CHAPTER 4: CUMULATIVE IMPACTS

4.1 INTRODUCTION AND OVERVIEW

California Environmental Quality Act (CEQA) Guidelines (Section 15130) require that cumulative impacts be analyzed in an Environmental Impact Report (EIR) when the resulting impacts are cumulatively considerable and therefore potentially significant. "Cumulatively considerable" means, according to Section 15065(a)(3) of CEQA Guidelines, "that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

Cumulative impacts are defined in the CEQA Guidelines (Section 15355) as "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects." More specifically, "cumulative impacts" refers to two or more individual effects which, considered together, compound or increase the environmental impacts.

4.1.1 METHODOLOGY

In accordance with Section 15130(b)(1)(A) of the CEQA Guidelines, a cumulative scenario has been developed to identify a list of past, present, and probable future projects producing related or cumulative impacts. Some existing or recent projects are included as part of the environmental setting for individual issue areas and are analyzed in respect to each resource issue area in Chapter 3. The cumulative analysis relies on the project list approach. However, agency area and specific plans were also examined as they provided insight into longer-term expectations regarding development. These are informative to the cumulative analysis even though specific projects are not necessarily identified.

The projects considered to be part of the cumulative scenario are presented in Tables 4.1-1 through 4.1-3. The project list includes those projects obtained from various planning agencies within the Proposed Project area as well as local utilities servicing the area. Projects were identified 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. This area is identified as the geographic scope for the analysis of cumulative impacts related to a particular resource. The projects in the cumulative scenario include a range of project types from residential and commercial developments to utility infrastructure projects. Figure 4.1-1 illustrates the approximate locations of the cumulative projects identified in Tables 4.1-1 through 4.1-3 (each project is identified by a map number).

TABLE 4.1-1. SPECIFIC PLANS

SPECIFIC PLAN NAME	INTENT OF SPECIFIC PLAN
Interstate 15 Corridor Specific Plan No. 266	The Interstate 15 Corridor Specific Plan is a planned community of 757.7 acres proposing a mix of commercial and residential uses. The project proposes a total of 256.8 acres of commercial and industrial development which is intended to service the full range of local, community and regional needs. The project also provides for a total of 2,400 residential dwelling units on 453.6 acres of the project site. Average residential density for the project is proposed to be 3.6 dwelling units per acre (du/ac) for single-family residences and 12 du/ac for multi-family residences. Twenty-five acres of parkland are proposed in two parks, including a 20-acre sports park. Additionally, two tot lots are to be constructed. Two potential school sites have also been designated.
La Sierra University Specific Plan	This Specific Plan encompasses 531 acres in the western portion of the City of Riverside; the overall plan concept envisions a "mixed-use" community. This community would accommodate the expansion of the La Sierra campus and development of the University's surplus lands, located east and south of the existing campus, to help support the University's endowment. The plan includes employment opportunities at La Sierra University, as well as potential jobs in a new industrial park and in commercial areas. A diverse mix of residential types and densities is also envisioned, providing housing for University faculty, staff, retirees from the Seventh-Day Adventist community, and others seeking housing opportunities.
Magnolia Avenue Specific Plan	This Specific Plan covers 1,473 acres fronting along Magnolia Avenue, the primary east/west street in Riverside. The plan is intended to facilitate and encourage development and improvements along Magnolia Avenue to help realize the community's vision for the corridor. The City's General Plan 2025 laid the foundation for this plan by establishing the Very High Residential and Mixed Use General Plan land use designations along much of the corridor.
Rancho La Sierra Specific Plan	This Specific Plan encompasses approximately 755 acres of rolling mostly vacant land situated at the northwestern edge of the City of Riverside. This Specific Plan is intended to comply with the objectives of Measure C by facilitating a high quality development accommodating a variety of uses while still maintaining the property's open space character and protecting the sensitive Santa Ana River corridor. By combining active recreation (golf), passive open space and limited residential clusters, the Plan not only complies with the objectives of Measure C but also provides opportunities for economic return in the form of golf and residential development with northerly views of natural open space and the golf course.
Riverwalk Vista Specific Plan	This Specific Plan encompasses approximately 122 acres and is an infill residential community that blends a variety of single-family detached housing into an integrated village setting.
Thoroughbred Farm Specific Plan No. 376	The Thoroughbred Farm Specific Plan proposes a land use plan, development standards, design and landscaping guidelines, and designation of 14 planning areas for industrial, business park and commercial developments.
Victoria Avenue Specific Plan	The intent of this Specific Plan is to preserve Victoria Avenue as a landscaped parkway and as a cultural heritage landmark as designated by the Cultural Heritage Board. It provides standards for the various factors affecting Victoria Avenue, present and future, both in the right-of-way and in its vicinity. Physical factors considered for the Avenue are street improvements, utilities, bridle trails, landscaping and irrigation and rights-of-way. Improvements will be related to traffic volumes and safety both now and in the future, taking into consideration the effects of other highways and freeways and land use in the vicinity. Land use policies and standards for private development of adjoining lands including subdivision and development design are also discussed.

