Road (MP 121.9) approximately 0.3 miles west to MP 122.2. The underground line would follow San Vicente Road within a 60-foot ROW for an additional 2,100 feet before it would turn north and travel through open space for approximately 200 feet to the overhead transition point. The line would transition overhead south of proposed Structure I85 and would travel west-northwest for 2,200 feet, slowly converging with the Proposed Project route at Structure I83. Both the proposed and alternative transition poles would be within Barnett Ranch Open Space Preserve. This alternative would result in reduced impacts to visual resources in the immediate vicinity and would result in a longer duration of construction-related air quality (AQ-1) and noise impacts (N-1). However, based on the short length of this alternative and its location relative to past, present, and reasonably foreseeable projects, it would not substantially increase or decrease project contributions to cumulative impacts.

Chuck Wagon Road Alternative

The Chuck Wagon Road Alternative is a partial underground that would diverge from the underground proposed route at MP 121.7 and would turn south in Chuck Wagon Road. The alternative route would continue underground south in Chuck Wagon Road for approximately 1.6 miles before transitioning to overhead for 1.2 miles and rejoin the Proposed Project route at MP 125.6. This alternative would avoid Barnett Ranch Open Space Preserve and would reduce impacts to visual resources and wilderness and recreation in this location. The underground portion of this alternative would increase the project's contribution to construction-related impacts to biological resources, air quality, and noise, and would decrease long-term operation impacts to biological resources and noise.

The geographic extent of the cumulative analysis and existing cumulative conditions for each issue area for the Inland Valley Link Alternatives would be the same as those identified for the Proposed Project in Section G.3. Additionally, each of the Inland Valley Link Alternatives would be within the same relative proximity to the past, present, and reasonably foreseeable projects identified in Table G-3.

Table G-8 presents the results of the analysis of how the Inland Valley Link Alternatives would affect the project's contributions to the significant cumulative impacts (Class I) identified for the Proposed Project. When combined with the effects of similar impacts of past, present and reasonably foreseeable projects, the Inland Valley Link Alternatives would not result in the elimination of any of the cumulative impacts identified for the Proposed Project, nor would it result in any new cumulative impacts.

G.4.1.5 Coastal Link Alternatives

As described in Section C.4, the following four alternatives within the Coastal Link have been analyzed in this EIR. These alternatives include three alternative transmission route alternatives and a system upgrade alternative which involves upgrades to substations and well as reconductoring of existing lines. The transmission reroutes include the Pomerado Road to Miramar Area North Alternative, the Los Peñasquitos Canyon Preserve–Mercy Road Alternative, and the Black Mountain to Park Village Road Underground Alternative. All three are shown on Figure G-5 and range in length from 1.1 to 12.8 miles. The fourth Coastal Link Alternative is the Coastal Link System Upgrade Alternative which consists of upgrading substations and reconductoring existing transmission lines within the area of the Coastal Link.

Table G-8. Inland Valley Link Alternatives' Incremental Effects on Class I Cumulative Impacts Identified for the Proposed Project*

Issue Area	CNF Existing 69 kV Route Alternative	Oak Hollow Road Underground Alternative	San Vicente Transition Alternative	Chuck Wagon Road Alternative
Biology	Decreased contribution to Impacts B-1 and B-5 due to use of existing access roads and shorter route.	Decreased contribution to Impacts B-10, B-11, and B-12 due to underground line in existing roadways.	NC	Increased contribution to Impacts B-2 and B-5, and decreased contribution to Impacts B-10, B-11, and B-12 due to greater length of underground construction.
Visual Resources	NC	Decreased contribution to operational impacts due to underground line.	NC	Decreased contribution to operational impacts due to greater length of the underground line.
Land Use	NC	NC	NC	NC
Wilderness and Recreation	NC	NC	NC	Decreased contribution to Impact WR-2, because would reduce impacts to Barnett Ranch Open Space Preserve.
Agricultural Resources	NC	Decreased contribution to Impacts AG-2, AG-3, and AG-4 because would reduce agricultural impacts.	NC	NC
Cultural Resources	NC	NC	NC	NC
Paleontological Resources	NC	NC	NC	NC
Noise	NC	Increased contribution to Impact N-1 with more underground trenching, and decreased contribution to N-3 because line would be underground, which would eliminate operational corona noise.	NC	Increased contribution to Impact N-1 with more underground construction, and decreased contribution to N-3, because line would be underground for longer, which would reduce operational corona noise.
Transportation and Traffic	NC	NC	NC	NC
Environmental Contamination	NC	NC	NC	NC
Air Quality	NC	Increased contribution to Impact AQ-1 with greater ground disturbance from underground construction.	NC	Increased contribution to Impact AQ-1 with greater ground disturbance from underground construction.
Water Resources	NC	NC	NC	NC
Geology, Mineral Resources, and Soils	NC	NC	NC	NC
Socioeconomics, Public Services, and Utilities	NC	NC	NC	NC
Fire and Fuels Management	NC	Decreased contribution to Impacts F-2, F-3, F-5, F-6 with the line placed underground.	NC	NC

* NC = No Change in contribution to the significant cumulative impacts identified for the Proposed Project in Table G-4, or in the potential to combine with other projects to result in cumulative impacts.

Pomerado Road to Miramar Area North Alternative

The majority of the Pomerado Road to Miramar Area North Alternative would be underground (10 miles of the entire 12.8-mile route) with the exception of the east and west ends, which would be overhead segments within existing ROW. This alternative would exit west from the Sycamore Substation as an overhead line within an existing ROW and travel toward Pomerado Road, transitioning underground just east of the roadway. From there the line would travel underground beneath Pomerado Road toward the south. The line would be attached to the Pomerado/Miramar Road bridge over I-15 or on an overhead structure crossing I-15. The route would continue traveling west and north under several streets, including: Miramar Road, Kearny Villa Road, Black Mountain Road, Miralani Drive, Arjons Drive, Trade Street, Carroll Road, and Scranton Road. At approximately MP 10.4 of this alternative, the line would continue west for approximately 400 feet behind commercial buildings and near to an existing transmission pole. At this location the line would transition to overhead and would be located within the existing 230 kV ROW heading northward into the Peñasquitos Substation

The Pomerado Road to Miramar Area North Alternative would be located farther away from most of the cumulative past, present and reasonably foreseeable projects identified for the Coastal Link of the Proposed Project, but would be located within close proximity to the Stone Creek housing development project. Most of this alternative route would be located underground within existing roadways and would therefore reduce visual impacts along the route. This alternative would also avoid impacts to Los Peñasquitos Canyon Preserve and would affect less DOC farmland than the portion of the Proposed Project it would replace. This alternative would increase the duration of underground construction activities as well as the noise and air quality impacts associated with such activities. The underground portion of this alternative would decrease long-term operational impacts to biological resources, noise, and fire and fuels management impacts.

Los Peñasquitos Canyon Preserve–Mercy Road Alternative

The Los Peñasquitos Canyon Preserve–Mercy Road Alternative varies from the Proposed Project route east of the Chicarita Substation. The entire 3.6-mile alternative would be underground, with exception of the eastern and western ends where the line transitions to overhead structures. Under this alternative, the transmission line would bypass the Chicarita Substation, instead coming from the Sycamore Substation and connecting to an existing ROW along Scripps-Poway Parkway in the vicinity of Ivy Hill Drive. From here the line would transition to underground and continue west on Scripps Poway Parkway/ Mercy Road to under Mercy Road and finally to its terminus at Black Mountain Road. Within Black Mountain Road, the line would remain underground heading north then west at Park Village Drive where the line would rejoin the Proposed Project alignment.

This alternative would avoid impacts to Los Peñasquitos Canyon Preserve. However, this alternative would also increase the duration of underground construction activities as well as the noise and air quality impacts associated with such activities. The underground portion of this alternative would decrease long-term operational impacts to biological resources, noise and fire and fuels management impacts.

Black Mountain to Park Village Road Underground Alternative

Black Mountain to Park Village Road Underground Alternative would deviate from the underground portion of the Proposed Project alignment at MP 143.7 and continue south within Black Mountain Road, turning west under Park Village Drive, and following the Proposed Project alignment into the Peñasquitos Substation via the Los Peñasquitos Canyon Preserve. This alternative would avoid some of the homes in Rancho Peñasquitos that are located along the existing vacant ROW proposed to be used by the project. With regard to potential cumulative impacts, this alternative only differs from the por-

tion of the Proposed Project it would replace in that it would require approximately 0.6 miles more of underground construction activities.

Coastal Link System Upgrade Alternative

Coastal Link System Upgrade Alternative would involve a transmission system modification that would avoid the construction of the Proposed Project's 230 kV transmission line from Sycamore Canyon to Peñasquitos Substation. Three options were initially considered, but Option 1 was selected. Option #1 would be a system modification to install a third transformer at the existing Sycamore Canyon Substation within an existing easement and reconductor the existing: a.) Sycamore Canyon–Pomerado 69 kV circuit on existing structures; b.) Pomerado-Poway 69 kV circuit on existing structures; and c.) Sycamore Canyon–Chicarita 138 kV circuit using 34 existing wood frame structures.

The Coastal Link System Upgrade Alternative would eliminate all potential environmental impacts associated with the Proposed Project 230 kV segment between Sycamore Canyon and Peñasquitos Substations and would therefore result in an incrementally decreased contribution to all of the cumulative impacts identified for the Proposed Project in Section G.3.

The geographic extent of the cumulative analysis and existing cumulative conditions for each issue area for the Coastal Link Alternatives would be the same as those identified for the Proposed Project in Section G.3. Additionally, each of the Coastal Link Alternatives would be within the same relative proximity to the past, present, and reasonably foreseeable projects identified in Table G-3, with the exception of the Pomerado Road to Miramar Area North Alternative and the Coastal Link System Upgrade Alternative, as described above.

Table G-9 presents the results of the analysis of how the Coastal Link Alternatives would affect the project's contributions to the significant cumulative impacts (Class I) identified for the Proposed Project. When combined with the effects of similar impacts of past, present and reasonably foreseeable projects, the Coastal Link Alternatives would not result in the elimination of any of the cumulative impacts identified for the Proposed Project, nor would they result in any new cumulative impacts.

G.4.2 Cumulative Impact Analysis of Southern Route Alternatives

This section addresses potential cumulative effects that would occur as a result of implementation of the Southern Route Alternatives to the Proposed Project. These alternatives consist of the Interstate 8 (I-8) Alternative, and three transmission line reroutes (ranging in length from 17 to 39 miles) of portions of the I-8 Alternative route. Each alternative was developed to avoid or reduce project impacts to a particular resource and/or location. The remainder of each alternative (which totals approximately 93 miles) would be identical to that of the I-8 Alternative and would therefore result in substantially similar or identical impacts as the I-8 Alternative for many of the project impacts addressed in Sections E.1 through E.4.

Cumulative impacts of the I-8 Alternative have been analyzed in detail below in Section G.4.2.1. Since the BCD Alternative, Route D Alternative, and Modified Route D Alternative are substantially similar to the I-8 Alternative, the same methodology that was applied to the Northern Route Alternatives, as described above in Section G.4.1, was used for analysis of cumulative impacts of the three proposed reroutes of the I-8 Alternative. Sections G.4.2.2 through G.4.2.4 below identify the differences and similarities in each alternative's contribution to significant cumulative impacts as compared to that of the I-8 Alternative, as presented in Table G-10. The list of cumulative projects in Table G-3 and illustrated on Figure G-1 and Figures G-8 through G-10 also apply to this analysis.

Table G-9. Coastal Link Alternatives' Incremental Effects on Class I Cumulative Impacts Identified for the Proposed Project*

Issue Area	Pomerado Road to Miramar Area North Alternative	Los Peñasquitos Canyon Preserve–Mercy Road Alternative	Black Mountain to Park Village Road Underground Alternative	Coastal Link System Upgrade Alternative
Biology	Decreased contribution to Impacts B-1, B-5, B-10, and B-11 due to more underground construction in existing roadways.	Decreased contribution to Impacts B-1, B-5, B-10, and B-11	NC	Decreased contribution to Impacts B-1, B-5, B-7, B-10, and B-11 due to elimination of construction of the 230 kV line from Sycamore Canyon to Peñasquitos Substation.
Visual Resources	Decreased contribution to operational impacts due to more underground construction in existing roadways.	Decreased contribution to operational impacts	NC	Decreased contribution to operational impacts due to elimination of construction of the 230 kV line from Sycamore Canyon to Peñasquitos Substation.
Land Use	NC	NC	NC	NC
Wilderness & Recreation	Decreased contribution to Impact WR-2 due to reduction of impacts to Los Peñasquitos Preserve and other recreation areas.	Decreased contribution to Impact WR-2 because avoids a portion of overhead line within Los Peñasquitos Preserve.	NC	Decreased contribution to Impact WR-2 due to elimination of construction of the 230 kV line from Sycamore Canyon to Peñasquitos Substation.
Agricultural Resources	Decreased contribution to AG-2 because would reduce impacts to agricultural lands.	NC	NC	Decreased contribution to Impact AG-2 due to elimination of construction of the 230 kV line from Sycamore Canyon to Peñasquitos Substation.
Cultural Resources	NC	NC	NC	NC
Paleontological Resources	NC	NC	NC	NC
Noise	Increased contribution to Impact N-1 due to more underground construction, and decreased contribution to N-3 due to elimination of corona noise due operation of underground segments.	Increased contribution to Impact N-1 due to more underground construction, and decreased contribution to N-3 due to elimination of corona noise due operation of underground segments.	Increased contribution to Impact N-1 due to longer underground construction.	Decreased contribution to Impacts N-1, N-3, and N-4 due to elimination of construction of the 230 kV line from Sycamore Canyon to Peñasquitos Substation.
Transportation & Traffic	NC	NC	NC	NC
Environmental Contamination	NC	NC	NC	NC
Air Quality	Increased contribution to Impacts AQ-1 & AQ-4 due to more underground construction and longer route.	Increased contribution to Impacts AQ-1 & AQ-4 due to more underground construction and longer route.	Increased contribution to Impacts AQ-1 & AQ-4 due to more underground construction and longer route.	Decreased contribution to Impacts AQ-1 and AQ-4 due to elimination of construction of the 230 kV line from Sycamore Canyon to Peñasquitos Substation.
Water Resources	NC	NC	NC	Decreased contribution to Impacts H-1 and H-7 due to elimination of construction of

Table G-9. Coastal Link Alternatives' Incremental Effects on Class I Cumulative Impacts Identified for the Proposed Project*

Issue Area	Pomerado Road to Miramar Area North Alternative	Los Peñasquitos Canyon Preserve–Mercy Road Alternative	Black Mountain to Park Village Road Underground Alternative	Coastal Link System Upgrade Alternative
				the 230 kV line from Sycamore Canyon to Peñasquitos Substation.
Geology, Mineral Resources, & Soils	NC	NC	NC	NC
Socioeconomics, Public Services, & Utilities	NC	NC	NC	NC
Fire & Fuels Management	Decreased contribution to Impacts F-2, F-3, F-5, F-6 due to more of the line being located underground.	Decreased contribution to Impacts F-2, F-3, F-5, F-6 due to more of the line being located underground.	NC	Decreased contribution to Impacts F-2, F-3, F-5, F-6 due to elimination of construction of the 230 kV line from Sycamore Canyon to Peñasquitos Substation.

* NC = No Change in contribution to the significant cumulative impacts identified for the Proposed Project in Table G-4, or in the potential to combine with other projects to result in cumulative impacts.

G.4.2.1 Interstate 8 Alternative

The route of the Interstate 8 (I-8) Alternative, which is described in detail in Section C and Section E, would be located adjacent to the existing 500 kV SWPL, separated by an average of 400 feet, for the first 35.7 miles. This segment generally parallels I-8. The route would begin at the Imperial Valley Substation, paralleling the SWPL to a point about six miles west of the San Diego/Imperial County line. At that point, the 500 kV line would turn northwest, passing less than one mile southeast of the southwest corner of ABDSP and crossing just west of the BLM Carrizo Gorge Wilderness Area and one mile east of the community of Boulevard. The 500 kV line would terminate at a new 500 kV/230 kV substation on the north side of the freeway and a 230 kV line would continue on, spanning to the south side of the freeway and transitioning underground beneath Alpine Road. At approximately MP I8-79, the route would span I-8 to the north and diverge from the I-8 corridor for the last time, heading in a north to northwest direction, passing El Capitan Reservoir, Wildcat Canyon, El Monte County Park, and the equestrian residential community of Moreno, before eventually spanning SR67 and connecting to Sycamore Canyon Substation. This alternative is shown on Figure G-1 and Figures G-8 through G-10.

There are five route options to the Interstate 8 Alternative: Campo North Option, Buckman Springs Underground Option, West Buckman Springs Option, South Buckman Springs Option, and Chocolate Canyon Option. All five of these short options would be in close proximity to the alternative route and were developed to avoid or reduce project impacts to a particular resource and/or location. These alternatives traverse the same or similar land uses as the portion of the Interstate 8 Alternative route they are proposed to replace, would require the same types of construction activities to build, and would result in the same or similar impacts and operational capacity as the Proposed Project and Interstate 8 Alternative. They would therefore result in substantially similar or identical cumulative impacts as the Interstate 8 Alternative discussed below, and they are not discussed individually.

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Figure G-8. Cumulative Projects: SWPL Alternatives Eastern Portion
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Figure G-9. Cumulative Projects: SWPL Alternatives Central Portion
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Figure G-10. Cumulative Projects: SWPL Alternatives Western Portion
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Biological Resources

Geographic Extent

The geographic scope for the analysis of cumulative impacts related to biological resources includes the entire region traversed by the I-8 Alternative, which consists of Imperial and San Diego Counties. The I-8 Alternative is located near, adjacent to, or crosses through a variety of federal, State, county and other agency parks and preserves that represent components of the regional preserve system, all of which are within Imperial and San Diego Counties. The first 30 miles of the I-8 Alternative occurs almost entirely on BLM lands. The portion of the I-8 Alternative between approximately MP I8-51 and MP I8-71 occurs primarily on USFS lands. The sensitive habitat areas, areas of special concern and biological significance and various species that have the potential to be affected by the I-8 Alternative are described in detail in Section E.1.2.

Existing Cumulative Conditions

Tremendous urbanization, population growth, and continuing development pressures in Imperial and San Diego Counties have brought about substantial changes to, and effects on, natural resources. Consequently, modification, alteration and destruction of habitats and proliferation of non-native species are occurring throughout the region. Furthermore, future growth and development in the analysis area will likely accelerate these impacts. Habitats vary substantially from east to west along the project alignment, from desert scrub, chaparral, juniper-pinyon woodland, and grasslands at lower elevations to mixed hardwood forest, southern oak, southern Jeffrey pine, and southern yellow pine at higher elevations. Along the coast, where limited real estate is highly sought after, salt marshes and lagoons experience increasing encroachment from adjacent land use developments.

Cumulative Impact Analysis

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.2.4.1.

Impact B-1: Construction and maintenance activities would result in temporary and permanent losses of native vegetation (Class I). Despite measures to protect and remediate losses, construction of the I-8 Alternative would cause both temporary (during construction from vegetation clearing) and permanent (displacement of vegetation with project features such as towers or permanent access roads) significant impacts to vegetation communities as described in Section E.1.2. Most of the projects identified in Table G-3 would result in temporary and permanent losses of native vegetation through grading and clearing activities to construct roads, utility infrastructure, and commercial and residential developments. Some of the projects identified in Table G-3, particularly large scale residential developments and solar projects would require clearance of hundreds, and in some cases thousands, of acres of contiguous land area occupied by both sensitive and non-sensitive species. Permanent losses of vegetation associated with the I-8 Alternative combined with losses associated with past, present and future projects are considered significant because they would represent substantial adverse effects to native communities that cannot be fully mitigated. Therefore, impacts of the I-8 Alternative, when combined with impacts from past, present, and reasonable future projects would be considered cumulatively significant. (Class I). As discussed in Section D.2.5, Mitigation Measures B-1a through B-1c would be implemented to reduce the I-8 Alternative's effect to native vegetation; however, even with mitigation, incremental impacts would persist and when combined with impacts of past projects, would still be considered significant.

Impact B-2: Construction activities would result in adverse effects to jurisdictional waters and wetlands through vegetation removal, placement of fill, erosion, sedimentation, and degradation of water quality (Class II). Since a formal delineation has not yet been conducted, the precise presence and extent of wetlands at this time is unknown. However, as discussed in Section D.2.5, direct and/or indirect impacts to jurisdictional Waters of the U.S. and possibly wetlands (i.e., areas regulated by the ACOE and RWQCB and/or CDFG) would occur from the I-8 Alternative. A formal delineation for the project will be conducted for the final route selected that includes sited project-specific features and final engineering at the time SDG&E applies for permits from the ACOE, RWQCB, and CDFG. The I-8 Alternative is likely to have adverse impacts to vegetation communities which occur in jurisdictional wetland areas, such as, Sonoran wash scrub, disturbed wetland, freshwater, non-vegetated channel, freshwater marsh, emergent wetland, mesquite bosque, mule fat scrub, southern willow scrub, tamarisk scrub, arrowed scrub, southern coast live oak riparian forest, southern arroyo willow riparian forest, desert dry wash woodland, southern sycamore-alder riparian woodland, and vernal pools. Past projects such as roads, bridges, and residential developments within five miles of the I-8 Alternative route occurring near or in jurisdictional waters and wetlands have resulted in similar impacts. Additionally, though formal delineations have not yet been conducted, it is likely that several of the development projects identified in Table G-3 will also be located near enough to jurisdictional waters and wetlands to result in similar impacts. The combined effects of the I-8 Alternative with those of past, present and future projects would be significant if because they would have adverse effects to jurisdictional waters and wetlands. However, if jurisdictional waters are indeed impacted by the I-8 Alternative, Mitigation Measures B-1c and B-2a would be implemented to create new jurisdictional habitat. Mitigation ratios would range from 1:1 up to 4:1. With implementation of such measures, the I-8 Alternative's contribution to a significant cumulative impact to jurisdictional waters would be rendered less than cumulatively considerable and therefore less than significant (Class II) because after mitigation there would be no net loss of jurisdictional waters or wetlands.

