

Chapter 4  
**Cumulative Impacts**

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## Introduction

The State CEQA Guidelines (Section 15130) require that cumulative impacts be analyzed in an EIR when the resulting impacts are cumulatively considerable and, therefore, potentially significant. Cumulative impacts refer to the combined effect of project impacts with the impacts of other past, present, and reasonably foreseeable future projects. The discussion of cumulative impacts must reflect the severity of the impacts as well as the likelihood of their occurrence. However, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. Furthermore, the discussion should remain practical and reasonable in considering other projects and related cumulatively considerable impacts. According to Section 15355 of the 2001 State CEQA Guidelines:

“Cumulative impacts” refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

- (a) The individual effects may be changes resulting from a single project or a number of separate projects.
- (b) The cumulative impact from several projects is 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. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Furthermore, according to State CEQA Guidelines, Section 15130 (a)(1):

As defined in Section 15355, a “cumulative impact” consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.

In addition, as stated in the State CEQA Guidelines, Section 15064(i)(5), it should be noted that:

The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.

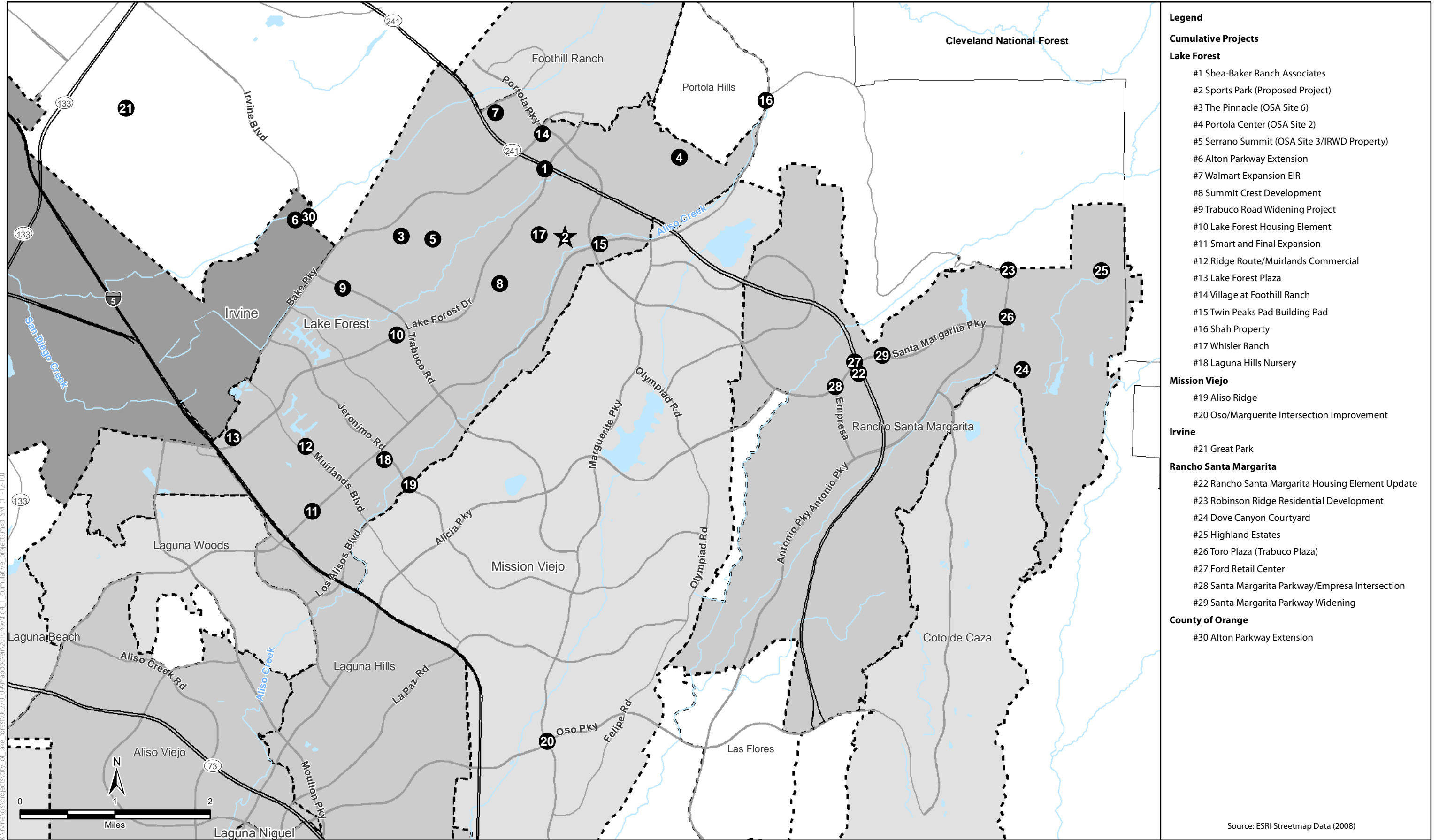
Therefore, the cumulative impacts discussion in an EIR focuses on whether the impacts of the proposed project are cumulatively considerable within the context of combined impacts caused by other past, present, or future projects.

## Past, Present, and Reasonably Foreseeable Future Projects

The cumulative impact analysis considers other projects proposed within the area that have the potential to contribute to cumulatively considerable impacts. After discussions with City staff, it was determined that the projects listed in Table 4-1 and shown on Figure 4-1 are located in the area and may have the potential to contribute to cumulative effects.