TABLE 4.1-2. CUMULATIVE PROJECTS LISTS

Figure ID	CASE #	DESCRIPTION	PROJECT STATUS
City of Riverside Projects			
1	P07-0872	DR Single Story Medical Building Business Park – 6421 Central; 1.74 acres; 22,935 square foot (sq ft) total building size	ZA approved 2/20/09.
2	P07-0816 P07-0817	VR/DR Single Story Office – 6411 Arlington; 0.48 acre; 4,992 sq ft total building size	ZA approved 11/30/07. Not constructed yet.
3	P08-0301	MCUP Harvest Christian Fellowship Parking Lot; 5.3 acres; parking lot	ZA approved. 1/27/10. Not built yet
4	P09-0600 P09-0601	DR/EIR Wal Mart Expansion – 5200 Van Buren	In process. Submitted 9/18/09
5	P07-0661	DR 3 Retail/Commercial Bldgs – Northeast corner of Arlington & Chadbourne	ZA approved 2/7/08. Under construction.
6	P07-1194 P07-0751	CUP/DR to establish 27,267 square-foot vehicle inspection building on an approximately 17.8 acre site developed with a legal non-conforming vehicle auction yard – 5894 Payton; 17.8 acres; 27,267 sq ft total building size	CC approved 6/17/08.
7	P09-0142 P09-0229	CUP/DR to establish vehicular storage yard on two vacant contiguous lots totaling 4.22 acres – Northeast corner of Jurupa & Payton; 4.2 acres	CC approved 6/23/09.
8	P09-0687 P10-0128	DR/CUP to establish a Building Materials Supply Store with wholesale and ancillary retail sales areas – 7500 Jurupa; 36,822 sq ft total building size	CC approved 5/18/10. Pending building permit issuance as of 11/9/10.
9	P05-1521 P05-1523 P05-1524 P05-1525 P05-1526 P06-0443	RZ/PRD/DR/PM/TM/CUP Magnolia Square Commercial and 318 Condos – 10411-10481 Magnolia; 16.7 acres; 40,000 sq ft total building size	CC approved 6/6/06.
10	P07-0279	TM 35455 Lionhead 6 SFR lots, RC Zone – west of intersection at California & Bolton; 26 acres	CC approved 5/27/08.
11	P07-1124 P07-1125 P07-1185 P08-0084	DR/CUP/RZ/TM 35852 California Square Redevelopment – 8616 California; 4.47 acres; 194,630 sq ft total building size	CC approved 6/17/08. Phase One under construction.
12	P07-1118 P07-1120	DR/PCN Fresh & Easy Retail Center – 4865 Van Buren; 1.8 acres; 19,530 sq ft total building size	CPC approved 3/6/08.
13	P10-0406 P10-0407 P10-0408	PPE/DR/VR revised site plan and building elevations for a previously approved but not constructed 168-unit apartment complex – 11470-11590 Magnolia; 7.6 acres	Scheduled CPC 12/9/10.
14	P06-0501 P06-0554 P06-0555 P06-0556 P06-0557	SP/RZ/PPE/PM/DR Griffin Riverwalk 264 Market Rate Apartments; 204 Senior Apts.; 200 Unit ALF – 4710 Riverwalk PW; 25.5 acres	CC approved 10/3/06. Under construction.
15	P04-1476 P04-1477 P04-1478	DR/PRD/RZ Cinnamon Creek Apartments, 95 Units – 4826 Van Buren; 4.2 acres	CC approved 6/6/06.
16	P08-0727	PM 35901 – establish 5 BMP lots for future industrial development – 6639 Hillside; 7 acres	CPC approved 11/18/10.
17	P10-0282 P10-0284	CUP/DR Surface storage lot for about 2,500 wholesale vehicles, Riverside Auto Auction – 6900 Jurupa (former Dow Jones site); 27 acres	CC approved 10/19/10.

Figure ID	CASE #	DESCRIPTION	PROJECT STATUS
18	P10-0511 P10-0510	MCUP/DR La Sierra University School of Business building – 4500 Riverwalk PW; 68,500 sq. ft. total building size	ZA approved 10/22/10.
19	P10-0438 P04-0671 P04-0674	DR/VR Magnolia Garden Condominiums 62 units – 3875-3917 Dawes; 3 acres	ZA approved 8/3/10. In plan check
20	P10-0083 P10-0084	CUP/DR Walgreens – 10938 Magnolia; 14, 000 sq. ft. total building size	CC approved 7/13/10.
21	P05-1055 P05-1056 P05-1057 P05-1058 P05-1059	TM/PRD/GP/RZ/DR 63 unit Sierra Park PRD – west side of La Sierra between Gramercy & Norwood; 9 acres	CC approved 7/11/06. Phase 1 under construction.
22	P03-0041	TM 28987 - 113 lot Ag Park subdivision, both sides of Jurupa between Crest and Rutland; 63.4 acres	CC approved 7/8/03. Revised design pending.
23	P10-0678 P10-0679	DR/VR Warehouse Addition Flexsteel Expansion – 6971 Central; 7.58 acres; 78,352 sq. ft. total building size	Cycle date 10/29/10. In process.
Riverside County Projects			
24	CZ05619	701.3 acres	Approved on 11/09/1993.
25	TR31778	Hillcrest Homes Inc. - Divide 31.57 acres into 128 single family lots	Approved on 04/04/2006.
26	TR34201	Hillcrest Homes Inc.-Divide 79.4 acres into 185 R-4 SFR lots/2 parks/ 8 OS lots and 1 basin	Application under review.
27	TR31768	Hillcrest Homes Inc.- Subdivide 71.66 acres into 189 sq ft. lots w/park	Approved on 4/04/06.
28	TR33461	Tentative TR33461 proposes to subdivide 64.7 gross acres into 203 single-family residential lots with a minimum lot size of 7,200 square feet, with a 4.39 acre school site (Lot 204) that is a part of the school proposed within TR31768 for an 11 acre total school site, a 3.28 acre park (Lot 205) that is also part of a park proposed within TR31768 for a 5 acre total park site, and an additional 2.19 acre open spaces (Lots A to L). The proposed map will be developed in conjunction with proposed maps TR31768 and TR31778.	Approved on 05/22/2007.
29	PM34790	Wiggins Development- Divide 1.8 acres into three residential parcels.	Approved on 11/05/2007.
30	PP14060	Change use from auto repair to professional offices	Approved on 09/14/1994.
31	CZ06194; PP15352	Change Zone from A-P/W-1 to R-1 change of Zone from A-P and W-1 to R-5 (originally to R-1-15.5) EA 36521. N/A.; Clubhouse, Parking & Maint. Fac. for golf course.	Approved on 05/30/1995; Approved on 04/06/1998.
32	TR13476	Not available.	Not available.
33	PP21472	Orco Block Paver Plant. 2 Paver Plants/ 1 Mortar blending plant /office/parking/product storage area/for manufacturing concrete blocks	Approved on 12/05/2006.
34	CZ06358	Change zone from A-1-10 to A-1 and C-P-S	Approved on 06/04/2002.
35	TR32362; CZ07012	West Pointe Homes, Inc.- Subdivide 24 acres into 19 SFR and 1 open SP lots; change zone from C-P-S to R-1-20,000	Approved on 01/31/2006.
36	PP20024	Business park (4 buildings) located at Northeast Van Buren, South Galena, West Feldspar St.	Approved on 03/13/2008
37	TR34344	Total acreage: 3.54 gross acres. Subdivision for industrial condominium purposes. Total proposed lots: one (1) commercial/industrial for condominium purposes	Approved.

