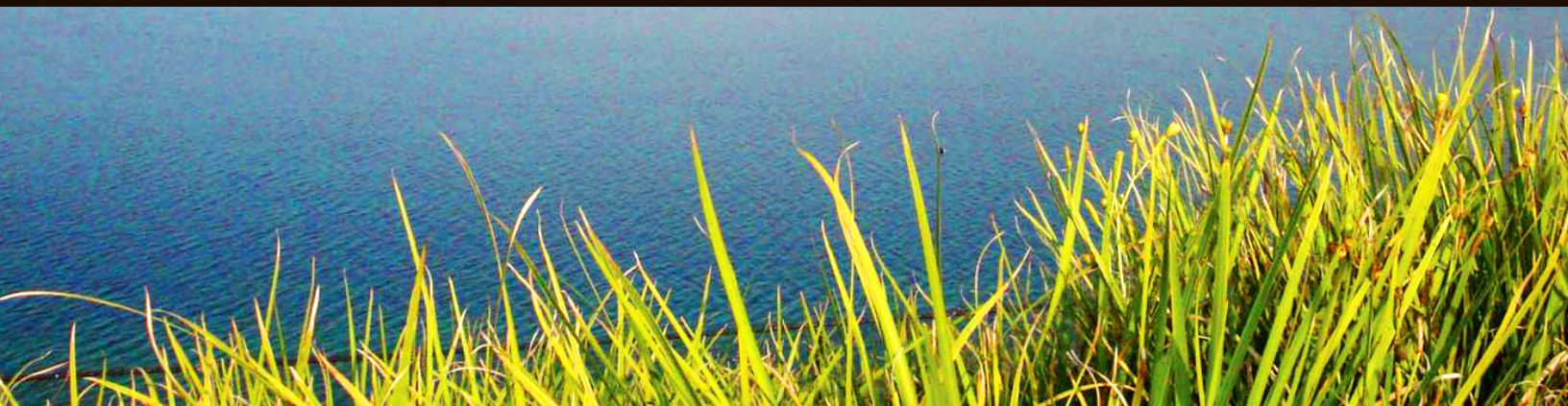




City of Mission Viejo

MISSION VIEJO GENERAL PLAN PROGRAM EIR

March 2013





Environmental Impact Report

Mission Viejo General Plan

Program EIR

State Clearinghouse # 2012031065

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EXECUTIVE SUMMARY

ES.1 Project Summary

The project analyzed in this Program Environmental Impact Report (Program EIR) is the adoption and implementation of updates to three elements of the Mission Viejo General Plan: the Land Use Element, the Conservation/Open Space Element, and the Circulation Element. This Program EIR provides a program-level assessment of the general environmental impacts resulting from the updates to and implementation of policies established within the General Plan, in addition to any impacts related to preparation and implementation of the proposed Sustainability Action Plan.

California state law requires each city to adopt a comprehensive, long-term General Plan to guide the physical development of the incorporated city and any land outside the city boundaries that bears a relationship to its planning activities. A General Plan clarifies and articulates a city's intentions with respect to the expectations of residents and businesses, and their long-term vision for the community. Through its General Plan, a City outlines its goals, policies, and standards to the public and private sectors for meeting community objectives. Since the General Plan is the constitution for all future development, any decision by a City affecting land use and development must be consistent with the General Plan. An action, program, or project would be considered consistent with the General Plan if, considering all of its aspects, it would further the objectives and policies set forth within the General Plan and not obstruct their attainment.

Subsequent to incorporation of Mission Viejo as a city in 1988, the first General Plan for the City of Mission Viejo (City) was adopted on October 8, 1990, along with its accompanying EIR. The General Plan was prepared to address issues related to future growth and development in Mission Viejo, while providing a general long-term approach for maintaining and improving the quality of life in the community. In accordance with state law, the City initiated a comprehensive update to the General Plan in 2007 to provide an update to five of its elements: Land Use, Noise, Conservation/Open Space, Circulation, and Public Safety. The Housing Element was not part of the update since it was updated through a separate process.

Subsequent to consultation with the California Office of the Attorney General regarding compliance with Assembly Bill (AB) 32 and environmental documentation for the comprehensive General Plan update, it was determined that an EIR would be required for the proposed update to the Land Use, Conservation/Open Space, and Circulation elements, and the existing Negative Declaration would be used as environmental documentation for the updated Noise and Public Safety elements. The Mission Viejo City Council subsequently adopted the updated Noise and Public Safety elements on February 2, 2009.



ES.2 Project Location

The City of Mission Viejo is located in the south-central portion of Orange County in the Saddleback Valley, 23 miles southeast of Anaheim and 43 miles southeast of downtown Los Angeles (**Figure 2-1, Regional Location** and **Figure 2-2, Project Vicinity**). The City of Mission Viejo is located east of the Cities of Laguna Hills and Laguna Niguel, north of the City of San Juan Capistrano, west of the City of Rancho Santa Margarita and unincorporated communities of Ladera Ranch and Coto de Caza, and south of the City of Lake Forest. The City of Mission Viejo and the surrounding cities are suburban in nature with mainly residential uses. Mission Viejo is located approximately 8 miles northeast of the Pacific Ocean, 6 miles west of the Santa Ana Mountains, and approximately 10 miles east of the Crystal Cove State Park.

The City proper encompasses the corporate city limits with a total area of 17 square miles. The City is connected to its neighboring cities via surface streets as well as Interstate 5 (I-5), which borders the City on the west, separating it from the Cities of Laguna Hills and Laguna Niguel.

ES.3 Potential Areas of Controversy

The State California Environmental Quality Act (CEQA) Guidelines require that potential areas of controversy be identified in the Executive Summary. Through the scoping process and two Scoping Meetings, no areas of controversy were identified and no significant issues were raised.

ES.4 Issues to be Resolved

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain a discussion of issues to be resolved. Issues to be resolved in this EIR include the decision among alternatives, and deciding how to feasibly mitigate significant environmental impacts. Since no impacts remain significant and unavoidable in light of the proposed mitigation measures, a decision over whether the benefits of the project override those environmental impacts that cannot be feasibly avoided or mitigated to less than significant does not become an issue. Therefore, adopting a Statement of Overriding Considerations would not be required for this project.

ES.5 Alternatives Analyzed

CEQA Guidelines Section 15126.6(a) states that an EIR must address “a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives.” As described in Chapter 5.0, three project alternatives were identified during the scoping process and analyzed for relative impacts as compared to the proposed project:

- No Project/Existing General Plan Alternative
- Land Use Alternative, Re-Zoning Existing Undeveloped Parcels
- Circulation Alternative, Expanding Bike Paths



Analysis of these project alternatives is summarized in **Table ES-1**. Impact levels identified are “Greater,” “Less,” or “Similar” based on their comparison to the project.

Table ES-1
Comparison of Impacts of Alternatives to the Project

Environmental Impact	No Project/Existing General Plan Alternative	Land Use Alternative, Re-Zoning Existing Undeveloped Parcels	Circulation Alternative, Expanding Bike Paths
Air Quality	Greater	Lesser	Lesser
Greenhouse Gas Emissions	Greater	Lesser	Lesser
Land Use and Planning	Similar	Similar	Similar
Noise	Similar	Lesser	Lesser
Transportation and Circulation	Similar	Lesser	Lesser
Conclusion	Environmentally Inferior	Environmentally Superior	Environmentally Superior

As discussed in Chapter 5.0, Land Use and Circulation Alternatives were both identified to be environmentally superior to the project.

ES.6 Summary of Environmental Impacts

Based on the analysis throughout Chapter 3.0 of this Program EIR, implementation of the Mission Viejo General Plan update would result in environmental impacts under one of the following categories: significant and unavoidable; significant but mitigated to a level less than significant; or less than significant without mitigation. Some issue areas were also determined to have no impact. Detailed analyses for these environmental impacts are provided in Sections 3.1 through 3.5 of this Program EIR. **Table ES-2**, located at the end of this section, provides a summary of environmental impacts, significance, mitigation measures as applicable, and significance after mitigation.



Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
3.1 AIR QUALITY		
Conflict with or obstruct implementation of the applicable air quality plan Implementation of the General Plan update and Sustainability Action Plan would not conflict with or obstruct the implementation of the RAQS and/or applicable portions of the SIP, and, therefore, is consistent with SCAQMD current air quality planning efforts. (Less than Significant)	No mitigation is required.	Less than Significant



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Violate any air quality standard or contribute substantially to an existing or projected air quality violation</p> <p>The General Plan update and Sustainability Action Plan would result in significant construction and operational impacts associated with criteria air pollutants and precursors that could violate any air quality standard or contribute substantially to an existing or projected air quality violation. (Significant)</p>	<p>AQ-1 Reduce Construction-Related Emissions. The City and project contractors shall implement the following measures during all construction activities involving demolition or exterior construction. Furthermore, a fugitive dust control plan shall be developed and approved by SCAQMD for all projects prior to issuance of a grading permit and commencement of construction activities. The dust control plan shall specifically identify measures that would minimize generation of fugitive dust from all construction activities. In addition, the following standard measures shall be implemented:</p> <ul style="list-style-type: none"> • Comply with and implement all applicable SCAQMD rules and regulations that pertain to construction activities (e.g., asphalt paving ROG requirements, administrative requirements, fugitive dust management practices). Implement all construction-related requirements recommended by the air district or local government. • Apply water as necessary to prevent visible dust emissions. • Apply water, nontoxic chemical stabilizers, or dust suppressants, or use tarps or other suitable material in all disturbed areas that will not be utilized for 10 days or more. • Prevent carryout and track out of fugitive dust on construction vehicles. Methods to limit carryout and track include, but are not limited to, using wheel washers and/or metal tracks at the site egress(es), sweeping any track out on adjacent public streets at the end of each workday, and lining access points with gravel, mulch, or wood chips. 	<p>Construction: Significant and Unavoidable</p> <p>Operation: Significant and Unavoidable</p>



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> • Cover or wet the filled cargo compartment of all transport trucks to limit visible dust emissions during transport, and maintain at least 2 feet of freeboard space from the top of a container. • Install sandbags or other erosion control measures on sites with a slope greater than 1 percent to prevent silt runoff to public roadways. • Maintain all construction equipment according to the manufacturers' specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated. • Minimize idling time either by shutting off equipment when it is not in use or reducing the time of idling to no more than 5 minutes. Provide clear signage regarding idling at site access points. • Use alternative fueled (e.g., compressed natural gas [CNG], liquefied natural gas [LNG], propane), or electric-powered construction equipment where feasible. • Use equipment with diesel oxidation catalysts, catalyzed diesel PM filters, or other applicable air district-approved emission reduction retrofit devices where feasible. <p>AQ-2 The City shall work with SCAQMD and new development to identify projects that would cause a significant air quality impact. When significant impacts are determined, the City shall work with new development to ensure all applicable General Plan policies are fulfilled by the project and identify and require the implementation of additional mitigation measures that would be consistent with the</p>	



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>General Plan goals and policies to reduce air quality pollutant emissions.</p> <p>AQ-3 The City shall work with SCAQMD and SCAG to implement and enforce air quality reduction measures in the AQMP to meet all federal and state ambient air quality standards. Projects within the City that have significant air quality impacts should be required by the City to implement mitigation consistent with the goals and measures in the AQMP. The City shall participate in any future amendments and updates to the AQMP when possible.</p>	