Impact B-3: Construction and operation/maintenance activities would result in the introduction of invasive, non-native, or noxious plant species (Class II). The I-8 Alternative construction and operation/maintenance activities would result in ground disturbance which has the potential to result in the introduction of invasive, non-native, and noxious plant species. Invasive, non-native, or noxious plant species exist within the counties affected by the I-8 Alternative, as a result of natural events such as wildfires as well as from past and ongoing residential, commercial and industrial development. Many of the development projects identified in Table G-3, particularly residential development projects that would clear dozens to hundreds of acres of native vegetation would result in similar impacts, which when combined with impacts of the I-8 Alternative would be significant. However implementation of Mitigation Measures B-1a, B-2a, and B-3a, which include habitat restoration/compensation, a pre-construction weed inventory, and a Weed Control Plan would render the project's contribution to this significant impact less than cumulatively considerable (Class II) by preventing invasive and non-native species from being introduced as a result of the I-8 Alternative.

Impact B-4: Construction activities would create dust that may result in degradation of vegetation (Class III). As discussed in Section E.1.2, I-8 Alternative construction activities such as grading, tower footing excavation, and driving of heavy equipment on unpaved roadways would result in increased levels of airborne dust that may settle on surrounding vegetation. Increased levels of dust on plants can significantly impede the plants' photosynthetic capabilities and degrade the overall vegetation community. Project construction practices such as regular watering to control dust during clearing, grading, earth-moving, excavation, or other construction activities, establishing a 15-mile-per-hour speed limit on dirt access roads would reduce the amount of dust settling on surrounding vegetation. Several of the projects identified in Table G-3 that would be in close proximity to the I-8 Alternative route, including

the Lakeside Downs, Lakeside Ranch, Erdmann, McCain Valley Road, and Dart Residential Developments would also involve dust-generating construction activities. If construction at these adjacent locations were to occur at the same time as construction of the I-8 Alternative, dust from those projects and the I-8 Alternative would combine to significantly impact plants' photosynthetic capabilities and degrade the overall vegetation community in those areas if the amount of dust leaving were to be inordinately and substantially large. Given the nature of construction of linear projects such as the I-8 Alternative, construction activities would not occur at any one location for an extended period of time. The likelihood that intensive dust generating activities of adjacent projects would occur concurrently with those of the I-8 Alternative is considered low based on the nature of construction of linear projects. Therefore the potential for impacts of the I-8 Alternative to combine with those other projects to result in a cumulative significant impact is also considered low and therefore less than significant (Class III).

Impact B-5: Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants (Class I). Impacts to listed or sensitive plant species would be caused by direct loss of known locations of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during I-8 Alternative construction. Plant species that are listed or considered to be sensitive are already considered to be compromised, partly or completely (depending on the species) as a result of past and continued human activity and development throughout the region. As such any activities that would considerably contribute to adverse affects on these plant species would be considered significant. Therefore, when combined with similar impacts of past and future projects, these incremental impacts would create a cumulative impact. The I-8 Alternative's contribution to this impact would be cumulatively considerable and thus significant (Class I). Implementation of Mitigation Measures B 1a, B 1c, B 2a, and B 5a would minimize the I-8 Alternative's contribution to this impact, but not to less than significant levels. No additional mitigation measures are available to reduce the I-8 Alternative's contribution to this impact to less than considerable.

Impact B-6: Construction activities, including the use of access roads, would result in disturbance to wildlife and could result in wildlife mortality (Class III). Direct impacts to wildlife anticipated as a result of the I-8 Alternative include the temporary loss of wildlife habitat along with the displacement and/or potential mortality of resident wildlife species that are poor dispersers such as snakes, lizards, and small mammals. Other past and future projects that have been or would be implemented in undeveloped areas have resulted, and would have the potential to result, in similar impacts. However, the combined effect of impacts to non-sensitive/threatened wildlife from the I-8 Alternative and impacts of past and future projects is not considered to be significant because these species are common and wide-ranging over the entire project area and are expected to recover from these losses given the large numbers of the overall regional populations. Additionally, displaced wildlife would be expected to return to the I-8 Alternative alignment after vegetation is allowed to recover upon completion of construction activities. Therefore, the I-8 Alternative's contribution to a cumulative impact would be less than significant (Class III).

Impact B-7 (B-7A through B-7N): Direct or indirect loss of listed or sensitive wildlife or a direct loss of habitat for listed or sensitive wildlife (Class I). As discussed in Section E.1.2, construction of the I-8 Alternative would result in impacts to listed or sensitive wildlife species. Potentially affected species include: Peninsular bighorn sheep, burrowing owl, least Bell's vireo, southwestern willow flycatcher, golden eagle, quino checkerspot butterfly, arroyo toad, and coastal California gnatcatcher. Impacts to these species would be caused by direct loss of known locations of individuals, or direct loss of potential habitat as a result of temporary or permanent grading or vegetation clearing during I-8 Alternative construction. With implementation of Mitigation Measures B-1a, B-1c, B-7a, B-7b, B-7c, B-7d, B-7e, B-7h, B-7i, B-7j, B-7k, and B-7l as recommended in Section E.1.2, impacts of the I-8

Alternative to burrowing owls, least Bell's vireo, southwestern willow flycatcher, arroyo toad, Stephens' kangaroo rat, and coastal California gnatcatcher would be considered less than significant. However, wildlife species that are listed or considered to be sensitive are already considered to be compromised, partly or completely (depending on the species) as a result of past and continued human activity and development throughout the region. Therefore, a cumulative impact is created as a result of the I-8 Alternative in combination with other past, present and future projects causing related impacts. As such, any activities that would considerably contribute to adverse affects on these wildlife species would be considered significant. Therefore, although localized impacts of the I-8 Alternative to some of the above species would be considered to be less than significant, when combined with similar impacts of past and future projects, these impacts would considerably contribute to a cumulative impact (Class I) for all of the species listed above. Implementation of the mitigation measures recommended in Section E.1.2 would reduce the I-8 Alternative's contribution to this impact, but not to less than significant levels. No additional mitigation measures are available to reduce the I-8 Alternative's contribution to this impact to less than considerable.

Impact B-8: Construction Activities would result in a potential loss of nesting birds (Violation of the Migratory Bird Treaty Act) (Class II). As discussed in Section E.1.2, I-8 Alternative construction activities such as vegetation clearing and tree trimming would have the potential to result in the killing of migratory birds or caused the destruction or abandonment of migratory bird nests and/or eggs. Several of the development projects identified in Table G-3 would result in similar impacts to nesting birds. Some of the projects identified in Table G-3, particularly large scale residential developments and solar projects would require clearance of hundreds, and in some cases thousands, of acres of contiguous land area occupied by trees and other vegetation with the potential to house nesting birds. Furthermore, many parts of the project area, particularly within San Diego County have undergone intensive urbanization which has resulted in similar impacts to nesting birds. Potential losses of nesting birds associated with the I-8 Alternative, when combined with losses associated with past, present and future projects are considered significant because they would represent substantial adverse effects to nesting birds. However, as discussed in Section E.1.2, Mitigation Measure B-8a includes conditions such as requiring vegetation clearing and tree trimming activities to occur outside general avian and raptor breeding seasons, performing pre-construction surveys, construction monitoring, and stopping and deferring work if impacts to nestlings cannot be avoided, that would prevent adverse impacts to nesting birds from occurring as a result of the I-8 Alternative. Therefore, the I-8 Alternative's contribution to a cumulative impact to nesting birds would be rendered less than cumulatively considerable and therefore is not significant (Class II).

Impact B-9: Adverse effects to Linkages or wildlife movement corridors, the movement of fish, and/or native wildlife nursery sites (Class II). As discussed in Section E.1.2, the I-8 Alternative would have no impact on wildlife movement corridors and would therefore not have the potential to combine with impacts to wildlife corridors from other projects to result in a cumulative significant impact. The I-8 Alternative has the potential to adversely affect bat nursery colonies. Unmitigated, these impacts would have the potential to combine with impacts of other current and future development projects that would be implemented near bat nurseries. However Mitigation Measure B-9a would include methods to avoid impacts to bat nursery colonies during construction through such measures as halting any construction activity that would cause falling rock, substantial vibration impacts, or any other construction-related impact to a nursery colony as determined by an approved biologist, until the colony is inactive. Therefore, the I-8 Alternative's contribution to a cumulative impact to bat nursery colonies would be rendered less than cumulatively considerable and therefore not significant (Class II).

Impact B-10: Presence of transmission lines may result in electrocution of, and/or collisions by, listed or sensitive bird species (No Impact [electrocution] and Class I [collision]). As discussed in Section E.1.2, Biological Resources, the I-8 Alternative would have no impact with regard to bird electrocution and therefore is not cumulatively considerable. Project components such as transmission towers and conductors would pose collision risks to birds. Several of the projects listed in Table G-3, including all the transmission line projects, electrical generation plants, and substations, would involve construction of structures of sufficient height with which birds to collide as would several other transmission lines that currently exist within San Diego and Imperial Counties. As discussed in Section E.1.2, research shows that large numbers of birds collide with such structures annually. Therefore, impacts of the I-8 Alternative, when combined with impacts from past, present, or reasonable future projects would create a cumulative impact. The I-8 Alternative's contribution to this impact would be cumulatively considerable and thus significant (Class I). Implementation of Mitigation Measure B-10a would reduce the I-8 Alternative's contribution to this impact, but not to less than significant levels. No additional mitigation measures are available to reduce the I-8 Alternative's contribution to this impact to less than considerable.

Impact B-11: Presence of transmission lines may result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers (No Impact). Common ravens have been documented to prey on the desert tortoise and the FTHL (Liebezeit et al., 2002; Flat-Tailed Horned Lizard Interagency Coordinating Committee, 2003), which do not occur along this alternative. The common raven has not been documented to prey on any other listed or sensitive wildlife in the vicinity of this option (Liebezeit et al., 2002). Therefore, impacts of the I-8 Alternative would not have the potential to combine with impacts of past, present, and reasonably foreseeable projects to result in a cumulative impact (No Impact).

Impact B-12: Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (Class I). As discussed in Section E.1.2, maintenance, including such activities as the use of existing access roads or regular brush clearing around I-8 Alternative features, would result in disturbance to and potential mortality of wildlife (including listed or sensitive wildlife). As discussed above for Impact B-7, wildlife species that are listed or considered to be sensitive are already considered to be compromised, partly or completely (depending on the species) as a result of past and continued human activity and development throughout the region. Therefore, the loss of sensitive or listed species as a result of the I-8 Alternative in combination with other past and I-8 Alternatives causing related impacts, such as the SWPL Transmission Line, would create a cumulative impact. Although implementation of Mitigation Measures B-1a, B-1c, B-7a, B-7b, B-7c, B-7d, B-7e, B-7h, B-7i, B-7j, B-7k, and B-7l, and B-12a through B-12c would reduce impacts to nesting birds and other sensitive species, impacts to Peninsular bighorn sheep would remain significant. No additional mitigation measures are available to reduce the I-8 Alternative's contribution to this impact to less than considerable.

Visual Resources

Geographic Extent

As described above in Section G.1 for the Proposed Project, cumulative impacts to visual resources would occur where project facilities occupy the same field of view as other built facilities or impacted landscapes. In some cases, a cumulative impact would also occur if a viewer perceives that the general visual quality of a localized area is diminished by the proliferation of visible structures or construction effects, even if the changes are not within the same field of view as existing structures or facilities, but are nearby. Most cumulative impacts would occur within two miles of the I-8 Alternative. Beyond two

miles, structures become less distinct or even not visible if they blend sufficiently with background forms, colors, and textures. Also, beyond two miles it is likely that sightlines will become impaired or blocked by intervening terrain and vegetation. In some cases, the expansiveness or openness of a landscape or the availability of vista viewpoints and overlooks greatly expand the viewshed for a portion of the project to distances of five miles or more. From these locations, the geographic scope of the cumulative analysis would increase commensurately.

Existing Cumulative Conditions

The 92.7-mile I-8 Alternative would cross through a diversity of landscapes ranging from arid, expansive deserts in the east to the suburban inland valleys further to the west. Views of the I-8 Alternative would be available from numerous vantage points including I-8, Evan Hewes Highway, SR67, SR79, Sunrise National Scenic Byway, local roads, recreation facilities and dispersed recreation areas, and residential areas.

The eastern portion of this alternative is located mainly within desert land with panoramic views that include the existing SWPL transmission line and the linear feature of I-8. Views from I-8 in the vicinity of the span are unobstructed and panoramic. Adjacent landform colors are predominantly tan with lavender and bluish hues for the distant mountains. Landform textures appear smooth to granular while vegetation is patchy with clumps, transitioning to continuous blocks at greater distance. Although there are distant mountain ranges that create land variation of visual interest, the overall scenic quality of the desert basin landscape is somewhat non-descript and compromised by the noticeable presence of the steel-lattice transmission line with its industrial character and the linear form the freeway that creates an unnatural demarcation in the desert vegetation.

As the route travels west, wide range of existing, cumulative visual conditions occur within this geographic extent, mainly due to varied geography and landscape types and the multiple types of land uses that are traversed by the I-8 Alternative. Dramatic visual changes to the natural landscape character have been occurring due to ongoing land development projects needed to accommodate a growing regional population. Short-term cumulative impacts may occur if other projects in close proximity (viewable from the site of I-8 construction) are constructed at the same time as the I-8 Alternative. In these cases, construction activities and/or equipment associated with more than one project may be visible within the same field of view and at the same time, and therefore would create significant, unavoidable (Class I) impacts to the visual environment. Dramatic visual changes to the natural landscape character are associated with development of agricultural fields, hillsides into commercial uses and residential subdivisions. Dramatic visual changes to the natural landscape character have been occurring and ongoing development has impacted existing landscape character, scenic vistas, and existing visual resources. The siting of new residential, commercial, and industrial land uses is often located in existing natural-appearing open space areas, and has also extended across existing agricultural fields, especially in southwest San Diego County. Relatively undeveloped valleys and hillsides are currently being developed into high-density residential communities. Consequently, the impacts of additional development projects that permanently alter existing landscape character, scenic vistas, and visual resources would be cumulatively considerable.

Cumulative Impact Analysis

Industrial projects with tall, highly visible vertical elements differ from ground-level projects in terms of their potential visibility and their visual character. There are several past, present and reasonably foreseeable cumulative infrastructure projects that would share many of the same characteristics of the I-8

Alternative, and could be within the same field of view as the I-8 Alternative. These projects would exhibit similar vertical structural form, structural complexity, and industrial character as the I-8 Alternative. The projects include:

- Stirling Energy Power Plant 4,500-acre solar generating station
- SWPL Transmission Line
- Imperial Valley Substation Expansion
- Interstate 8

In addition to these infrastructure projects, several large residential developments are planned to be constructed within viewing distance of the I-8 Alternative. These projects would result in a perceived diminution of visual quality and Stirling Energy Power Plant 4,500-acre solar generating station

- Lakeside Downs 412-acre Residential Development
- Lakeside Ranch 462-acre Residential Development
- Volli 40-acre Residential Development

A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.3.4.2.

Impact V-1: Short-term visibility of construction activities, equipment, and night lighting (Class I). Several of the projects identified in Table G-3 would be in close proximity to the I-8 Alternative route, including the Lakeside Downs, Lakeside Ranch, Erdmann, McCain Valley Road, and Volli Residential Developments. If construction at these adjacent locations were to occur at the same time as, or consecutively before or after construction of the I-8 Alternative, construction activities, equipment and night lighting from these sites would combine with such activities and equipment from the I-8 Alternative site. Given the nature of construction of linear projects such as the I-8 Alternative, construction activities would not occur at any one location for an extended period of time. However, construction of the I-8 Alternative and the residential development projects identified near the SWPL ROW would lead to the presence of construction equipment near the ROW for several years (at least 2008 through 2012), which would be a significant impact. Therefore I-8 Alternative Impacts, when combined with impacts of other past, present, and reasonably foreseeable projects would be significant (Class I).

Impact V-2: Long-term visibility of land scars in arid and semi-arid landscapes (Class I). The I-8 Alternative would result in scarring from use of staging areas and construction yards, construction of new access and spur roads, and activities adjacent to construction sites and along the entire project ROW. Past projects within the I-8 Alternative area that have resulted in similar impacts include the SWPL Transmission Line and access roads, residential developments, agricultural fields and access roads, and railroads. Three of the reasonably foreseeable projects identified in Table G-3 would result in similar impacts, including the Stirling Energy Power Plant, the Imperial Valley Substation Expansion, and the residential developments planned along the I-8 Alternative. Although this I-8 Alternative impacts would be minimized through implementation of APMs and mitigation measures, when combined with similar impacts of past, present, and reasonably foreseeable projects, these impacts would be significant (Class I) because land scars are currently and will continue to be visible throughout the I-8 Alternative. No additional mitigation measures are available to reduce the I-8 Alternative's contribution to this impact to less than considerable.

Impacts V-56, V-57, V-59, V-61, V-62, and V-65 through V-68: Increased structure contrast, industrial character, view blockage, and skylining (Class I). I-8 Alternative structures (transmission towers and substations) would be prominently visible from many locations throughout the I-8 Alterna-

tive area and would introduce additional industrial character wherever they are viewable. A cumulatively considerable impact would occur if the structure contrast, industrial character, view blockages, and skylining introduced by the I-8 Alternative combined with similar effects from past, present and reasonably foreseeable projects within viewing distance of the I-8 Alternative. A review of past development along the I-8 Alternative route as well as the reasonably foreseeable projects identified in Table G-3 above shows that when combined with the effects of other projects, the I-8 Alternative would contribute to a significant impact (Class I). Projects whose impacts with which the I-8 Alternative's impacts would combine include the existing SWPL Transmission Line, I-8, the Stirling Energy Project, the Imperial Valley Substation Expansion, and residential developments such as Lakeside Downs and Lakeside Ranch. No additional mitigation measures are available to reduce the I-8 Alternative's contribution to this impact to less than considerable.

Impacts V-58, V-60, V-63 and V-64: Inconsistency with Interim BLM VRM Class III management objective due to increased structure contrast, industrial character, view blockage, and skylining (Class I). Portions of the I-8 Alternative route would be constructed on or within viewing distance of BLM lands near the Plaster City West OHV Staging Area, Table Mountain ACEC, and in Buckman Springs. Presence of I-8 Alternative structures would introduce structural contrast and a visual character to these lands. The industrial character of the I-8 Alternative would combine with similar effects from the Stirling Energy Project, I-8, and the SWPL Transmission Line to increase the effect of this industrial character viewable from BLM lands in this area. When combined, the resulting structural visual contrast (for form and line) would range from moderate-to-strong to strong and the overall level of change would be moderate-to-high, resulting in a significant impact (Class I). Implementation of Mitigation Measure V-3a would minimize the project's impact, but not to a level of less than considerable. No additional mitigation measures are available to reduce the I-8 Alternative's contribution to this impact to less than considerable.

Land Use

Geographic Extent

The geographic extent for the analysis of cumulative impacts associated with land use are the communities that would be traversed by or adjacent to the I-8 Alternative or alternatives, including:

- Community of Boulevard
- Community of Alpine
- County of Imperial
- County of San Diego
- City of San Diego

This is defined as the geographic extent because many of these areas have been characterized by rapid growth, which results in the development of new residential, commercial, and industrial land uses. New development affects existing land uses (i.e., open space, low-density uses) within the communities that are traversed by the project.

Existing Cumulative Conditions

The projects considered in evaluating cumulative land use impacts are shown on Figure G-1 and Figures G-8 through G-10 and described in Table G-3. In addition to the specific projects identified in Table G-3, relevant planning and environmental documents listed in Table G-2 were considered when identifying activities that could potentially contribute to cumulative land use impacts. Imperial and San

Diego Counties continue to experience population growth and increased urbanization. City and County General Plans guide the location and types of development in the context of long-term physical development of the jurisdiction. Because much of the project would be located within existing SDG&E rights-of-way, land use impacts of the project have been minimized.

The criteria by which land use impacts would be considered cumulatively significant are the same as those considered for the Proposed Project and are discussed in Section D.4.4.1.

Cumulative Impact Analysis

Impact L-1: Construction would temporarily disturb land uses at or near the alignment (Class II). Section E.4 (Land Use) discusses the impacts from construction and operation of the I-8 Alternative on existing residential and commercial land uses. Several residential and commercial/industrial developments have been proposed or are currently under construction within two miles of the I-8 Alternative route, including Lakeside Downs, Lakeside Ranch, Erdmann, McCain Valley Road, Volli, and Pine Creek Ranch. Some of these new development projects would be directly adjacent to and/or traversed by the I-8 Alternative.

Development has been and continues to occur rapidly in Imperial and San Diego Counties, within both the cities and the surrounding unincorporated areas of the counties. Much of this development is located in areas that are adjacent to existing residential and commercial development. Such development is beneficial to the growing populations within the cities and surrounding communities that require housing, and in particular are seeking a variety of housing opportunities. New development also benefits existing businesses that target the surrounding communities as their customer base. As such, the existing cumulative conditions have created beneficial impacts for residential and business opportunities.

Construction of the I-8 Alternative would likely occur between the years 2010 to 2012. A definitive construction schedule is not currently available for all of the proposed residential and commercial/industrial projects listed in Table G-3. However, it is assumed that construction of some of these projects would overlap with construction of the I-8 Alternative. The construction of multiple projects within the same area could create a potentially significant impact to adjacent residential land uses in the form of noise, dust, traffic and general neighborhood disruption as a result of heavy construction equipment, trenching activities associated with the undergrounding of a portion of the proposed transmission line, and moving building materials to and from construction staging areas, particularly within the residential neighborhoods of Alpine where the transmission line is proposed to be underground within roadways and would require trenching. Also, commercial land uses would be impacted if access to a business was affected or precluded during construction activities from the projects occurring simultaneously in close proximity to the I-8 Alternative.