Figure ID	CASE #	DESCRIPTION	PROJECT STATUS
38	SP376 (Thorough-bred Farm Specific Plan)	Total Acreage: 109.55 gross acres. (light industrial, business park*,tourist/commercial, commercial/retail uses and potential fire station) *may also include an option for development of a 250-bed hospital/medical facility within the business park	Application under review.
39	PP21371	Birtcher Center at General Drive.	Approved on 02/26/2008.
40	PP16979	200,731 Sq Ft Tilt-up Industrial Building.	Application under review with Planning Commission.
41	CUP03598	Industrial Buildings located North/San Sevaine Flood Control Channel, East/San Sevaine, West/Bain Street. 161,215 Sq Ft, Two phased development on a 18.75 gross (18.75 net) acre lot with an associated sign program. The proposed use is for concrete reinforcing steel bending/cutting, for fabrication, and fuel/wash facility for concrete pump trucks.	Approved on 12/23/2008.
42	TR33428	Schedule a subdivision of 117.69 gross acres into 338 residential lots, 3 park lots, 1 Open Space lot, and 2 remainder parcels. Location: North/Limonite Ave., South/Bellegrave Ave., East/I-15, West/Wineville Ave.	Approved on 02/04/2009.
43	GPA00709	Highest density residential on 14.9 acres. (Limonite Senior Project)	Application under review.
44	TR32136	Divide 50.22 acres into 165 lots/3 Open Space, 2 park sites.	Approved on 9/27/05.
45	PM35896	Subdivision of 2.97 gross acres into 4 residential parcels.	Approved on 4/20/10.
46	GPA00859	Change land use designation from LDR to LI	Approved on 02/09/2010.
47	PP22513	2 concrete Tiltup Industrial buildings. Plot Plan No. 22513 proposes two (2) industrial buildings totaling 73,878 square feet on a 4.42 gross acre site with a floor area ratio of 0.38 (Heavy Industrial requires a 0.15-0.50 floor area ratio) consisting of: 2,000 square foot mezzanines, 45,647 square feet of landscaping area, 75,037 square feet of paved area, and 126 parking spaces. The total building square footage proposed is 73,878 square feet.	Approved on 11/19/2007.
48	PM36192	Divide 68 acres into 18 lots.	Applied on 6/22/09.

Sources: Riverside County Land Information System, December 2010; City of Riverside Planning Department, November 2010.

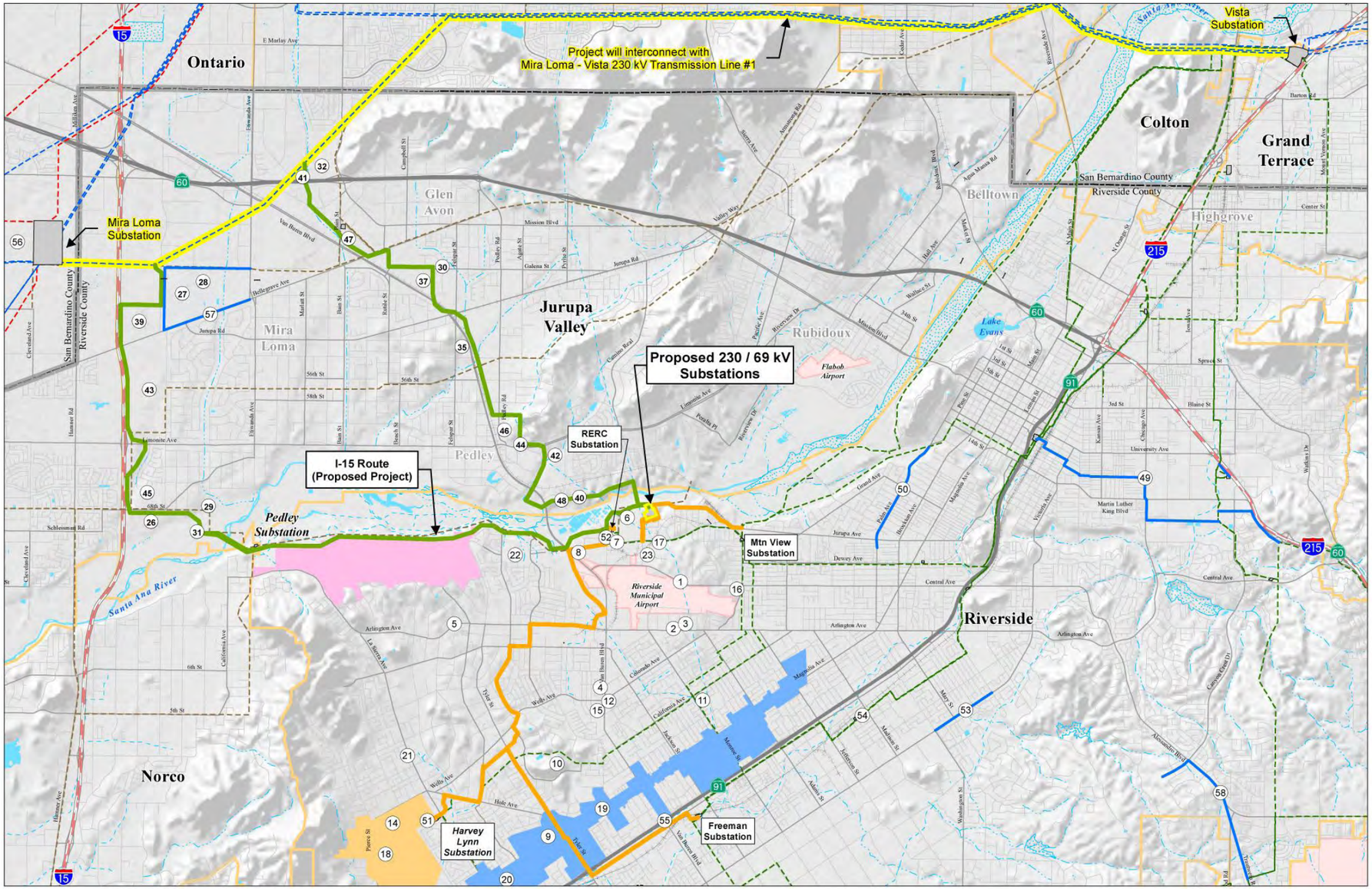
Legend:

ALF=Assisted Living Facility	BMP=Business and Manufacturing Park
CC=City Council	CPC=City Planning Commission
CUP=Conditional Use Permit	DR=Design Review
EIR=Environmental Impact Report	GP=General Plan
LDR=Low Density Residential	LI=Light Industrial
MCUP=Minor Conditional Use Permit	PCN=Public Convenience or Necessity
PM=Preliminary Map	PPE=Plot Plan and Elevations
PRD=Planned Residential Development	RC=Resource Conservation
RM=Multi-Family Residential	RZ=Rezoning
SFR=Single Family Residence	SP=Specific Plan
TM=Tract Map	VR=Variance Case
ZA=Zoning Administration	

TABLE 4.1-3. RELEVANT PUBLIC PROJECTS

Figure ID	Project Name (Sponsor)	Location	Status	Project Description
49	Sub-transmission project (Riverside Public Utilities)	City of Riverside	Under Construction	New double-circuit 69 kV sections to enhance the subtransmission connection between the Riverside, La Colina, Springs and University Substations
50	Circuit 441 Voltage Conversion (Riverside Public Utilities)	City of Riverside: Jurupa and Palm Avenues from Emerson Dr to Rubidoux Ave	Completed 2010	Upgrade to overhead electric distribution by replacing approximately 52 poles, changing out 36 transformers, replacing approximately 8,988 feet of overhead cable, and convert approximately 1.7 MW of 4 kV to 12 kV.
51	Harvey Lynn substation to Riverwalk Area electric service upgrade (Riverside Public Utilities)	City of Riverside: Riverwalk master planned development, La Sierra and La Sierra South	Completed 2008	Construction of approximately 2,000 feet of electrical distribution facilities to meet the load.
52	Riverside Energy Resource Center Units 3 & 4 (Riverside Public Utilities)	City of Riverside: Acorn Street adjacent to water treatment plant	Under Construction	Construction of two new peaking units to generate 96 MW of local generation.
53	Underground Utilities (Riverside Public Utilities)	City of Riverside: Victoria Avenue between Washington and Maude	In Design	Relocate existing overhead power lines underground.
54	Casa Blanca Substation Upgrade (Riverside Public Utilities)	City of Riverside: Evans Avenue and the Santa Fe railroad track ROW	In Design	New substation that will result in an improvement of electrical service that will include the extension of 69 kV subtransmission lines into the new facility, new 12 kV distribution feeder lines, improvement of critical load relief and backup reliability.
55	Van Buren Boulevard/ Riverside Freeway Bridge (Riverside Public Works)	City of Riverside: Van Buren Blvd and Riverside Freeway (SR 91)	Under Construction	Six-lane replacement bridge over SR 91.
56	Tehachapi Renewable Transmission Project, Segments 4-11 (Southern California Edison)	San Bernardino County near the City of Ontario	Awaiting Final Approval	Interconnection to the Mira Loma substation of a new overhead transmission line that will bring renewable energy from the Tehachapi area.
57	Groundwater Wells and Pipeline Project (Jurupa Community Services District)	Riverside County, Mira Loma community; Wineville Ave, Cantu-Galleano Ranch Road, Bellegrave Ave	In Design	Two groundwater wells and up to 13,400 linear feet of water conveyance pipelines and 200 feet of a discharge pipeline.
58	Van Buren Blvd, Santa Ana Bridge Replacement	Riverside County	Under Construction	Replacement bridge for Van Buren Blvd, crossing over the Santa Ana River.

FIGURE 4.1-1. CUMULATIVE PROJECTS



Cumulative Projects

LEGEND

- Proposed 230 kV Project
- Proposed 69 kV Project
- # Refer to Cumulative Project List
- # Linear Projects
- La Sierra University Specific Plan
- Magnolia Avenue Specific Plan
- Rancho La Sierra Specific Plan

Note: Project locations for 24, 25, 33, 34, 38 were not provided by the County

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RIVERSIDE TRANSMISSION RELIABILITY PROJECT

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4.2 CUMULATIVE IMPACTS ANALYSIS

The cumulative impacts analysis in this DEIR focuses on whether the impacts of the Proposed Project are cumulatively considerable within the context of combined impacts caused by other past, present, or reasonably foreseeable future projects.

4.2.1 AESTHETICS

Cumulative aesthetic impacts would occur if multiple cumulative projects would occur within the same viewshed and result in a combined adverse visual impact. Given the scale of the landscapes traversed throughout the Proposed Project area, the general urban character of the Proposed Project area, and the extensive range of viewsheds of the Proposed Project area, the Proposed Project would add a noticeable but not considerable change to the area's overall visual resources. Currently, RPU's double-circuit 69 kV Sub-Transmission Project have or will add new electric system transmission/distribution infrastructure (poles, conductors) to areas that did/do not have such facilities. Although this project introduces new infrastructure to viewers, such facilities are not uncommon in urban areas in order to serve the load. As such, there are no existing or planned projects within the Proposed Project's study area that would considerably add to or affect visual resources, thus the Proposed incremental effect would not be cumulatively considerable or significant.

4.2.2 AGRICULTURAL AND FORESTRY RESOURCES

The interactions among land uses are affected by the type and proximity of the land uses. For land use, the geographic scope for the analysis of cumulative impacts of agricultural and forestry resources are defined as the area within one mile of the Proposed Project. Land uses immediately adjacent to the ROW can be affected by the Proposed Project's implementation. Projects at a greater distance from the ROW would have lesser interaction with the Proposed Project. Land uses greater than one mile from the Proposed Project are highly unlikely to be perceived as interacting with the Proposed Project in a cumulative way, as they would not be directly impacted by the construction or the long-term operation of the transmission lines or substations.

Agricultural uses, including dairies, are still present in Riverside County's landscape; however, the County has seen a reduction in agricultural land due to urbanization. In 2008, the total acreage of Farmland in Riverside County was 204,722 acres. There has been a reduction of 10,501 acres of Farmland for Riverside County between 2006 and 2008 (FMMP, 2008). The Proposed Project would permanently impact 1.5 acres of Farmland.