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Expose sensitive receptors to substantial pollutant concentrations</p> <p>Implementation of the General Plan update and Sustainability Action Plan would expose sensitive receptors to substantial TAC concentrations. (Significant)</p>	<p>AQ-4 Require use of SCAQMD’s Localized Significance Thresholds (LST) for construction-related emissions. If construction emissions would exceed the SCAQMD’s LSTs, the project shall prepare a health risk assessment of construction emissions and implement all feasible mitigation to reduce impacts to a less-than-significant level (i.e., less than 10 in a million cancer risk and less than 1.0 hazard index).</p> <p>AQ-5 If and when needed, which should be determined through the environmental review process under CEQA, a health risk assessment that identifies health risk levels from nearby TAC sources shall be prepared for sensitive land uses (e.g., residential, hospital, convalescent home) that would be developed within 500 feet of I-5 or other stationary sources producing TACs. When health risk levels at the proposed sensitive receptor land uses are determined to exceed applicable significance thresholds, the proposed project shall implement mitigation measures into the project’s design and/or implement alternative approaches to land use development that would reduce TAC exposure to proposed or nearby sensitive receptors. These mitigation measures and land use development approaches should use recommendations from ARB and local air districts, if and when possible. Mitigation measures to reduce TAC impacts to a less-than-significant level include, but should not be limited to setbacks, buffers, and air filters.</p>	<p>Less than Significant</p>



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Create objectionable odors affecting a substantial number of people</p> <p>Implementation of the General Plan update and Sustainability Action Plan would not create objectionable odors affecting a substantial number of people. (Less than Significant)</p>	<p>No mitigation is required.</p>	<p>Less than Significant</p>
<p>3.2 GREENHOUSE GAS EMISSIONS</p>		
<p>Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment</p> <p>Implementation of the General Plan update and Sustainability Action Plan would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. (Significant)</p>	<p>GHG-1 To reduce construction-generated GHG emissions, projects seeking discretionary approval from the City shall implement all feasible measures for reducing GHG emissions associated with construction that are recommended by the City and/or SCAQMD at the time individual portions of the site undergo construction.</p> <p>The project applicant(s) for any particular discretionary project may submit a report to the City that substantiates why specific measures are considered infeasible for construction of that particular discretionary project and/or at that point in time. By requiring that the list of feasible measures be established prior to the selection of a primary contractor, this measure requires that the ability of a contractor to effectively implement the selected GHG reduction measures be inherent to the selection process.</p> <p>The recommended measures for reducing construction-related GHG emissions at the time of writing this EIR are listed below. The list will be updated as new technologies or methods become available. The</p>	<p>Construction: Less than Significant Operation: Significant and Unavoidable</p>



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>project applicant(s) shall, at a minimum, be required to implement the following:</p> <ul style="list-style-type: none"> • Improve fuel efficiency of construction equipment: <ul style="list-style-type: none"> ○ reduce unnecessary idling (modify work practices, install auxiliary power for driver comfort); ○ perform equipment maintenance (inspections, detect failures early, corrections); ○ train equipment operators in proper use of equipment; ○ use the proper size of equipment for the job; and ○ use equipment with new technologies (repowered engines, electric drive trains). • Use alternative fuels for electricity generators and welders at construction sites such as propane or solar, or use electrical power. • Use an ARB-approved low-carbon fuel, such as biodiesel or renewable diesel for construction equipment. Emissions of NO_x from the use of low carbon fuel must be reviewed and increases mitigated. Additional information about low-carbon fuels is available from ARB’s Low Carbon Fuel Standard Program. • Reduce electricity use in the construction offices by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones. 	



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> • Recycle or salvage nonhazardous construction and demolition debris. • Use locally sourced or recycled materials for construction materials (goal of at least 20 percent based on costs for building materials, and based on volume for roadway, parking lot, sidewalk, and curb materials). • Develop a plan to efficiently use water for adequate dust control. This may consist of the use of nonpotable water from a local source. <p>GHG-2 As a part of a contractor demolition package, require 25 percent of nonhazardous debris (excluding excavated soil and land-clearing debris) to be recycled or salvaged. Work with contractors to share best practices on building recycling and reuse and demolition techniques to minimize waste, dust generation, water and energy use and other impacts of construction and demolition work.</p> <p>GHG-3 Upgrade the local building code to incorporate California Green Building Standards Code requirements on a regular and timely manner as mainline construction practices develop and new materials and building products become available with the goal of meeting the state’s Net Zero Energy goals for new residential development by 2020 and new commercial development by 2030.</p>	
<p>Conflict with an applicable plan, policy, or regulation adopted to reduce greenhouse gas emissions Implementation of the General Plan would not conflict with the AB 32</p>	<p>GHG-4 Update the Sustainability Action Plan to meet any future community-level emissions targets established by the State.</p> <p>Developing additional mitigation to meet statewide emission reduction goals to the year 2050 is currently infeasible.</p>	<p>Significant and Unavoidable</p>



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Scoping Plan for purpose of reducing GHG emissions. However, reductions beyond 2020 capable of achieving an emission level of 80 percent below 1990 levels are uncertain at this time, as is the City’s role in developing local measures to parallel the state’s efforts. (Significant)</p>		
<p>3.3 LAND USE</p>		
<p>Physically divide an established community Implementation of the General Plan update and Sustainability Action Plan would not result in the division of an established community. (Less than Significant)</p>	<p>No mitigation is required.</p>	<p>Less than Significant</p>
<p>Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect Implementation of the General Plan update and Sustainability Action Plan would result in land use</p>	<p>No mitigation is required.</p>	<p>Less than Significant</p>



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
designation changes that would conflict with the existing Zoning Ordinance. (Less than Significant)		
3.4 NOISE		
<p>Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or Municipal Code, or applicable standards of other agencies</p> <p>Implementation of the General Plan update and Sustainability Action Plan would allow for development and redevelopment that could conflict with adopted noise standards. (Significant)</p>	<p>N-1 Acoustical studies shall be required for all discretionary projects where any of the following apply:</p> <ul style="list-style-type: none"> • The project includes a noise-sensitive land use that is located within the existing or future 60-dBA CNEL contour for transportation noise sources. • The project will cause future traffic volumes to increase by 25 percent or more on any roadway that fronts residential, institutional, or open space land uses. • The project will expose a noise-sensitive land use to a stationary noise source exceeding the standards outlined in the Noise Element. Such stationary sources may include mechanical equipment operations, entertainment venues, industrial facilities, and property maintenance. • The project includes a noise-sensitive land use in the vicinity of existing or proposed commercial and industrial areas. • The project is a mixed-use development that includes a residential component. The focus of this type of acoustical study is to determine likely interior and exterior noise levels and to recommend appropriate design features to reduce noise. <ul style="list-style-type: none"> ○ Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise 	<p>Less than Significant</p>



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>Element. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance. An acoustical analysis prepared in accordance with the Noise Element shall:</p> <ul style="list-style-type: none"> ▪ be the financial responsibility of the applicant seeking City approval of a project; ▪ be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics; ▪ include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and predominant noise sources; ▪ estimate existing and projected cumulative (20 years) noise in terms of CNEL or L_{dn}, and compare those noise levels to the adopted standards and policies of the Noise Element; ▪ estimate noise exposure after the prescribed mitigation measures have been implemented; and ▪ describe a post-project assessment program that could be used to evaluate the effectiveness of the proposed mitigation measures. <p>In addition, see Mitigation Measure N-3 below.</p>	



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Exposure of persons to or generation of excessive groundborne vibration or noise levels</p> <p>Implementation of the General Plan update and Sustainability Action Plan would allow for development and redevelopment that could result in significant groundborne vibration and noise. (Significant)</p>	<p>See Mitigation Measure N-1, and the following:</p> <p>N-2 A vibration analysis shall be required as part of all acoustical studies required under Mitigation Measure N-1. Where a noise study is not required, the City shall require construction contractors to implement the following measures during construction activities through contract provisions and/or conditions of approval as appropriate:</p> <ul style="list-style-type: none"> • For projects where construction will include vibration-generating activities, such as pile driving, within 100 feet of existing structures, site-specific vibration studies shall be conducted to determine the area of impact and to present appropriate mitigation measures that may include the following: <ul style="list-style-type: none"> ○ Identify sites that would include vibration compaction activities such as pile driving and have the potential to generate groundborne vibration, and the sensitivity of nearby structures to groundborne vibration. This task should be conducted by a qualified structural engineer. ○ Develop a vibration monitoring and construction contingency plan to identify structures where monitoring would be conducted; set up a vibration monitoring schedule; define structure-specific vibration limits; and address the need to conduct photo, elevation, and crack surveys to document before and after construction conditions. Construction contingencies would be identified for when vibration levels approached the limits. 	<p>Less than Significant</p>



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ○ At a minimum, monitor vibration during initial demolition activities and during pile driving activities. Monitoring results may indicate the need for more or less intensive measurements. ○ When vibration levels approach limits, suspend construction and implement contingencies to either lower vibration levels or secure the affected structures. ○ Conduct post-survey on structures where either monitoring has indicated high levels or complaints of damage have been made. Make appropriate repairs or compensation where damage has occurred as a result of construction activities. 	
<p>A substantial temporary or periodic and permanent increase in ambient noise levels in the project vicinity above levels existing without the project</p> <p>Implementation of the General Plan update and Sustainability Action Plan would allow for development and redevelopment that would result in temporary or periodic ambient noise levels. (Significant)</p> <p>However, the proposed project would not result in permanent increases over existing noise levels greater than 2dBA along any</p>	<p>See Mitigation Measure N-1, and the following:</p> <p>N-3 The City shall require construction contractors to implement the following measures during construction activities through contract provisions and/or conditions of approval as appropriate:</p> <ul style="list-style-type: none"> ● Construction equipment shall be properly maintained per manufacturers’ specifications and fitted with the best available noise suppression devices (e.g., mufflers, silencers, wraps). ● Construction operations and related activities associated with the project shall comply with the operational hours outlined in the City of Mission Viejo Municipal Code (Noise Control). ● Construction equipment shall not be idled for extended periods of time in the vicinity of noise-sensitive receptors. ● Locate fixed and/or stationary construction equipment as far as possible from noise-sensitive receptors (e.g., generators, 	<p>Temporary and Periodic: Less than Significant</p> <p>Permanent: Less than Significant</p>