**Table 4-1. Projects Potentially Contributing to Cumulative Impacts**

	<b>Project</b>	<b>Description</b>	<b>Location</b>	<b>Status</b>
<b>City of Lake Forest</b>				
1	Shea-Baker Ranch Associates	General Plan Amendment, Zone Change and Development Agreement approved 7/20/10 would allow up to 2,815 new homes and up to 320,000 square foot commercial.	West of Bake Parkway, south of Rancho Parkway, north of Commercentre Drive	Application for TTM and Area Plan expected during 2010
2	Sports Park (The Project)	See Chapter 2, Project Description	North of El Toro Road, west of Portola Parkway, South of SR 241	EIR in preparation
3	The Pinnacle (OSA Site 6)	Development of 85 single-family homes on 24.6 gross acres. Project is consistent with residential designation in the City's General Plan.	Northerly terminus of Peachwood	Application under review.
4	Portola Center (OSA Site 2)	Development of up to 930 homes and 32,000 square feet of commercial use with three public parks on 227.8 gross acres. Project is consistent with the residential, open space, regional open space, and mixed-use designation identified in the City's General Plan/	Generally located at the corner of Glenn Ranch Road and Saddleback Ranch Road	Application submitted September 2008. Application incomplete.
5	Serrano Summit (OSA Site 3/IRWD Property)	Subdivision of 99 acres for residential development and public facilities. Project is consistent with the residential and public facilities overlay identified in the City's General Plan.	20996 Marin	Application under review.
6	Alton Parkway Extension	Extension of Alton Parkway from Irvine Boulevard to Commercentre Drive. The project is identified in the County's MPAH and City's General Plan.	Alton Parkway from Irvine Boulevard to Commercentre Drive	EIR approved September 2007. Completion anticipated for Fall 2011.



- Legend**
- Cumulative Projects**
- Lake Forest**
- #1 Shea-Baker Ranch Associates
  - #2 Sports Park (Proposed Project)
  - #3 The Pinnacle (OSA Site 6)
  - #4 Portola Center (OSA Site 2)
  - #5 Serrano Summit (OSA Site 3/IRWD Property)
  - #6 Alton Parkway Extension
  - #7 Walmart Expansion EIR
  - #8 Summit Crest Development
  - #9 Trabuco Road Widening Project
  - #10 Lake Forest Housing Element
  - #11 Smart and Final Expansion
  - #12 Ridge Route/Muirlands Commercial
  - #13 Lake Forest Plaza
  - #14 Village at Foothill Ranch
  - #15 Twin Peaks Pad Building Pad
  - #16 Shah Property
  - #17 Whisler Ranch
  - #18 Laguna Hills Nursery
- Mission Viejo**
- #19 Aliso Ridge
  - #20 Oso/Marguerite Intersection Improvement
- Irvine**
- #21 Great Park
- Rancho Santa Margarita**
- #22 Rancho Santa Margarita Housing Element Update
  - #23 Robinson Ridge Residential Development
  - #24 Dove Canyon Courtyard
  - #25 Highland Estates
  - #26 Toro Plaza (Trabuco Plaza)
  - #27 Ford Retail Center
  - #28 Santa Margarita Parkway/Empresa Intersection
  - #29 Santa Margarita Parkway Widening
- County of Orange**
- #30 Alton Parkway Extension

Source: ESRI Streetmap Data (2008)



	<b>Project</b>	<b>Description</b>	<b>Location</b>	<b>Status</b>
7	Walmart Expansion EIR	The expansion consists of the addition of 39,173 square feet of commercial/retail uses to the existing 135,009 square foot structure, resulting in a 174,182 square foot Supercenter with a full-service grocery department. Project is consistent with commercial designation in the City's General Plan.	26502 Towne Centre Drive	EIR approved by City Council on appeal, July 7, 2009. Litigation settled, project approved, no building permits issued.
8	Summit Crest Development	Development of 29 single-family homes on 6.1 acre site. Project is consistent with residential designation in the City's General Plan.	Osterman Road at Monterra Road	Under construction. Completion anticipated during 2010.
9	Trabuco Road Widening Project	Widen Trabuco Road between Bake Parkway and Via Del Rio by adding the missing portion of the third lane for southbound Trabuco Road. Would also include bike lanes and raised landscaped median. This project is identified in the County's MPAH and the City's General Plan.	Trabuco Road between Bake Parkway to Via Del Rio.	Construction to begin in late 2010 and completed by Fall 2011.
10	Housing Element Update	Housing Element Update	Citywide	Housing Element adopted September 2010
11	Smart and Final Expansion	Expansion of the existing Smart & Final. Project is consistent with the commercial designation in the City's General Plan.	23631 El Toro Road	Under construction
12	Ridge Route / Muirlands Commercial	Demolition of a 2,552 square foot gas station and construction of two buildings totaling 9,165 square feet. Project is consistent with the commercial and professional office designation in the City's General Plan	22942 Ridge Route	Under construction