Acreage of Farmland could be converted by some of the projects identified in Tables 4.1-1 through 4.1-3. The Proposed Project would contribute incrementally to this decline. Implementation of environmental protection elements would locate access roads, spur roads, staging areas, and pulling/splicing sites in areas that minimize impacts to agricultural operations. These elements would also minimize the removal of perennial crops. These measures, however, would not reduce the cumulative impacts related to the permanent reduction of agricultural land to a less than significant level. Given the rapid loss of agricultural lands in the County due to general urban growth and the County's policy to preserve prime agricultural lands, the incremental contribution of Farmland conversion associated with the Proposed Project would be a cumulatively considerable contribution to an existing significant cumulative impact. This impact would be significant and unavoidable.

4.2.3 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

The potential geographic extent of the cumulative impact area for the Proposed Project covers the air basin in which the Proposed Project would be located. Past development and population growth within the city of Riverside and in adjacent areas have expanded the potential to contribute to increased air emissions within the South Coast Air Basin (SCAB). The SCAB is in nonattainment for the federal and state eight-hour and one-hour ozone, particulate matter less than 10 microns (PM_{10}), and particulate matter less than 2.5 microns ($PM_{2.5}$) standards. The Proposed Project area is designated as attainment/unclassified for nitrogen dioxide (NO_2) and carbon monoxide (CO) for both state and federal standards. Long-term trends in reduced emissions of ozone precursors, specifically nitrogen oxides (NO_X) and volatile organic compounds (VOCs), have led to reduced ozone formation in the Proposed Project area; however, the area continues to exceed the state one-hour and federal eight-hour ozone standards. Additionally, while there is an overall gradual downward trend for PM_{10} concentrations, there has been little or no progress since 1993. As such, any increase in emissions of ozone precursors and particulate matter (and particulate matter precursors) would cause an adverse air quality impact; however, this incremental impact would not be considered significant. See discussion under CEQA criterion c) in Chapter 3, Section 3.2.3.

Since operation of the Proposed Project does not involve combustion of fossil fuels or involve other chemical processes that produce gaseous emissions, the Proposed Project would have very minor operating emissions. For this reason the cumulative impact discussion is focused on construction impacts. Construction impacts are localized and of short duration. Therefore, only projects within one mile of the Proposed Project are considered projects that could, with the Proposed Project, cause cumulative impacts because those are the only projects that have the potential for causing impacts that might overlap with the impacts of the Proposed Project. Additionally, only projects with construction or operating emissions that have the potential for temporally overlapping emissions at the same time as the Proposed Project's construction are considered part of this cumulative impact analysis and could potentially contribute to cumulative impacts as analyzed in this section. Existing emission sources are considered part of the existing ambient background cumulative condition.

The construction schedule of many of these cumulative projects is uncertain, or the projects will be complete prior to the construction of the Proposed Project. Therefore, there is the potential that most of these projects will not have construction periods coinciding with that of the Proposed Project; however, there is also the likelihood of a number of additional projects not currently known and listed that would meet the cumulative project criteria for air quality.

Construction emissions from the Proposed Project would not exceed the South Coast Air Quality Management District regional or localized thresholds of significance. However, for cumulative assessment purposes, the potential existence of nearby concurrent cumulative projects would add to these emission totals. The portion of the SCAB within which the Proposed Project is located is designated as a non-attainment area for ozone and PM_{10} under state standards, and as a non-attainment area for ozone, PM_{10}, and $PM_{2.5}$ under federal standards. While not all of the cumulative projects would occur at the same time as the Proposed Project, it can be assumed that one or more other projects will be in construction or will start operations and cause emissions that are cumulatively significant with those of the Proposed Project's construction. Therefore, the

combined effect of construction emissions from the Proposed Project and other projects' construction and/or operating emissions would be cumulatively significant at various times during construction. As such, the Proposed Project's contribution to cumulative impacts as it relates to air quality would be cumulatively considerable and unavoidable.

Greenhouse gas (GHG) emissions resulting in anthropogenic climate change are considered a global effect, such that the analysis of GHG is—by its very nature—an analysis at a cumulative impacts level. The Proposed Project's impacts on climate change are discussed in detail in Chapter 3 (Section 3.2.3, Air Quality and Greenhouse Gas Emissions). The Proposed Project is expected to have a less than significant impact on the environment through the minor generation of GHG emissions during construction and would only temporarily contribute to the cumulative effect on GHG from other projects included within this cumulative impact analysis for the project area. Furthermore, the Proposed Project's operation would not require the combustion of fossil fuels and would allow the City to access renewable energy sources while reducing the need for internal generation during demand peaks. Accordingly, the Proposed Project's cumulative impact on GHGs is less than significant.

4.2.4 BIOLOGICAL RESOURCES

The Proposed Project would be constructed in an area that is substantially altered by human activity and urbanization. While historically the region was a mix of native habitat and alluvial floodplain along the Santa Ana River watershed, and then predominantly agricultural use, it is now an urban environment with limited open space and connectivity to other open space and native habitat. Cumulatively, the Proposed Project area is disturbed and urbanized.

The Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP), however, has been initiated to conserve remnant habitat within the urban areas and conserve native habitat in adjacent areas to provide long-term conservation for sensitive plants and wildlife and, consequently, local ecosystems and more common, widespread plants and animals. The MSHCP provides a structure to reduce to less than significant potential cumulative impacts from past, present, and reasonably foreseeable projects that may occur in the vicinity of the Proposed Project. As identified in the MSHCP, one project would be the widening of the Van Buren Bridge overcrossing of the Santa Ana River. Impacts associated will be mitigated through the MSHCP. Therefore, as the Proposed Project would also be consistent with the MSHCP and conserve lands, the cumulative effect of these two proposed actions would be less than significant because they comply with the conservation and avoidance and minimization measures identified in the MSHCP Incidental Take Permit. Other projects that could be in development within this region would also comply with the MSHCP or reduce potential to affect consistent with CEQA or federal requirements. While these proposed current or future projects reduce habitat and affect biological resources, consistency with the MSHCP or mitigation to reduce impacts to less than significant support the determination that the cumulative impact of these project would be less than significant. Projects would be mitigated through the MSHCP, Stevenson's kangaroo rat habitat conservation plan (HCP), or other Biological Opinion and federal Endangered Species Act (ESA) permitting.