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
affected roadways. (Less than Significant)	compressors, rock crushers, cement mixers). <ul style="list-style-type: none"> • Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on powered construction equipment. • Where feasible, temporary barriers shall be placed as close to the noise source or as close to the receptor as possible and break the line of sight between the source and receptor where modeled levels exceed applicable standards. Acoustical barriers shall be constructed material having a minimum surface weight of 2 pounds per square foot or greater, and a demonstrated Sound Transmission Class (STC) rating of 25 or greater as defined by American Society for Testing and Materials (ASTM) Test Method E90. Placement, orientation, size, and density of acoustical barriers shall be determined by analysis. 	
<p>3.5 TRANSPORTATION AND CIRCULATION</p>		
<p>Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and</p>	<p>Mitigation Measures TT-1 and TT-2 are applicable to both Daily and Peak Hour Roadway Segment LOS and Intersection ICU LOS:</p> <p>TT-1 The City shall implement the improvements to intersections listed below that have been identified in Table 3.5-9. All of the improvements include additional turn lane capacity provisions. These provisions will require further evaluation to ensure the improvements are appropriate and necessary. Prior to implementation of the identified improvements, the intersections should be monitored to ensure the improvements are ultimately necessary as the surrounding developments mature.</p> <ul style="list-style-type: none"> • I-5 northbound ramp/Oso Parkway (PM peak hour LOS E) 	<p>Daily and Peak Hour Roadway Segment LOS: Significant and Unavoidable</p> <p>Intersection ICU LOS: Less than Significant</p>



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>mass transit Implementation of the General Plan update and Sustainability Action Plan would result in significant impacts related to daily and peak hour roadway segment LOS and intersection ICU LOS. (Significant)</p>	<p>TT-2</p> <ul style="list-style-type: none"> • I-5 northbound ramp/Avery Parkway (PM peak hour LOS F) • Trabuco Road/Los Alisos Boulevard (AM peak hour LOS E) • Los Alisos Boulevard /Santa Margarita Parkway (AM and PM peak hour LOS E/E) • Marguerite Parkway/Jeronimo Road (AM peak hour LOS E) • Marguerite Parkway/Avery Parkway (AM and PM peak hour LOS E/E) • Felipe Road/Oso Parkway (AM and PM peak hour LOS E/E) <p>Support alternative modes of travel by continuously developing and supporting these modes of travel. This can continually occur by:</p> <ul style="list-style-type: none"> • Continued implementation and update of the Bicycle Master Plan and integrating it with a Pedestrian Master Plan; • Update and maintain City Roadway Standards to consider the public realm of the street and implement complete streets, as appropriate; • Consider development of a neighborhood electric vehicle (NEV) master plan to encourage use of no emission vehicles on appropriate facilities. Coordinate with SCAG and the State Legislature to allow NEVs on public roadways with greater than 35 miles per hour posted speed limit; • Develop innovative funding mechanisms (such as fee districts or Transnet funding) to assist in implementing, operating, and maintaining the proposed shuttle system and bike share facilities within the City; 	



**Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan**

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> • Work with developers to integrate bicycle and pedestrian amenities within their development plans. 	
<p>Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways</p> <p>All CMP facilities within Mission Viejo are expected to operate within the CMP acceptable levels of service. (Less than Significant)</p>	<p>No mitigation is required.</p>	<p>Less than Significant</p>
<p>Result in inadequate emergency access</p> <p>Implementation of the General Plan update and Sustainability Action Plan would not result in impacts related to emergency access. (Less than Significant)</p>	<p>No mitigation is required.</p>	<p>Less than Significant</p>



Table ES-2
Summary of Environmental Impacts and Mitigation Measures for the Mission Viejo General Plan

Potential Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities</p> <p>Implementation of the General Plan update and Sustainability Action Plan would not result in conflicts with adopted policies or plans associated with alternative transportation. (Less than Significant)</p>	<p>No mitigation is required.</p>	<p>Less than Significant</p>



CHAPTER 1 – INTRODUCTION

This Program Environmental Impact Report (Program EIR) is a first-tier evaluation of the environmental effects associated with the adoption and implementation of the updated Mission Viejo General Plan. This Program EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (Public Resources Code [PRC] Section 21000 et seq.), and the Guidelines for Implementation of CEQA published by the Resources Agency of the State of California (California Administrative Code Section 15000 et seq.).

1.1 Purpose of the Program EIR

This Program EIR is intended to provide information to public agencies, the general public, and decision makers regarding potential environmental impacts related to adoption and implementation of the updated Mission Viejo General Plan. The purpose of an EIR, under the provisions of CEQA, is “to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided” (PRC Section 21002.1[a]).

According to CEQA Guidelines (Section 15168), a Program EIR may be prepared on a series of actions that can be characterized as one large project, are related geographically, and are logical parts in the chain of contemplated actions in connection with issuance of rules, regulations, or plans. The Program EIR allows for a more exhaustive consideration of effects and alternatives than would be practical in a project EIR on separate individual actions and ensures consideration of cumulative impacts that might be slighted on a case-by-case basis.

This Program EIR provides first-tier analysis of the environmental effects of the updated Mission Viejo General Plan. Section 15152 of the CEQA Guidelines indicated that tiering is appropriate when the sequence of analysis is from an EIR prepared for a General Plan, policy, or program to an EIR or negative declaration for another plan, policy, or program of lesser scope, or to a site-specific EIR or negative declaration. Subsequent activities in accordance with the City of Mission Viejo General Plan must be examined in light of this Program EIR to determine whether an additional environmental analysis must be conducted and documentation prepared. If a subsequent project or later activity would have effects that were not examined in this Program EIR, or were not examined at an appropriate level of detail to be used for the later activity, an initial study would need to be prepared, leading to a negative declaration or an EIR. If the City finds that, pursuant to Section 15152 of the CEQA Guidelines, no new effects could occur or new mitigation measures would be required on a subsequent project, the City can approve the activity as being within the scope of the project covered by this Program EIR, and no new environmental documentation would be required.

Both the General Plan update and the Sustainability Action Plan will be evaluated in the Program EIR presented to the City Council for certification. The City of Mission Viejo is largely built out and does not intend to proactively use tiering benefits under CEQA for communities that have adopted a “... local plan for the reduction or mitigation of GHG emissions” pursuant



to Senate Bill (SB) 97 (2008) and CEQA Guidelines Section 15183.5. Nevertheless, if the Sustainability Action Plan is prepared in a manner that meets the framework set forth in the CEQA Guidelines, the City can preserve the option to tier cumulative greenhouse gas (GHG) emissions analysis of future development projects from the Sustainability Action Plan and General Plan Program EIR. The City intends to adaptively manage its GHG emissions reduction programs as new technologies, financing strategies and resources, and the state of the science continue to emerge, without need for General Plan amendments.

This Program EIR serves as an information document for use by public agencies, the general public, and decision makers. This Program EIR is not a City of Mission Viejo policy document; it does, however, discuss the impacts of development pursuant to the General Plan and analyzes project alternatives. This Program EIR would be used by the City of Mission Viejo City Council in assessing impacts of the project prior to adoption of the General Plan.

1.2 Lead and Responsible Agencies

A lead agency is defined as the public agency that has the principal responsibility for carrying out or approving a project that may have a significant impact upon the environment (CEQA Guidelines Section 15367). The City of Mission Viejo is the lead agency for the preparation of this Program EIR, as defined by CEQA.

Responsible agencies are defined as those public agencies that propose to carry out or approve a project for which a lead agency is preparing an EIR, and includes all agencies other than the lead agency that have discretionary approval power over the project (CEQA Guidelines Section 15381). No other public agencies directly carry out or have discretionary approval over the General Plan except for the City of Mission Viejo.

1.3 Scope of the EIR

The Mission Viejo General Plan EIR is a Program EIR. CEQA Guidelines Section 15168(a) defines a Program EIR as an EIR that may be prepared on a series of actions that can be characterized as one large project and are related (1) geographically; (2) as logical parts in the chain of contemplated actions; (3) in connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental impacts that can be mitigated in similar ways.

Program EIRs can be used as the basic, general environmental assessment for an overall program of projects developed through the stated planning horizon. A Program EIR has several advantages. First, it provides a basic reference document to avoid unnecessary repetition of facts or analysis. Second, it allows the lead agency to look at the broad, regional impacts of a program of actions before its adoption and eliminates redundant or contradictory approaches to the consideration of regional and cumulative impacts.

Pursuant to CEQA Guidelines Section 15143, a lead agency should limit the EIR's discussion of environmental effects to specific issues where significant effects on the environment may



occur. Implementation of the update to the General Plan's Land Use, Conservation/Open Space, and Circulation Elements may result in significant adverse effects on a number of environmental issue areas. These issue areas are listed below and are the focus of this EIR:

- Air Quality
- Greenhouse Gas Emissions
- Land Use and Planning
- Noise
- Transportation and Traffic

1.4 Public Review and Participation Process

Consistent with the requirements of CEQA, the City of Mission Viejo conducted public outreach efforts during the preparation of this EIR to contact affected agencies, organizations, and individuals who may have an interest in the General Plan. This early and open consultation with the relevant agencies, organizations, and individuals assisted in defining the scope of this EIR as discussed above in Section 1.3.

1.4.1 Initial Study and Notice of Preparation

The City of Mission Viejo initiated the EIR scoping process on March 19, 2012, through the circulation of an Initial Study/Notice of Preparation (IS/NOP). The IS/NOP was received by the State Clearinghouse (Clearinghouse) at the California Office of Planning and Research on March 19, 2012. The Clearinghouse is responsible for monitoring compliance of state agencies in providing timely responses. The Clearinghouse assigned state identification number SCH No. 2012031065 to this EIR.

Since the lead agency should limit the discussion of environmental effects in the EIR to specific issues with potential to impact the environment, an IS was prepared and circulated along with the NOP (CEQA Guidelines Section 15143). The IS provided a preliminary discussion and analysis of potential environmental effects and identified the environmental topics that would be further studied in this EIR and topics that would not be based on the absence of environmental impacts. The analysis within the IS identified that implementation of the proposed updates to the General Plan may have an effect on a few environmental topics which are the focus of this EIR and listed below:

- Air Quality
- Greenhouse Gas Emissions
- Land Use and Planning
- Noise
- Transportation and Traffic

The NOP provided formal notification to all federal, state, and local agencies involved with funding or approval of the project, and to other interested organizations and members of the



public, that an EIR will be prepared for the project. The NOP is intended to encourage interagency communication concerning the action and provide sufficient background information about the action so that agencies, organizations, and individuals can respond with specific comments and questions on the scope and content of the EIR. A copy of the IS/NOP is provided in Appendix A, as well as all the written responses received during the initial 30-day IS/NOP period. Comment letters were received from the following agencies and organizations:

- South Coast Air Quality Management District (SCAQMD)
- Orange County Fire Authority (OCFA)
- Orange County Transportation Authority (OCTA)
- State of California, Department of Transportation, District 12 (Caltrans)
- State of California, Department of Fish and Wildlife, South Coast Region
- State of California, Native American Heritage Commission (NAHC)
- Sierra Club, Angeles Chapter, Global Warming Committee (OCGWA)
- Mr. Bill Ring, City of Mission Viejo resident

The City also held two public scoping meetings on April 2, 2012 in the afternoon and in the evening to gather feedback and comment on the scope of the EIR. The meetings were announced through a notice in the local paper and notifications to the surrounding jurisdictions and related responsible agencies.

1.4.2 Availability of Draft Program EIR

The Draft Program EIR was available at the City of Mission Viejo City Hall and the Mission Viejo Library during a 45-day public review period from March 4 through April 18, 2013. The City of Mission Viejo City Hall is located at 200 Civic Center, Mission Viejo, CA 92691. The Mission Viejo Library is located at 100 Civic Center, Mission Viejo, CA 92691. Documents may be reviewed during regular business hours. The Draft Program EIR was also available on the City's website at www.cityofmissionviejo.org.