	<b>Project</b>	<b>Description</b>	<b>Location</b>	<b>Status</b>
13	Lake Forest Plaza	Façade remodel, demolition of a 7,665 square foot building and construction of two buildings totaling 10,000 square feet. Project is consistent with the commercial designation in the City's General Plan.	23592 Rockfield Boulevard	Under construction
14	Village at Foothill Ranch	129 room hotel; 25,000 square foot office; 4,195 square foot drive-through fast food; 41,489 square foot retail on undeveloped land. Project is consistent with the commercial designation in the City's General Plan.	Southwest corner of Portola/Bake Parkway	Approved, no building permits issued
15	Twin Peaks Pad Building Pad	New 8,400 square foot building on undeveloped pad at an existing shopping center. Project is consistent with the commercial designation in the City's General Plan.	23625 El Toro Road	Approved, no building permits issued
16	Shah Property	Replacement of existing 2,500 square foot electronics testing facility with new 7,000 square foot building. Project is consistent with commercial designation in the City's General Plan.	19121 El Toro Road	Approved October 28, 2010
17	Whisler Ranch	Subdivision of 11.84 acres for 68 single-family homes. Project is consistent with residential designation in the City's General Plan.	Northwestern corner of Osterman Road and Regency Lane	Approved. Grading expected to begin during 2010.
18	Laguna Hills Nursery	37,289 square foot industrial building project and commercial nursery project. Project is consistent with light industrial designation in the City's General Plan.	25290 Jeronimo Road	Application on file, but inactive.
<b>City of Mission Viejo</b>				
19	Aliso Ridge	Development of 144 townhomes. The project is consistent with the residential designation in the city of Mission Viejo's General Plan.	Los Alisos and Jeronimo	Approved by City Council



	<b>Project</b>	<b>Description</b>	<b>Location</b>	<b>Status</b>
20	Oso/Marguerite Intersection Improvement	Adds fourth through lane in each direction on Oso Parkway with dual left turn on each approach. The proposed improvements are consistent with the city of Mission Viejo's General Plan,	Intersection of Oso and Marguerite Parkways	Construction to begin in Fall 2010.
<b>City of Irvine</b>				
21	Great Park	Project to provide active and passive uses, including a 2.5 mile canyon and lake, miles of walking and biking trails, a cultural terrace, sports park, a botanical garden, and a helium observation balloon. More than 3,885 of the 4,700 acres will be dedicated to open space, education, and other public uses. The project is identified in the City's General Plan.	Former El Toro MCAS	Limited recreational attractions have opened.
<b>City of Rancho Santa Margarita</b>				
22	Housing Element Update and Other Minor Technical Amendments	Housing Element Update and Other Minor Technical Amendments. Updates are consistent with existing State law	Citywide	Adopted and Certified.
23	Robinson Ridge Residential Development	Construction of 198 single-family homes and dedication of land for future active and/or passive recreational uses on the Robinson Ridge property, the extension of Plano Trabuco Road, and improvements to Alta Vista Ranch Road. The proposed project also consists of a General Plan Amendment, Rezoning, Annexation, and Development Agreement and Design.	Northeast of the intersection of Plano Trabuco and Trabuco Canyon	Project is in planning stages.

	<b>Project</b>	<b>Description</b>	<b>Location</b>	<b>Status</b>
24	Dove Canyon Courtyard	Conditional Use Permit/Change Plan for existing and expanded use of the Dove Canyon Courtyard Facility for outdoor weddings and other celebratory events. This project is consistent with the Neighborhood Commercial designation in the City of Rancho Santa Margarita's General Plan.	31981 Dove Canyon Road	Mitigated Negative Declaration was adopted in February 2010. Planning Commission continued the item for further research.
25	Highland Estates	Development of eight new homes. This project is consistent with the residential designation in the City of Rancho Santa Margarita's General Plan.	North of Robinson Ranch Road and east of Headlands Drive	Project needs grading and building permits.
26	Toro Plaza (Trabuco Plaza)	Development of a 24,000 square foot retail center. This project is consistent with the Neighborhood Commercial designation in the City of Rancho Santa Margarita's General Plan.	21522 Plano Trabuco Road	Grading plans are pending approval.
27	Ford Retail Center	13,500 square foot retail center. This project is consistent with the Commercial general designation in the City of Rancho Santa Margarita's General Plan.	30031 Santa Margarita Parkway	No activity
28	Santa Margarita Parkway/Empresa Intersection	Addition of a third left turn lane from westbound Empresa to southbound Santa Margarita. The transportation improvements are consistent with City's General Plan and 2008 Regional Transportation Plan.	Intersection of Santa Margarita Parkway and Avenida Empresa	Under construction

	<b>Project</b>	<b>Description</b>	<b>Location</b>	<b>Status</b>
29	Santa Margarita Parkway Widening	Add right turn lane onto northbound on-ramp of the SR-241 and widen the roadway from the onramp to Avenida de Las Flores, and later, as second phase all the way to El Paseo. The transportation improvements are consistent with the general plan and local transportation plans.	Santa Margarita Parkway from northbound on-ramp of SR-241 to Avenida de Las Flores.	Feasibility Analysis has been programmed to be done in 2010-2011.
<b>County of Orange</b>				
30	Alton Parkway Extension	The project will construct a six-lane missing gap roadway between Irvine Boulevard and Commercentre Drive. The project is identified in the County's MPAH and City of Lake Forest's General Plan.	Alton Parkway from Irvine Boulevard to Commercentre Drive	Construction to begin in Fall 2010.
Sources: City of Lake Forest, 2009 Development Services Department Project Status Report; Inter-Jurisdictional Planning Forum, Measure M Growth Management Area Prepared June 3, 2010. City of Lake Forest General Plan, City of Rancho Santa Margarita General Plan, City of Mission Viejo General Plan, County of Orange MPAH, City of Irvine General Plan, and SCAG 2008 Regional Transportation Plan.				

## Cumulative Impact Analysis

Cumulative impact discussions for each environmental element are provided below. Where appropriate, mitigation measures for cumulative effects are also identified.

### Aesthetics

There are several development projects that are proposed in the City and surrounding vicinity. The proposed project including projects 1, 3, 4, 5, 6, 30 listed in Table 4-1 have the potential to result in major alteration of landforms, loss of mature vegetation, and loss of open space.