Historically, western Riverside County has experienced urbanization and conversion of alluvial flood plain to agricultural and, during the last twenty years, more rapid land conversion to residential housing and commercial use. The agricultural use significantly changed and

diminished the biological resources supported in the region. This is evident in the Proposed Project habitat impacts identified in Chapter 3. The Proposed Project would affect primarily disturbed, urban, and non-native habitat even though it is a linear action spanning approximately more than 30 combined miles. While this habitat supports urban adapted wildlife and remnant open space supports less adapted or migratory species, overall the Proposed Project vicinity is disturbed, and biological resources native or endemic to the region have been cumulatively and significantly affected.

Nevertheless, the Proposed Project would be consistent with the MSHCP and provide conservation habitat. Therefore, while the Proposed Project has identified biological resources impacts and would contribute to the ongoing urbanization and land conversion, the Proposed Project's cumulative impact would be less than significant because of the mitigation measures, MSHCP, and existing level of disturbance. Because of this consistency and the proposed mitigation in this document, no additional mitigation for cumulative impact is proposed.

4.2.5 CULTURAL RESOURCES

Analysis of cumulative impacts to cultural resources places project-specific impacts into a broader context that takes into account the full range of impacts on cultural resources by actions taking place over a given space and time. Cumulative impacts may be considered a significant impact to the environment, because cultural resources are non-renewable and the loss of California's heritage may result from the combined, incremental impacts of many actions.

Most ground disturbing activities constitute a potential direct impact to cultural resources. Preparation of the construction site and grading of access roads can directly impact cultural resources. Ground clearing can compact soils, crush artifacts, and alter prehistoric and historic features. Although some construction activities are temporary, damage to cultural resources resulting from these activities is permanent.

When modern industrial structures are introduced into the viewshed, visual impacts may occur to some significant visually sensitive cultural resources, such as sacred sites, historic roads and some historic buildings.

Finally, despite data recovery and other mitigation measures, over time, there would likely be an unquantifiable cumulative loss of data about the past. Similarly, Native Americans may feel a cumulative loss of cultural identity as prehistoric archaeological sites are impacted by the projects described in Tables 4.1-2 and 4.1-3.

Overall, present and foreseeable projects on county and city land in the impact area would probably encompass 1,500 to over 2,000 acres of development, although the extent of ground disturbance within each project footprint would vary, as would the potential for adverse visual impacts on cultural resources. Table 4.2-1 briefly summarizes the ranges of factors within different types of projects that could affect cultural resources.

TABLE 4.2-1. POTENTIAL SOURCES OF IMPACTS TO CULTURAL RESOURCES CAUSED BY DIFFERENT TYPES OF PROJECTS

Project Type	Potential Visual Impact to Cultural Resources	Potential Ground Disturbance Impact
Transmission Projects	Height of towers	Access roads, vegetation clearance, structure placement
Transportation	Possible with bridge expansion; or with new roads	Vegetation clearing, grading, cut and fill
Development (residential, commercial, industrial)	Height of buildings, size of parking lots, acreage of development	Excavation, vegetation clearing, grading,
Pipelines	ROW clearance and width	Trenching, excavation, vegetation clearing, grading

CEQA Guidelines provide specific guidance on how cultural resources should be managed in regard to proposed projects on State or private land in California. Therefore, it is assumed that all projects that could potentially affect cultural resources in the RTRP cumulative impact area would be required to have some level of cultural resource documentation, evaluation, impact assessment, and, if necessary, mitigation. In many cases, potential impacts may be reduced or eliminated by avoiding significant cultural resources through project redesign or by implementing mitigation measures, such as data recovery. Despite mitigation efforts, cumulative impacts to cultural resources could result from the loss of irreplaceable cultural resources from development of over 2,000 acres in the RTRP vicinity.

The projects listed in Tables 4.1-2 and 4.1-3 have already complied, or will need to comply, with CEQA. Cultural resource surveys, evaluations of National Register and California Register eligibility, and other activities have likely been performed for the projects or will be performed in the future. The numbers and types of cultural resources potentially affected by these projects are unknown at this time. However, it is reasonable to assume that the overall density of cultural resources within these 2,000 acres would be comparable to the overall density of cultural resources in the RTRP area. However, construction of either the Proposed Project or its alternative could potentially affect cultural resources in areas covering approximately 91 acres (depending on the length of the ROW). This acreage would be approximately 5 or 6 percent of the present and foreseeable development of 1,500 to 2,000 acres in the surrounding area. In terms of the types of impacts resulting from the projects listed in Tables 4.1-2 and 4.1-3, impacts to cultural resources from transmission lines are more easily avoided by project redesign than impacts caused by development, pipelines, or transportation projects. Therefore, construction of the RTRP would make only a small contribution to the cumulative quantitative loss of cultural resources in the project vicinity and would not be cumulatively considerable.

4.2.6 GEOLOGY AND SOILS

The Proposed Project and cumulative projects are all located in an area that is seismically active. Seismic ground shaking would likely result in similar impacts to all of the projects in the area due to the far-reaching effects of seismic activities. However, it is typical engineering and architectural practice for construction, building, or utility projects to have specific geological conditions addressed during design and construction to minimize potential effects from potential seismic activities.

The Proposed and cumulative projects have or would require disturbing the soil to prepare the site and construct the projects. Cumulatively considerable impacts could occur if the projects were to be constructed at the same time, and erosion occurs during construction that creates sedimentation issues within the local watershed. However, this is unlikely as the sponsors of the cumulative projects would be expected to follow federal, State, and local water quality and storm water prevention standards established by government regulators as well as generally accepted construction practices that would protect adjacent receiving waters from erosion. As explained in Chapter 3, the Proposed Project would result in less than significant impacts to geology and soils in the Proposed Project area. When viewed in the context of other projects, cumulative impacts on geology and soils as a result of the Proposed Project would be less than cumulatively considerable.

4.2.7 HAZARDS AND HAZARDOUS MATERIALS

The geographic extent for the analysis of cumulative impacts related to hazards and hazardous materials, including environmental contamination, is limited to the areas of active construction as well as a 0.25 mile area on either side of the transmission / subtransmission line ROW and a 0.25 mile radius around the substation sites. This is because any potential release of hazardous materials associated with Proposed Project activities or from other sites that could combine with a release from the Proposed Project route would not likely be able to migrate more than 0.25 mile from the location of the actual release.