Comments from agencies and individuals were invited regarding the information contained in the Program EIR. Where possible, those responding should endeavor to provide the information they feel is lacking in the Program EIR, or should indicate where the information may be found. All comments on the Program EIR were directed to:

City of Mission Viejo
Community Development Department
Attn: Mr. Charles Wilson, AICP
Director of Community Development
200 Civic Center
Mission Viejo, CA 92691



Following the 45-day period of circulation and review of the Program EIR, all comments and the City's responses to the comments were incorporated into a Final Program EIR prior to certification of the document by the City of Mission Viejo.

1.5 Structure and Organization of the Program EIR

This Program EIR is organized into an Executive Summary and eight chapters. The Executive Summary includes a brief project description and summarizes project impacts and mitigation measures. Chapter 1.0 is this Introduction. Chapter 2.0 provides a detailed description of the General Plan. Chapter 3.0 includes a discussion of the general environmental setting of the planning area. Chapter 3.0 also contains individual subsections that analyze project impacts and identify mitigation measures designed to reduce significant impacts. An analysis of long-term effects including maximum theoretical buildout, cumulative impacts, growth-inducing impacts, significant irreversible environmental impacts, and areas of no significant impact is provided in Chapter 4.0. Chapter 5.0 provides an analysis of alternatives to the project. Chapter 6.0 contains reference information, and Chapter 7.0 contains a list of EIR preparers.

The Appendices consist of the Notice of Preparation and Responses to the Notice of Preparation (Appendix A) and technical documents (Appendices B through E) included as supporting information to the Program EIR. In compliance with PRC Section 21081.6, a mitigation monitoring and reporting program (MMRP) was prepared as a separately bound document and adopted in conjunction with the certification of the Final Program EIR and project approval.

1.6 General Approach to Program EIR Analysis

As discussed above, the approach to the analysis presented in this Program EIR is programmatic in nature. Each environmental issue is analyzed in the same manner starting with a discussion of the existing environmental setting. Thresholds of significance are then defined and used to measure the project's potential impact in the environmental impact section. If the General Plan would result in a significant impact for a particular environmental issue, mitigation measures are included within the discussion. Most of the mitigation measures included in this Program EIR have been derived from the Implementation Plan for the General Plan. Each implementation program is a procedure, program, or technique that requires City action, either alone or in collaboration with non-City organizations or state and federal agencies. Some of the implementation programs are processes or procedures the City currently administers on a day-to-day basis (such as development project review), while others identify new programs or projects. By identifying a responsible party, a timeline for implementation, and a monitoring frequency, the Implementation Plan provides a mechanism for ensuring that potential impacts resulting from the project are reduced below a level of significance. It should be noted that not all implementation programs would serve as mitigation in this Program EIR and that mitigation measures proposed are not all from the Implementation Plan. Lastly, the analysis includes a discussion on the level of significance of each environmental impact after proposed mitigation measures are incorporated.



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CHAPTER 2 - PROJECT DESCRIPTION

The purpose of the project description is to describe the project in a way that would be meaningful to the public, reviewing agencies, and decision makers. As described in Section 15124 of the CEQA Guidelines, a complete project description must contain the following information but is not required to supply extensive detail beyond that needed for evaluation and review of the environmental impact: (1) The location and boundaries of the project on a regional and detailed map; (2) A statement of objectives sought by the project; (3) A general description of the project's technical, economic, and environmental characteristics; and (4) A statement briefly describing the intended uses of the EIR.

2.1 General Plan Background

2.1.1 Overview and History

California state law requires each city to adopt a comprehensive, long-term General Plan to guide the physical development of the incorporated city and any land outside the city boundaries that bears a relationship to its planning activities. A General Plan clarifies and articulates a city's intentions with respect to the expectations of residents and businesses, and their long-term vision for the community. Through its General Plan, a city outlines its goals, policies, and standards to the public and private sectors for meeting community objectives. Since the General Plan is the constitution for all future development, any decision by a city affecting land use and development must be consistent with the General Plan. An action, program, or project would be considered consistent with the General Plan if, considering all of its aspects, it would further the objectives and policies set forth within the General Plan and not obstruct their attainment.

Development of the City of Mission Viejo began in 1965 when a master plan for Mission Viejo was approved by the Orange County Board of Supervisors. Mission Viejo was incorporated as a city in 1988. Although, largely undeveloped until the 1970s due to its hilly topography, in the 1970s and 1980s development was widespread, and roadway and housing construction substantially increased to keep pace with the large demand for housing. Land uses consisted of residential, commercial, industrial, recreational, and public uses designed to meet the growing population of the City. The first General Plan for the City was adopted on October 8, 1990, along with its accompanying EIR. The General Plan was prepared to address issues related to future growth and development in Mission Viejo, while providing a general long-term approach for maintaining and improving the quality of life in the community.

2.1.2 City of Mission Viejo General Plan

In compliance with California law, the City had initiated a comprehensive update to the General Plan in 2007 to provide an update of five elements: Land Use, Noise, Conservation/Open Space, Circulation, and Public Safety. The Housing Element is not part of the update since it was updated during a separate cyclical process prescribed by state law.



After submittal of the comprehensive General Plan update to the Planning and Transportation Commission for review, the planning staff consulted with the California Office of the Attorney General regarding compliance with Assembly Bill (AB) 32 and environmental processing of the comprehensive update. It was determined that an EIR would be required as environmental documentation for the proposed update to the Land Use, Conservation/Open Space, and Circulation Elements, and the existing Negative Declaration would be used as environmental documentation for the update to the Noise and Public Safety Elements. The City Council subsequently adopted the updated Noise and Public Safety Elements on February 2, 2009.

The City of Mission Viejo's General Plan currently consists of nine elements in addition to a summary, an introduction to the General Plan, and a glossary of terms used throughout the General Plan. The nine elements encompass all the elements required by California General Plan Law. The elements in the Mission Viejo General plan are:

- Land Use Element
- Housing Element
- Circulation Element
- Conservation/Open Space Element
- Public Safety Element
- Noise Element
- Public Facilities Element
- Economic Development Element
- Growth Management Element

Each element identifies related goals and policies. The General Plan implementation measures provide a course of action for the City to implement ensuring that the overall direction provided by the goals and policies set forth in the General Plan is translated from general terms into specific actions. The issues addressed in each element often overlap. The contents for each chapter of the existing General Plan are summarized in the following paragraphs. Please note that the following descriptions depict the General Plan prior to the comprehensive update of the Land Use, Conservation/Open Space, and Circulation Elements. The updated Land Use, Conservation/Open Space, and Circulation Elements are also described in this chapter and constitute the project for which this EIR has been prepared.

2.1.2.1 Summary

The summary is an abbreviated discussion of the General Plan and its nine elements. It introduces the purpose of the General Plan and the vision it presents for the City of Mission Viejo and its residents.



2.1.2.2 Introduction to the General Plan

The General Plan's introduction presents a brief history of the City, the purpose of the General Plan, the organization of the General Plan, and an overview of the structure of the General Plan. The introduction also includes a history of the General Plan and the structure of each element within the General Plan.

2.1.2.3 Land Use Element

The Land Use Element of the General Plan discusses the various land uses within the City. It delineates the general location, distribution, and extent of these uses within the boundary of the City. In addition, standards for residential densities and nonresidential intensities are identified through this element. The goals of the Land Use Element include the following:

1. Establish a balanced distribution of land uses and maintain land use compatibility throughout the City.
2. Establish a growth management and development program which avoids adverse public service, environmental or fiscal effects.
3. Maintain community identity and development quality for the City and its neighborhoods.
4. Maintain open space resources for the purpose of providing recreational opportunities, protecting the public from safety hazards and conserving natural resources.

2.1.2.4 Housing Element

The City of Mission Viejo Housing Element identifies the current and future housing needs within the City's planning area. This element includes a comprehensive discussion of the community's profile, including population and household, land use, employment, and housing stock characteristics. An integrated set of goals, policies, and programs are presented in this element for the conservation, rehabilitation, and development of housing to address the needs of all economic segments of the City population. The goals of the Housing Element include the following:

1. Expand upon the present range of housing types to meet future needs of residents.
2. Promote the continued maintenance and enhancement of residential areas.
3. Provide support services in meeting the needs of the City's low and moderate income residents.
4. Provide for housing which is sensitive to environmental and social needs.
5. Promote equal housing opportunity.
6. Preserve housing units affordable to low and very low income households.



2.1.2.5 Circulation Element

The Circulation Element identifies the general location and extent of the existing circulation system and guides the continued development of the freeways, roadways, railways, transit routes, scenic highways, bikeways, and trails. This element promotes the safe and effective movement of people and goods and the connection of people to places. Other components of the circulation system, including pedestrian safety and walkability, traffic calming, and parking, are also addressed in this element. The goals of the Circulation Element include the following:

1. Manage and optimize a circulation system that is based upon, and is in balance with, the Land Use Element of the City of Mission Viejo General Plan.
2. Protect the City's investment in its circulation system by assessing and mitigating the transportation impacts of new development proposed within and outside the City of Mission Viejo.
3. Identify and assess the feasibility and funding of circulation improvements needed within the City, to address the impacts of regional traffic demands upon the City's circulation system.
4. Preserve the residential character of local neighborhoods by minimizing through traffic and regulating vehicular speed.
5. Facilitate the safe and efficient movement of people and vehicles to and from school sites.
6. Coordinate and update the City's traffic signal coordination system.
7. Evaluate, monitor, and implement operational improvements and traffic control measures to maximize efficiency of the City's arterial circulation system.
8. Monitor the condition of, and regularly maintain, city streets with preventive and rehabilitation treatments to protect the City's investment in roadway infrastructure and extend the life of the City's roadway pavement.
9. Support the development and completion of a network of regional roadway facilities which ensure the safe and efficient movement of people and goods from within the City to areas outside its boundaries, and which accommodate the regional travel demands of developing areas outside the City.
10. Identify and assess the feasibility and funding of circulation improvements needed outside the City, necessary to address the impacts of regional traffic demands upon the City's circulation system.
11. Coordinate the development of the City's circulation system with regional transportation facilities and with transportation facilities in neighboring jurisdictions.



12. Maximize the efficiency of the circulation system through transportation system management (TSM) and transportation demand management (TDM) strategies.
13. Support development of a public transportation system that provides mobility to all City residents and encourages use of public transportation as an alternative to automobile travel.
14. Protect and encourage non-motorized transportation such as bicycle, pedestrian, and equestrian travel.
15. Plan, provide, and maintain a comprehensive bicycle trail network that links with the regional trail system and encourages use of bicycle trails for commuter and recreational purposes.
16. Plan and provide a pedestrian network that links residential, employment, schools, and commercial facilities to public sidewalks and bus stop locations.
17. Promote linkage of residences, schools, shopping centers, and other public facilities through an internal system of trails.
18. Require sufficient off-street parking for all land uses and maximize the use of parking facilities in the City.
19. Encourage the development of adequate recreational vehicle storage areas within the City.
20. Provide a circulation system that effectively provides for the transport of commodities while minimizing the negative impacts on neighborhoods.
21. Preserve and provide landscaped transportation routes which accentuate the beauty of the existing settings in order to provide pleasant and beneficial driving environments while maintaining safety.
22. Maximize pursuit of outside funding sources to complement city resources to plan, design and construct transportation capacity improvements and implement transportation programs that benefit the City of Mission Viejo.
23. Require new development to pay its fair share towards circulation improvements needed to accommodate project traffic.
24. Utilize the City's transportation model as a technical tool to promote Circulation Element goals and policies.
25. Pursue City of Mission Viejo transportation policy objectives through city advocacy efforts.
26. Comply with the Airport Environs Land Use Plan (AELUP) for Heliports.