These future planned projects could noticeably alter existing visual character and result in a net loss of existing visual quality without the incorporation of landscape design measures. In order to minimize potential visual impacts, future development would continue to be guided by local general plans, municipal codes, and local design review procedures, which would continue to protect the visual character of the area represented by architectural features and elements, visual compatibility, view corridors, and scenic resources and vistas. The majority of the projects listed in Table 4-1, with the exception of Project 23, are consistent with the applicable general plans and/or applicable transportation plans. These projects would be required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts associated with the general plan amendment and identification of mitigation measures in the event significant environmental impacts are identified.

The proposed project and other future projects could result in the creation of new sources of light or glare that could affect day or nighttime views. Future development of vacant and underutilized land could increase light and glare visible from public viewing areas or from scenic corridors. In addition, many of these projects would be adjacent to residential neighborhoods that could be sensitive to increases in light and glare. It is assumed that through the visual impact analysis and design review processes conducted for these future projects; lighting would also be placed to ensure that it illuminates only the intended areas and does not penetrate into residential communities. However, where development would occur in areas that do not contain substantial existing structures or lighting, the combined effect of related project development would result in changes to the ambient condition. Projects 1, 3, 4, 5, 6, 17, 21, 30 listed in Table 4-1 would occur in areas that do not contain substantial structures or lighting, which could result in a cumulative considerable contribution to this impact. The project's contribution to cumulative impacts associated with the substantial creation of light or glare, such that it adversely affects nighttime views in the area, would be considered significant. When combined with past, present, and reasonably foreseeable future projects, the aesthetic impacts of the proposed project would be cumulatively considerable.

## Air Quality

The geographic context for the air quality cumulative impacts is SRA 19 (Source Area Receptor 19 in Mission Viejo) of the South Coast Air Basin, which covers Saddleback Valley. The analysis accounts for all anticipated growth within the geographic area, including the development of related projects provided in Table 4-1. SCAQMD's approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and state Clean Air Acts. The SCAQMD recommends that the same thresholds be used for both project-specific and cumulative impacts for criteria pollutants and air toxics.

As previously discussed in Section 3.2, Air Quality, the proposed project would be consistent with the AQMP, which is intended to bring the Basin into attainment for all criteria pollutants.<sup>1</sup> Cumulative development is not expected to result in a significant impact in terms of conflicting with, or obstructing implementation the AQMP. This projected growth is considered to be consistent with the AQMP and would not interfere with attainment because this growth is included in the projections utilized in the formulation of the AQMP. Consequently, as long as growth in the Basin is consistent within the projections for growth identified in the Growth Management Chapter of the Regional Comprehensive Plan and Guide, implementation of the AQMP will not be obstructed by such growth. As growth in the Basin has not exceeded these projections, this is considered to be a less-than-significant cumulative impact. Additionally, growth under the proposed project would not impair implementation of the AQMP. Therefore, the cumulative impact of the proposed project regarding potential conflicts with the AQMP would be less than significant.

However, the mass regional emissions calculated for the proposed project and presented earlier in Tables 3.2-9 and 3.2-10 (mitigated construction emissions) are greater than the applicable SCAQMD

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<sup>1</sup> CEQA Guidelines Section 15064(h)(3) states "A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g. water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency."

daily significance thresholds, which are designed to assist the region in attaining the applicable state and national ambient air quality standards. The proposed project would comply with the SCAQMD's Rule 403 (fugitive dust control) during construction, as well as all other adopted AQMP emissions control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on all projects Basin-wide, which would include all related projects. Nevertheless, cumulative impacts with respect to construction criteria pollutant emissions would be significant and unavoidable, and therefore would be cumulatively considerable.

Cumulative development would not have a significant impact in terms of the creation of objectionable odors affecting a substantial number of people. Related projects projected to be built in include residential, retail, office, commercial, public facilities, and transportation-related improvements. Odors resulting from the construction of these projects are not likely to affect a substantial number of people, due to the fact that construction activities do not usually emit offensive odors. In addition, standard construction requirements would be imposed on the developers/applicants associated with these construction projects that would address odors from construction activities. The odor impacts resulting from operation of these projects are not expected to affect a substantial amount of people, as activities typically associated with these uses do not emit offensive odors and solid waste from these projects would be stored in special areas and in containers as required by City and Health Department regulations. Therefore, this cumulative impact would be less than significant. The cumulative impact of the proposed project is also considered to be less than significant.

The majority of the projects listed in Table 4-1, with the exception of Project 23, are consistent with the applicable general plans and/or applicable transportation plans. These projects would be required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts associated with the general plan amendment and identification of mitigation measures in the event significant environmental impacts are identified.

## Biological Resources

The geographical context for the analysis of cumulative biological impact includes the area covered by the Natural Communities Conservation Plan and Habitat Conservation Plan (NCCP/HCP) – County of Orange Central and Coastal Subregion. The primary effects of the proposed project and the other development projects, specifically some of the larger project identified in Table 4-1 such as projects 1, 4, 5, 6, 30 (see Table 4-1) could result in the cumulative direct loss of open space, which would permanently remove plant and wildlife resources, which could affect special status species, nesting habitat for resident and migratory avian species, wetlands, sensitive natural plant communities, wildlife movement, and/or local policies or ordinances protecting biological resources.