The I-8 Alternative would be designed and constructed such that transmission towers would be located to maximize avoidance of sensitive land uses. In addition, mitigation measures that would reduce noise, traffic, and air quality impacts are presented in Sections E.8 (Noise), E.9 (Transportation and Traffic) and E.11 (Air Quality), respectively, but these measures would not eliminate the disturbance to land use. While this disturbance would be short-term and temporary, given the existing cumulative land use impact that would occur from the construction of multiple projects, the impact would be significant if construction is not carefully managed and area users kept informed. Implementation of Mitigation Measure L-1a (Prepare Construction Notification Plan) would reduce the I-8 Alternative's contribution to this impact to less than cumulatively considerable (Class II) because affected property and business owners would be informed of potential disturbances.

Impact L-2: Presence of a transmission line or substation would disrupt land uses at or near the alignment (No Impact*).* As discussed in Section. E.1.4, the I-8 Alternative would have no impacts with respect to disrupting land uses as a result of project operation. Therefore the I-8 Alternative would not have the potential to combine with impacts of other projects to result in a cumulatively considerable impact (No Impact).

Wilderness and Recreation

Geographic Extent

A cumulative impact would result if Proposed Project impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.5.4.1. In addition to these criteria, the cumulative loss of State Park land or reduced/diminished quality of recreation experience on State Park land due to development is addressed below under Impact WR-5. For this impact, a cumulative impact would occur if two or more projects resulted in the loss of State Park lands specifically designated for the preservation and conservation of wildlife and/or public, or the diminished quality of recreational experience on State Park Lands.

Existing Cumulative Conditions

Wilderness and recreation resources in these areas are managed by the following jurisdictions: Bureau of Land Management, U.S. Forest Service, and U.S. Fish and Wildlife Service; California Department of Parks and Recreation and California Department of Fish and Game; and Imperial and San Diego Counties.

In addition to the projects listed in Table G-3, plans and environmental documents listed in Table G-2 were considered when identifying development activities that could contribute to cumulative wilderness and recreation impacts.

Cumulative Impact Analysis

A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.5.4.1.

Impact WR-1: Construction activities would temporarily reduce access and visitation to recreation or wilderness areas (Class II). Past projects would not currently be under construction and would therefore not have the potential to contribute to this impact, therefore only current and reasonably foreseeable projects are considered for analysis of cumulative impacts of Impact WR-1. As discussed in Section E.1.5, the following recreational areas and uses would be affected by I-8 Alternative construction activities: Dunaway Primitive Camp, Plaster City ORV Open Area, PCT, Horse Canyon hang gliding and paragliding site, Secret Canyon Trail, Trans-County Trail, and Blossom Valley hang gliding and paragliding site. Several past, present and reasonably foreseeable projects identified in Table G-3, including the Broad oaks Road Extension, Old Hwy 80 Improvements, the Slope Residential Development, Sky Mesa Ranch Residential Development, and Carroll Residential Development would also result in temporary impacts to these resources, particularly the aforementioned trails. If construction activities of some or all of these projects occurred concurrently or consecutively with construction of the I-8 Alternative, access to these areas would likely be substantially reduced, a significant impact. Implementation of Mitigation Measures WR-1a, WR-1b, and WR-1c would reduce the I-8 Alternative's contribution to this impact to less than considerable (Class II) by providing alternate routes and temporary detours for recreationists.

Impact WR-2: Presence of a transmission line would change the character of a recreation area, diminishing its recreational value (Class I). Several past and one reasonably foreseeable projects within the Imperial Valley Link, including the SWPL Transmission Line, I-8 Freeway, Stirling Energy Plant, the Slope Residential Development, Sky Mesa Ranch Residential Development, and Carroll Residential Development would place industrial structures and features within viewing distance of recreation areas described in Section E.1.5. When combined with impacts of the I-8 Alternative, these projects would substantially change the character of these recreation areas, resulting in a significant and unavoidable impact (Class I). Mitigation Measures V-3a, V-45a, and N-3a would be implemented to minimize the I-8 Alternative's contribution to this impact, but not to a less than significant level.

Impact WR-3: Presence of a transmission line would permanently preclude recreational activities (Class II). Placement of I-8 Alternative structures on nature trails would permanently preclude the use of some trails and campgrounds. The I-8 Alternative would be constructed overhead between the launch and landing pads of the Horse Canyon and Blossom Valley hang gliding and paragliding sites, thereby precluding use of these areas. Past projects throughout the project area, including construction of roads and freeways, as well as residential, industrial and commercial development have permanently precluded use of various areas throughout the I-8 Alternative area. None of the current and reasonably foreseeable projects identified in Table G-3 are expected to permanently preclude use of recreation areas within the I-8 Alternative area. Although it is unknown to what extent past projects have precluded recreational activities, it is conservatively assumed that further restriction of recreational activities from implementation of the I-8 Alternative would combine with past projects to result in a significant impact. However, Mitigation Measure WR-3a would render the I-8 Alternative's contribution to this impact to trails to less than considerable by placing structure in locations such that permanent restriction of use of recreation facilities would not occur (Class II). Although the I-8 Alternative would permanently preclude use of the Horse Canyon and Blossom Valley hang gliding and paragliding sites, there are no other projects with whose impacts the I-8 Alternative would combine to result in a cumulative impact to these two areas.

Impact WR-4: Presence of a transmission line in a designated wilderness or wilderness study area would result in the loss of wilderness land (No Impact). As discussed in Section E.15, the Interstate 8 Alternative ROW would not traverse any wilderness areas or WSAs. Therefore the I-8 Alternative would not have the potential to contribute to a cumulative impact in these areas (No Impact).

Impact WR-5: Cumulative loss of State Park land or reduced/diminished quality of recreation experience on State Park land due to development. (No Impact). As discussed in Section E.15, the Interstate 8 Alternative ROW would not traverse any wilderness areas or WSAs. Therefore the I-8 Alternative would not contribute to a cumulative impact in these areas (No Impact).

Agriculture

Geographic Extent

Although the I-8 Alternative would be located in both San Diego and Imperial Counties, it would only traverse on or adjacent to agricultural lands within San Diego County. Therefore, the geographic extent for the analysis of cumulative impacts associated with agricultural resources consists of San Diego County, throughout which agricultural land is being converted to other land uses. Cumulative impact analysis for agricultural resources has been conducted using the projects in Table G-3, and data obtained from the Department of Conservation Division of Land Resource Protection Farmland Mapping and Monitoring Program.

Existing Cumulative Conditions

San Diego County maintains extensive existing rural land uses, including agriculture (see Section D.6). The Interstate 8 Overhead/Underground Alternative would permanently impact a total of approximately 102 acres of Agricultural Resources (37.2 acres of DOC Farmland, 6.4 acres of Active Agricultural Operations, and 58.3 acres of Williamson Act lands). The impacts of additional development projects in San Diego County that convert Farmland to non-agricultural use and conflict with agricultural operations would be cumulatively considerable over time.

Cumulative Impact Analysis

The construction and operation of the I-8 Alternative would make an incremental contribution to existing and anticipated cumulative effects on agricultural resources. Impacts to agricultural resources would occur where project structures would occupy agricultural land that includes Farmland (Prime Farmland, Farmland of Statewide Importance, and Unique Farmland), Williamson Act lands, or agricultural operations. Table G-3 lists projects included in the cumulative agriculture analysis because they have the potential to adversely affect agricultural resources. A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.6.4.1.

Impact AG-1: Construction activities would temporarily interfere with Active Agricultural Operations (No Impact). The I-8 Alternative would temporarily interfere with active agricultural operations by impeding access to certain fields or plots of land, obstructing farm vehicles and equipment, and disrupting grazing activities, all of which could result in the temporary reduction of agricultural productivity. I-8 Alternative impacts would be significant when combined with impacts of current and future projects if those projects would interfere with operations to the same agricultural lands at the same time as the I-8 Alternative. However, based on the locations of the current and reasonably foreseeable projects (as presented in Figures G-1 through G-7) and the relatively small number of agricultural lands that would be affected by them or the I-8 Alternative, it is unlikely any of those projects would impact the same farmland at the same time as the I-8 Alternative. Therefore, I-8 Alternative impacts would not combine with impacts from other current and reasonably foreseeable projects to result in a cumulative impact (No Impact).

Impact AG-2: Operation would permanently convert DOC Farmland to non-agricultural use (Class I). Conversion of agricultural lands has been ongoing throughout most areas of the I-8 Alternative for several decades. According to the DOC Division of Land Resource Protection Farmland Mapping and Monitoring Program, in the period from 2002 to 2004, approximately 4,000 acres of DOC farmland in San Diego County was converted to other uses, primarily urbanization. A review of data collected since 1984 shows the conversion of DOC Farmland to non-agricultural uses is an annually consistent trend throughout California, including San Diego County that is likely to continue. The I-8 Alternative would convert nearly 40 acres of DOC Farmland to non-agricultural use. Although it is currently unknown whether any of the reasonably foreseeable would convert DOC Farmland to non-agricultural uses, given the large number of large residential and public works projects, it is reasonable to assume that some DOC Farmland would be converted. Therefore, when combined with similar impacts from all past, present, and reasonably foreseeable projects would be significant (Class I) and no feasible mitigation measures exist to mitigate this impact to a less than considerable.

Impact AG-3: Operation would permanently interfere with Active Agricultural Operations (Class I). Residential, commercial, and industrial developments including roads, electrical transmission lines, and residential neighborhoods have interfered with agricultural operations throughout most areas of the I-8

Alternative for several decades. The I-8 Alternative would interfere with at least 3.2 acres of active agricultural operations. As discussed above, the conversion of agricultural land to non-agricultural uses is an annually consistent trend throughout California, including San Diego County that is likely to continue. Although it is currently unknown whether any of the reasonably foreseeable would convert DOC Farmland to non-agricultural uses, given the trend toward increased urbanization in San Diego County, it is reasonable to assume that agricultural land will continue to be permanently converted. Therefore, impacts of the I-8 Alternative, when combined with impacts from all past, present, and reasonably foreseeable projects, would be significant (Class I), and no feasible mitigation measures exist to mitigate this impact to a less than considerable.

Impact AG-4: Operation would permanently convert Williamson Act lands to non-agricultural use (No Impact). The I-8 Alternative would not convert any Williamson Act lands to non-agricultural uses and therefore would not have the potential to combine with impacts from past, present, and reasonably foreseeable projects to result in a cumulative impact (No Impact).

Cultural and Paleontological Resources

Geographic Extent

The geographic scope for the analysis of cumulative impacts on cultural and paleontological resources is all of Imperial and San Diego Counties. The proximity of cultural and paleontological resources to the I-8 Alternative would be of interest only to the extent that proximity would considerably affect the context or integrity of the resource. This wide geographic scope is appropriate because it is likely that cultural resources similar to those in the I-8 Alternative's Area of Potential Effect are present throughout this area.

Existing Cumulative Conditions

Cultural resources, including archaeological sites and historical structures, are impacted by ground disturbing activities associated with development. Current air photos show that development has modified much of the land within San Diego County and portions of Imperial County. Cultural resources, such as prehistoric and historic archaeological sites and historic structures, that were located within this developed area, as indicated by the records search results for the I-8 Alternative, have been significantly impacted (likely destroyed). Grading and other ground disturbing activities associated with land development can destroy archaeological sites, which are usually on the surface or within three feet below surface.

Cumulative Impact Analysis

As described in Table G-3, there are numerous projects in the planning or construction phase within Imperial and San Diego Counties that have the potential to adversely affect cultural and paleontological resources.

The actual number and type of resources that might be adversely affected by the cumulative scenario projects is unknowable without a comprehensive inventory of the area within the geographic scope of the cumulative analysis. Development of such an inventory is beyond the reasonable scope of this analysis. Typically, cultural and paleontological resources are identified as part of the permitting process for individual undertakings, and often are discovered only during ground disturbing activities. Applicable laws and regulations, as discussed in Section D.7.7, afford specific protections to discovered resources.

A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.7.4.1.

Impact C-1: Construction of the project could cause an adverse change to known historic properties (Class II). As currently mapped, there are 81 cultural resources that are potentially NRHP/CRHR-eligible, NRHP/CRHR-eligible and/or NRHP/CRHR-listed within the five Links of the I-8 Alternative area that are located in areas of direct impact. Several of these resources include resources determined to be NRHP-eligible/CRHR-listed or NRHP/CRHR-listed. Past projects, such as the SWPL Transmission Line, I-8 that have been constructed within the same corridor as the I-8 Alternative would affect the same resources directly affected by the I-8 Alternative. Without mitigation, these resources would likely be destroyed through construction activities of these projects, resulting in a significant impact. However, Mitigation Measures C-1a through C-1f would reduce the I-8 Alternative's contribution to this impact to less than considerable (Class II) through data-recovery excavations to capture important data from the affected resources.

Impact C-2: Construction of the project could cause an adverse change to sites known to contain Native American human remains (Class I). As discussed in Section E.1.07, one archaeological site known to contain Native American human remains may be adversely and directly affected by construction of the I-8 Alternative. Past projects, such as the SWPL Transmission Line, I-8 that have been constructed within the same corridor as the I-8 Alternative would affect the same resources directly affected by the I-8 Alternative. I-8 Alternative impacts, when combined with impacts of past, present and reasonably foreseeable projects would be significant because any adverse effect to human remains is considered a significant (Class I) impact. Implementation of Mitigation Measures C-1b through C-1f and C-2a would minimize impacts of the I-8 Alternative, but not to a less than considerable level. No additional mitigation measures are available to reduce the I-8 Alternative's contribution to this impact to less than considerable.

Impact C-3: Construction of the project could cause an adverse change to unknown significant buried prehistoric and historical archaeological sites or buried Native American human remains (Class III). Unknown, unrecorded cultural resources may be found at nearly any development site. As they are discovered, sites are recorded and information retrieved. If the nature of the resource requires it, the resource is protected. When discovered, cultural resources are treated in accordance with applicable federal and State laws and regulations as well as the mitigation measures and permit requirements applicable to a project. It is not known what cultural resources, if any, would be affected by development of all present and future projects within San Diego and Imperial Counties; however, given the density of past development in these areas and the large number of reasonably foreseeable projects listed in Table G-3, it is reasonable to assume that resources exist and would be expected to be uncovered at several of these sites. As would be done during I-8 Alternative construction through Mitigation Measure C-1c, C-1d, C-1f, C-2a, and C-3a, should resources be discovered during construction of current and future projects, they would be subject to legal requirements designed to protect them, thereby reducing the effect of impacts. Therefore I-8 Alternative impacts, when combined with impact from past, present and reasonably foreseeable projects would not be significant (Class III) and no additional mitigation measures are necessary.

Impact C-4: Construction of the project could cause an adverse change to Traditional Cultural Properties (Class I). No TCPs have been identified that would be directly impacted by the Interstate 8 Alternative. However, Native American consultation has indicated that there are prehistoric rock art sites, springs, and sacred mountains in the vicinity of this alternative. Additionally, the Sacred Lands File search conducted for the alternatives noted that lands sacred to Native Americans are present in the vicinity of the alternatives, in undisclosed locations. Since several past reasonably foreseeable projects would result in similar impacts as the I-8 Alternative in the same location as the I-8 Alternative, including the SWPL Transmission Line, I-8 Freeway roadways adjacent to the route, and several of the residential development projects identified in Table G-3, any prehistoric rock art sites and sacred lands

affected by impacts of the I-8 Alternative area would very likely combine with impacts of these projects to result in a significant impact (Class I). Mitigation Measure C-4a would be implemented to minimize I-8 Alternative impacts. However since the extent of potential impacts and effectiveness of potential mitigation are still unknown, it is conservatively assumed that the I-8 Alternative's contribution to this impact would be significant and unavoidable (Class I).

Impact C-5: Project operation and maintenance could cause an adverse change to known historic properties (Class II). Direct impacts would result from maintenance or repair activities, while increased erosion would result as an indirect project impact. Operation of the past, present, and reasonably foreseeable projects, including the SWPL Transmission Line, I-8, other adjacent roadways, and the residential development identified in Table G-3 would have similar impacts. When combined with impacts of these projects, I-8 Alternative impacts would be significant. However, the site protection measures and monitoring procedures that would be implemented through Mitigation Measure C-5a, C-2a, and C-4a would render the I-8 Alternative's contribution to this impact to less than considerable (Class II) by protecting register-eligible properties from impacts of the I-8 Alternative.

Impact C-6: Long-term presence of the project could cause an adverse change to known historic architectural (built environment) resources (Class I). Four known historic resources would be impacted by long-term presence of the I-8 Alternative, Old Highway 80, the San Diego & Arizona Eastern Railroad (SD&AE), and two resources not within the 300-foot-wide study corridor, Desert View Tower (CHL 939), and the presumed NRHP/CRHR-eligible Westside Main Canal (P-13-008334/CA-IMP-7834). Potential impacts to these resources include physical disturbance or alteration directly as a result of construction activities or diminished visual character of the site(s) due to presence of industrial structures. Past and reasonably foreseeable projects in this area, including the SWPL Transmission Line, I-8 Freeway, and the Volli and McCain Valle Road Residential Developments, would result in similar impacts to these resources as the I-8 Alternative. Therefore, I-8 Alternative impacts, when combined with impacts of these past and reasonably foreseeable projects would be significant (Class I). Mitigation Measures C-6a and V-3a would be implemented to minimize I-8 Alternative impacts. However since the extent of potential impacts and effectiveness of potential mitigation are still unknown, it is conservatively assumed that the I-8 Alternative's contribution to this cumulative impact would remain significant and unavoidable (Class I).

Impact PAL-1: Construction of the transmission line could destroy or disturb significant paleontological resources (Class III). Unknown, unrecorded paleontological resources may be found at nearly any development site. As they are discovered, sites are recorded and information retrieved. If the nature of the resource requires it, the resource is protected. When discovered, paleontological resources are treated in accordance with applicable federal and State laws and regulations as well as the mitigation measures and permit requirements applicable to a project. It is not known what paleontological resources, if any, would be affected by development of all present and future projects within San Diego and Imperial Counties; however, given the density of past development in these areas and the large number of reasonably foreseeable projects listed in Table G-3, it is reasonable to assume that resources exist and would be expected to be uncovered at several of these sites As would be done during I-8 Alternative construction through Mitigation Measure PAL-1a through PAL-1e, should resources be discovered during construction of current and future projects, they would be subject to legal requirements designed to protect them, thereby reducing the effect of impacts. Therefore I-8 Alternative impacts, when combined with impact from past, present and reasonably foreseeable projects would not be significant (Class III) and no additional mitigation measures are necessary.

Noise

Geographic Extent

The geographic extent for the analysis of cumulative impacts related to noise is generally limited to areas within approximately one-quarter mile of the I-8 Alternative route or activity. This area is defined as the geographic extent of the cumulative noise impact area because noise impacts would generally be localized, mainly within approximately 500 feet from any noise source; however, it is possible that noise from different sources within one-quarter mile of each other could combine to create a significant impact to receptors at any point between the projects. At distances greater than one-quarter mile, impulse or helicopter noise would be briefly audible and steady construction noise from the I-8 Alternative would generally dissipate into quiet background noise levels. The baseline for assessing cumulative noise impacts includes the noise sources associated with other projects in the immediate vicinity of the I-8 Alternative (Table G-3) and the existing and future sensitive receptors near project-related activities or noise sources.

Existing Cumulative Conditions

Ambient Noise Levels. Cumulative noise levels within the Counties of Imperial and San Diego and throughout the incorporated cities include and will continue to include an expanded number of sources of man-made noise, mainly due to increased roadway traffic, air traffic, and other human activity including construction projects and an expanded geographic area of impact as urbanization spreads and population grows. Approved, pending and reasonably foreseeable projects, listed in Table G-3 and growth projections and land use plans contained in Table G-2 would add to the future expected noise levels throughout the geographic area. However, varying noise levels would continue to occur depending on the proximity to human activity. Rural communities or unpopulated lands will remain the quietest.

Noise-Sensitive Receptors. Cumulative conditions will introduce new residences or other sensitive receptors to areas near the I-8 Alternative. Approved, pending and reasonably foreseeable projects, listed in Table G-3 and growth projections and land use plans contained in Table G-2 would bring an increased number of noise-sensitive uses to the area.

The significance criteria identified in Section D.8.4.1 are used to characterize the cumulative impacts.

Cumulative Impact Analysis

Impact N-1: Construction noise would substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances (Class I). Construction of the I-8 Alternative would temporarily substantially increase ambient noise levels in the vicinity of the line, along the route, and along all transport access routes. Projects identified in Table G-3 and plans in Table G-2 would also involve construction activities that would in some instances occur concurrently with construction of nearby portions of the I-8 Alternative. Because of variability in project timelines, many of the projects would not likely contribute to overlapping noise impacts in the cumulative scenario. However, there is the possibility that a variety of projects would occur at the same time as project construction. In the areas where project construction may occur simultaneously with other development, the combined effects of noise generated by the project and other development would adversely impact noise-sensitive receptors cumulatively.

Some of the projects identified in Table G-3, including the Lakeside Downs Residential Development, Lakeside Ranch Residential Development, Volli Residential Development, Pine Creek Ranch Residential Development, the Imperial Valley Substation Expansion, and the Stirling Energy Plant, would

bring new noise-sensitive receptors closer to the I-8 Alternative. The impact at each new receptor would be identical to that identified in this analysis for existing noise-sensitive receptors. SDG&E would implement NOI-APM-1 to notify sensitive receptors. However, this cumulative impact would be significant without additional measures.

Therefore, impacts of the I-8 Alternative, when combined with impacts from past, present, and reasonable future projects would be considered cumulatively significant (Class I). As discussed in Sections E.1.4 and E.1.8, Mitigation Measures L-1a and N-1a would be implemented to reduce the Proposed Project's construction noise impacts. Specifically, Mitigation Measure N-1a, in combination with the notification required by Mitigation Measure L-1a (see Section E.4, Land Use), would reduce the project's construction noise impact to the extent feasible. However even with mitigation, the Proposed Project's incremental impacts would persist and would still be considered significant and unavoidable.