Construction activities could increase the hazard potential in the study area. However, it is unlikely that the Proposed Project, with the other past, present, and reasonably foreseeable future projects, would contribute to a cumulative hazard or hazardous materials related impact (such as a hazardous material spill or fire). Environmental Protection Elements HAZ-01 through HAZ-03 would ensure that the Proposed Project's construction-related hazards and hazardous materials would be used and stored in a responsible manner meeting all regulatory requirements for such materials. Additionally, the Proposed Project includes construction of high voltage transmission and subtransmission lines (as opposed to lower voltage overhead distribution lines), which have a very low probability and history of causing fires, especially in an urban environment such as that of the Proposed Project. Therefore, impacts would be less than cumulatively considerable (i.e., because the Proposed Project would mitigate its contribution to any potential cumulative impact). Therefore, the cumulative impact of the Proposed Project related to hazards and hazardous materials, in combination with other reasonably foreseeable projects, would be less than significant.

4.2.8 HYDROLOGY AND WATER QUALITY

The geographic extent for the analysis of cumulative impacts related to hydrology and water quality is limited to the watershed. Whenever multiple activities, or activities at multiple sites, that produce similar or complementary changes to environmental parameters or watershed processes take place, the resulting impacts, even if they are individually insignificant, can be cumulatively significant. For example, soil compaction resulting from construction vehicles driving over a natural surface decreases pore space and collapses conduits between pores, reducing soil porosity and permeability, and increasing runoff rates, which causes erosion. Likewise, replacement of natural surfaces with impermeable material allows a high stormwater

runoff ratio and increases both peak flows and total flow volume. Removal of topsoil which leaves mineral soil exposed also increases the rate of stormwater flow, which in turn creates more erosion (Reid 1993). Increased and eroding stormwater flows carry increased sediment load into drainages, which increases turbidity. When these processes are occurring at multiple sites, sediment load can increase turbidity such that water temperature can increase, which in turn decreases the level of dissolved oxygen, which can lead to increased stress or death of aquatic animals.

Polluted stormwater runoff resulting from construction in urbanized areas could introduce petroleum products or pathogens, or otherwise alter water chemistry, including pH levels. Runoff from multiple sources could lead to water quality impacts that exceed water quality objective thresholds. In addition, some introduced chemicals can alter the mobility or chemical composition of chemicals already present, and may contribute to nutrient deficiencies or inhibit the ability of plants to make use of available nutrients. Introduced chemicals may be deposited within streams, and repeated addition of chemicals may cause a cumulative increase in concentration (Reid 1993).

When topography is altered for construction purposes, the change in natural contours can change local and downstream hydrology. Altered hydrology can decrease water availability to wetlands, which would impact wetland plant populations and eventually create upland conditions. Altered hydrology can also modify the timing and amount of storm runoff, which could change base flows, peak flows, and flood seasonality. In response to these changes, flood frequencies could change, stream channels could be aggraded, incised, or widened, and the size distribution of streambed sediment would be modified (Reid 1993). These effects would not be limited to the physical environment, but would also affect wetland and riparian plant populations and aquatic animal populations. Changes in flood frequency and distribution could also affect human populations.

Impacts that are individually less than significant are cumulatively significant if they contribute incrementally to a cumulative impact that is already significant. For example, if a project results in sedimentation impacts that are less than significant on a project-level basis, the cumulative impact from sediment can be significant if the sediment is released into a stream that has not yet recovered from previous sedimentation impacts.

Potential impacts to water resources resulting from construction and operation of the Proposed Project may be less than significant; however, even with integrated environmental protections, they will have a cumulative effect on the watershed in which they occur as they add to the impacts of past and contemporary projects in an urban setting, and as the impacts of future projects are added to them. For this reason, cumulative impacts are considerable and unavoidable. While project-level mitigation measures and best management practices are not sufficient to negate cumulative watershed effects, effectively implemented, they are an important component of a broader watershed-scale approach to recovery from human activities.

4.2.9 LAND USE

The interactions among land uses are affected by the type and proximity of the land uses. For land use, the geographic scope for the analysis of cumulative impacts of land use is defined as the area within one mile of the Proposed Project. Land uses immediately adjacent to the ROW

can be affected by the Proposed Project's implementation. Projects at a greater distance from the ROW would have lesser interaction with the Proposed Project. Land uses greater than one mile from the Proposed Project are highly unlikely to be perceived as interacting with the Proposed Project in a cumulative way as they would not be directly impacted by the construction or the long-term operation of the transmission lines or substations.

As noted in Tables 4.1-1 through 4.1-3, a number of projects are planned within the Proposed Project area and would have the potential to be constructed simultaneously with the Proposed Project. Potential land use impacts resulting from temporary construction activities, including temporary increases in noise and dust, decreased air quality from construction vehicles, odors from construction equipment, safety issues, loss of vegetation, and access issues are analyzed in the corresponding sections of this DEIR (see Sections 3.2.1, Aesthetics; 3.2.3, Air Quality and Greenhouse Gas Emissions; 3.2.4, Biological Resources; 3.2.11, Noise; and 3.2.15, Transportation and Traffic). From an operations and maintenance perspective, the Proposed Project would not be cumulatively considerable because the projects presented in Tables 4.1-1 through 4.1-3 are representative of the ongoing level of development in the region and would be required to be consistent with applicable land use plans, policies, or regulations of the agencies with jurisdiction over the respective projects. Therefore, implementation of the Proposed Project would not result in significant cumulative impacts to land use. Impacts would be less than significant.

Projects would also be required by the Western Riverside County MSHCP to conduct habitat assessments and, if required, conduct surveys and mitigate for impacts to loss of sensitive habitats and species. The project applicants would be required to contribute mitigation fees identified in the MSHCP, in support of continued implementation of the plan. Compliance with the plan reduces impacts to less than cumulatively considerable levels.

4.2.10 MINERAL RESOURCES

A cumulative impact on mineral resources would occur if the Proposed Project contributes to the loss of availability of significant mineral deposits. The Proposed Project is not located in designated mineral resource zones where significant mineral deposits are present or there is a high likelihood for their presence. Therefore, the Proposed Project would not have a cumulatively considerable impact on mineral resources.