2.1.2.6 Conservation / Open Space Element

The Conservation and Open Space Element focuses on the protection and enhancement of ecological, biological, and open space resources of the City. This element also discusses the park system and establishes a park enhancement plan. This element also provides for protection of sensitive lands by limiting grading and requiring biological and archaeological surveys. The goals of the Conservation / Open Space Element include the following:

1. Conserve the City’s natural resources.
2. Protect open space areas to preserve natural resources.
3. Provide for present and future recreational and open space needs.
4. Establish a balanced public and private recreational facility system.
5. Establish a long-term funding mechanism for the acquisition, development, and maintenance of future city park facilities.

2.1.2.7 Public Safety Element

The purpose of the Public Safety Element is to identify and address those features that represent a potential danger to the citizens, structures, public facilities, and infrastructure located in the community. The Public Safety Element establishes goals and policies to minimize danger to residents, workers, and visitors associated with geologic and seismic geologic hazards, flooding and inundation hazards, fires, and neighborhood safety. Emergency preparedness planning is also addressed. The goals of the Public Safety Element include the following:

1. Protect the community from hazards associated with geologic formations.
2. Reduce the risk of seismic hazards.
3. Protect the City’s inhabitants from risk associated with flood hazards.
4. Develop and maintain a disaster preparedness plan.
5. Protect the City’s inhabitants from exposure to hazardous materials and wastes.
6. Protect the City’s inhabitants from risk associated with fires.
7. Protect the City’s inhabitants and businesses from criminal activity.
8. Protect the City’s water quality and watersheds from risk associated with urban runoff.

2.1.2.8 Noise Element

The Noise Element addresses noise sources in the community and identifies ways to reduce the impact of these noise sources. This element identifies the effects of noise on the surrounding environment and defines noise standards and land use compatibility to protect noise-sensitive



land uses from excessive noise. Goals, policies, and plans to address and control transportation-related noise and non-transportation-related noise are also identified. The goals of the Noise Element include the following:

1. Provide for measures to reduce noise impacts from transportation noise sources.
2. Incorporate noise considerations into land use planning decisions.
3. Develop measures to control non-transportation noise impacts.

2.1.2.9 Public Facilities Element

The Public Facilities Element describes public services, infrastructure systems, and the dry utilities that serve Mission Viejo. Public services such as sheriff protection, fire/emergency medical response, schools, libraries, and solid waste disposal are also contained in this element. Infrastructure systems addressed include water, wastewater, and dry utilities, such as electricity, natural gas, and telecommunications. The goals of the Public Facilities Element include the following:

1. Maintain exceptional levels of law enforcement, fire protection, and paramedic services for the community.
2. Maintain the Civic Center as a high-quality facility that meets the needs and expectations of the residents and businesses.
3. Work with and support efforts by local school and community college districts to provide high quality public education.
4. Provide exceptional library service and facilities.
5. Maintain a consistent level of quality water and sewer services.
6. Provide necessary storm drainage control.
7. Provide necessary control of solid waste generation and disposal.
8. Coordinate with utility companies for the provision of natural gas, electricity, and communications.

2.1.2.10 Economic Development Element

This element focuses on the local economy and discusses and sets the future direction for economic development planning and program efforts to promote strengthening the local economy. The Economic Development Element addresses the shortage of employment opportunities in the City. The goals of the Economic Development Element include the following:



1. Provide for the long-term fiscal stability of the community.
2. Plan for modernization and improvement to the City’s infrastructure and public facilities.
3. Enhance employment, educational, and business opportunities in the community.

2.1.2.11 Growth Management Element

This element strives to promote a balanced growth where an adequate circulation system and the transportation infrastructure can meet the demand from additional development. This element sets goals and policies to implement effective growth management in the City of Mission Viejo. This element also responds to the provisions of the Orange County Measure M Growth Management Program and the statewide Congestion Management Program (CMP) in addressing land use impacts on transportation systems. The goals of the Growth Management Element include the following:

1. Manage traffic congestion to maintain city-established levels of service standards.
2. Maintain levels of service standards on city roadways by requiring new development to play its fair share towards circulation improvements needed to accommodate project traffic (Development Mitigation).
3. Phase new development to the timing of transportation infrastructure necessary to accommodate project traffic, to maintain city-established levels of service standards on city transportation facilities impacted by new development (Development Phasing).
4. Ensure that impacts to City of Mission Viejo streets and intersections caused by traffic generated from land use changes, new development, or MPAH amendment proposed in neighboring jurisdictions, are mitigated to allow the City to maintain its Levels of Service standards.
5. Participate with neighboring jurisdictions to address areawide and regional traffic congestion issues.
6. Recognizing the constraints of existing physical development, strive towards achieving balanced land uses in residential, non-residential, and public land uses.

2.1.2.12 Glossary

This section provides definitions of terms commonly used throughout the General Plan document.

2.2 Regional Setting

The City of Mission Viejo is located in the south-central portion of Orange County in the Saddleback Valley, 23 miles southeast of Anaheim and 43 miles southeast of downtown Los Angeles (Figure 2-1, *Regional Location* and Figure 2-2, *Project Vicinity*). The City of Mission Viejo is located east of the Cities of Laguna Hills and Laguna Niguel, north of the City of San Juan



Capistrano, west of the City of Rancho Santa Margarita and unincorporated communities of Ladera Ranch and Coto de Caza, and south of the City of Lake Forest. The City of Mission Viejo and the surrounding cities are suburban in nature with mainly residential uses. The City of Mission Viejo is located approximately 8 miles northeast of the Pacific Ocean, 6 miles west of the Santa Ana Mountains, and approximately 10 miles east of the Crystal Cove State Park.

The City proper encompasses the corporate city limits with a total of 17 square miles. The City is connected to its neighboring cities via surface streets as well as Interstate 5 (I-5) which borders the City on the west, separating it from the Cities of Laguna Hills and Laguna Niguel.

2.3 Project Purpose and Objectives

A General Plan serves as the blueprint for future growth and development for Mission Viejo. As a blueprint for the future, the plan must contain policies and programs designed to provide decision makers with a solid basis for decisions related to land use and development. The updated Mission Viejo General Plan would be guided by interrelated policies and programs in addition to the Sustainability Action Plan policies to reinforce the City's vision for a sustainable future.

More specifically, the Land Use, Conservation/ Open Space, and Circulation Elements have been updated by City staff, with the following objectives:

- To correct outdated references in the elements' narratives
- To update and correct outdated text, tables, and maps
- To review and revise as appropriate the goals and policies of the elements
- To make editorial revisions
- To create a Sustainability Action Plan including greenhouse gas emissions reduction goals and measures

2.4 Project Characteristics

The project analyzed in this Program EIR is an update to the Mission Viejo General Plan Land Use, Conservation/Open Space, and Circulation Elements as well as the preparation of a Sustainability Action Plan.

The first General Plan for the City was adopted on October 8, 1990, along with its accompanying EIR. The General Plan was prepared to address issues related to future growth and development in the City of Mission Viejo, while providing a general long-term approach for maintaining and improving the quality of life in the community. The City experienced widespread growth in the 1980s, which continued through 2000, and now has few remaining vacant parcels of land. Based on City of Mission Viejo demographics data, the City currently has a population of 94,196 persons with a housing stock of 34,254 units (City of Mission Viejo 2012). The City's population is projected to be 102,985 in 2035.



The City is mostly developed (Figure 2-3, *Existing Land Use*); however, existing undeveloped parcels are scattered throughout the City. The following table identifies the existing undeveloped/vacant parcels in the City with their General Plan land use designations. Figure 2-4, *Undeveloped Parcels*, also shows the GP Land Use and the existing undeveloped/vacant parcels, which indicate where growth would occur in the City.

**Table 2-1
Existing Land Use Designations of the Vacant Parcel**

Frequency	Land Use	Acreage
5	Business Park	10.39
3	Commercial Highway	3.54
2	Commercial Neighborhood	0.32
6	Community Facility	0.04
8	Office Professional	0.13
3	Office Professional/Residential 30 / Business Park	1.85
17	Recreation/Open Space	8.00
3	Residential 14 (6.5–14.0 du/ac)	0.03
2	Residential 3.5 (0.0–3.5 du/ac)	0.10
15	Residential 30 (14.0–30.0 du/ac)	38.84
4	Residential 6.5 (3.5–6.5 du/ac)	0.22
2	Transportation Corridor	0.63
Total Acreage of Vacant Parcels		64.09

Source: City of Mission Viejo



Figure 2-1
Regional Location

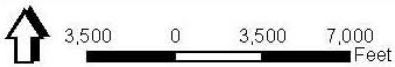
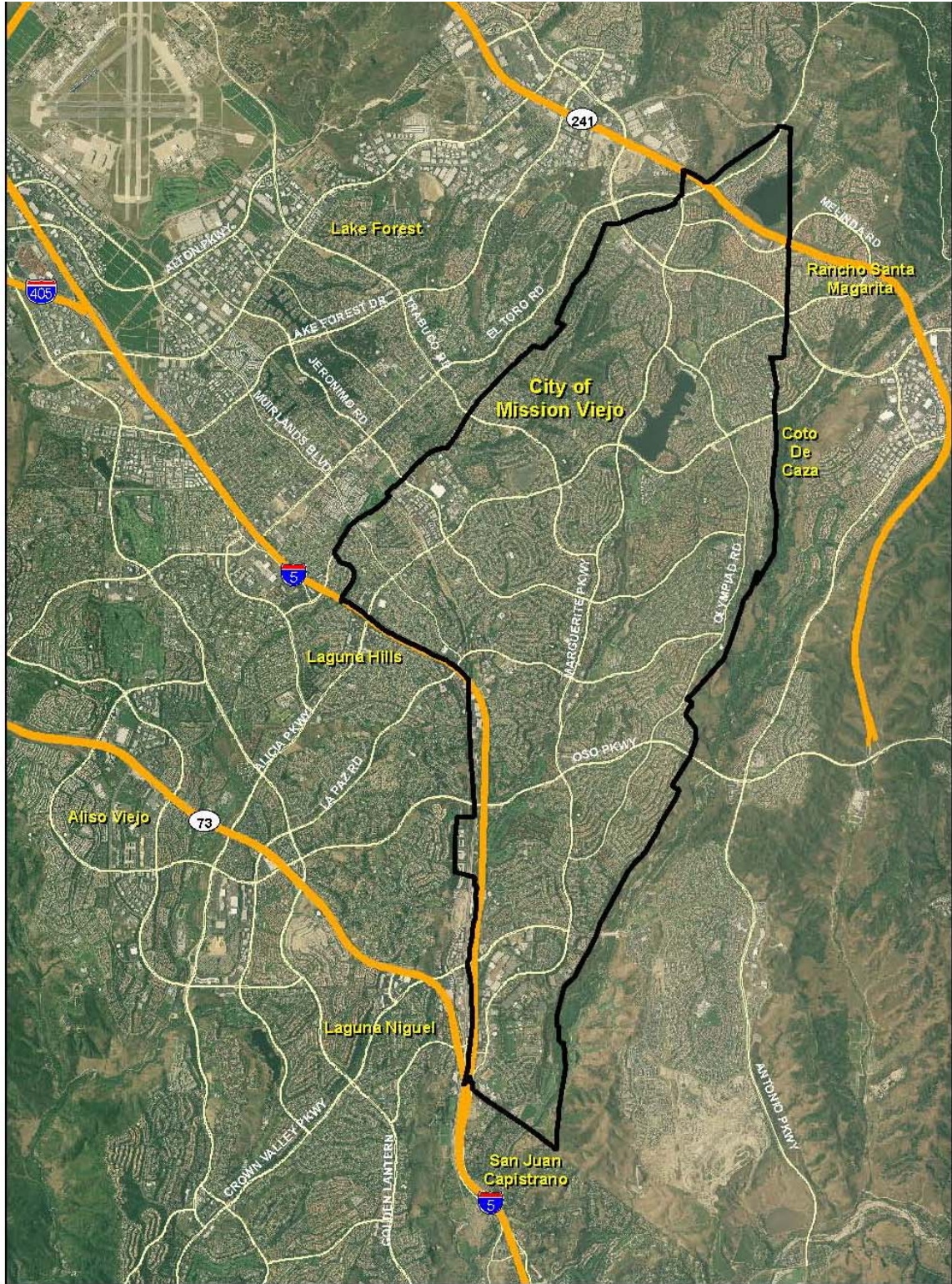