Impact N-2: Construction activity would temporarily cause groundborne vibration (No Impact). A groundborne vibration impact would occur in the immediate vicinity of construction sites and any areas of blasting. Blasting is not expected to be necessary for the Interstate 8 Alternative. Therefore, impacts of the I-8 Alternative would not have the potential to combine with impacts of other projects to result in a cumulative impact (No Impact)

Impact N-3: Permanent noise levels would increase due to corona noise from operation of the transmission lines and noise from other project components (Class I). Operational noise from the corona effect would cause a substantial permanent increase of more than 5 dBA within 500 feet of the 500 kV portions of the project transmission line alignment in natural areas where existing noise levels could be as low as 35 dBA. Some of the projects identified in Table G-3, particularly for residential developments and expansion of residential land uses such as Lakeside Downs, Lakeside Ranch, Erdmann, McCain Valley Road, Volli, and Pine Creek Ranch, would bring new noise-sensitive receptors closer to the I-8 Alternative. The impact at each new receptor would be identical to that identified in this analysis for existing noise-sensitive receptors. Impacts of the I-8 Alternative, when combined with impacts from past, present, and reasonable future projects, including the existing SWPL Transmission Line and I-8, would be considered cumulatively significant (Class I). As discussed in Sections E.1.4 and E.1.8, Mitigation Measure N-3a would be implemented to reduce the I-8 Alternative's corona noise impacts; however, even with mitigation, the I-8 Alternative's incremental impacts would persist and would still be considered significant and unavoidable.

Impact N-4: Routine inspection and maintenance activities would increase ambient noise levels (Class I). Helicopter and ground-level inspection and maintenance, including occasional emergency response, would cause noise at levels similar to transmission line construction. Some of the projects identified in Table G-3, particularly for residential developments and expansion of residential land uses such as Lakeside Downs, Lakeside Ranch, Volli, Erdmann, McCain Valley Road, and Pine Creek Ranch, would bring new noise-sensitive receptors closer to the I-8 Alternative. The impact at each new receptor would be identical to that identified in this analysis for existing noise-sensitive receptors. Impacts of the I-8 Alternative, when combined with impacts from past, present, and reasonable future projects, including the existing SWPL Transmission Line and I-8, would be considered cumulatively significant (Class I). As discussed in Section E.1.8, the need for emergency response cannot be predicted. As such providing advance notification or restricting the noise from work to daytime hours would not be practical, and the I-8 Alternative's incremental impacts would be considered significant and unavoidable.

Transportation and Traffic

Geographic Extent

After construction, the I-8 Alternative would have little transportation or traffic associated with it other than for routine inspection and maintenance activities and operations. Therefore, the only opportunity for cumulatively significant transportation and/or traffic impacts to occur would be during the approximate two-year construction phase of the project. Construction-related traffic impacts would mostly result from lane closures that would occur within the immediate vicinity of the I-8 Alternative. Therefore, the geographic extent for the analysis of cumulative traffic and transportation impacts is defined as the area up to three miles from the project route. This scope is appropriate because traffic impacts caused by the I-8 Alternative would be limited to local streets and would be of short duration (with the exception of undergrounding activities) and based on the project impact analysis presented in Section E.9, are unlikely to cause substantial delays or traffic congestion.

Existing Cumulative Conditions

The character of the area along the I-8 Alternative route varies from rural to urbanized. The most urbanized areas along the I-8 Alternative route are within the southwest San Diego County and the community of Alpine. Development is occurring throughout the project study area and as a result traffic increases are anticipated. Although IVAG and SANDAG and other transportation planning and management entities are developing additional roadways, roadway widening and transit projects, it is anticipated that the roadways in the project area will continue to experience increased levels of traffic congestion as additional future land use developments are approved and population growth occurs.

Cumulative Impact Analysis

A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.9.4.1.

Impact T-1: Construction would cause temporary road and lane closures that would temporarily disrupt traffic flow (Class III). Construction of the I-8 Alternative would cause temporary lane roadway closures for a few minutes at a time at locations where construction activities, especially transmission line stringing, would be located within ROWs of public streets and highways. Such closures are regulated by the applicable jurisdictional agency through encroachment permits which require specific measures to minimize disruption to local traffic flow. All projects requiring work within ROWs of public streets and highways are required to obtain encroachment permits. In order for a cumulative impact to occur, lane closures from different projects would have to occur at the same time and on the same road or a connecting road within close proximity to the lane closure from the I-8 Alternative. Past projects in the project area would not combine with impacts of the I-8 Alternative because construction of those projects is complete and lane closures associated with such construction would no longer be necessary. Reasonably foreseeable projects that would require lane closures in the immediate vicinity of the I-8 Alternative route include the Tavern Road Widening Project. Some of the residential development projects located in the immediate vicinity of the I-8 Alternative route may also require lane closures, but it is currently unknown to what extent such closures would be likely or necessary or if they would occur at the same time as lane closures associated with the I-8 Alternative. If lane closures of current and future projects were required for extended for durations (as for the Tavern Road Widening Project) traffic flow would be disrupted. However, since closures associated with the I-8 Alternative would be of very short duration and would be regulated by encroachment permits from the applicable jurisdictional agencies, the incremental effect from such lane closures would not be cumulatively considerable (Class III).

Impact T-2: Construction would temporarily disrupt the operation of emergency service providers (Class III). Lane closures associated with construction of the I-8 Alternative could disrupt the routes traveled by emergency providers. Other current and reasonably foreseeable projects would have the same potential to restrict emergency service provider routes, especially the Tavern Road Widening Project. If these and other projects required lane closures in the same vicinity of and at the same time as the I-8 Alternative impacts to emergency service providers would be significant. However, T-APM-4a, which would be implemented as part of the I-8 Alternative, requires construction activity to be coordinated in advance with emergency service providers to avoid restricting movements of emergency vehicles. Additionally lane closures associated with the I-8 Alternative would be of very short duration. Therefore, the I-8 Alternative's contribution to a potential significant impact would be less than cumulatively considerable (Class III).

Impact T-3: Construction would temporarily disrupt bus transit services (Class III). Lane closures associated with construction of the I-8 Alternative could disrupt the routes traveled bus transit services. Other current and reasonably foreseeable projects would have the same potential to restrict transit service routes, especially the Tavern Road Widening Project. If these and other projects required lane closures in the same vicinity of and at the same time as the I-8 Alternative impacts to transit service providers would be significant. However, T-APM-5a, which would be implemented as part of the I-8 Alternative, requires construction activity to be coordinated in advance with school districts and transit providers. Additionally lane closures associated with the I-8 Alternative would be of very short duration. Therefore, the I-8 Alternative's contribution to a potential significant impact would be less than considerable (Class III).

Impact T-4: Construction would temporarily disrupt pedestrian and/or bicycle movement and safety (Class II). Pedestrian and bicycle circulation could be affected by transmission line construction activities if pedestrians and bicyclists were unable to pass through the construction zone or if established pedestrian and bike routes were blocked. If concurrent construction projects restricted pedestrian and/or bicycle movement within the immediate vicinity of such restrictions associated with the I-8 Alternative, impacts would be significant. However, implementation of Mitigation Measure T-4a and WR-1b, would render impacts of the I-8 Alternative less than cumulatively considerable (Class II) by requiring establishment of alternative pedestrian and bicycle routes around the I-8 Alternative construction zone for safe passage as well as temporary detours for trail users.

Impact T-5: Construction vehicles and equipment would potentially cause physical damage to roads in the project area (Class II). There is potential for unexpected damage to roads by vehicles and equipment to occur from construction vehicles. Other development projects that require heavy equipment to use the same roads utilized by I-8 Alternative construction vehicles could result in similar damage to roads. If left unmitigated, road damage caused by the I-8 Alternative, when combined with unprepared road damage from past, present, and reasonably foreseeable projects would combine to be significant. However, Mitigation Measure T-5a would render the I-8 Alternative's contribution to less than cumulatively considerable (Class II) because it would require repair of roads damaged by I-8 Alternative construction activities.

Impact T-6: Construction activities would cause a temporary disruption to rail traffic or operations (No Impact). The I-8 Alternative would cross San Diego and Imperial Valley Railroad as well as Southern Pacific Railroad ROWs and could disrupt rail traffic. However, T-APM-8a would be implemented as part of the I-8 Alternative, which would require a permit from railroad companies to enter railroad ROWs. Compliance with railroad permit requirements would ensure that I-8 Alternative construction activities would not disrupt rail traffic. Therefore, impacts of the I-8 Alternative would not have the potential to combine with impacts of other reasonably foreseeable projects to result in a cumulative impact (No Impact).

Impact T-7: Construction would result in the short-term elimination of parking spaces (No Impact). Construction activities would result in short-term elimination of a limited amount of parking spaces immediately adjacent to the construction ROW where the ROW occurs adjacent to roads with parking spaces. It is possible that concurrent construction projects located within close proximity to the I-8 Alternative would also result in temporary elimination of parking spaces. If several projects were to concurrently eliminate parking spaces at the same time and same location as the I-8 Alternative, a cumulative impact would occur. However the roads paralleled by the I-8 Alternative are freeways and major thoroughfares along which designated parking spaces generally do not exist, such as I-8 and Alpine Boulevard. Therefore, impacts of the I-8 Alternative would not have the potential to combine with similar impacts of other past, present and reasonably foreseeable projects to result in a significant impact (No Impact).

Impact T-8: Construction would conflict with planned transportation projects (No Impact). The I-8 Alternative and any other project that would interface with a roadway or other transportation facility would be required to obtain an encroachment permit or other such agreement from the applicable jurisdictional agency. Complying with local permits and agreements would ensure appropriate coordination between project applicants and the affected agencies so that conflicts would be avoided or minimized. Therefore, impacts of the I-8 Alternative would not have the potential to combine with similar impacts of other past, present and future projects to result in a significant impact (No Impact).

Impact T-9: Construction would generate additional traffic on the regional and local roadways (Class II). Construction of the I-8 Alternative would temporarily increase traffic (through project trip generation) on the regional and local roadways. Current and reasonably foreseeable projects in these areas would also temporarily increase traffic in these areas during construction. There are several current and future residential developments in these areas, including Lakeside Downs, Lakeside Ranch, Erdmann, McCain Valley Road, and Volli Residential Developments, etc. that, when completed, will contribute to congestion in this area. It is reasonable to assume that some of the many residential developments in these areas would be completed and partially occupied by the time I-8 Alternative construction in this area. Traffic associated with these future residential developments would contribute to congestion on area roadways. Temporary roadway congestion resulting from lane closures associated with construction of the I-8 Alternative would combine with congestion resulting from past, present and future residential and commercial development to result in a cumulative significant impact. However, Mitigation Measure T-9a would minimize the I-8 Alternative's contribution to this impact, Therefore, the I-8 Alternative's contribution to a significant cumulative impact to congestion on regional and local roadways would be rendered less than cumulatively considerable and therefore less than significant (Class II).

Impact T-10: Underground Construction Could Restrict Access to Properties and Businesses (No Impact). Underground construction activities would temporarily restrict access to properties and other neighboring roadways. However, underground construction activities would preclude other projects from being constructed in the same area and therefore from restricting access to these properties and businesses. Therefore, impacts of the I-8 Alternative would not have the potential to combine with impacts of other reasonably foreseeable projects to result in a cumulative impact (No Impact).

Public Health and Safety

Geographic Extent

Contamination. For purposes of the cumulative analysis, the excavation, removal, and treatment/disposal of contaminated soil is considered the only public health and safety issue. Impacts would only have the potential to occur during construction and would be limited to the areas where concurrent construc-

tion is occurring. The geographic scope for the cumulative impact analysis is the actual area of disturbance created by a project, including the project alignment, substation, staging and laydown areas. Furthermore, issues related to air quality and water resources are discussed in their respective sections.

Field-Related Concerns. Electric power facility projects can create both safety and nuisance issues related to radio/television/electronic equipment interference; induced currents and shock hazards and potential effects on cardiac pacemakers. These effects would only be cumulative within the immediate area of the I-8 Alternative, because the electric fields from a transmission line would create impacts only in the immediate vicinity of the corridor.

Existing Cumulative Conditions

Contamination. The project area includes both rural and urban areas and includes land utilized for a variety of uses including: open-space recreation and preserve, agricultural, rural and suburban residential housing, recreational, and commercial businesses. Existing and past land use activities are used as potential indicators of hazardous material storage and use. Many industrial and military sites, historic and current, have soil or groundwater contaminated by hazardous substances such as, heavy metals, and vehicle fuels. Other hazardous materials sources include leaking underground tanks in commercial, rural and agricultural areas. Contaminated surface runoff may occur from polluted sites and agricultural fields that have been treated with pesticides, herbicides, and fumigants. In areas of past and current industrial use, contaminated groundwater plumes could exist along the transmission line routes. The continued development of lands within the Counties of Imperial and San Diego will result in the continued potential for public health and safety risk factors.

Field-Related Concerns. These effects result only from electric transmission and distribution lines, and would occur only within the immediate area of the lines themselves. No other facilities create similar effects, so the area of potential cumulative effect remains within the immediate area of the corridor.

Cumulative Impact Analysis

Contamination

A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.10.4.1.

Impact P-1: Improper handling and/or storage of hazardous materials during construction could cause soil or groundwater contamination (Class II). The I-8 Alternative could contaminate soil or groundwater through accidental releases of hazardous materials used during construction. Health and Safety APMs HS-APM-1, HS-APM-2, HS-APM-3, HS-APM-8, and HS-APM-10 would be implemented as part of the I-8 Alternative to decrease the potential for accidental releases to occur and to clean up potentially harmful materials in the unlikely event of a release. Impacts to groundwater are unlikely to occur primarily because groundwater in most of the groundwater basins crossed by this alternative is typically deeper than the expected depth of excavation (excavation will be less than 40 feet in comparison to at least 70 feet depth for groundwater), resulting in little chance for direct contamination. However, this impact could occur within the Campo Valley Groundwater Basin where shallow groundwater may exist. Impacts to soil could occur along the entire route. The combined effect of impacts to soil from these projects and the I-8 Alternative would result in a cumulative impact. However, Mitigation Measures P-1a, and P-1b would render impacts of the I-8 Alternative less than cumulatively considerable (Class II) by requiring construction in this area to the dry season and implementing a monitoring program and maintaining emergency spill supplies onsite, thereby precluding potential impacts to groundwater and soil from the I-8 Alternative.

Impact P-2: Residual pesticides and/or herbicides could be encountered during grading or excavation in agricultural areas (No Impact). The presence of residual pesticide and herbicide contamination of the soil and/or groundwater in the agricultural areas along the alignment at the north end of Jacumba Valley (from mileposts I8-33.9 to I8-34.1) could result in potential health hazards to construction workers and the public due to exposure to contaminated soil and/or groundwater. As shown in Table G-3 and Figure G-10, there are no current or reasonably foreseeable projects in this area of the I-8 Alternative. While past projects in the area may have encountered pesticides during grading or excavation, the exposure from those activities to workers or the public would most likely have ended upon completion of construction activities. Therefore, impacts of the I-8 Alternative do not have the potential to combine with similar impacts of past, present, or reasonably foreseeable projects to result in a cumulatively considerable impact (No Impact).

Impact P-3: Unanticipated preexisting soil and/or groundwater contamination could be encountered during excavation or grading (No Impact). Encountering preexisting soil and groundwater contamination during I-8 Alternative construction would result in exposure of construction workers to potential health hazards. Such exposure would be hazardous to people in the immediate vicinity of the contamination since the contaminant would either be limited to the medium in which it is discovered or would volatilize and become airborne. If fumes from potential contamination volatilized, risk of exposure would decrease as distance from the source of contamination increased due to dispersal of the fumes. Additionally, the I-8 Alternative includes APMs HS-APM-15, -16 and -17 which would require stopping work if suspected contamination is identified, cordoning off suspected areas of contamination cordoned and taking appropriate health and safety measures. These activities would reduce the risk of exposure to potential contaminants. Although concurrent construction at projects located immediately adjacent to the I-8 Alternative would be subject to the same risk of encountering contaminants and exposing workers to health hazards, such exposure is not likely to combine with effects of the I-8 Alternative to result in a significant impact because of the extremely localized nature of exposure to such contaminants. Therefore, this impact of the I-8 Alternative would not combine with similar impacts of past, present and reasonably foreseeable projects to result in a cumulatively considerable impact (No Impact).

Impact P-4: Unexploded ordinance encountered during construction could explode and injure workers or the public (No Impact). This impact is not expected to occur along the I-8 Alternative. Therefore, this impact of the I-8 Alternative would not have the potential to combine with similar impacts of past, present, and reasonably foreseeable projects to result in a cumulatively considerable impact (No Impact).

Impact P-5: Soil or groundwater contamination could result from accidental spill or release of hazardous materials during operation and maintenance (Class III). The I-8 Alternative could contaminate soil or groundwater through accidental releases of hazardous materials used operation and maintenance activities. APMs HS-APM-1, HS-APM 3, and HS-APM 10 would be incorporated into the I-8 Alternative to decrease the potential for accidental releases to occur and to clean up potentially harmful materials in the unlikely event of a release. These measures would greatly reduce the likelihood of a release as well as the potentially harmful effect of a release.

Past, present and reasonably foreseeable residential development projects, including Lakeside Downs, Lakeside Ranch, Erdmann, McCain Valley Road, and Volli Residential Developments, could also result in a potential release of hazardous materials. These types of developments do not typically use or require substantial quantities of hazardous materials but do require small amounts of common hazardous materials such as gasoline, oils, grease, and solvents which can be accidentally released from vehicles, residences, businesses, and non-point sources. Substantial accidental releases from the I-8 Alternative,

when combined with substantial releases from other past, present and reasonably foreseeable projects would result in a cumulatively considerable impact. However, since measures would be in place to greatly reduce the likelihood of a release as a result of I-8 Alternative activities, the I-8 Alternative's contribution to this impact would be less than cumulatively considerable (Class III).

Impact P-6: Herbicides used for vegetation control around towers and other project facilities could result in adverse health effects to the public or maintenance workers (Class III). Application of herbicides around I-8 Alternative towers could result in adverse health effects to the public and maintenance workers. Impacts from herbicides applied to past, present and reasonably foreseeable projects located in close proximity (less than 0.25 miles) to the I-8 Alternative route would have the potential to combine with impacts of the I-8 Alternative. However, considering the generally low toxicity of herbicides used for the I-8 Alternative, their restricted use at project structures, and the non-routine access of these areas by maintenance workers and the general public, the I-8 Alternative's contribution to such an impact would be less than cumulatively considerable (Class III).

Impact P-7: Excavation or grading could result in mobilization of existing soil or groundwater contamination from known sites (No Impact). Encountering preexisting soil and groundwater contamination during I-8 Alternative construction would result in exposure of construction workers to potential health hazards. Such exposure would be hazardous to people in the immediate vicinity of the contamination since the contaminant would either be limited to the medium in which it is discovered or would volatilize and become airborne. If fumes from potential contamination volatilized, risk of exposure would decrease as distance from the source of contamination increased due to dispersal of the fumes. Additionally, the I-8 Alternative includes APMs HS-APM-5 and HS-APM-10 to reduce impacts from known contaminated sites These measures would reduce the risk of exposure to potential contaminants. Although concurrent construction at projects located immediately adjacent to the I-8 Alternative would be subject to the same risk of encountering known contaminants and exposing workers to health hazards, such exposure is not likely to combine with effects of the I-8 Alternative to result in a significant impact because of the extremely localized nature of exposure to such contaminants. Therefore, this impact of the I-8 Alternative would not combine with similar impacts of past, present and reasonably foreseeable projects to result in a cumulatively considerable impact (No Impact).

Magnetic and Electric Field-Related Concerns

A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.10.24.

Impact PS-1: Transmission line operation causes radio and television interference (Class II). Corona or gap discharges related to high frequency radio and television interference impacts are very localized, if they occur at all. The I-8 Alternative would be constructed adjacent to the existing SWPL Transmission Line. Therefore, these effects have the potential to be cumulatively considerable.

However, in all cases, the individual sources of adverse radio/television interference impacts can be located and corrected by making adjustments to the power lines themselves. The potential magnetic field interference of transmission lines with electronic equipment such as computer monitors can be corrected through the use of software, shielding or changes at the monitor location. Depending on the proximity of residences and businesses to multiple sources of radio and television interference, the incremental effect of radio and television interference from the I-8 Alternative, when combined with the effects of other transmission lines in the area, would be significant. However, implementation of Mitigation Measures PS-1a and PS-1b would reduce the interference from the I-8 Alternative. As a result, the I-8 Alternative's contribution to Impact PS-1 would be less than cumulatively considerable (Class II).

Impact PS-2: Transmission line operation causes induced currents and shock hazards in joint use corridors (Class II). Induced currents and voltages on conducting objects near the proposed transmission lines represent a potential significant impact, but these impacts do not pose a threat to safety if the conducting objects are properly grounded. Like radio/television interference, the addition of new transmission lines through the region is expanding the area potentially at risk for shock hazards, and other nearby existing and reasonably foreseeable transmission lines like the existing SWPL Transmission Line, contribute to this expansion. The cumulative impact of such projects would be significant, and the project's contribution to this impact would be cumulatively considerable. However, Mitigation Measure PS-2a would require grounding of nearby objects that that have the potential for induced voltages. Therefore, implementation of this mitigation measure would render the I-8 Alternative's contribution to Impact PS-2 to less than cumulatively considerable (Class II).

Impact PS-3: Electric fields can affect cardiac pacemakers (No Impact). The electric fields associated with the I-8 Alternative's transmission lines may be of sufficient magnitude to impact operation of a few older model pacemakers resulting in them reverting to an asynchronous pacing. This impact would not combine with impacts of other projects in the area because it would occur only in the immediate area of the transmission line and the presence of other lines would not substantially change the level of effect at any specific location. Therefore, I-8 Alternative impacts would not have the potential to combine with impacts of other past, present, or reasonably foreseeable projects (No Impact).

Impact PS-4: Transmission line structures can be affected by wind and earthquakes (No Impact). This impact describes effect of local environment on the project, rather than the project's effect on the environment. Therefore, Impact PS-4 cannot combine with other projects and cannot create a cumulatively considerable impact.