The proposed project would not conflict with the adopted NCCP/HCP for the region, and therefore, would not result in cumulatively considerable impacts. All potential impacts are to covered species and habitats which have been addressed by the NCCP/HCP; and pursuant to the provisions and assurances contained in the NCCP/HCP, the loss of biological resources from the project site were clearly foreseeable when the plan was adopted. As previously mentioned, although not covered by the NCCP/HCP, impacts to paniculate tarplant, southern California black walnut, and Species of

Special Concern with potential to occur on-site would not have significant adverse effects to the regional populations of these species.

Projects sites 1, 3, 4, 5, 6, and 30 (see Table 4-1) including the proposed project site are known to contain areas that would be considered either wetlands or other aquatic habitats (i.e., stream channels) and implementation of those projects would thus affect waters of the United States (including wetlands), which are regulated by Sections 401 and 404 of the Clean Water Act, as well as Section 1600 of the California Fish and Game Code. These regulations ensure that no net impact to waters of the United States occurs through the proper application of mitigation measures and other conditions established through the Section 401 and 404 permitting processes and, with respect to state regulated waters, through the process of obtaining a Streambed Alteration Agreement as detailed in Section 1600 of the California Fish and Game Code. Therefore, on a cumulative basis, impacts would be considered less than significant. Similarly, the proposed project's contribution to those impacts would also be less than significant as a result of the project-specific permitting process.

The Central and Coastal subregion of the NCCP/HCP supports a number of wildlife movement corridors (California Wilderness Coalition. 2000 in City of Lake Forest 2008). While the area is becoming increasingly urbanized, which could restrict wildlife movement, the NCCP/HCP, and the reserve areas established therein, were developed with several goals that specifically support wildlife movement, including the following:

- Conserve large habitat blocks;
- Conserve habitat diversity; and
- Keep conservation areas contiguous and connected

Project sites 4, 6, 23, and 30 are adjacent to Whiting Ranch Wilderness Park or to the Regional Park/Open Space system and have the potential to support wildlife movement. Therefore development on those sites would have the potential to block the movement of wildlife across them. The project site and surrounding conditions are not conducive for more than local wildlife movement. Habitat within the immediate project study area is surrounded by development to the northwest, east, and southwest. Areas north and northeast of the study area are currently graded. West and southeast of the project study area is undeveloped land, which includes a portion of Aliso Creek. As a result of the surrounding conditions, the project study area does not serve as a component of a significant regional wildlife movement corridor, nor does it serve as a linkage between two or more larger habitat areas. The continuation of local movement would be facilitated by implementation of OSA program EIR mitigation measure BIO-5. Thus, the proposed project's contribution to this cumulative impact is considered less than significant. The proposed project and other identified cumulative projects would be subject to complying with federal, state, and local policies and/or ordinances protecting biological resources. It is assumed that as part of the development review and entitlement process the City of Lake Forest and adjacent jurisdictions would ensure compliance with any and all applicable local policies and/or ordinances since they were developed for the primary purpose of providing a framework for future development..

The majority of the projects listed in Table 4-1, with the exception of Project 23, are consistent with the applicable general plans and/or applicable transportation plans. These projects would be required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts associated with the general plan amendment and identification of mitigation measures in the event significant environmental impacts are identified. As previously

discussed, the proposed project is consistent and will be required to comply with all local General Plan policies protecting biological resources. Thus, the proposed project's contribution to this cumulative impact is less than significant.

## Cultural Resources

No cumulative effects on cultural resources have been identified. Cultural resources are generally not considered subject to cumulative effects because they are either individually directly or indirectly affected in a way that changes the significance of the property, or they are not affected in a way that changes the significance of the property.

Development in the City of Lake Forest and adjacent jurisdictions would require grading and excavation that could potentially affect archaeological and paleontological resources, including human remains. It is possible that the project could cause a significant impact on historic properties and unidentified buried archaeological resources, including buried human remains, through possible ground disturbance associated with construction activities. CEQA requirements for protecting archaeological resources and CEQA and Health Code requirements related to the treatment of human remains are applicable to development in the City of Lake Forest and adjacent jurisdictions, as are local cultural resource protection provisions. If subsurface cultural resources are protected upon discovery as required by law, impacts to those resources would be less than significant. Further, with the mitigation measures that would be imposed and enforced throughout construction of the proposed project, the contribution of the proposed project to the cumulative destruction of subsurface cultural resources throughout Lake Forest and the region would not be cumulatively considerable.

## Geology and Soils

Development in the seismically active region in which the City is located has put people and structures at risk from a wide range of earthquake-related effects, including seismic ground shaking and seismically induced landslides. The existing level of seismic risk exposure represents a significant cumulative impact. However, as discussed above, various mechanisms are in place to reduce risks at the project level, including project-specific hazards evaluation processes mandated by the Seismic Hazards Mapping Act, as well as the seismic design standards promulgated by the City's building code. Although there would be some residual level of risk because seismic hazards cannot be entirely avoided, the proposed project would not contribute considerably to the existing cumulative impact related to seismic hazards.

Potentially adverse environmental effects associated with seismic hazards, as well as those associated with expansive soils, topographic alteration, and erosion, usually are site-specific and generally do not combine with similar effects that could occur with other projects in the City. Implementation of the provisions of the City's and California's Building Code, the National Pollution Discharge Elimination System permit requirements, and the General Plan Safety Policies would ensure that potential site-specific geotechnical conditions would be addressed fully in the design of the project and that potential impacts would be maintained at less-than-significant levels. The proposed project would not contribute to adverse soils, geologic, or seismic cumulative impacts effects.