Figure 2-2
Project Vicinity

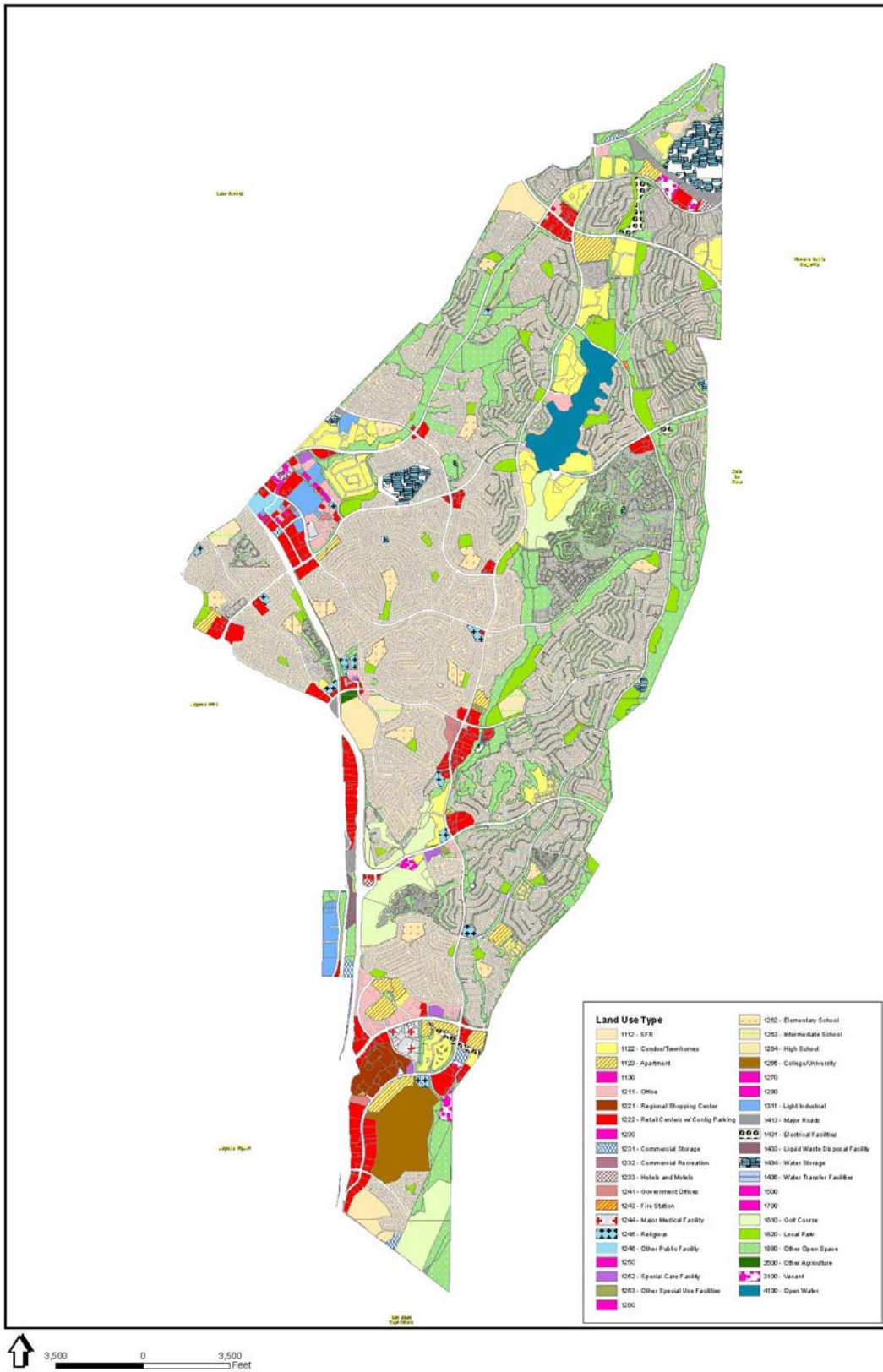


Figure 2-3
Mission Viejo Existing Land Use

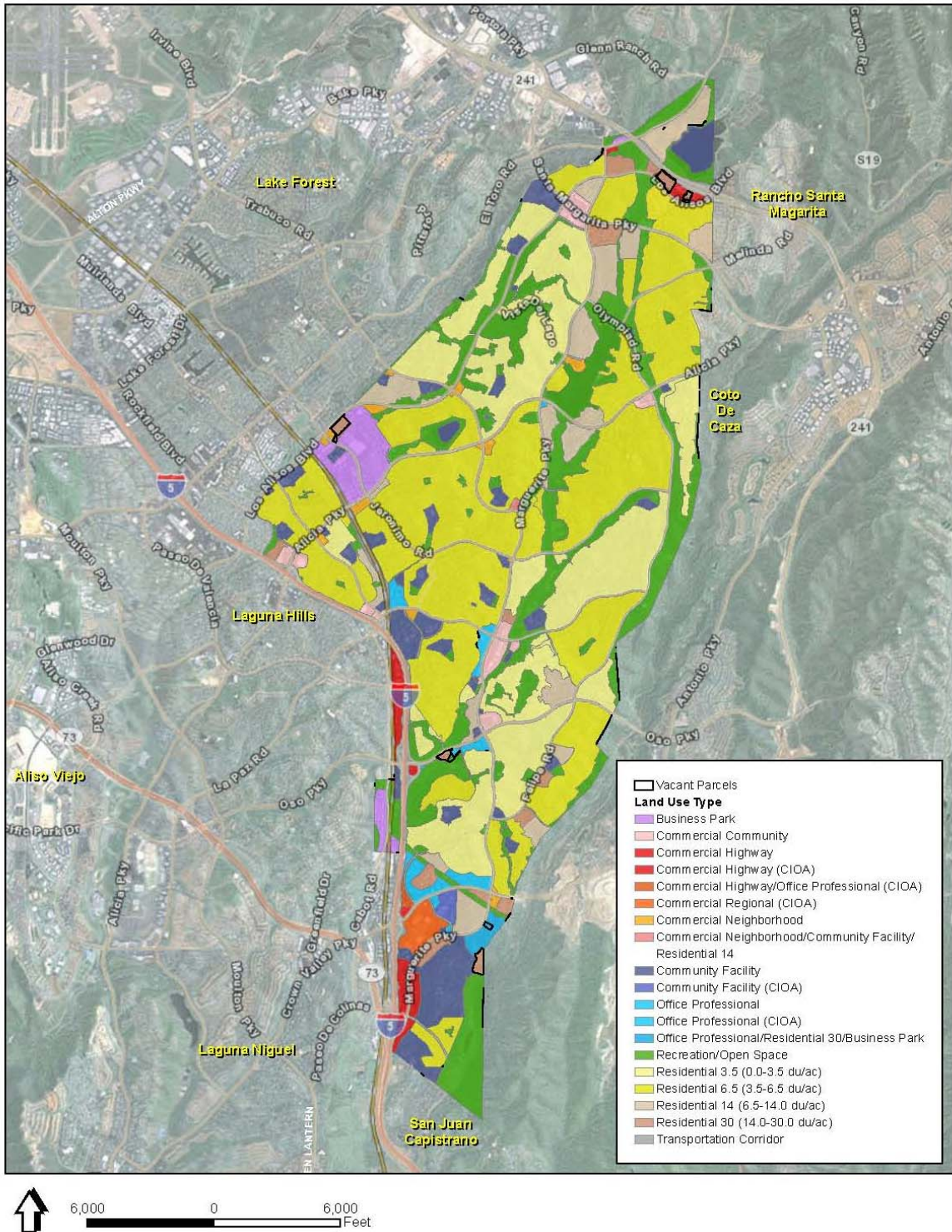


Figure 2-4
Mission Viejo Undeveloped Parcels



The comprehensive update to the General Plan includes the following components:

Land Use Element

- Incorporation of the Public Facilities Element into the Land Use Element
- Incorporation of the Healthy Community initiative (City Council Resolution 11-24) into the Land Use Element
- Additional land use plans and programs
- Goals and policies related to:
 - Law enforcement and protection
 - Public services such as fire protection, police protection, and emergency services
 - Public and cultural facilities such as the Mission Viejo Civic Center educational facilities, parks, and libraries
 - Public utilities and infrastructure such as water, sewer, storm drainage, urban runoff, solid waste, natural gas, electricity, and communities
 - Building a healthier community
- Land use related to airport land use consistency
- Additional Specific Plan study area

Conservation/Open Space Element

- Additional conservation and open space plans and programs
- Goals, policies, and measures related to:
 - Ecological and biological resources
 - Cultural and historic resources
 - Park, recreation, and open space
 - Water supply and conservation, water quality, storm water, and urban runoff management
 - Air quality, climate change, energy conservation, and green building practices
- Update coordinated with the Sustainability Action Plan

Circulation Element

- Addition of a Bikeway Plan depicting the City's bicycle network



In addition, the City is preparing a Sustainability Action Plan to address GHG emission reductions in a manner consistent with AB 32. The Sustainability Action Plan will be prepared to meet requirements for a plan to reduce GHG emissions as described in CEQA Guidelines Section 15183.5.