Air Quality

Geographic Extent

The geographic extent of the cumulative impact area for air quality focuses on the Imperial County and San Diego County air basins, the location of project-related activities. Cumulative impacts could extend over the entire project route; however, the shared nature of air resources warrants consideration of emissions occurring outside of the local air basins. Project-related changes in power plant emissions would occur across the western U.S., Mexico, and Canada. Emissions occurring in any location are considered in the analysis of cumulative impacts.

Existing Cumulative Conditions

Air quality management in Imperial County is the responsibility of the Imperial County Air Pollution Control District (ICAPCD), and for San Diego County, the San Diego Air Pollution Control District (SDAPCD) is responsible. Past development and population growth within the cities and unincorporated portions of Imperial and San Diego Counties contribute to increased activity of stationary and mobile sources of air emissions throughout the Imperial and San Diego County air basins. Most cumulative projects shown on Table G-3 contribute incrementally to short-term and long-term air emissions through construction activities and operational emissions. The air quality management plans for the ICAPCD and SDAPCD (identified in Section D.11.3.3) are periodically updated to adjust the emissions inventories that are closely dependent on economic development and population growth. Updates to the air quality management plans account for development as planned for and outlined in the plans and programs listed in Table G-2.

Cumulative Impact Analysis

The significance criteria identified in Section D.11.4.1 are used to characterize the cumulative impacts.

Impact AQ-1: Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class I). Construction activities would cause emissions of criteria pollutants, odors, and toxic air contaminants in all areas of the project. Projects identified in Table G-3 and plans in Table G-2 would cause similar new emissions from increased economic development and population growth, which leads to increased emissions from stationary and mobile sources throughout the Imperial and San Diego County air basins. Some residential development projects such as Lakeside Downs, Lakeside Ranch, Erdmann, McCain Valley Road, and Volli, could also bring new sensitive receptors closer to areas of dust and exhaust emissions caused by I-8 Alternative construction. The impact at each new receptor would be identical to that identified in Section E.1.11 for existing sensitive receptors (Section E.1.11). Impacts of the I-8 Alternative, when combined with impacts from past, present, and reasonably foreseeable projects would be considered cumulatively significant (Class I). As discussed in Section E.1.11, Mitigation Measures AQ-1a and AQ-1b would be implemented to reduce the I-8 Alternative's construction dust and exhaust impacts, and Mitigation Measure AQ-1h would offset the overall criteria pollutant impacts. However even with mitigation, incremental impacts would persist and when combined with impacts of past projects, would still be considered significant and cumulatively considerable (Class I).

Impact AQ-2: Operation, maintenance, and inspections would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants (Class III). Once I-8 Alternative construction is complete, operational emissions would result from vehicle use that would be necessary for periodic maintenance, repair, and inspection of the project components. The projects identified in Table G-3 and plans in Table G-2 would cause new emissions from increased economic development and population growth, which leads to increased emissions from stationary and mobile sources throughout the Imperial and San Diego County air basins. Some projects such as Lakeside Downs, Lakeside Ranch, Erdmann, McCain Valley Road, and Volli Residential Developments, would also bring new sensitive receptors closer to areas of dust and exhaust emissions related to operation, maintenance, and inspection of the I-8 Alternative. The impact at each new receptor would be identical to that identified in Section E.11 for existing sensitive receptors. Minor and occasional increases in dust and exhaust emissions would occur as a result of the I-8 Alternative; however, these emissions would occur at levels that would be less than the thresholds for operation significance in Table D.11-8. The emissions occurring under the cumulative conditions would be forecast, managed, and planned for through the local air quality rules, regulations, and attainment plans established by the ICAPCD and SDAPCD. The air quality management plans for the ICAPCD and SDAPCD (identified in E.11) illustrate how each area would eventually achieve attainment of the federal and California ambient air quality standards. Cumulative projects subject to local rules and regulations would be consistent with the applicable air quality management plans. Because operation, maintenance, and inspection impacts of the I-8 Alternative would not exceed thresholds, when combined with impacts from past, present, and reasonably foreseeable projects would be considered less than cumulatively considerable (Class III).

Impact AQ-3: Power generated during transmission line operation would cause emissions from power plants (Class I). Impacts related to power generated during transmission line operation would cumulatively affect air quality inside and outside the region. Projects identified in Table G-3 and plans in Table G-2 would cause new emissions from increased economic development and population growth, which leads to increased emissions from stationary and mobile sources throughout the Imperial and San Diego County air basins. The emissions occurring under the cumulative conditions would be forecast, man-

aged, and planned for through the local air quality rules, regulations, and attainment plans established by the ICAPCD and SDAPCD. The air quality management plans for the ICAPCD and SDAPCD (identified in Section E.11) illustrate how each area would eventually achieve attainment of the federal and California ambient air quality standards. A project may be deemed inconsistent with applicable air quality plans if it would result in stationary sources that would not comply with local rules and regulations or if it would induce population and/or employment growth exceeding the growth estimates included in the attainment plans. Project-related power plant emissions would need to be within existing permitted emission levels that have been previously licensed by local air management agencies, with U.S. EPA oversight, and at these levels, the emissions would be consistent with applicable air quality management plans. As discussed in Section E.1.11, the I-8 Alternative and new renewable energy resources would result in a reduction of emissions from power plants inside the region and increased emissions from power plants outside the region. Because the project-related power plant emissions would overlap with emissions generated by past, present, and reasonably foreseeable projects, the cumulative impacts of the I-8 Alternative would be cumulatively considerable (Class I).

Impact AQ-4: Project activities would cause a net increase of greenhouse gas emissions (Class I). Global warming and climate change impacts would occur because the I-8 Alternative would cause an overall net increase of greenhouse gas emissions. Past projects that have also caused increased greenhouse gas emissions include most development within Imperial and San Diego Counties. All of the present and reasonably foreseeable projects identified in Table G-3 would require construction activities that would also result in increased greenhouse gas emissions. When combined with impacts of past, present, and reasonably foreseeable projects, the I-8 Alternative would result in a significant impact (Class I). Even with mitigation, incremental impacts would persist and would be cumulatively considerable.

Water Resources

Geographic Extent

The geographic scope of the cumulative impact analysis includes two primary Hydrologic Regions: the Colorado River Hydrologic Region governed by the Colorado River Regional Water Quality Control Board (Colorado RWQCB) and the San Diego Hydrologic Region governed by the SDRWQCB. Although these regions contain watercourses that are not crossed by the project, they represent both the geographic and administrative units for water quality control and protection of beneficial uses through which the project would pass. Cumulative impacts such as potential impacts on flooding and erosion, could result from related impacts cause by other past, present and reasonably foreseeable future projects throughout numerous watersheds in Imperial County and San Diego County. These counties, together with the cities contained within, are the administrative units responsible for floodplain and flood hazard administration. Projects resulting in impacts related to hydrology and water resources consist of all development, construction and agricultural projects within the geographic areas of consideration.

Existing Cumulative Conditions

The project area includes the Colorado River Hydrologic Region and the San Diego Hydrologic Subregion of the South Coast Hydrologic Region Each of these regions is divided into groundwater basins, which are described further in Section E.12 of the EIR/EIS. A wide variety of past, present, and reasonably foreseeable future development projects contribute to the cumulative conditions for hydrology and water quality in the project area. Population growth and land development activities in the project area have caused significant alterations to natural water systems in the project area. Hydrology and water quality are affected by two main types of projects: (1) water projects such as dams

and diversions for the purpose of generating supply; and (2) development projects, such as homes, businesses, and roadways, which alter the physical features of an area. Ongoing development throughout the Colorado River Hydrologic Region and the San Diego Hydrologic Region is dominated by residential developments, clustered in and around established community areas. This trend in residential development is also representative of reasonably foreseeable future projects in the cumulative effects area, as supported by expected population growth forecast (San Diego County, 1999). Therefore, the impacts to hydrology and water quality from past and ongoing projects, as described above, are expected to continue and increase in the future.

Cumulative Impact Analysis

A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.12.4.1.

Impact H-1: Construction activity could degrade water quality due to erosion and sedimentation (Class I). I-8 Alternative construction activities would include grading and excavation activities that could degrade water quality due to soil erosion and sedimentation during periods of extended rainfall while such activities are ongoing. Surface waters throughout the project area have experienced varying amounts of sedimentation as a result of erosion from past projects and are likely to experience similar impacts from other I-8 Alternatives that would require substantial grading. However, potential impacts from erosion and sedimentation are regulated by multiple entities including Regional Water Quality Control Boards, the Clean Water Act, U.S. Army Corps of Engineers, California Department of Fish and Game, etc., depending on the size and location of the project. Construction projects that involve ground disturbance are required to comply with various permits and regulatory requirements that require implementation of specific measures to prevent soil erosion and sedimentation from entering local waterways. Such measures include stoppage of work and use of physical barriers to prevent sedimentation from flowing off-site during periods of extended rainfall. Although these measures would reduce the impact of individual projects to less than significant levels, it is likely that minor amounts of sedimentation would occur. Over time sediment from multiple projects would be expected to eventually accumulate in downstream water-bodies. Therefore, the I-8 Alternative, when combined with the effects of other past and reasonably foreseeable project, would considerably contribute to a cumulative impact (Class I). No mitigation measures are available to reduce the I-8 Alternative's contribution to this impact.

Impact H-2: Construction activity could degrade water quality through spills of potentially harmful materials (Class III). The I-8 Alternative could degrade surface or groundwater quality through accidental releases of hazardous materials used during construction, such as diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. Water Quality APMs WQ-APM-8, WQ-APM-9, WQ-APM-13, and WQ-APM-14 would be implemented as part of the I-8 Alternative to decrease the potential for accidental releases to occur and to clean up potentially harmful materials in the unlikely event of a release. Additionally, APMs WQ-APM-1, WQ-APM-2 and WQ-APM-15 situate construction activities away from streams where possible. Surface and groundwater throughout the project area has been subject to similar impacts through decades of residential, commercial, utility, and roadway construction. As described in Section E.12, Water Resources, several water receiving waters of streams within the project are considered polluted or threatened by such agents as nutrients, salinity and other pollutants originating from industrial point sources, agricultural return flow and out-of-state sources. Due to the currently compromised condition of water quality in the project area, any action that substantially degrades water quality should be considered significant. However, as discussed in Section E.12 the dry nature of the surface streams that could be affected by

an accidental release during I-8 Alternative construction is such that should material spills occur, these could easily be cleaned up prior to water quality being contaminated. Therefore, the I-8 Alternative's contribution to this significant impact would be less than cumulatively considerable (Class III).

Impact H-3: Excavation for the project including the substations could degrade groundwater quality in areas of shallow groundwater (Class II). Excavation for tower foundations in areas with shallow groundwater could contaminate groundwater through accidental material spills. This impact is unlikely to occur primarily because groundwater in most of the groundwater basins crossed by this alternative is typically deeper than the expected depth of excavation (excavation will be less than 40 feet in comparison to at least 70 feet depth for groundwater), resulting in little chance for direct contamination. However, this impact could occur within the Campo Valley Groundwater Basin where shallow groundwater may exist. However, APMs WQ-APM-1, WQ-APM-2, WQ-APM-9, WQ-APM-13, WQ-APM-14, and WQ-APM-15, and the construction SWPPP would render impacts of the I-8 Alternative less than cumulatively considerable (Class III) by implementing measures that would preclude potential impacts to groundwater from the I-8 Alternative.

Impact H-4: Groundwater dewatering for project construction could deplete local water supplies. (Class III). Dewatering for tower construction in the Campo Valley Groundwater Basin could result in a local and temporary drawdown of groundwater levels which could temporarily reduce the yield of nearby water supply wells. Water supply wells are typically deeper than the proposed maximum excavation depth of 40 feet, so a temporary drawdown limited to that depth would not affect water yield. Table G-3 includes a large number of residential development projects. Such projects would increase the need for drinking water throughout the project area which would increase usage groundwater. This increased demand, in addition to current demand from past residential, commercial and agricultural development, when combined with impacts from groundwater dewatering from project construction would result in a significant cumulative impact. However, WQ-APM-6, which would require provision of alternate water supplies in areas where local water supplies could be depleted, would be implemented during project construction. With implementation of this measure, the I-8 Alternative's contribution to a cumulative impact would be rendered less than cumulatively considerable and therefore is not significant (Class III).

Impact H-5: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream (Class III). Construction of substations, tower foundations and access roads could result in additional runoff through creation of impervious areas and compaction of soils. Surface runoff can carry pollutants such as nutrients, phosphates, oil, grease, and other pollutants associated with human development into nearby waterways. Although the volume of new runoff attributable to the I-8 Alternative would be very small in comparison to the total watershed, due to the currently compromised condition of water quality in the project area, any action that substantially degrades water quality should be considered significant. However, much of the I-8 Alternative area is comprised of vast areas of open space which has comparatively little impervious surface. Additionally, most of the projects identified in Table G-3 are large residential development projects which would be required by the relevant regulatory agency (Regional Water Quality Control Board, county or municipal water/flood protection district) to include features such as stormwater detention basins to ensure adequate drainage and prevent flooding. This practice has been implemented in areas of intense development throughout San Diego County. Therefore a cumulative impact is unlikely to occur. Additionally, the amount of new impervious surface created by the I-8 Alternative would be negligible in comparison to the amount of permeable surface throughout the watersheds as well as in comparison to future development. Therefore, even if impacts from past and future projects combined to create a significant impact, the I-8 Alternative's contribution would be less than cumulatively considerable.

Impact H-6: Transmission towers or other aboveground project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion (Class II). Encroachment of I-8 Alternative structures into a flow path could result in erosion damage to the encroaching structure, diversion of flows and increased flood risk for adjacent property, and/or increased erosion on adjacent property. Other past, present and reasonably foreseeable projects, such as the existing and proposed transmission lines that have been/will be constructed within the same ROW as the I-8 Alternative would have similar effects. Effects of the I-8 Alternative would combine with those of past and reasonably foreseeable projects to divert flood flows and substantially increase erosion within the ROW and on adjacent properties, resulting in a significant impact. However, implementation of Mitigation Measures H-1c and H-6a would render the I-8 Alternative's contribution to this impact to less than considerable (Class II) by avoiding bank erosion and effects to adjacent properties.

Impact H-8: Underground portions of the power line could be subject to damage from stream scour at locations where the line crosses stream channels (No Impact). This impact describes the effect of the localized environment on I-8 Alternative structures, rather than the effect of the project on the natural environment. Therefore, the effect of this impact would not have the potential to combine with similar effects of other projects and is not cumulatively considerable.

Geology, Mineral Resources, and Soils

Geographic Extent

The geographic scope for considering cumulative impacts to Geology, Mineral Resources, and Soils is the I-8 Alternative corridor itself (including proposed substations). This is because geologic materials, minerals, and soils occur at specific locales and are unaffected by activities not acting on them directly and any impacts of the I-8 Alternative would be site-specific.

Existing Cumulative Conditions

Past and ongoing development throughout the I-8 Alternative area has resulted in substantial alterations to the natural landscape. Past, existing, and future projects could contribute to the cumulative effects of geology and soils creating any of the following conditions: triggering or acceleration of erosion or slope failures; groundshaking, earthquake-induced ground failure, and fault rupture. These conditions would be limited to the areas within and adjacent to the boundaries of individual projects. In order to be cumulatively considerable, such conditions would have to occur at the same time and in the same location as the same or similar conditions of the I-8 Alternative. Seismic impacts (groundshaking, earthquake-induced ground failure, and fault rupture) from the numerous local and regional faults comprise an impact of the geologic environment on individual projects and would not introduce cumulatively considerable impacts.

Cumulative Impact Analysis

A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.13.1.

Impact G-1: Erosion could be accelerated due to construction activities (No Impact). The potential for this impact to combine with similar effects of other projects would only occur if other projects were implemented in the same area at the same time as the I-8 Alternative. However, construction of the I-8 Alternative would preclude other projects from being implemented concurrently in the same location. Furthermore measures would be implemented to reduce or prevent erosion impacts during construction.

Therefore I-8 Alternative impacts would not have the potential to combine with similar effects from other projects and would not be cumulatively considerable.

Impact G-2: Unique geologic features would be damaged due to construction activities (Class II). Construction activities such as grading and excavation from the I-8 Alternative could cause damage to desert pavement, a unique geologic feature takes thousands of years to form and protects the underlying silty and sandy soils from excessive wind and water erosion. Other projects in this area of the I-8 Alternative route, such as the existing SWPL Transmission Line, Imperial Valley Substation Expansion, and the Stirling Energy Solar Power Project would likely result in similar impacts. Damage to desert pavement could result in extreme acceleration of erosion as well as damage a unique geologic feature. This effect of the I-8 Alternative, when combined with the effects of the projects referenced above, would contribute to a significant cumulative impact. However, implementation of Mitigation Measure G-2a, which would minimize and avoid grading in areas of desert pavement, would render the I-8 Alternative's contribution to this impact less than cumulatively considerable (Class II).

Impact G-3: Project structures could be damaged by problematic soils exposing people or structures to substantial adverse effects (Class II). Unidentified expansive and corrosive soils could damage project structures and facilities potentially resulting in collapse of such structures, which could result in power outages, damage to nearby roads or structures, and injury or death to nearby people. Past and future projects located in close proximity to project structures on the same soil types would be exposed to the same conditions and therefore the same impacts. Collapse of project structures and adjacent structures would combine to result in a significant impact where such structures are in close proximity to other structures or people, such as the residential and commercial developments located adjacent to the project route within the community of Alpine. However, implementation of Mitigation Measure G-3a, which would require designing project features to avoid damage from problematic soils, would render the I-8 Alternative's contribution to this impact less than cumulatively considerable (Class II).

Impact G-4: Project structures could be damaged by seismically induced groundshaking and/or ground failure (Class II). As discussed in Section E.1.13, this impact could result in collapse of I-8 Alternative structures in the event of severe groundshaking. Collapse of project structures could result in power outages, damage to nearby roads or structures, and injury or death to nearby people. Past and future projects located in close proximity to project structures would be exposed to the same conditions and therefore the same impacts. Collapse of project structures and adjacent structures would combine to result in a significant impact where such structures are in close proximity to other structures or people, such as the residential and commercial developments located adjacent to the project route within the community of Alpine. However, implementation of Mitigation Measure G-4a, G-4b, and G-6a, which would require designing project features to avoid damage from groundshaking, would render the I-8 Alternative's contribution to this impact less than cumulatively considerable (Class II).

Impact G-5: Project structures could be damaged by surface fault rupture at crossings of active faults (Class II). As discussed in Section E.1.13, this impact could result in collapse of I-8 Alternative structures in the event of surface fault rupture at crossings of active faults. Collapse of project structures could result in power outages, damage to nearby roads or structures, and injury or death to nearby people. Past and future projects located in close proximity to project structures would be exposed to the same conditions and therefore the same impacts. Collapse of project structures and adjacent structures would combine to result in a significant impact where such structures are in close proximity to other structures or people, such as the residential and commercial developments located adjacent to the project route within the community of Alpine. However, implementation of Mitigation Measure G-5a, which would require project structures be placed outside of active fault zones, would render the I-8 Alternative's contribution to this impact less than cumulatively considerable (Class II).

Impact G-6 Excavation or grading during construction could cause slope instability (No Impact). The potential for this impact to combine with similar effects of other projects would only occur if other projects were implemented on the same slopes at the same time as the I-8 Alternative. However, construction of the I-8 Alternative would preclude other projects from being implemented concurrently in the same location. Therefore I-8 Alternative impacts would not have the potential to combine with similar effects from other projects and would not be cumulatively considerable.

Impact G-7: Project structures could be damaged by landslides, earthflows, debris flows and/or rock fall (No Impact). As discussed in Section E.1.13, this impact could result in collapse of I-8 Alternative structures in the event of landslides, earthflows, debris flows and/or rock fall near milepost 22. However, as shown on Figure G-10, there are no cumulative projects in this area with which impacts of the I-8 alternative could combine. Therefore the I-8 Alternative would not have the potential to combine with impacts of other projects to result in a cumulatively considerable impact (No Impact).

Impact G-9: Construction activities would interfere with access to known mineral resources (Class II). As discussed in Section E.1.13, the I-8 Alternative crosses the edges of two active sand and gravel quarries and one granite/crushed-broken stone quarry. In Imperial County the I-8 alternative ROW crosses through the southern potion of the Ocotillo Material Pit near MP I8-19; however, there are no cumulative projects in this area with which the I-8 Alternative could combine. In San Diego County the I-8 Alternative ROW crosses the northern edges of two adjacent quarries located between MP 89.5 and 90.5, the Ennis Pit owned by Hansen Aggregate which is in active production of sand and gravel and the TTT Quarry owned by Superior Ready Mix which is an active granite/crushed-broken stone quarry. Construction operations for the I-8 Alternative would potentially interfere with daily ongoing mining operations at these active quarries and it would be in proximity to five cumulative projects, four of which are residential developments (269 homes total) an done would be the construction of Enniss Industrial Park. Implementation of Mitigation Measure G-9a would require coordination of construction activities with the quarry operations and therefore would avoid or minimize interference of the I-8 Alternative and would likewise reduce the Interstate 8 Alternative's contribution to any cumulative impacts to less than significant (Class II).

Socioeconomics

Geographic Extent

The geographic scope for the analysis of impacts on socioeconomics consists of both Imperial County and San Diego County and the cities contained therein. This geographic extent is appropriate because socioeconomic factors such as public services and utilities are provided by local jurisdictions or districts, and the local labor force is expected to come primarily from within these counties although proximity to the U.S./Mexico border may result in spillover effects and housing prices in San Diego County have affected the workforce by partially displacing workers to adjacent Riverside County where housing remains relatively more affordable. Table G-3 provides a list of projects for the socioeconomics cumulative scenario, and Table G-2 identifies applicable plans and projections.