The majority of the projects listed in Table 4-1, with the exception of Project 23, are consistent with the applicable general plans and/or applicable transportation plans. These projects would be

required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts associated with the general plan amendment and identification of mitigation measures in the event significant environmental impacts are identified. As previously discussed, the proposed project is consistent and will be required to comply with all local General Plan policies protecting seismic and geologic hazards. Thus, the proposed project's contribution to this cumulative impact is less than significant.

## Greenhouse Gas Emissions

With regard to climate change and proposed project-related GHG emissions, the amounts of construction- and operations-period GHG emissions that would result from development of the proposed project have been quantified and are presented in Section 3.6. The proposed project's annual GHG emissions are estimated to be 7,151 metric tons CO<sub>2</sub>e under Grading Plan 1, or 7,240 metric tons CO<sub>2</sub>e under Grading Plan 2, and represent emissions from construction and operation activity. Implementation of Mitigation Measures GHG-1 through GHG-10 would reduce the incremental GHG emissions associated with implementation of the proposed project, although the precise degree of the reduction is not quantifiable and therefore not known. No additional feasible mitigation measures exist. The City, therefore, conservatively assumes that the reductions would not be to a level less than cumulatively significant. Even with these mitigation measures, implementation of the proposed project will continue to contribute to the global climate change impacts of development. Therefore, the cumulatively considerable incremental contribution to the worldwide increase in GHG emissions represented by development that is anticipated to occur with implementation of the proposed project is considered significant and unavoidable.

## Hazards and Hazardous Materials

The proposed project would not have a cumulatively considerable contribution to hazards and hazardous materials. The proposed project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The proposed project would therefore not create a significant hazard to the public or the environment. While development of sites that may contain hazardous materials may occur with some of the cumulative projects identified in Table 4-1 (i.e., Orange County Great Park at former MCAS El Toro), environmental effects from the release of hazardous materials would be fairly localized and would not result in cumulative effects. Additionally, projects identified on the cumulative list would undergo investigations similar to the proposed project in the OSA and would implement mitigation measures to remediate or otherwise avoid release of hazardous materials into the environment. Past, present, and reasonably foreseeable future development would be required to follow existing regulations regarding the investigation of the use of hazardous materials and any known or unknown hazardous materials releases. The proposed project's incremental contribution to cumulative impacts from hazards and hazardous materials, when combined with past, present, and reasonable foreseeable projects, would be less than cumulatively considerable.

## Hydrology and Water Quality

The project site primarily drains into Aliso Creek Watershed via Glass Creek; however, a portion of it also drains into the San Diego Creek Watershed. While Aliso Creek does not have any designated TMDLs, it does have impairments for bacteria, phosphorous and toxicity. San Diego Creek does have designated TMDLs for pesticides, nutrients and sedimentation. Primary causes of impairment



include urban runoff and storm sewers, and unknown nonpoint sources. Long-term impacts to water quality could result from parking lot and roadway runoff containing heavy metals, debris, oils and grease from vehicles, as well as potential fertilizers and pesticides applied to landscaping. Heavy metals and oil and grease concentrations will likely increase, as well as fecal coliforms and other pathogen indicator concentrations compared to undeveloped runoff.

Buildout of the proposed project and other identified projects within the watersheds is subject to compliance with the Basin Plans, DAMP, NPDES Permits, Orange County codes, pertinent city codes, and the Orange County Groundwater Management Plan. Potential adoption of draft TMDLs may also result in additional protection requirements. Compliance with these plans and regulations would help minimize impacts to surface water runoff, groundwater recharge, groundwater elevations, and water quality impacts.

The proposed project would permanently increase the area of paved, impermeable surfaces in the project site. This increase in impervious area would result in increased pollutant build up and wash-off; a greater volume and rate of stormwater runoff could cause or contribute to erosion and offsite pollutant transport. The proposed project would be required to implement post-construction stormwater quality BMPs identified in the WQMP prepared in compliance with the NPDES Permit. These BMPs designed to handle project runoff, in addition to the implementation of Mitigation Measures HWQ-1 through HWQ-6, would sufficiently handle offsite runoff that may occur and would remove the potential for significant cumulative impacts related to surface runoff and water quality.

The proposed project, in conjunction with other identified projects, would contribute to an increase in impervious surfaces in the project area, which would result in an increase in stormwater runoff. Existing drainage culverts may not be able to accommodate this additional runoff. The size and location of the floodplain associated with local creeks may change if drainage accommodations are not made. The increase in impervious surface over time could also increase the frequency of flooding. County and applicable City regulations for FEMA compliance would minimize or prevent any significant increase in flood elevation. Where increased runoff could contribute to stream bank erosion, streambed siltation, or otherwise degrade water quality and habitat, the existing NPDES permit would help prevent discharge of stormwater at rates exceeding existing conditions. Each project would be required to evaluate specific impacts on local hydrology and flooding and to implement measures to address impacts, if identified. The project will be designed to minimize runoff below existing levels (in accordance with the OSA PEIR Mitigation Measure MM 3.8-5), and will include a WQMP that will entail a series of retention basins to retain first flush of storm events to minimize potential flooding downstream and to minimize surface water pollutants throughout the watershed. Therefore, the proposed project, when combined with other projects, would not contribute to significant cumulative impacts related to hydrology and flooding.