4.2.11 NOISE

Cumulative noise impacts could occur from the construction operation and maintenance of the Proposed Project in combination with the cumulative projects. For noise, cumulative projects were examined out to 0.25 mile from the Proposed Project's ROWs; however, construction noise from the Proposed Project would merge with background noise in the existing environment within a few hundred feet of construction activities. Cumulative impacts would likely occur if construction of the Proposed Project and the Jurupa Community Service District (JCSD) groundwater wells and pipeline project (cumulative project #57 above) occurred simultaneously. The northern terminus of a section of the 230 kV line of the Proposed Project is located in the vicinity of the JCSD proposed project, which is currently in design. This is in an area currently consisting of commercial and agricultural land uses. The remaining cumulative projects are either constructed or under construction, or are located outside of the immediate construction

vicinity of the Proposed Project so that cumulative noise impacts from construction are unlikely to occur. Proposed Project impacts would be short-term and localized to the segment under construction; there is limited potential for those impacts to overlap with the impacts of other past, present, or probable future projects, and because of the short duration of any such overlap, cumulative impacts would not be considered cumulatively considerable or significant.

In operation, the Proposed Project's transmission lines, subtransmission lines and substations are not noisy facilities. The hum of corona noise from lines and transformers, electric pump noise, occasional thumps from circuit breakers and similar sounds generally fade into ambient noise and are not noticeable. When viewed within the context of cumulative projects in the project area, cumulative impacts related to operations are not significant. Impacts to the noise resources resulting from construction and operation of the Proposed Project would not be cumulatively considerable.

4.2.12 POPULATION AND HOUSING

Cumulative impacts to population and housing would occur if the Proposed Project would result in the displacement of persons or in a substantial population increase. The Proposed Project would not displace any persons and, thus, would not require the development of replacement housing. The Proposed Project would increase employment in the area during construction, with some contractors likely coming in from outside of the local area to reside most likely in transient accommodations, such as hotels, while working on the Proposed Project. The Proposed Project would not induce substantial population growth in the area. Therefore, no significant impacts to population and housing would occur, and the Proposed Project would not have a cumulatively considerable impact.

4.2.13 PUBLIC SERVICES AND UTILITIES

The geographic scope for the analysis of cumulative impacts on public services and utilities would be western Riverside County. This is defined as the geographic scope or the cumulative impact area because public services within the Proposed Project area are provided by County fire and police services for the unincorporated areas and the cities for the incorporated areas (City of Riverside and City of Norco). Utilities and service systems are provided predominantly by service providers to both unincorporated and incorporated areas of Riverside County.

With respect to public services and utilities cumulative effects can result from individually insignificant, but collectively significant, projects that would affect services and systems in the same geographic area and take place over an extended period of time.

Implementation of the Proposed Project would yield only temporary, less than significant impacts to public services and utilities and would not hinder the ability of service providers to provide reliable fire protection, police protection, and public educational facilities in the Proposed Project area. Furthermore, construction, operation, and maintenance of the Proposed Project would not prohibit Riverside County, the City of Riverside, or the City of Norco from providing reliable water, wastewater, stormwater drainage, or solid waste utilities services in the Proposed Project area. Past, present, and reasonably foreseeable projects include the development of new residential, commercial, and industrial land uses that would occur in the Proposed Project vicinity and may impact public services and utilities in the region. It is likely

that this cumulative development would require the physical alteration of existing, or the construction of new, public service facilities and utilities infrastructure to accommodate the new residential population.

If substantial population growth were to occur prior to the public service and utilities infrastructure improvements proposed by this project, significant effects to existing public facilities and systems could result. Moreover, impacts to public services and systems from the Proposed Project would generally occur only during the projected temporary construction period from Fall 2013 to Fall 2014 and would be less than significant. Additionally, the Proposed Project would be considered an improvement to the existing utility infrastructure within the Proposed Project area once it is constructed by providing more reliable service to City of Riverside customers (see Chapter 1 Purpose and Need). Therefore, the Proposed Project would not have a cumulatively considerable impact on public services or utilities systems in the Proposed Project area.

4.2.14 RECREATION

The interactions among land uses are affected by the type and proximity of the land uses. For recreation, the geographic scope for the analysis of cumulative impacts of land use is defined as the area within one mile of the Proposed Project. Land uses immediately adjacent to the ROW can be affected by the Proposed Project's implementation. Projects at a greater distance from the ROW would have lesser interaction with the Proposed Project. Land uses greater than one mile from the Proposed Project are highly unlikely to be perceived as interacting with the Proposed Project in a cumulative way as they would not be directly impacted by the construction or the long-term operation of the transmission lines or substations.

Implementation of the Proposed Project would not result in a substantial increase in demand for recreational facilities such that substantial physical deterioration of the existing facilities would occur or be accelerated. Implementation of new projects as presented in Tables 4.1-1 through 4.1-3 would include residential developments which may increase demand on existing recreational facilities and/or result in the need for new recreational facilities within the Proposed Project vicinity. However, since the Proposed Project would not have an individual incremental impact on demand for recreational facilities once construction is complete, it would not contribute to cumulative demand associated with other reasonably foreseeable projects (No Impact).

There are a number of other reasonably foreseeable development projects within the vicinity of the Hidden Valley Wildlife Area and Goose Creek Golf Course; however, none of these projects would actually be constructed in the wildlife area or golf course and would therefore not impact operation of these areas. Since there are no reasonably foreseeable projects that would impact the wildlife area and golf course simultaneously with construction of the Proposed Project, short-term impacts associated with the proposed 230 kV transmission line would not be cumulatively considerable and cumulative impacts would be less than significant.

4.2.15 TRANSPORTATION AND TRAFFIC

Cumulative impacts would occur if the Proposed Project and cumulative projects would create impacts resulting in a permanent reduction of capacity (Level of Service) on the area roadways

or result in changes to air traffic routes of airports. The operation of the Proposed Project is not anticipated to generate substantial vehicle traffic as to exceed City of Riverside and Riverside County Level of Service standards. The Proposed Project is not anticipated to require modifications to air traffic routes of Flabob Airport or Riverside Municipal Airport, although consultation with the airport ownership will occur during the design phase to ensure compatibility with airport operations. Therefore, the Proposed Project would not have a cumulatively considerable impact on transportation infrastructure and air traffic patterns.