Existing Cumulative Conditions

Past development and population growth within both Imperial and San Diego Counties have impacted employment, public services, utilities, and housing demands. As the population increases through an indirect and direct influence of development, housing demands and workforce expand to serve the growing population and development needs. This in turn stresses existing public services and utility

systems. Continued development thus results in more infrastructure being built and changes to employment opportunities. Section E.14 describes existing socioeconomic, public services, and utilities conditions within the affected counties and cities. Development of the I-8 Alternative in conjunction with the projects described in Table G-3 and the overall continued development of the Region will continue to result in the potential for increased job opportunities, increased housing, public services and utilities demands, and land use development impacts, including redevelopment, expansion of facilities, and displacement.

The criteria by which socioeconomic, public services and utilities impacts would be cumulatively considered significant are the same as those considered for the I-8 Alternative, which are discussed in Section D.14.4.1.

Cumulative Impact Analysis

Most socioeconomic impacts associated with transmission lines and towers along the proposed route have been accounted for in various local and regional plans and projections (see Table G-2). As discussed in Section E.14, the I-8 Alternative would not cause existing housing or persons to be displaced, necessitating the construction of replacement housing elsewhere. In addition, there would be no impact from construction workers requiring housing that exceeds the supply of local housing or temporary housing facilities no changes in the demand for labor or in local employment. As growth has been accounted for in various local and regional plans and projections and no impacts would occur along the I-8 Alternative at any point, displacement of and demand for housing and changes in the local labor market would not be considered as cumulative impacts and they are not discussed further. A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.14.4.1.

Impact S-1: Project construction would cause a substantial change in revenue for businesses, tribes, or governments (Class II, Class III).

Revenue from Business Operations. Socioeconomic impacts to local businesses adjacent to the I-8 Alternative corridor or along construction transportation routes would result from visual impacts, vehicular or pedestrian access impacts, land use impacts, or health and safety concerns (such as EMF and air emissions). The cumulative effects of the I-8 Alternative in combination with past, present and reasonably foreseeable projects on each of these resource areas for this alternative are analyzed in this chapter in Sections G.4.2.1.2 (Visual Resources), G.4.2.1.8 (Transportation and Traffic), G.4.2.1.3 (Land Use), and G.4.2.1.9 (Public Health and Safety). As discussed above in these sections, where the cumulative contribution of the I-8 Alternative to any of short-term visual, traffic, land use, noise, emissions, or safety impacts for these issue areas are found to be less than significant or have been mitigated to less than significant levels (Class II or III), any associated short-term loss of local business revenue impacts would not be cumulatively considerable (Class III).

Revenue from Agricultural Operations. The restriction of crop production or damage to crops would potentially decrease revenues for the agricultural landowners whose crops would be affected by project activities. The addition of other projects that would affect the agricultural resources of the same landowners also affected by the proposed route or to overall agricultural resources in the region would potentially create a significant cumulative farming revenue impact. Many of the other cumulative projects, such as housing and commercial developments, could contribute to loss of farmland and agricultural resources. However, based on the locations of the current and reasonably foreseeable projects (as presented in Figure G-1 and Figures G-8 through G-10) and the relatively small number of agricultural

lands that would be affected by them and/or the I-8 Alternative, it is unlikely any of those projects would impact the same farmland at the same time as the I-8 Alternative. In addition, project design, timing, and avoidance of agricultural operations (Mitigation Measure AG-1a) would minimize any lost crop revenues associated with the I-8 Alternative to less than considerable (Class II).

On the other hand, operation of the project along with the cumulative projects would create significant impacts associated with loss of DOC Farmland, (see Section G.4.2.15). However, because farmers would be compensated for any lost crops (APM LU-3) as part of project design in the event that the design and mitigation do not avoid operations, the project would not contribute to cumulative revenue impacts (Class III).

Economic Benefit. Employment of construction personnel for both the I-8 Alternative and any or all of the cumulative projects listed in Table G-3 would be beneficial to local businesses and the regional economy through increased expenditure of wages for goods and services. It is assumed that personnel for construction of the cumulative projects listed in Table G-3 would be drawn from local populations in Imperial and San Diego Counties, creating new temporary and permanent employment in these counties and economic benefit to the local economy (Class IV).

Impact S-2: Construction would disrupt the existing utility systems or cause a co-location accident (No Impact). The I-8 Alternative would be co-located next to the existing SWPL Alternative. Only those cumulative projects located within the I-8 Alternative ROW are considered for collocation impacts. However, no other past, present or reasonably foreseeable projects have been identified within this ROW. Therefore the I-8 Alternative would not have the potential to combine with impacts of other projects to result in a cumulatively considerable impact (No Impact).

Impact S-3: Project construction would increase the need for public services and facilities (Class II, Class III).Water and Sewer and Solid Waste. The I-8 Alternative would require water for dust control and concrete production during construction and periodic conductor cleaning during operation. Project construction would generate waste largely in the form of soil from earthwork, grading and excavations, and from the removal of existing structures. As a result, related projects in conjunction with the I-8 Alternative construction would place demands on local water or solid waste services during similar construction activities.

The project vicinity and geographic region is experiencing and will continue to experience significant demands for public services and utilities as a result of continued growth. Agencies with development approval authority review individual project consistency with existing local and regional plans and programs. California State laws require specific plans, projects, and planning and development programs to be consistent with local general plans. Therefore, when development proposals are consistent with local general plans, and those, in turn, are consistent with County and Regional Plans, the goals and policies of County and Regional Plans are implemented through the local actions on development proposals. As a consequence, if reasonably foreseeable development projects in the cumulative area of impact are consistent with the applicable local government plan and policy documents, then the impacts of those projects have already been anticipated and accounted for and are, therefore, consistent with the plans and policies listed in Table G-2.

As a part of these plans, local planning agencies augment or develop water, wastewater and solid waste facilities to meet the anticipated needs of population projected for the region. The water, wastewater, and solid waste needs related to the I-8 Alternative are expected to be within the parameters of regional capacities, projections, and plans applicable to the geographic extent of the cumulative impact area.

Impact S-3 (Project construction and operation would increase the need for public services and facilities) was found to be less than significant with the I-8 Alternative (Class III). In addition, implementation of Mitigation Measures S-3a (Recycle Construction Waste) and S-3b (Use Reclaimed Water), as described in Section D.14 (Socioeconomics), would further reduce all water supply and solid waste impacts of the I-8 Alternative, thus ensuring that the project would not cumulatively contribute to a significant impact with the addition of other reasonably foreseeable projects. Therefore, the current cumulative impact of all development projects within the cumulative area of impact on water and solid waste facilities serving the areas is less than significant (Class II) with the implementation of mitigation and because the impacts of growth have already been anticipated and accommodated in approved plans.

Public Services. *Construction Workers Demands*. As discussed in Section D.14, the large available labor pool in San Diego and Imperial Counties and nearby areas means that few construction workers are expected to temporarily or permanently relocate to the area. Therefore, construction workers would not generate additional population that along with other cumulative projects in the area would exceed the capacity of local public service providers listed in Table D.14-2. Therefore, the temporary addition of cumulative construction personnel would not substantially increase any demands on schools or hospitals or lower the level of service for fire protection or police protection and impacts, because it would not require construction or expansion of facilities or services. Accordingly, the I-8 Alternative will have no significant incremental effect on impacts to public services from past, present and reasonably foreseeable projects (Class III).

Fire Hazards. As described in Section E.1.15 (Fuels and Fire Management), construction activities would result in an increase in potential fire hazards and would increase the need for emergency services and first responders due to accidents caused by construction personnel or equipment. The presence of construction equipment (vehicles, generators, tools, etc.) and personnel may increase the likelihood of a wildland fire. The addition of the IID Bannister–San Felipe transmission project would be located in Imperial County in an area of low fire risk and the addition of a new shorter line with smaller towers would not create a significant obstacle or increase the probability of ignitions. Overgrown and untended vegetation may be present in or near the construction areas and could be ignited by a spark or heat-related incident due to the operation of construction equipment or construction activities. In addition, the presence of construction personnel increases the potential for wildland fires through the increase of human influenced ignition (smoking, use of flammables, etc.). This increase in potential fire hazards resulting from construction with the addition of other projects along the route as well would increase temporary demands for fire protection services and is discussed in Section E.1.15 (Fuels and Fire Management) and not within this section.

Emergency Services. Construction of the project and equipment would impede emergency access through the area. With implementation of APM PSU-APM-3, SDG&E would be required to coordinate construction schedules, lane closures, and other activities associated with installation of the I-8 Alternative with emergency and police services to ensure that disruption to response times and access is minimized as not to significant affect response times. Impacts to emergency access are discussed under Section E.1.9 (Transportation and Traffic), which concludes that such impacts would be less than significant. Because the project would not preclude emergency access, the addition of past, present and future projects would not cumulatively contribute to impact response times. Therefore, impacts to emergency access and/or public services and facilities would be less than significant (Class III) and no mitigation is required.

Impact S-4: Property tax revenues and/or fees from project presence would substantially benefit public agencies (Class IV). Local property tax revenues are a function of tax rates levied within the affected jurisdictions. SDG&E's property taxes would increase as a result of the I-8 Alternative. All

other cumulative projects on private lands would likewise increase property tax revenues for public agencies. Any increase in property tax revenue as a result of the I-8 Alternative plus other cumulative projects would be a beneficial impact to the local economy and would not result in an adverse change in public resource revenue (Class IV). Therefore, socioeconomics Impact S-4 when combined with impacts from past, present, or reasonably foreseeable future projects would have a beneficial cumulative impact (Class IV).

Impact S-5: Presence of the project would decrease property values (Class III). Impact S-5 under the Imperial Valley Link (see Section D.14.5.1) addresses in detail the issues associated with the potential for impacts on property values from industrial facilities such as transmission lines. Additionally, as discussed in Section D.14.5.1, numerous studies conclude that any property value effects are usually smaller than anticipated and essentially impossible to generally quantify due to the individuality of properties/neighborhoods, differences in personal preferences of individual buyers/sellers, and the weight of other factors that contribute to a person's decision to purchase a property. Other factors (e.g., neighborhood factors, square footage, size of lot, irrigation potential) are much more likely than overhead transmission lines to be major determinants of the sales price of property (Kroll and Priestley, 1992). Most of the projects identified in Table G-3 are residential and commercial developments that would provide housing and services for the local communities and would not decrease property values. However, there are several past, present, and future industrial projects and/or other projects perceived to negatively affect property values in combination with the I-8 Alternative. These projects would likewise result in smaller than anticipated effects that would be essentially impossible to generally quantify based on individual preferences and other factors discussed above. In addition, across the board, studies have generally concluded that over time any adverse property value impacts diminish and within five years the change is negligible most likely due to increased screening as trees and shrubbery grow and/or diminished sensitivity to the line proximity in the absence of adverse publicity. As a result, any changes in property values would not be a substantial decrease and this impact is considered to be less than significant (Class III). Although not required, it should be noted that implementation of mitigation measures in the Visual Resources section (Section D.3), such as Mitigation Measures V-3a (Reduce visual contrast of towers and conductors) and other visual resources mitigation specific to Key Viewpoints, would help to reduce the cumulative visual impacts, which is one of the components perceived to affect property values.

Therefore, I-8 Alternative impacts, when combined with impacts of past, present and reasonably foreseeable projects would not be significant (Class III).

Fuels and Fire Management

Geographic Extent

The geographic extent for the analysis of cumulative impacts related to fire and fuels management includes the area within the seven project firesheds identified in Section E.15. Firesheds are regional landscapes that are delineated based on fire history, fire regime, vegetation, topography, and potential wildfire behavior. Figure E.1.15-1, Interstate Alternative Overview Map, shows fireshed boundaries along the I-8 Alternative route.

Existing Cumulative Conditions

Human-ignited Wildfires. Most wildfires (at least 83%) in San Diego County are human-ignited wildfires (see Section D.15.2). Ignitions often occur along transportation routes through wildland areas and at the wildland-urban interface (WUI), where human development is interspersed with or adjacent

to wildlands. Construction projects that occur in wildland areas in the county make a major contribution (at least 17%) to total human-caused ignitions (see Section D.15.2). Large wildfires have damaging effects on air quality, biological resources, and water quality (see Section D.15.2.1 for a detailed description of these effects).

Landscape-level Obstacles to Firefighting. Ground-based firefighting near transmission lines is hazardous because heavy smoke can conduct electricity and cause an arc from the transmission line to the ground, creating an extremely hazardous working space for firefighters. Firefighting suppression tactics, maneuverability and approach distances are greatly restricted by the indefensible island created between collocated and parallel transmission lines in otherwise defensible landscapes. This indefensible island is a swath of land where firefighting is tactically very difficult or simply too dangerous (due to a combination of minimum approach distances and rates of wildfire spread that can reach up to 300 feet per minute).

Non-native Plants' Effect on Fire Behavior. Non-native plants are spread across the landscape primarily via transportation corridors, by humans, equipment, and in soil transported from one place to another. Transportation of people and goods between continents and states introduces non-native plants to novel places. Creation of new roads and an increased frequency of transportation of people and goods contribute to the spread of non-native plants across the landscape. Non-native plants can become invasive, nuisance species especially in disturbed environments like agricultural fields and ranches, but they can also invade natural and backcountry areas. Invasive plants, such as cheatgrass (*Bromus tectorum*), Saharan mustard (*Brassica tournefortii*), and medusa head (*Taeniatherum caput-medusae*) can impact fire behavior and increase fire ignition potential and rate of spread. Cheatgrass and medusa head, for example, dry out earlier in the season than native grasses creating fine fuels that are easily ignited. These fine fuels contribute to wildfires igniting earlier in the year and an increased level of fire recurrence. In addition, non-native grasslands have a 'spotting' effect during a wildfire, where embers from these grasslands are blown ahead of the fire line, contributing to an increased rate of fire spread. Invasive annual grasses also influence fire spread by creating a fine fuel continuum between patchy, perennial shrubs allowing wildfires to expand further into otherwise sparsely vegetated wildlands (USGS, 2007).

Changing Fire Regime. Periodic wildfire maintains the integrity and species composition of many ecosystems. Fire is a natural process in San Diego County and has played an important role shaping the ecology and evolution of species (Pyne et al., 1996; Bond and Keeley, 2005). Periodic wildfire maintains the integrity and species composition of many ecosystems, particularly those in which species have developed strategic adaptations to fire (Pyne et al., 1996; Savage et al., 2000; Pausas et al., 2004).

Human activities have altered natural fire regimes relative to their historic range of variability (Syphard et al., 2007). The two primary influences on fire regimes are fire suppression and increased human ignitions, though climate change, vegetation manipulation, and other indirect factors may also play a role (Lenihan et al., 2003; Sturtevant et al., 2004). California chaparral shrublands have experienced such substantial human population growth and urban expansion that the increase in ignitions, coupled with the most severe fire weather in the country (Schroeder et al., 1964), have acted to offset the effects of suppression to the point that fire frequency exceeds the historic range of variability (Keely et al., 1999). Impacts to ecosystems, communities, and species are possible if a disturbance regime, like wildfire, exceeds its natural range of variability (Landres et al., 1999; Dale et al., 2000). For example, too-frequent fire can result in habitat loss and fragmentation, shifting plant community composition, reduction of small-mammal populations, and accompanying loss of predator species (Barro and Conard, 1991; DellaSalla et al., 2004).

These land-use changes and fire frequency increases have lead to vegetation type conversion[3] of the native shrubland systems into primarily non-native grasslands in many areas of San Diego County. These non-native grassland systems dry out earlier in the season and are more easily ignited than native shrublands, thus their presence increases the potential for fire occurrence and fire frequency even as they may locally reduce fire intensity by replacing hot, woody fuels with cool, fast-burning fuels.

More frequent fires also increase the total number of homes and businesses lost to wildfires over time, as most structures are rebuilt after being damaged or destroyed in a wildfire.

Cumulative Impact Analysis

A cumulative impact would result if I-8 Alternative impacts, when combined with other past, present and future projects would exceed the significance criteria presented in Section D.15.4.1. Two of these impacts (F-5, The presence of the overhead transmission line would alter historic fire regimes, and F-6, Project-caused wildfires would adversely affect natural resources), would only occur as cumulative impacts and are not addressed in Section D.15.

Impact F-1: Construction and/or maintenance activities would significantly increase the probability of a wildfire (Class I). Numerous construction activities are currently underway adjacent to wildland areas throughout San Diego County, and numerous others — including residential development and road and infrastructure expansion — are reasonably foreseeable in the near future (Table G-1). These construction projects increase the level of human influence adjacent to wildlands, thereby increasing human-caused wildfire ignitions. Other phenomena, such as increased travel on wildland-adjacent roadways also contribute to wildfire ignitions that result in widespread damages. Construction of the Interstate 8 Alternative would also increase wildfire ignitions in fuel-laden wildlands, and these can have especially devastating consequences during severe fire weather conditions. Therefore, the Interstate 8 Alternative's incremental contribution to increased probability of human-caused wildfire ignitions in the five project firesheds across San Diego County would be cumulatively considerable.

Mitigation Measures F-1a, Develop and implement a Construction Fire Prevention Plan, F-1b, Finalize and implement SDG&E 2006 Draft Fire Plan for Electric Standard Practice, F-1c, Ensure coordination for emergency fire suppression. F-1d, Remove hazards from the work area, and F-1e, Contribute to defensible space grants fund, would help reduce the severity of project-level impacts from wildfire ignition. However, even a single ignition that escapes containment in the highly fire-prone region of San Diego County could have devastating effects on communities, firefighter health and safety, and natural resources, and these mitigation measures would not ensure prevention or containment of all ignitions. Therefore, Interstate 8 Alternative impacts, when combined with similar impacts from past, present, and reasonably foreseeable projects would be significant (Class I). No additional mitigation measures are available to reduce the Interstate 8 Alternative's contribution to this impact to less than considerable.

Impact F-2: Presence of the overhead transmission line would significantly increase the probability of a wildfire (Class I). The presence of the overhead transmission line would create an ongoing source of potential wildfire ignitions for the life of the project. Line faults can be caused by such unpredictable events as conductor contact by floating debris, gun shots, and helicopter collisions; these events are rare but would be unavoidable. Past present and reasonably foreseeable projects that have been/ would be constructed near fuel-laden wildlands, including many of the residential developments and

[3] Type conversion occurs when the dominant vegetation community is gradually replaced with a new community. Section D.2.5 presents a further discussion of vegetation type conversion.

electrical infrastructure projects identified in Table G-1 would also increase the probability of igniting a wildfire that would result in widespread damages. Therefore, the incremental contribution of project operation and maintenance activities to an increased probability of human-caused wildfire ignitions — resulting in damage to communities, firefighters, and natural resources— in the six project firesheds across San Diego County would be cumulatively considerable. Although Mitigation Measures F-2a, Establish and maintain adequate line clearances, F-2b, Install existing conductors on steel poles, and F-1e, Contribute to defensible space grants fund, would reduce the probability of igniting a wildfire and reduce the impacts of fires when they occur, the potential for wildfire ignition from unpredictable events would still exist, and even a single ignition that escapes containment in the highly fire-prone region of San Diego County could have devastating effects on communities, firefighter health and safety, and natural resources, and these mitigation measures would not ensure prevention or containment of all ignition. Therefore, Interstate 8 Alternative impacts, when combined with similar impacts from past, present and reasonably foreseeable projects would be significant (Class I). No additional mitigation measures are available to reduce the Interstate 8 Alternative's contribution to this impact to less than considerable.

Impact F-3: Presence of the overhead transmission line would reduce the effectiveness of firefighting (Class I). As discussed in Section D.15.6 through D.15.11, the addition of the aboveground segments of the Interstate 8 Alternative would reduce the effectiveness of firefighting activities within the affected firesheds. Where the overhead transmission line would be collocated with an existing transmission line in an expanded ROW, the linear swath of terrain that firefighters must avoid would be expanded. This effect would become increasingly severe as additional Future Transmission System Expansion lines are collocated with existing lines or located within one mile of existing lines (see Section B.2.7 for a description of the Future Transmission System Expansion projects).

Firefighting suppression tactics, maneuverability and approach distances are greatly restricted by the indefensible island created between collocated and parallel transmission lines in otherwise defensible landscapes. This indefensible island is a swath of land where firefighting is tactically very difficult or simply too dangerous (due to a combination of minimum approach distances and rates of wildfire spread that can reach up to 300 feet per minute). Where the Interstate 8 Alternative's overhead ROW would be located within one mile of another transmission line ROW (existing or future) in an otherwise defensible landscape, the space located between the two transmission lines would be rendered an extremely difficult space in which to fight fires. When the interstitial space between two transmission line ROWs is a wildland area, the indefensible space can fuel wildfires to uncontrollable levels of severity.

Significant conflicts to wildfire containment created by the addition of the Interstate 8 Alternative to landscapes currently occupied by other transmission lines would be created at MP I8-41.5 to I8-43.5, MP I8-44 to I8-47, and MP I8-62 to I8-63.5 (see Section D.15.4.3 for methods). Transmission line undergrounding could mitigate this cumulative effect to a less than significant level; however, undergrounding is not feasible along the entire length of the Interstate 8 Alternative and Future Transmission System Expansion route. Mitigation Measures F-3a, Construct and maintain fuelbreaks, and F-3b, Prepare and implement a Multi-agency Fire Prevention MOU, would reduce, to the extent feasible, the severity of the conflict. However, the creation of these conflict areas would be significant and unavoidable (Class I). Therefore, the Interstate 8 Alternative's incremental effect would be cumulatively considerable.

The Interstate 8 Alternative impacts, when combined with the effects of other past, present and reasonably foreseeable transmission and distribution line projects would be significant (Class I). No additional mitigation measures are available to reduce the Interstate 8 Alternative's contribution to this impact to less than considerable.

Impact F-4: Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread (Class I). Mitigation measures targeted at the prevention and management of invasive plants can reduce project-level impacts on the spread of invasive species across the six project firesheds, which in turn reduces the effect of non-native plant cover on exacerbating wildfire behavior. Similar mitigation measures would be expected to be implemented for many of the reasonably foreseeable projects in the six project firesheds that have the potential to introduce and spread non-native species, such as housing development projects and public works projects, reducing the cumulative impact of invasive plant cover on wildfire behavior to a less than significant level. However, not all activities that result in non-native plant introductions and spread are regulated, nor can they be easily regulated due to their dispersed nature. These activities include such things as human travel on roadways and recreational hiking in wildland areas, both of which can transport non-native plant seeds in soils compacted in tire treads and on the soles of hiking boots.