Additional buildout within the San Diego Creek and Aliso Creek watersheds could contribute pollutants to receiving waterbodies with stormwater concentrations that might violate water quality standards, waste discharge requirements, or result in an increase in any pollutant for which a water body is listed as impaired [303(d)] list. As mentioned earlier, both San Diego Creek and Aliso Creek are already listed as impaired by certain pollutants. TMDLs have been developed for some pollutants of San Diego Creek; however, no TMDLs have been developed for Aliso Creek or for certain causes of impairment for San Diego Creek. Compliance with the NPDES Permits, DAMP, County and City codes, Groundwater Management Plan, and the Basin Plans would help reduce potential water quality impacts to the maximum extent practicable; however, in the cases of certain constituents, such as pesticides, reducing the contribution of certain pollutants to the maximum

extent practicable may still result in the exceedance of TMDLs or otherwise contribute to the degradation of water quality.

The OSA Program EIR, concluded that buildout of the OSA, would result in significant and unavoidable cumulative impacts to water quality. However, the OSA did not have detail regarding potential mitigation measures, which resulted in the City conservatively concluding that water quality impacts would be significant and unavoidable. Given the current project level of detail, including the proposed drainage plan and use of detention basins, the project's incremental contribution to water quality impacts would not be cumulatively considerable .

As discussed previously, compliance with the DAMP and incorporation of water quality BMPs, to the maximum extent practicable (MEP), will result in compliance with general waste discharge requirements and the NPDES permit. Meeting NPDES and DAMP requirements include implementation of BMPs (structural and nonstructural) best suited to maximized reduction of the pollutants of concern. Implementation of appropriate BMPs, such as biofilters or a nutrient management program, as well as design guidelines and ordinances encouraging use of native plant species and other minimal maintenance plants in landscaping would reduce potential nutrient impacts from the proposed project on San Diego Creek and Aliso Creek. Non-Structural BMPs to be implemented as part of the project include conducting regular parking lot sweeping to handle metals, oil & grease and the implementation of the City's IPM policy. BMPs listed in the DAMP are considered "likely to have significant impact" beneficial to water quality for targeted pollutants that are of concern within the watershed. Other BMPs can be used if shown to be better suited to mitigating potential pollutant impacts.

Structural BMPs include the creation of the detention basins to address pollutants of concerns. The City proposes to collect stormwater in water quality detention facilities prior to discharge into Glass Creek to minimize downstream flooding, as well as for water quality purposes associated with nitrate and phosphorus impairments. The project will be designed to minimize runoff below existing levels (in accordance with the OSA PEIR Mitigation Measure MM 3.8-5), and will include a series of retention basins to retain first flush of storm events to minimize potential flooding downstream and to minimize surface water pollutants throughout the watershed. The design of the water quality detention facilities will attempt to mimic the current hydrology and avoid one large input to Glass Creek, and account for the hydrological and biological functions of Glass Creek, to minimize potential impacts on the onsite and offsite hydrology. The final design of the water quality detention facilities is currently in process, and the specific features to be incorporated into the drainage site design will be subject to review and approval by the City's Director of Public Works/City Engineer. The design will be developed in coordination with the RWQCB, USACE, and CDFG as necessary to ensure the site in compliance with the CWA 401 and 404 permits and CDFG Streambed Alteration Agreement and to ensure runoff is controlled and downstream flooding does not result. The City or its contractor will develop and implement the WQMP in accordance with applicable permits. Cumulative water quality impacts to both San Diego Creek and Aliso Creek as a result of the proposed project are anticipated to be less than significant with the incorporation of mitigation measures.

## Land Use and Planning

The majority of the projects listed in Table 4-1, with the exception of Project 23, are consistent with the applicable general plans and/or applicable transportation plans. These projects would be required to undergo environmental review under CEQA, which would include analyzing the potential environmental impacts associated with the general plan amendment and identification of

mitigation measures in the event significant environmental impacts are identified. It is anticipated that development of future projects and general regional growth would be reviewed for consistency with adopted and applicable land use plans and policies, in accordance with the requirements of CEQA, the state Zoning and Planning Law, and the state Subdivision Map Act, all of which require findings of plan and policy consistency prior to approval of entitlements for development. For this reason, cumulative impacts associated with inconsistency of future development with adopted plans and policies would be less than significant.

The proposed project, including the GPA, is consistent with the General Plan land use designation and Zoning Code. The cumulative projects would not substantially conflict with adjacent land uses, or create impacts to such a magnitude that the conflict would preclude the use of the land as it was intended by the General Plan. The proposed project would not conflict with the existing NCCP/HCP, and therefore would not result in cumulative impact regarding the existing policies and provisions of the NCCP/HCP. When combined with past, present, and reasonably foreseeable future projects, the land use and planning impacts of the proposed project would not be cumulatively considerable.

## Mineral Resources

Statewide, the current and projected need for aggregate resources exceeds the available supply, particularly in Orange County, which has been ranked by the California Geological Survey as having one of the state's greatest needs for this resource (California Geological Survey 2006: 3). The situation in Orange County is typical of urban and urbanizing areas, where development (comprising numerous projects over a period of decades) has created a need for aggregate resources but has also caused local mineral resources to become increasingly unavailable, either because development has occurred on minable parcels or has resulted in nearby changes in land use that are incompatible with mining. The existing shortfall represents a significant cumulative impact.

The loss of the ability to extract known aggregate resources would contribute to the existing shortage. The Rados parcel is presumed to contain aggregate resources based on its MRZ-2 designation. Total reserves on the Rados parcel are unknown but are assumed to be substantial because of the parcel's size (approximately 13 acres and approximately 405,000 cubic yards of material that would need to be exported to accommodate the proposed park facilities); the loss of aggregate resource availability that would result if this parcel becomes unavailable for mining is therefore determined to be cumulatively considerable. As discussed above for the project-specific impact, the only mitigation for loss of availability of the aggregate resources on the Rados parcel would be to mine the parcel (prior to or during development) or to preserve it in a minable condition for future extraction. Since it is unknown whether this parcel would be mined in the future and mining of Rados Parcel is not proposed as part of this project; the project's contribution to the existing cumulative impact with regard to shortage of aggregate resources is therefore also considered unavoidable.