The Sustainability Action Plan will be prepared as the primary document designed to implement and achieve such climate change goals and policies. The Sustainability Action Plan will include a baseline 2008 emission inventory and projecting future emissions for 2020 and 2035; GHG emissions reduction goals and measures; action to implement the measures; and metrics to monitor the plan and measure its performance. Additionally, the climate change goals, policies, and implementation measures would be introduced into the Conservation/Open Space Element of the General Plan to provide a strong foundation for the Sustainability Action Plan. The Sustainability Action Plan would be adopted at the same time as the General Plan update, making the Sustainability Action Plan an immediate implementation program.

The baseline inventory in the Sustainability Action Plan indicates that the Mission Viejo community released 726,653 metric tons (MT) of carbon dioxide equivalent (CO₂e) emissions in 2008. Combined with statewide reductions anticipated with implementation of the Renewable Portfolio Standard (RPS), AB 1493 vehicle efficiency standards, the Low Carbon Fuel Standard, and the California Air Resources Board's (ARB) Tire Pressure Regulation in Mission Viejo, communitywide strategies and measures recommended in the Sustainability Action Plan can collectively reduce GHG emissions by approximately 161,674 MT CO₂e per year (equivalent to a 19 percent reduction below 2008 levels) by 2020, and by approximately 288,896 MT CO₂e per year (equivalent to a 31 percent reduction below 2008 levels) by 2035.

GHG reduction measures in the Sustainability Action Plan establish a specific implementation pathway for Draft General Plan policies. The GHG reduction measures were developed (a) by evaluating existing community conditions, (b) by identifying emissions reduction opportunities within the city, (c) by reviewing best practices recommended within the Draft General Plan, and (d) by incorporating state and regional laws, guidelines, and recommendations. The recommended Sustainability Action Plan measures are grounded in actions directly influenced by the City and rely on community participation. The Sustainability Action Plan recommends five community-wide reduction measures that, together with statewide reductions, would reduce GHG emissions in Mission Viejo. Implementation actions and performance standards are also defined to guide implementation and to monitor performance of each proposed measure over time.

2.5 Intended Uses of this EIR

The Program EIR serves as the basis for environmental review and impact mitigation for adoption and implementation of the update to the City of Mission Viejo General Plan. The City will review subsequent implementation projects for consistency with the Program EIR and prepare appropriate environmental documentation pursuant to CEQA provisions for Program



EIRs and subsequent projects. Subsequent projects under the Program EIR may include the following implementation activities:

- Approval of Zoning Ordinance amendments and updates;
- Rezoning of properties;
- Approval of Specific Plans;
- Approval of development plans, including tentative maps, variances, conditional use permits, and other land use permits;
- Approval of development agreements;
- Approval of facility and service master plans and financing plans;
- Approval of funding of public improvement projects;
- Approval of resource management plans;
- Issuance of municipal bonds;
- Issuance of permits and other approvals necessary for implementation of the General Plan;
- Acquisition of property by purchase or eminent domain; and
- Issuance of permits and other approvals necessary for public and private development projects.

The following responsible and trustee agencies may utilize this Program EIR in the adoption of the General Plan and/or implementation of subsequent activities and programs. These agencies may include, but are not limited to, the following:

- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- California Department of Fish and Wildlife (previously California Department of Fish and Game)
- California Department of Conservation
- California Department of Housing and Community Development
- California Department of Transportation (Caltrans)
- California State Lands Commission
- California Water Resources Control Board
- Southern California Association of Governments (SCAG)



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- South Coast Air Quality Management District
- County of Orange
- San Diego Regional Water Quality Control Board (SDRWQCB)
- Moulton-Niguel Water District (MNWD)
- Santa Margarita Water District (SMWD)
- El Toro Water District (ETWD)
- Orange County Sanitation District (OCSD)



CHAPTER 3 – ENVIRONMENTAL SETTING AND IMPACT ANALYSIS

3.0.1 Environmental Setting Summary

3.0.1.1 Physical Characteristics

The City of Mission Viejo is situated within the southern part of Orange County, west of the Santa Ana Mountains. Orange County is a geographically diverse area of mountains, hills, flatlands, and shoreline. The southern part of the county is characterized by the slopes of the San Joaquin Hills and Laguna Hills, and a mix of open and undeveloped areas. One of the major topographic features of the southern part of Orange County is the Peninsular Ranges. As part of the North American Coast Ranges, the Peninsular Ranges stretch approximately 900 miles from southern California to the southern tip of Baja California. The Peninsular Range Province, which is characterized by northwest-trending topographic and structural features, is bound by the Transverse Range Province to the north and the Colorado Desert Province to the west. An irregular coastal plain is located to the western edge of the province (including the Los Angeles Coastal Plain and Basin), which is composed predominantly of marine and nonmarine clastic deposits of the Upper Cretaceous, Tertiary, and Quaternary ages.

Mission Viejo is located near the western side of the Santa Ana Mountains, bounded by the Elsinore fault zone to the east and the Newport-Inglewood fault zone to the west. The San Andreas Fault is the largest active fault in California and is approximately 50 miles northeast of the City. The closest major active faults include the San Joaquin Thrust fault, the San Jacinto fault, and the Compton-Los Alamitos Thrust fault.

Overall, the City is characterized as a master planned community that is nearly built out with residential and urban development. The eastern portion of the City remains undeveloped and contains a number of natural resources, including riparian corridors, biologically sensitive lands, steep slopes (slopes over 30 percent), water bodies, canyons, drainage courses that are associated with the physical characteristics of the land, and lands that may contain cultural resources.

3.0.1.2 Environmental Resources

Mission Viejo is a part of two of Orange County's 13 different watersheds. The northern portion of the City is located in the Aliso Creek Watershed, which drains an area of approximately 31 square miles in southern Orange County. Its main tributary, Aliso Creek, originates in the Santa Ana Mountains inside the Cleveland National Forest. Smaller tributaries include Wood Canyon, Sulphur Creek, the Aliso Hills channel, and English Canyon Channel. English Canyon is the main route for Aliso Creek Watershed water flowing through the City.

The majority of the City is located in the San Juan Creek Watershed, which covers approximately 134 square miles and also includes portions of the Cities of Dana Point, Laguna



Hills, Laguna Niguel, Rancho Santa Margarita, and San Juan Capistrano. The San Juan Creek Watershed's main tributary, San Juan Creek, originates in the Santa Ana Mountains inside the Cleveland National Forest. Smaller tributaries include Arroyo Trabuco and Oso Creek, the latter being the main route for San Juan Creek Watershed water flowing through the City. Floodplain zones occur along Aliso Creek, the English Canyon channel, Oso Creek, and the southern portion of Arroyo Trabuco. Areas that are susceptible to inundation in the event of a dam failure exist downstream of the Upper Oso Reservoir, the El Toro Reservoir, and Lake Mission Viejo. The undeveloped portions of the City contain natural habitat directly adjacent to the biologically and archaeologically important Arroyo Trabuco, which runs in a southerly direction between the City of Mission Viejo and the City of Rancho Santa Margarita, and County of Orange unincorporated areas. In addition to Arroyo Trabuco, Aliso Creek, and Oso Creek, the City contains a number of ground and surface water resources, including Lake Mission Viejo, Upper Oso Reservoir, and El Toro Reservoir. Lake Mission Viejo is an artificial lake stretching approximately 1 mile from Olympiad Road to Alicia Parkway along Marguerite Parkway. Upper Oso Reservoir is one of the largest recycled water reservoirs in Orange County and holds up to 1.3 billion gallons of recycled and runoff water used for outdoor irrigation in the surrounding communities. El Toro Reservoir is on a tributary of Oso Creek and has a normal surface area of 21 acres.

The three riparian corridors that exist within the City occur along Aliso Creek; north of the Upper Oso Reservoir; along portions of Oso Creek; and along Arroyo Trabuco, which runs through the southeast edge of the City. The regionally significant riparian corridors along Aliso Creek and Arroyo Trabuco begin in the Cleveland National Forest and terminate at the Pacific Ocean. Riparian open space also exists along Oso Creek, which extends from Lake Mission Viejo to west of I-5.

The riparian corridors and lands within the City may contain cultural resources, mainly located along the City's eastern border in undeveloped areas. According to the Conservation/Open Space Element, studies associated with the Foothill Transportation Corridor have identified lands that contain archaeological and paleontological resources. The lands surrounding the Upper Oso Reservoir contain a high potential for historical and cultural resources for the area.

The steep slopes along the City's eastern boundary form an edge between the City and Arroyo Trabuco. Another important natural resource is the oak woodland, a reflection of the community's ranch history. The coast live oak (*Quercus agrifolia*) was named as the Official City Tree by the City Council on April 9, 1990.

3.0.1.3 Existing Land Use and Development Patterns

Development of the community began in 1965 when a master plan for Mission Viejo was approved by the Orange County Board of Supervisors. Land uses consisted of residential, commercial, industrial, recreational, and public uses designed to meet the growing population of the City. The first General Plan for the City was adopted on October 8, 1990, along with its accompanying EIR. The General Plan was prepared to address issues related to future growth



and development in the City of Mission Viejo, while providing a general long-term approach for maintaining and improving the quality of life in the community.

The City's General Plan accounts for a variety of existing land uses by providing for 17 land use categories and designations, including residential development ranging from low-density single-family to high-density multi-family development; commercial designations for office, industrial and community facilities; a special intensive overlay designation "Commercial Intensive Overlay Area" for concentrated development in the Crown Valley Parkways/I-5 core area; mixed use designations that offer flexibility in co-locating commercial, office, residential, and community facilities; recreation/open space designation for parkland and open space areas; and a transportation corridor designation for major transportation facilities.

Mission Viejo is located east of the Cities of Laguna Hills and Laguna Niguel, north of the City of San Juan Capistrano, west of the City of Rancho Santa Margarita and unincorporated communities of Ladera Ranch and Coto de Caza, and south of the City of Lake Forest. Mission Viejo and the surrounding cities are suburban in nature with mainly residential uses. Residential development in the City offers a wide range of housing types, from apartments to single-family dwelling units. Employment opportunities mainly exist within the industrial, business park, and office areas located in the westerly portion of the City. Recreational activities, parkland, and schools exist throughout the community and are located proximal to residential neighborhoods. Major institutional uses located within the southern regional commercial district of the City consist of Saddleback Community College and Mission Hospital. The City's trail system includes pedestrian and bike trails within open space corridors and regional trails that link to local and regional parkland.

3.0.1.4 Existing Transportation Network

The City of Mission Viejo transportation system consists of highways, streets, pedestrian paths, transit routes, and bikeways. The Mission Viejo circulation network is connected to a larger regional system. I-5 provides regional connection to the City of Mission Viejo. I-5 provides access to destinations throughout southern California in general and south Orange County. Within the City boundaries, access to I-5 is provided from Avery Parkway in the southernmost portion of the City to Alicia Parkway in the northern portion of the City. Additional access is provided via Crown Valley Parkway, Oso Parkway, La Paz Road, and Alicia Parkway. Surface streets connect Mission Viejo to the Cities of Laguna Hills and Laguna Niguel to the west, San Juan Capistrano to the south, Lake Forest to the north, Rancho Santa Margarita, and unincorporated communities of Ladera Ranch and Coto de Caza to the east.