Because invasive plant introductions to wildland areas is reasonably foreseeable despite best efforts at mitigation, and because Mitigation Measure B-3a, Prepare and implement a Weed Control Plan, cannot reduce the risk of non-native species introduction and spread to zero, the incremental effects of the Interstate 8 Alternative on non-native species introduction that adversely affect wildfire behavior is considered cumulatively considerable. The cumulative impact is significant (Class I), and no additional mitigation is available to further reduce the level of impact.

Impact F-5: The presence of the overhead transmission line would alter historic fire regimes (Class I). Population growth and development along the WUIs within the six project firesheds across San Diego County has altered the natural background fire regime (frequency of fire occurrence). A change in frequency of this natural process can have adverse impacts not only on ecosystems and species, but on communities located at the WUI. A change in the fire regime is a landscape-level phenomenon that takes place over a long temporal scale. The presence of the project would incrementally contribute to this ongoing fire regime change by introducing equipment and personnel to wildland areas and increasing the probability of wildfire ignitions. The incremental effects of the Interstate 8 Alternative, when combined with the effects of past development and the reasonably foreseeable projects identified in Table G-1 that occur along the WUI, including Future Transmission System Expansion projects, would be significant (Class I). No additional mitigation measures are available to reduce the Interstate 8 Alternative's contribution to this impact to less than considerable.

Impact F-6: Project-caused wildfires would adversely affect natural resources (Class I). Although fires are a natural process in the chaparral ecosystems in San Diego County, wildfires can have damaging effects on natural resources including air quality, biological resources, and water quality. These effects would be worse as the frequency of large fires increases.

Air Quality. Smoke from wildfires can elevate levels of particulate matter and ozone in urban and suburban areas to hazardous levels. The effects on air quality from fires would be worse as fire extent and frequency increase, emitting larger quantities of pollutants over shorter periods of time, and increasing the number of days of poor air quality in the air basin. The high concentrations of pollutants would lead to adverse health effects and diminished visibility. The Interstate 8 Alternative would incrementally increase the frequency of fires through ignitions related to construction, operation, and maintenance activities.

Wildfires also release large quantities of carbon dioxide in smoke. The potentially large short-term release of carbon dioxide from wildfires is offset over longer time scales (decades) by the uptake of atmospheric carbon associated with forest or shrubland regrowth. Increased fire frequency postpones

carbon sequestration by cutting short vegetation regrowth, resulting in a net increase in atmospheric carbon from fire until shrubland biomass has an opportunity to regrow. Large fires that result from Interstate 8 Alternative ignitions would incrementally increase fire frequency, resulting in a short- or medium-term net increase in atmospheric carbon emissions from fire over the life of the project.

Biological Resources. Chaparral shrublands that dominate San Diego County are characterized by frequent large wildfire; however, increasingly frequent large fires would result in impacts to biological resources. Chaparral is highly tolerant to the disturbance fire provides, and will generally dominate a burned site several decades after a fire. Early successional plant species, including native and non-native grasses and herbs will generally dominate a burned site for the first several years after a fire. Thus, increased fire frequency on the same site tends to favor vegetative type conversion to early successional species such as native and non-native grasses and herbs. Changes in dominant vegetation communities dramatically affect habitats for plant and animal species, and may impact special status species. For example, the coastal California gnatcatcher is dependent primarily on coastal sage scrub vegetation which, if burned too many times, can convert to non-native grassland or disturbed habitat that would preclude its use by the gnatcatcher. In many desert and semidesert habitats where fire historically burned infrequently because of sparse fuels, invasion of weedy species has changed the vegetation so that burns occur much more frequently. Many species in desert ecosystems are poorly adapted to avoid fire or use resources in post-fire communities.

These potentially significant impacts to biological resources would be more severe as the frequency and extent of fires increase. The Interstate 8 Alternative would incrementally increase fire frequency due to ignitions from project construction, operation, and maintenance resulting in potentially significant impacts to biological resources.

Water Quality. Water quality can be impacted as a result of the occurrence of fire through increased rates of erosion and sedimentation from denuded hillsides, increased water temperature from decreased vegetative stream shade, increases in chemical pollutants from deposition of ash, and impacts to aquatic biota from deposition of fire retardant. These potentially significant impacts to water quality would be more severe as the extent and frequency of fires increase. The Interstate 8 Alternative would incrementally increase the frequency of fires through ignitions related to construction, operation, and maintenance activities resulting in potentially significant impacts to water quality.

Of the wildfire ignitions in San Diego County over the last 13 years, 1% of these were caused by power lines (see Table D.15-1 in Section D.15.2.1). SDG&E data for the last three years (2004-2006) demonstrate that, of the power line ignitions in the SDG&E service area, 99% (96 ignitions) were distribution and low-voltage transmission system ignitions, and 1% (1 ignition) was higher voltage transmission system ignitions (see Section D.15.1.1). The contribution of the Interstate 8 Alternative to these unavoidable ignitions would therefore be incremental compared with the ignitions of large wildfires that currently occur in San Diego County. Even a very small increase in ignitions could result in catastrophic effects if it were to occur during Santa Ana winds, and therefore the incremental contribution of the Interstate 8 Alternative to impacts to air quality, biological resources, and water quality would be cumulatively considerable (Class I).

Mitigation Measures F-1a, Develop and implement a Construction Fire Prevention Plan, F-1b, Finalize and implement SDG&E 2006 Draft Fire Plan for Electric Standard Practice, F-2a, Establish and maintain adequate line clearances, F-2b, Install existing conductors on steel poles, F-1c, Ensure coordination for emergency fire suppression, F-1d, Remove hazards from the work area, would reduce project-related ignitions to the extent feasible, but the cumulative impacts to air quality, biological resources, and water quality would remain cumulatively considerable.

Summary of I-8 Alternative Significant Cumulative Impacts

Table G-10 summarizes the significant cumulative impacts of the Interstate 8 Alternative.

Table G-10. Significant Unavoidable (Class I) Cumulative Impacts of the I-8 Alternative

Impact No.	Description
B-1	Construction activities would result in temporary and permanent losses of native vegetation.
B-5	Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants.
B-7	Direct or indirect loss of sensitive/listed species.
B-10	Presence of transmission lines may result in collisions by and/or electrocution of listed or sensitive bird species.
B-12	Maintenance activities would result in disturbance to wildlife and could result in wildlife mortality.
V-1	Short-term visibility of construction activities, equipment and night lighting.
V-2	Long-term visibility of land scarring in arid and semi-arid landscapes.
V-56, V-57, V-59, V-61, V-62, & V-65 through V-68	Increased structure contrast, industrial character, view blockage, and skylining.
V-58, V-60, V-63, V-64	Inconsistency with Interim BLM VRM Class III management objective due to increased structure contrast, industrial character, view blockage, and skylining.
WR-2	Presence of a transmission line or substation would permanently change the character of a recreation area, diminishing its recreational value.
AG-2	Operation would permanently convert DOC Farmland to non-agricultural use.
AG-3	Operation would permanently interfere with Active Agricultural Operations.
C-2	Construction of the project could cause an adverse change to sites known to contain Native American human remains.
C-4	Construction of the project could cause an adverse change to Traditional Cultural Properties.
C-6	Long-term presence of the project could cause an adverse change to known historic architectural (built environment) resources.
N-1	Construction noise would substantially disturb sensitive receptors and violate local rules, standards, and/or ordinances.
N-3	Permanent noise levels would increase due to corona noise from operation of the transmission lines and noise from other project components.
N-4	Routine inspection and maintenance activities would increase ambient noise levels.
AQ-1	Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.
AQ-3	Power generated during transmission line operation would cause emissions from power plants.
AQ-4	Project activities would cause a net increase of greenhouse gas emissions.
H-1	Construction activity could degrade water quality due to erosion and sedimentation.
F-1	Construction and/or maintenance activities would significantly increase the probability of a wildfire.
F-2	Presence of the overhead transmission line would significantly increase the probability of a wildfire.
F-3	Presence of the overhead transmission line would reduce the effectiveness of firefighting.
F-4	Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread.
F-5	The presence of overhead transmission line would alter historic fire regimes.
F-6	Project-caused wildfires would adversely affect natural resources.

G.4.2.2 BCD Alternative and BCD South Option

The BCD Alternative is a 19.6-mile reroute of the I-8 Alternative between MP I8-39.5 to MP I8-58 and is shown on Figure G-9 and G-10. This alternative would avoid crossing the Campo and La Posta Reservations, which are crossed by the I-8 Alternative. The BCD alternative would diverge from the I-8 Alternative about one mile northeast of Boulevard, where it would cross I-8 to the north and head north-northwest, generally paralleling McCain Valley Road. The route would cross Manzanita Cottonwood Road and Old Mile Road and then enter the Cleveland National Forest (CNF) where it would cross the Pacific Crest Trail before rejoining the I-8 Alternative route at MP I8-58. The 19.5-mile BCD segment of this route would include 6.5 miles within the CNF, 11 miles on BLM land, 0.2 miles on State of California conservation land, and 1.8 miles on private lands. The BCD South Option would diverge from the BCD Alternative at MP BCD-13.5 and rejoin the Interstate 8 or Modified Route D Alternatives. Therefore, it would result in a similar cumulative contribution compared to the BCD Alternative for the portion of the route that it would follow and then it would be similar to the Interstate 8 or Modified Route D Alternative depending on the route (see Sections G.4.2.1 and G.4.2.4, respectively).

Other than the roads listed in Table E.2.9-1, the lands crossed by the BCD Alternative are vacant and undeveloped. Besides the existing roads, no past, present, or reasonably foreseeable projects have been identified along this alternative route. The geographic extent of the cumulative analysis and existing cumulative conditions for each issue area for the BCD Alternative would be the same as those identified for the I-8 Alternative in Section G.4.2.1, with the following exceptions:

- The Dart and Volli Residential Developments would not be within close enough proximity to this route to be affected by it.
- The Campo, La Posta, and Manzanita Reservations would not be traversed by this route.
- The Active Agricultural Operations land between MP I8-51 and MP I8-52 would not be affected.
- Permanent conversion of 89.4 acres of Williamson Act lands.

As discussed above in Section G.4.2.1, impacts of the I-8 Alternative would combine with impacts of the Dart and Volli residential developments, among others, along different portions of the I-8 Alternative route, to result in significant cumulative impacts to noise, visual resources, air quality, and fire and fuels management. Because of the BCD Alternative's increased distance from these reasonably foreseeable projects, impacts of this alternative would not have the potential to combine with impacts to noise, visual resources, air quality, and fire and fuels management of these projects. Because this alternative would avoid the active agricultural land between MP I8-51 and MP I8-52, contributions to AG-2 and AG-3 would be incrementally decreased. However, since the BCD Alternative would convert Active Agricultural Operations and Williamson Act land to non-agricultural use, it would combine with past, present and reasonably foreseeable projects to result in significant cumulative impacts AG-3 and AG-4 (Class I).

Table G-11 below, presents the results of the analysis of how the BCD Alternative with or without the South BCD Option would affect the Proposed Project's contributions to the significant cumulative impacts (Class I) identified for the Interstate 8 Alternative. When combined with the effects of similar impacts of past, present and reasonably foreseeable projects, the BCD Alternative would not result in the elimination of any of the cumulative impacts identified for the I-8 Alternative; however, it would contribute to new significant cumulative Impact AG-4. For the following issue areas, there would be no change in the BCD Alternative's contribution to cumulative impacts as compared with the Interstate 8 Alternative: Biology, Land Use, Wilderness and Recreation, Cultural Resources, Paleontological Resources, Transportation and Traffic, Environmental Contamination, Air Quality, Water Resources, Geology, and Socioeconomics.

Table G-11. BCD Alternative and BCD South Option's Incremental Effects on Class I Cumulative Impacts Identified for the I-8 Alternative

Issue Area	BCD Alternative
Visual Resources	Decreased contribution to construction and operational impacts due to more remote location and reduced number of viewers.
Agricultural Resources	Although still significant, there would be a decreased contribution to construction and operational impacts (Impacts AG-3 and AG-4) because would impact less Active Agricultural Operations and Williamson Act lands.
Noise	Decreased contribution to Impacts N-1, N-3,& N-4, because affects fewer noise-sensitive receptors and would be removed from other cumulative projects.
Fire and Fuels Management	Increased contribution to F-1, F-2, F-3, F-5,& F-6 due to longer transmission route, which would increase construction duration and obstacles to firefighting.

G.4.2.3 Route D Alternative

The Route D Alternative is a 17-mile reroute of the I-8 Alternative that would begin at MP I8-70 and join the Proposed Project route at MP-113.5. This alternative is shown on Figure G-8. The Route D Alternative would pass through the Boulder Creek Valley north of the town of Descanso. It would pass between the Cuyamaca Rancho State Park and the Capitan Grande Reservation. While there is an existing 69 kV line in this area, that line passes through the center of several residential areas with insufficient space for a 500 kV transmission line. As a result, the line has been sited west of these areas, creating a new transmission corridor. About two miles of the 500 kV line would still parallel the existing 69 kV line ROW.

Other than the roads listed in Table E.3.9 1, the lands crossed by the Route D Alternative are vacant and undeveloped. In addition to the existing roads, the reasonably foreseeable Hoskings Ranch and Kemerko Residential Developments have been identified along this alternative route. These developments would result in urbanization of approximately 1,500 acres of land. The geographic extent of the cumulative analysis and existing cumulative conditions for each issue area for the Route D Alternative would be the same as those identified for the I-8 Alternative in Section G.4.2.1, with the following exceptions:

- The residential developments near the communities of Alpine and Lakeside would not be within close enough proximity to this route to be affected by it
- Most of the Active Agricultural lands and DOC farmland affected by the I-8 Alternative would be avoided
- No DOC Farmlands would be traversed by or adjacent to this alternative
- The Route D Alternative would traverse or be adjacent to Active Agricultural Operations and Williamson Act lands between MP 6 and 17.3.

As discussed above in Section G.4.2.1, impacts of the I-8 Alternative would combine with impacts of the reasonably foreseeable residential developments within the communities of Lakeside and Alpine, among others, along different portions of the I-8 Alternative route, to result in significant cumulative impacts to noise, visual resources, air quality, and fire and fuels management. Although this alternative would be located near two additional residential developments that are not located near the I-8 Alternative, because of the Route D Alternative's increased distance from the reasonably foreseeable projects within Alpine and Lakeside, the Route D Alternative's contributions to significant noise and visual resources

impacts would overall be incrementally decreased. This alternative would avoid the DOC Farmland and most of the active agricultural land affected by the I-8 Alternative, but it would replace it with incrementally greater contributions to significant agricultural impacts. Since the Route D Alternative would convert Active Agricultural Operations and Williamson Act land to non-agricultural use, it would combine with past, present and reasonably foreseeable projects to result in significant cumulative impacts AG-3 and AG-4 (Class I).

Table G-12 below, presents the results of the analysis of how the Route D Alternative would affect the project's contributions to the significant cumulative impacts (Class I) identified for the I-8 Alternative. When combined with the effects of similar impacts of past, present and reasonably foreseeable projects, the Route D Alternative would not result in the elimination of any of the cumulative impacts identified for theI-8 Alternative; however, it would contribute to new significant cumulative Impact AG-4. For the following issue areas, there would be no change in the Route D Alternative's contribution to cumulative impacts as compared with the Interstate 8 Alternative: Biology, Land Use, Cultural Resources, Paleontological Resources, Transportation and Traffic, Environmental Contamination, Water Resources, Geology, and Socioeconomics.

Table G-12. Route D Alternative's Incremental Effects on Class I Cumulative Impacts Identified for the I-8 Alternative

Issue Area	Route D Alternative
Visual Resources	Decreased contribution to construction and operational impacts, because line would cross through predominantly undeveloped landscape in CNF that would be removed from other cumulative projects.
Wilderness & Recreation	Decreased contribution to wilderness and recreation effects, because would affect fewer recreation areas and would be removed from other cumulative projects.
Agricultural Resources	Increased significant contribution to construction and operational impacts (Impacts AG-3 and AG-4) because would impact more Active Agricultural Operations and Williamson Act lands.
Noise	Decreased contribution to Impacts N-1, N-3,& N-4, because would affect fewer noise-sensitive receptors and would be removed from other cumulative projects.
Air Quality	Increased contribution to Impacts AQ-1 & AQ-4, because would be substantially longer route, which would increase already significant emissions to the air basin during construction.
Fire & Fuels Management	Increased contribution to F-1, F-2, F-3, F-5,& F-6 due to longer transmission route, which would increase construction duration and obstacles to firefighting.

G.4.2.4 Modified Route D Alternative and Star Valley Option

The Modified Route D Alternative is a 39-mile reroute of the I-8 Alternative that would begin at MP I8-47 and rejoin the I-8 Alternative route at MP I8-71.5. This alternative is shown on Figures G-8 and G-9. The Modified Route D Alternative would this route would pass between BLM's Hauser Mountain Wilderness area and the CNF's Hauser Wilderness, would traverse CNF lands, and would add 15 miles to the length of the I-8 Alternative. However, even with this additional length, the Interstate 8 Alternative with the Modified Route D segment would be 25 miles shorter than the portion of the Proposed Project it would replace. The Star Valley Option was developed to reduce the amount of underground construction in Alpine Boulevard and avoid a cultural resource site of concern. This short route option would be in close proximity to the Modified Route D Alternative and would not be nearby to any cumulative projects (see Figure G-8). Therefore, its cumulative impacts and contribution would be the same as the Modified Route D Alternative.

Other than the roads listed in Table E.4.9 1, the lands crossed by the Modified Route D Alternative are mostly vacant and undeveloped. In addition to these existing roads, the Modified Route D Alternative would be located near several reasonably foreseeable residential developments, including Lakeside Downs, Lakeside Ranch, Carroll, Sky Mesa and the Broad Oaks Road Extension Project. The geographic extent of the cumulative analysis and existing cumulative conditions for each issue area for the Modified Route D Alternative would be the same as those identified for the I-8 Alternative in Section G.4.2.1, with the following exceptions:

- 38.1 acres of DOC Farmland would be temporarily converted to non-agricultural use
- Permanent conversion of 7.6 acres of DOC Farmlands
- This alternative would traverse or be adjacent to 58.4 acres of Williamson Act lands.

The Modified Route D Alternative would contribute to the same level of cumulative impacts as the I-8 Alternative. Additionally, because this alternative would temporarily convert 38.1 acres of DOC Farmland to non-agricultural use, it would combine with past, present and reasonably foreseeable projects to result in significant cumulative Impact AG-1 (Class I).

When combined with the effects of similar impacts of past, present and reasonably foreseeable projects, the Modified Route D Alternative and/or the Star Valley Option would not result in the elimination of any of the cumulative impacts identified for the I-8 Alternative; however, it would contribute to new significant cumulative Impact AG-1.

With the exception of Agricultural Resources, which would result in a significant contribution to Impact AG-1, for the remaining 14 issue areas, there would be no change in the Route D Alternative's contribution to cumulative impacts as compared with the Interstate 8 Alternative.

G.4.3 Non-Wires Alternative

This section addresses potential cumulative impacts of the Non-Wires Alternative to the Proposed Project. The Non-Wires Alternative was developed to present an alternative that would avoid major new transmission projects in the project area. Two Non-Wires Alternatives were analyzed in this EIS/EIR: the New In-Area Renewable Generation Alternative and the New In-Area All Source Generation Alternative. These alternatives are described in detail in Section C and project impacts of each alternative are analyzed in Section E.5 and E.6, respectively.

G.4.3.1 New In-Area Renewable Generation Alternative

The New In-Area Renewable Generation Alternative would involve development of various In-Area renewable projects that together could provide sufficient generation capacity to defer the need for the Proposed Project. This alternative would require construction of several different facilities at various locations throughout San Diego County to: provide solar thermal generation facilities; install solar PV on thousands of buildings; construct new wind project facilities; and provide new biomass and biogas facilities. Construction of these facilities would occur at different times within different areas throughout San Diego County. A construction schedule for these projects is not currently available and a list of reasonably foreseeable projects with which impacts of the New In-Area Renewable Generation Alternative may combine was not generated due to the uncertainty of the timing and specific locations of the alternative's components. However, based on the continuing and increasing trend of commercial and residential development throughout San Diego County, it is conservatively assumed that there would be several past, present, and reasonably foreseeable projects with similar impacts to the New In-Area Renewable Generation Alternative within close enough proximity to its components to combine with its impacts to result in potentially significant cumulative impacts.

Although this alternative would not involve construction of new major transmission lines, it would involve installation of electrical infrastructure (including short distance transmission lines to connect facilities to the electrical grid) at multiple locations and facilities throughout San Diego County and would generally require the same types of construction activities as the Proposed Project. As described in Section E.5, construction and operation of this alternative would also result in similar impacts as the Proposed Project. Therefore the approach to analysis of cumulative impacts of this alternative is similar to the methodology applied to the Northern Route Alternatives described above in Section G.4.1.

To determine if this alternative would contribute to a cumulative impact, the impacts identified in Section E.5 were compared to impacts of the Proposed Project, as presented in Table H-27 as well as to the list of cumulative impacts identified for the Proposed Project presented above in Table G-4 in Section G.3.

Based on the impact analysis presented in Section E.5 and the methodology presented above, when combined with the impacts of past, present and reasonably foreseeable projects, implementation of the New In-Area Renewable Generation Alternative would result in the significant cumulative impacts listed in Table G-13.