## Noise

The geographic context for the analysis of cumulative noise impacts resulting from implementation of the proposed project are those projects that are adjacent to the project site since cumulative noise impacts would generally be limited to impacts within the immediate vicinity of the project area. Noise by definition is a localized phenomenon, and drastically reduces in magnitude as distance from the source increases. No other cumulative projects are located in the immediate vicinity that

could generate cumulatively considerable noise and affect the same sensitive receptors. Only sensitive receptors located in close proximity to each construction site would be potentially impacted by each development project listed in Table 4-1. Therefore, it is assumed for the purposes of this analysis that future development would result in a less-than-significant construction noise cumulative impacts. The exception includes cumulative noise impacts from increased traffic. As discussed in this chapter, the noise analysis considered traffic-related increases in noise levels, which included cumulative projects. As analyzed in this chapter, noise impacts were determined to be less than significant for traffic-related increases in noise projected to occur by 2015 (project build-out). Therefore, the project would not generate cumulatively considerable noise impacts. It should be noted that traffic noise has been classified as a significant and unavoidable cumulative impact as a result of buildout under the General Plan and OSA.

## Public Services and Utilities

As additional development occurs in the City and County, there may be an overall increase in the demand for law enforcement and fire protection services. However, increases in demand are routinely assessed by fire and law enforcement agencies as part of the budgeting processes, and law enforcement and fire protection services in the County are anticipated to be adequate to accommodate future growth in the County. This is partially accomplished through collection of development impact fees. Cumulative impacts on police and fire services in the County would be considered less than significant; therefore, impacts from the proposed project are not cumulatively considerable.

Development of the proposed project as well as other future development project within IRWD's service area would demand additional quantities of water. Because IRWD would have water supplies for projected growth through 2025, cumulative impacts to water supply would be considered less than significant (City of Lake Forest 2008). The project demand is therefore considered to be less than cumulatively considerable.

Development of the proposed project in conjunction with other cumulative projects within the IRWD service area would generate additional quantities of wastewater, depending on net increases in population, square footage, and intensification of uses. These projects would contribute to the overall regional demand for wastewater treatment service. The wastewater for this project and other cumulative projects would likely go to the Los Alisos Water Reclamation Plant (LAWRP) with only a portion going to Michelson Water Reclamation Plant (MWRP) (City of Lake Forest 2008). According to the OSA Program EIR, the LAWRP currently has sufficient capacity to treat the wastewater from the OSA Project, which includes development of the proposed project (City of Lake Forest 2008). Cumulative growth in the IRWD service area could result in the need for additional conveyance infrastructure, and due to the partially developed nature of the service area, it is expected that such expansion of conveyance infrastructure could result in significant cumulative environmental effects. Although the proposed project would require the expansion of existing infrastructure in order to establish connections to existing conveyance infrastructure, there would be adequate capacity in the existing IRWD water treatment plants to serve future flows (City of Lake Forest 2008). The contribution of the proposed project would not be cumulatively considerable, and the project's cumulative impact would be less than significant.

## Paleontological Resources

The project could result in a significant contribution to the cumulative loss of paleontological resources. Because much of the City of Lake Forest and surrounding areas are considered sensitive for paleontological resources, many of the cumulative projects could also result in significant impacts to paleontology. The combination of past, present, and reasonably foreseeable future projects, along with the proposed project, would result in significant cumulative impacts. However, the project's contribution would be reduced consistent with the current standard of care by Mitigation Measures Paleo-1 through Paleo-4 in Section 3.13. Therefore, the proposed project would not represent a cumulatively considerable impact with these measures in place.

## Transportation/Traffic

The traffic analysis for the proposed project is based on future traffic conditions in the year 2015, which accounts for future development in the project area, both with and without the proposed project. As a result, the discussion contained in the impact analysis for the proposed project constitutes the operational cumulative analysis for the project. The traffic analysis conducted for the proposed project included a comprehensive assessment of existing and future roadway conditions throughout the project area. As identified above, the proposed project would result in cumulatively considerable impacts to the intersection of Rancho Parkway and Lake Forest Drive. Implementation of Mitigation Measure TC-2 reduces the project impacts, as well as the cumulatively considerable impacts, to less-than-significant levels. According to the Austin-Foust Traffic Study, three additional intersections (Lake Forest Drive and Portola Parkway, Los Alisos and Muirlands, and El Toro and Avenida Carlota) are forecast to operate deficiently under the No Project and With Project. However, impacts to these intersections are not attributable to the proposed project and will be improved with implementation of the traffic improvements identified in the LFTM Program. Therefore, the proposed project is not anticipated to contribute considerably to permanent cumulative impacts that affect transportation and circulation in the project study area.

Cumulative traffic impacts beyond 2015 are addressed in the OSA PEIR. The cumulative traffic analysis for the OSA PEIR evaluated the 2030 Project Scenario (which included existing conditions, plus cumulative projects, plus the OSA, plus MPAH funded and unfunded improvements) including past, present and reasonably foreseeable cumulative projects within the City and nearby jurisdictions identified to occur within the vicinity of the OSA project site, in addition to General Plan buildout conditions identified to year 2030 as well as the OSA buildout.