Table G-13. Significant Unavoidable (Class I) Cumulative Impacts of the New In-Area Renewable Generation Alternative

Impact No.	Description
B-1	Construction activities would result in temporary and permanent losses of native vegetation.
B-5	Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants.
B-7	Direct or indirect loss of sensitive/listed species.
B-10	Presence of transmission lines may result in collisions by and/or electrocution of listed or sensitive bird species.
B-11	Presence of transmission lines may result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers.
B-13	Operation of the Wind component would lead to avian mortality from collision with turbines.
B-14	Operation of the Wind component would lead to bat mortality from collision with turbines.
V-1	Short-term visibility of construction activities, equipment and night lighting.
V-2	Long-term visibility of land scarring in arid and semi-arid landscapes.
V-NW1 through V-NW8, & V-6JS	Increased structure contrast, industrial character, view blockage, and skylining.
Land Use	A new cumulative impact to land use would result when combined with all reasonably foreseeable wind, solar thermal, and solar PV projects throughout San Diego County. Together, these projects would convert thousands of acres of undeveloped, open space and grazing land to an industrial use.
WR-1	Construction activities would temporarily reduce access and visitation to recreation or wilderness areas
WR-2	Presence of a transmission line or substation would permanently change the character of a recreation area, diminishing its recreational value.
WR-5	Cumulative loss of State Park land or reduced/diminished quality of recreation experience on State Park land due to development.
AG-2	Operation would permanently convert DOC Farmland to non-agricultural use.
AG-3	Operation would permanently interfere with Active Agricultural Operations.
AG-4	Presence of the transmission line would convert Williamson Act lands.
C-2	Construction of the project could cause an adverse change to sites known to contain Native American human remains.

Table G-13. Significant Unavoidable (Class I) Cumulative Impacts of the New In-Area Renewable Generation Alternative

Impact No.	Description
C-4	Construction of the project could cause an adverse change to Traditional Cultural Properties.
C-6	Long-term presence of the project could cause an adverse change to known historic architectural (built environment) resources.
N-1	Construction noise would substantially disturb sensitive receptors and violate local rules, standards, and/or ordinances.
N-3	Permanent noise levels would increase due to corona noise from operation of the transmission lines and noise from other project components.
N-4	Routine inspection and maintenance activities would increase ambient noise levels.
AQ-1	Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.
AQ-3	Power generated during transmission line operation would cause emissions from power plants.
H-1	Construction activity could degrade water quality due to erosion and sedimentation.
H-4	Groundwater dewatering for project construction would deplete local water supplies.
H-7	Accidental releases of contaminants from project facilities could degrade water quality.
F-1	Construction activities would significantly increase the probability of a wildfire.
F-2	Operation would significantly increase the probability of a wildfire.
F-3	Presence of the transmission line would reduce the effectiveness of firefighting.
F-5	Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread.

G.4.3.2 New In-Area All Source Generation Alternative

The New In-Area All Source Generation Alternative would involve development of various In-Area projects that together could provide sufficient generation capacity to defer the need for the Proposed Project. This alternative would require construction of several different facilities at various locations throughout San Diego County to provide a combination of fossil-fired central station and peaking generation, renewable generation, and non-renewable distributed generation (DG). Construction of these facilities would occur at different times within different areas throughout San Diego County. A construction schedule for these projects is not currently available and a list of reasonably foreseeable projects with which impacts of the New In-Area All Source Generation Alternative may combine was not generated due to the uncertainty of the timing and specific locations of the alternative's components. However, based on the continuing and increasing trend of commercial and residential development throughout San Diego County, it is conservatively assumed that there would be several past, present, and reasonably foreseeable projects with similar impacts to the New In-Area All Source Generation Alternative within close enough proximity to its components to combine with its impacts to result in potentially significant cumulative impacts.

Although this alternative would not involve construction of new major transmission lines, it would involve installation of electrical infrastructure (including short distance transmission lines to connect facilities to the electrical grid) at multiple locations and facilities throughout San Diego County and would generally require the same types of construction activities as the Proposed Project. As described in Section E.6, construction and operation of this alternative would also result in similar impacts as the Proposed Project. Therefore the approach to analysis of cumulative impacts of this alternative is similar to the methodology applied to the Northern Route Alternatives described above in Section G.4.1.

To determine if this alternative would contribute to a cumulative impact, the impacts identified in Section E.6 were compared to impacts of the Proposed Project, as presented in Table H-28 as well as to the list of cumulative impacts identified for the Proposed Project presented above in Table G-4 in Section G.3.

Based on the impact analysis presented in Section E.6 and the methodology presented above, when combined with the impacts of past, present and reasonably foreseeable projects, implementation of the New In-Area All Source Generation Alternative would result in the significant cumulative impacts listed in Table G-14.

Table G-14. Significant Unavoidable (Class I) Cumulative Impacts of the New In-Area All Source Generation Alternative

Impact No.	Description
B-1	Construction activities would result in temporary and permanent losses of native vegetation.
B-5	Construction activities would result in direct or indirect loss of listed or sensitive plants or a direct loss of habitat for listed or sensitive plants.
B-7	Direct or indirect loss of sensitive/listed species.
B-10	Presence of transmission lines may result in collisions by and/or electrocution of listed or sensitive bird species.
B-11	Presence of transmission lines may result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers.
B-16	Power plant operation and maintenance activities would result in disturbance to wildlife and could result in wildlife mortality (emissions)
V-1	Short-term visibility of construction activities, equipment and night lighting.
V-2	Long-term visibility of land scarring in arid and semi-arid landscapes.
V-NW9 V-NW12	Increased structure contrast, industrial character, view blockage, and skylining.
AG-2	Operation would permanently convert DOC Farmland to non-agricultural use.
AG-3	Operation would permanently interfere with Active Agricultural Operations.
N-1	Construction noise would substantially disturb sensitive receptors and violate local rules, standards, and/or ordinances.
N-3	Permanent noise levels would increase due to corona noise from operation of the transmission lines and noise from other project components.
N-4	Routine inspection and maintenance activities would increase ambient noise levels.
AQ-1	Construction would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.
AQ-3	Power generated during transmission line operation would cause emissions from power plants.
AQ-4	Project activities would cause a net increase of greenhouse gas emissions.
H-1	Construction activity could degrade water quality due to erosion and sedimentation.
H-7	Accidental releases of contaminants from project facilities could degrade water quality.
H-9	Power plant operation could substantially deplete local water supplies
F-1	Construction activities would significantly increase the probability of a wildfire.
F-2	Operation would significantly increase the probability of a wildfire.
F-3	Presence of the transmission line would reduce the effectiveness of firefighting.
F-5	Project activities would introduce non-native plants, which would contribute to an increased ignition potential and rate of fire spread.

G.4.4 System Alternatives

Two system alternatives are considered in this EIR/EIS: the LEAPS Transmission Only Alternative and the LEAPS Transmission and Generation Alternative. The following cumulative impact analysis for these alternatives is taken directly from the cumulative analysis included in the Final Environmental Impact Statement for the LEAPS Project (FERC, 2007; Section 3).

Cumulatively Affected Resources. According to the Council on Environmental Quality's regulations for implementing NEPA (§1508.7), a cumulative effect is the effect on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over time to include hydropower and other land and water development activities.

Based on the information contained in the license application, agency comments, other filings, comments from the scoping process, and preliminary staff analysis, we[23] identified water quantity, water quality, fisheries, federally listed plants and wildlife, wetlands, and riparian habitat as resources that could be cumulatively affected by the construction and operation of the LEAPS Project in combination with other activities in the San Juan Creek River Basin. We used the resource area to determine the geographical and temporal scope of the final EIS analysis.

Geographic Scope. The geographic scope of the analysis defines the physical limits or boundaries of the proposed action's effect on the resources. Because the proposed action would affect the resources differently, the geographic scope for each resource may vary. For water resources, we consider cumulative effects in the San Juan Creek River Basin from the location of the upper reservoir to the downstream influence of project releases. For fisheries, we consider the cumulative effects on Lake Elsinore relative to the programs of the city of Lake Elsinore to remove carp populations and restructure the fish community in Lake Elsinore to provide a sport fishery. For federally listed plants and wildlife, we consider cumulative effects within their range in southern California. For waters, wetlands, and riparian habitat, we would consider cumulative effects in the San Juan Creek Watershed as well as in the San Mateo Creek Watershed for the southern portions of the proposed and staff alternative transmission alignments.

Temporal Scope. The temporal scope of our cumulative analysis in the final EIS includes past, present, and future actions and their possible cumulative effects on each resource. Based on the license term, the temporal scope will look 30 to 50 years into the future, concentrating on the effects on the resources from reasonably foreseeable future actions. The historical discussion will, by necessity, be limited by the amount of available information for each resource.

Cumulative Conditions and Impact Analysis

Water Quantity and Quality

The Santa Ana Watershed Project Authority issued its Integrated Watershed Plan, 2005 Update in June 2005. The plan is a tool for improving the sustainability of water resources and ecological health of the watershed (SAWPA, 2005). Population growth and its commensurate demands on water resources in the watershed is expected to increase from a current level of 5 million to almost 10 million people by 50 years from now. The Authority is responsible for developing and maintaining regional plans for both water supply and water quality. A key goal of the plan is to develop and adaptive approach to make the Santa

Ana Basin region entirely self sufficient during drought cycles. Aspects of the strategy include identifying and describing a comprehensive mix of water resources projects and assuring that three years of groundwater storage is maintained in the Santa Ana River Basin by 2020 so that no imported water would be needed under a drought scenario. Congress recently appropriated $153.9 million to improve water quantity and quality in the region (WaterTech, 2005), including:

- Approximately $51.8 million to support a water reclamation project in Orange County
- $50 million to perform groundwater desalination in the Chino Basin
- $20 million develop large-scale wetlands along the Santa Ana River in the Prado Basin
- $40 million to develop brine lines to help discard excess water from desalination plants.

Final EPA approval of the Lake Elsinore TMDL is expected in 2006, which will define acceptable waste load allocations for phosphorus and nitrogen inputs into Lake Elsinore and associated offsets. The TMDL in conjunction with the operation of the proposed Lake Elsinore Stabilization and Enhancement Project would result in additional benefits to the water resources of Lake Elsinore.

We expect that the Lake Elsinore Stabilization and Enhancement Project would improve water quality in Lake Elsinore over time. The co-applicants' proposed project would likely cumulatively contribute to efforts to improve water quality in Lake Elsinore by improving the mixing of water in the lake and having a slight positive increase to the DO concentrations.

Fisheries

The Lake Elsinore Fisheries Management Plan proposes measures to control undesirable species and enhance populations of more desirable game fish in the lake. Funding for implementation of the Fisheries Management Plan is anticipated through the acquisition of grants from a variety of sources. The co-applicants' proposal to fund stocking fish in the lake in coordination with objectives of the Fisheries Management Plan would help ensure that the plan can be implemented as designed.

Implementation of the Lake Elsinore Stabilization and Enhancement Project would decrease the likelihood that lake elevations would drop to levels that would result in decreased water quality that result in fish kills. Operation of the Proposed Project would not affect implementation of the stabilization project. Aeration stations proposed as part of the Lake Elsinore Stabilization and Enhancement Project would help to increase DO at depth. Proposed Project operations will also increase mixing in the lake, thereby improving water quality and benefiting the fish population. The Proposed Project would also not alter proposals for reconfiguring the Back Basin wetlands into treatment wetlands described in that project.

The Corps has developed a draft Special Area Management Plan (SAMP) for the San Juan Creek and Western San Mateo Creek watersheds SAMP to provide a framework for permit coverage for the San Juan Creek Watershed and the western portion of the San Mateo Creek Watershed. The proposed LEAPS Project would not affect the development of the proposed SAMP, which is still under review by the Corps.

Biological Resources

Participants in scoping identified concerns about the LEAPS Project's cumulative effects on waters, wetlands and riparian habitat. Based on the analysis presented in Section 3.3.4.2, construction of a reservoir at either Morrell or Decker canyon would not affect wetlands, but would contribute to past, ongoing, and future losses of coast live oak woodland riparian habitat in southern California. Most of these losses have occurred (or will occur) as a result of human population growth. As discussed in Sec-

tion 3.3.7, *Land Use and Aesthetic Resources*, the population of Riverside County was predicted to grow by almost 70 percent between 2000 and 2020 (SCAG, 1998). The construction of homes, businesses, services, and infrastructure to serve this population is likely to adversely affect jurisdictional waters, including intermittent and ephemeral streams, despite federal, state, and county regulations that require protection, because substantial amounts of development are likely to occur in small increments that are difficult to regulate.

Construction at Morrell Canyon would affect a total of 6.5 acres of waters of the U.S. and the state over a stream length of about 4,400 feet, and would inundate Lion Spring. Construction at Decker Canyon would affect a total of 1.2 acres of waters of the U.S. and the state over a stream length of about 3,300 feet. Construction at Lake Elsinore and long-term operation of the project may contribute further to cumulative effects on waters and wetlands. Project effects on waters of the U.S. and state could be reduced by selecting the no action alternative, or by selecting Decker Canyon as the site of the upper reservoir. Under any action alternative, the project's contribution to cumulative effects could be reduced by implementing BMPs during construction, providing on-site, in-kind mitigation where possible, and by providing off-site mitigation where necessary.

Construction of a transmission line should not add to cumulative effects on these resources, because transmission towers would be located outside waters, wetlands, and riparian habitats. Access roads have not yet been sited, and their cumulative effects on waters and wetlands are therefore unknown.

Live oak woodlands are also at risk of loss as a wildlife resource, because their aesthetic qualities make parcels containing mature oaks especially attractive for human use (Giusti et al., 2004). Over 30,000 acres of oak woodlands in California are annually converted to residential and commercial uses (Standiford and Scott, 2001, as cited in Giusti et al., 2004). Recent legislation (California Senate Bill 1334, signed into law in January, 2005) is designed to protect oak woodlands, but the effectiveness of the bill is, as yet, unproven. Based on the Multi-Species HCP, the Plan Area currently supports 6,660 acres of coast live oak woodland, which accounts for about 0.5 percent of the existing vegetation cover types. Construction at the Morrell Canyon site would affect 20 acres of coast live oak. At Decker Canyon, the area of coast live oak woodland affected would be 5 acres.

During the terrestrial resource analysis, we concluded the project would contribute to cumulative effects on other important habitats, as well, including coastal sage scrub and chaparral. Neither of these are designated as having special status, but both (and coastal sage scrub in particular) support very high levels of biodiversity, including plants and wildlife that are endemic to the region. The Multi-Species HCP indicates the Plan Area supports about 159,000 acres of coastal sage scrub, and almost 363,000 acres of chaparral. Construction of the LEAPS Project as proposed would affect 31 acres of coastal sage scrub and 119.5 acres of chaparral. The alternative project configuration would affect about the same amount of coastal sage scrub and about 135.5 acres of chaparral.

Cumulative adverse effects on oak woodlands, coastal sage scrub and chaparral would in turn contribute to cumulative effects on the California spotted owl, an MIS that is rapidly declining in southern California forests, although range-wide populations may be stable (USFS, 2005b). The loss of habitat and increased disturbance would also adversely and cumulatively affect other special status species associated with these habitat types, including southern California rufous-crowned sparrow, Bell's sage sparrow, golden eagle, loggerhead shrike, and the coast (San Diego) horned lizard, which are known to occur in the project area, as well as others (e.g., Belding's orange-throated whiptail, northwestern red diamond rattlesnake, Coronado skink, San Diego mountain kingsnake, coastal rosy boa, and northwestern San Diego pocketmouse) that are also likely to be present.

The cumulative effects of the LEAPS Project on mountain lions, an MIS, would be of particular concern. Habitat loss within Core B for mountain lion and their primary prey, the mule deer (also an MIS), would contribute to adverse effects on a population that is already at risk of extirpation in the Santa Ana Mountains.

Again, selection of the no-action alternative would have the least impact, and selection of Decker Canyon as the upper reservoir site would have less effect on the habitat that would be hardest to replace—coast live oak woodland. Implementation of mitigation measures outlined in Section 5.2.6 would reduce the project's contribution to cumulative effects on special status species by providing on-site mitigation, where possible, and by acquiring and protecting off-site habitat, where on-site mitigation opportunities are unavailable or where on-site mitigation efforts would not likely be successful.

Threatened and Endangered Species

Construction of the LEAPS Project would adversely affect designated critical habitat for the Quino checkerspot butterfly, proposed designated critical habitat for the coastal California gnatcatcher, and suitable habitat for the Stephens' kangaroo rat within the boundaries of the Stephens' Kangaroo Rat HCP and Multi-Species HCP Lake Mathews–Estelle Mountain Core Reserve. Below, we discuss the cumulative effects of the project on each species.

Quino Checkerspot Butterfly

FWS listed the Quino checkerspot butterfly as an endangered species in 1997. At one time, the Quino checkerspot butterfly's range included much of coastal southern California and inland valleys south of the Tehachapi Mountains, but populations appear to have been reduced in number and size by more than 95 percent, due to the direct and indirect effects of habitat loss and fragmentation. Other threats include OHV use, grazing, invasion of exotic plants, and changes in fire regime. Other factors, such as predation, increased nitrogen deposition, increased atmospheric carbon dioxide concentrations, and climate change, may also affect this species and its habitat. Currently, the Quino checkerspot butterfly is known to occur only in Riverside County and San Diego County and in Baja California.

The Quino checkerspot butterfly is known from only a few locations within the Multi-Species HCP Plan Area, including Harford Springs County Park. This site is part of a distribution that once included lands south and east of Lake Mathews. The Lake Mathews–Estelle Peak Core Reserve is located partially within the Northwest Riverside Recovery Unit (FWS, 2003) and designated critical habitat Unit 1 (67 FR 72). Construction of the proposed transmission line or staff alternative transmission alignment and northern substation would affect about 36.75 acres of land within designated critical habitat at the Lake Mathews–Estelle Peak Core Reserve, and about 0.75 acres nearby. No other project features would be located in areas where historical populations have been documented, unless temporary access roads are constructed. Roads would also contribute to cumulative effects, by increasing the risk of habitat damage due to OHV use, fire, weed spread, and dust. As described earlier in this section, public access is difficult to prevent, even after roads have been closed and revegetated. The effects of human activity along roads extend beyond the road itself, and add to cumulative impacts of disturbance that would be caused by urban development.

We consider that project effects on the Quino checkerspot butterfly would be significant because so few populations exist, and habitat loss and degradation is ongoing. Loss of small acreages under either alternative would contribute to the cumulative effects of past, present and future actions. However, the co-applicants could contribute to recovery efforts. While the recovery plan emphasizes the importance of preserving existing suitable habitat, it also emphasizes the need to restore habitats that are not currently suitable, by measures such as removing and managing weeds, planting native species, and increasing ground

cover using brush and rocks. The recovery plan indicates that one of the criteria for down-listing the Quino checkerspot butterfly to threatened status would be to document or introduce a population within the formerly occupied Lake Mathews site in the Northwest Riverside Recovery Unit.

Coastal California Gnatcatcher

The coastal California gnatcatcher is considered uncommon throughout its range, which extends from southern Ventura County into Baja California. Riverside County supports about 10 percent of the total population. In 1993, FWS estimated the number of breeding pairs in Riverside County at 261, and in 1996, about 300 pairs. It is widely distributed within the Multi-Species HCP Plan Area, including the Lake Mathews–Estelle Mountain Core Reserve and Alberhill area. The highest densities occur in two important patches located along the I-15 corridor. One of these is situated east of I-15 between Lake Mathews and the City of Lake Elsinore.

FWS listed the coastal California gnatcatcher as a threatened species in 1993 because of habitat loss and fragmentation as a result of development (including conversion to agricultural land use) in coastal sage scrub. The Multi-Species HCP describes coastal sage scrub as one of the most depleted habitat types in the U.S. In addition, OHV use, grazing, weed invasion, changes in fire frequency, and air pollution can also adversely affect coastal sage scrub, reducing its quality for the coastal California gnatcatcher.

We consider the project's effects on the coastal California gnatcatcher to be significant because construction of the LEAPS Project would convert about 37.5 acres within proposed designated critical habitat or the Lake Mathews–Estelle Peak Core Reserve to project use, and an additional 1.0-acre nearby. About 30 acres of potential habitat would be removed at the Santa Rosa powerhouse site. Loss of this 30-acre patch would occur outside proposed designated critical habitat or core reserves, but would contribute to cumulative effects of other past and present actions that have reduced the cover of coastal sage scrub in Riverside County, and future actions that allow development between western shoreline of Lake Elsinore and the Santa Ana Mountains. Construction of roads would also contribute to cumulative effects, by increasing the risk of habitat damage due to OHV use, fire, weed spread, and harassment.

Stephens' Kangaroo Rat

As mentioned in Section 3.3.5.1, the Stephens' kangaroo rat is restricted to parts of Riverside County and north-central San Diego County. FWS listed the Stephens' kangaroo rat as an endangered species in 1988 due to its small range and the rapid loss of habitat within that range, as natural landscapes were converted to agricultural uses and urban development. The changes also caused habitat fragmentation, which can lead to genetic isolation in species, such as the Stephens' kangaroo rat, that are relatively sedentary.

In March 2004, FWS announced it would be initiating a status review to determine if delisting is warranted, based on new information submitted in a petition for delisting the species (69 FR 77). The new information included the results of several focused surveys that showed more locations for the species than were previously known, and studies indicating that some types of disturbance may enhance habitat, by maintaining sparse vegetative cover. FWS also found the status review was warranted because the existing Stephens' kangaroo rat HCP and Multi-Species HCP and the North County MSCP (in progress) may adequately protect this species.

The proposed transmission alignment would remove approximately 38.25 acres of potential habitat within the Lake Mathews–Estelle Peak Core Reserve and adjacent fee area, which supports one of the key Stephens' kangaroo rat populations in the Plan Area. Stephens' kangaroo rat may occupy 4,264 acres of the 11,243-acre reserve, and may be present at higher densities than are typical of other locations.

We consider project effects on Stephens' kangaroo rat to be significant because the project would affect a key population of a species that occurs within a very narrow geographic range. Loss of habitat would contribute to cumulative adverse effects caused by other past, present, and future development related activities in Riverside County. Construction of roads would also contribute to cumulative effects, by increasing the risk of habitat damage due to OHV use, fire, weed spread, and harassment. However, the co-applicants could mitigate for adverse effects by paying into existing mitigation funds, and more directly, by enhancing habitat that is not directly lost to project features through vegetation management, such as planting and management of vegetation preferred by this species.