Public transportation and alternative modes of travel are important components of the circulation system serving the City. Public bus service in Mission Viejo is operated by Orange County Transportation Authority (OCTA), which offers fixed route bus service on local and express routes throughout the City and county. These routes link housing, jobs, institutional, retail, and recreation areas in the City and the greater South County area. OCTA currently operates nine bus service routes: Routes 82, 85, 86, 87, 89, 91, 191, 212, and 216. These routes provide bus service from, to, and within the City, including stops at Saddleback College and the



Laguna Niguel/Mission Viejo Metrolink Rail Station. The Cities of Laguna Niguel and Mission Viejo jointly share responsibility for the Laguna Niguel/Mission Viejo Metrolink Rail Station, located in the City of Laguna Niguel near the intersection of I-5 and State Route 73 (SR-73). The rail station is a component of the Orange County Metrolink rail line that provides service from Oceanside in northern San Diego County to Orange County and downtown Los Angeles.

Existing bikeways serve a portion of Mission Viejo. Class III (signed bike lanes) are located along portions of Santa Margarita Parkway, Crown Valley Parkway, Marguerite Parkway, Olympiad, Trabuco, and La Paz Roads, and Los Alisos Boulevard. Class II striped bike lanes are located throughout the remaining arterial street network. In addition, four Class I (off-street) facilities are located in Mission Viejo, including Aliso Creek, Los Alisos Boulevard and Entidad, through the Jeronimo Open Space, along Oso Creek, and through Cordova Park.

The closest airport to the City of Mission Viejo is John Wayne Airport, located approximately 15 miles northwest of the proposed project. Currently, one heliport operates in the City at Mission Hospital; however, no helicopters are based at the hospital.

3.0.2 Environmental Issue Areas Analyzed

The subsequent sections, Sections 3.1 through 3.5, discuss the impacts of implementing the City of Mission Viejo General Plan update and identify mitigation measures, if any, aimed at reducing impacts found to be significant. In accordance with the State CEQA Guidelines, this Program EIR analyzes those environmental issue areas where significant impacts have the potential to occur.

The environmental issues analyzed in this EIR are as follows:

- Air Quality
- Greenhouse Gas Emissions
- Land Use and Planning
- Noise
- Transportation and Traffic

3.0.2.1 Organization of the Environmental Impact Analysis

Each issue area is analyzed in the following manner:

Existing Environmental Setting – This section describes the existing conditions in the environment in the vicinity of the project before the commencement of the project to provide a baseline for comparing “before the project” and “after the project” environmental conditions.

General Plan EIR Baseline – In accordance with Section 15125 of the State CEQA Guidelines, the discussion of the physical environment describes existing conditions within the City at the time the NOP was filed—March 19, 2012. However, in this case, 2008 was deemed appropriate as the CEQA baseline for the EIR analysis. This is primarily because the 2003 Mission Viejo Traffic Analysis Model (MVTAM) base year network was updated to reflect 2008 conditions within the City and the network was compared and updated to be consistent with the Orange County Traffic Analysis Model 3.3 (OCTAM 3.3) base year 2008 network outside of the City.



Additionally, as a result of the economic recession that began in 2007, conditions existing in 2012 did not change substantially since 2008. It is the City's judgment that the 2008 data represent conditions on the ground at the time of the NOP in 2012.

Regulatory Framework – This section provides a summary of the applicable federal, state, and local laws, regulations, plans, or policies that are relevant to each environmental issue area and, therefore, must be considered by the City of Mission Viejo in the decision-making process.

Thresholds for Determining Significance – This section defines and lists specific criteria used to determine whether an impact is or is not considered potentially significant. Major sources used in crafting criteria appropriate to the specifics of the project include the CEQA Guidelines; local, state, federal, or other standards applicable to an impact category; and officially established thresholds of significance. Per CEQA, "...an ironclad definition of significant effect is not possible because the significance of an activity may vary with the setting" (CEQA Guidelines Section 15064 [b]). Principally, "... a substantial, or potentially substantial, adverse change in any of the physical conditions within an area affected by the project, including land, air, water, flora, fauna, ambient noise, and objects of historic and aesthetic significance" constitutes a significant impact (CEQA Guidelines, Section 15382).

Analysis of Environmental Impacts – This section presents evidence, based to the extent possible on scientific and factual data, for the cause and effect relationship between the project and the potential changes in the environment. The exact magnitude, duration, extent, frequency, range, or other parameters of a potential impact are ascertained, to the extent possible, to determine whether impacts may be significant; all of the potential effects, including direct effects and reasonably foreseeable indirect effects, are considered. A cumulative impacts analysis is provided in Section 4.1 of this EIR. This section analyzes whether an impact is created as a result of the combination of the project together with other projects causing related impacts (CEQA Guidelines Section 15130).

Mitigation Measures – This section identifies the means by which potentially significant impacts could be reduced or avoided in cases where the Program EIR analysis determines such impacts to be potentially significant. Standard existing regulations, requirements, programs, and procedures that are applied to all similar projects are taken into account in identifying additional project-specific mitigation that may be needed to reduce significant impacts. Mitigation, in addition to measures that the lead agency will implement, can also include measures that are within the responsibility and jurisdiction of another public agency (CEQA Guidelines Section 15091 [a] [2]).

Significance after Mitigation – This section identifies the impacts that will remain after application of mitigation measures, and whether the remaining impacts are or are not considered significant. When these impacts, even with the inclusion of mitigation measures, cannot be mitigated to a level considered less than significant, they are identified as "unavoidable significant impacts." To approve a project with significant unavoidable impacts, the lead agency must adopt a Statement of Overriding Considerations. In adopting such a statement, the lead agency finds that it has reviewed the Program EIR, has balanced the



benefits of the project against the unavoidable adverse environmental effects, and determines that the benefits outweigh the adverse environmental effects. Thus, the adverse environmental effects may be considered “acceptable” (CEQA Guidelines Section 15093 [a]).

Cumulative Impacts – This section provides an analysis of the General Plan’s potential cumulative effects that addresses the impacts of the General Plan in combination with the impacts of growth that are forecast to occur through from present and future development across the region.

3.0.2.2 Project-Level Environmental Documentation for Subsequent Projects

Due to the programmatic nature of the General Plan and this EIR, project-level environmental documentation, separate from this EIR, may be required in the future as individual projects are proposed for implementation and as specific land use plans and development projects are proposed to implement the generalized land use patterns included in the General Plan. Based on the project-specific environmental analysis, actual project-level impacts will be more clearly defined at the time that this subsequent documentation is prepared.



3.1 Air Quality

This section describes existing air quality conditions in the City of Mission Viejo, a summary of applicable regulations, and an analysis of potential short-term construction and long-term operational air quality impacts of the project. In addition, mitigation measures are recommended, as necessary, to reduce significant air quality impacts. Detailed assumptions and analysis are provided in Appendix C.

3.1.1 Existing Environmental Setting

Air quality is defined by the concentration of pollutants related to human health. Ambient concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, ambient air quality conditions within the local air basin are influenced by such natural factors as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

3.1.1.1 Climate, Topography, and Meteorology

Climate, topography, and meteorology of an area influence regional and local ambient air quality. The City of Mission Viejo is located in the south-central portion of Orange County, which is located within the South Coast Air Basin (Basin). The Basin is a 6,600-square-mile coast plain bounded by the Pacific Ocean to the southwest and the San Gabriel, San Bernardino, and San Jacinto Mountains to the northeast. The boundary of the Basin is coincident with the boundary of all of Orange County and also includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties.

The distinctive climate of the Basin is determined by its terrain and geographic location. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the southwest and high mountains around the rest of its perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific (Pacific High), resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. These pattern changes are caused when the Pacific High moves southward during the winter, which allows low-pressure storms and precipitation to reach the coastal areas. During fall, the region often experiences dry, warm easterly winds (Santa Ana winds), which raise temperatures and lower humidity, often to less than 20 percent. Rainfall in the Basin averages approximately 9 inches annually (WRCC 2008). The heaviest precipitation occurs in November through April. The mean annual air temperature is 64.0 degrees Fahrenheit (°F), and the mean maximum and mean minimum temperatures are 72.1°F and 56.0°F, respectively (WRCC 2008).

Winds in the planning area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by the daytime onshore sea breezes. At night,



the wind generally slows and reverses direction, traveling toward the sea. Local canyons can also alter wind direction, with wind tending to flow parallel to the canyons. Nighttime cold air drainage from the mountains into the Basin mixes with cool marine air, resulting in stable atmospheric conditions, discussed below.

The vertical dispersion of air pollutants in the Basin is hampered by the presence of persistent temperature inversions. High-pressure systems, such as the semipermanent high-pressure zone in which the Basin is located, are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler, marine-influenced air near the ground surface, and resulting in the formation of subsidence inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog. The Basinwide occurrence of inversions at 3,500 feet above mean sea level or less averages 191 days per year (SCAQMD 1993:A8-2).

The potential for atmospheric pollution in an area depends largely on winds, atmospheric stability, solar radiation, and terrain. The combination of low wind speeds and low inversions produces the greatest concentration of air pollutants. The warm sunny weather in the Basin associated with a persistent high-pressure system is conducive to the formation of ozone and other oxidative pollutants, commonly referred to as “smog.” The problem is further aggravated by the surrounding mountains, frequent low inversion heights, and stagnant air conditions. All of these factors act together to trap pollutants in the air basin (ARB 2009). On days without inversions, or on days of winds averaging over 15 miles per hour, smog potential is greatly reduced.

3.1.1.2 Criteria Air Pollutants

The California Air Resources Board (ARB) and EPA focus on the following air pollutants as indicators of ambient air quality: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less (PM₁₀), fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less (PM_{2.5}), and lead (Pb). Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documentation is available for these pollutants, they are commonly referred to as “criteria air pollutants.”

Health-based air quality standards have been established for these pollutants by ARB at the state level and by EPA at the national level. These standards were established to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. A brief description of each criteria air pollutant, including source types and impacts to health, is provided below along with the most current monitoring station data and attainment designations for the project study areas. **Table 3.1-1** presents the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS).



**Table 3.1-1
National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	National ^a		California ^b
		Primary ^{c, d}	Secondary ^{c, e}	Concentration ^c
Ozone	1 hour	--	Same as primary standard	0.09 ppm (180 µg/m ³)
	8 hour	0.075 ppm (147 µg/m ³)		0.070 ppm (137 µg/m ³)
Respirable particulate matter	24 hour	150 µg/m ³	Same as primary standard	50 µg/m ³
	Annual arithmetic mean	--		20 µg/m ³
Fine particulate matter	24 hour	35 µg/m ³	Same as primary standard	No separate state standard
	Annual arithmetic mean	15 µg/m ³		12 µg/m ³
Carbon monoxide	8 hour	9 ppm (10 mg/m ³)	None	9.0 ppm (10 mg/m ³)
	1 hour	35 ppm (40 mg/m ³)		20 ppm (23 mg/m ³)
	8 hour (Lake Tahoe)	--		--
Nitrogen dioxide	Annual arithmetic mean	0.053 ppm (100 µg/m ³)	Same as primary standard	0.030 ppm (57 µg/m ³)
	1 hour	0.100 ppm	None	0.18 ppm (339 µg/m ³)
Sulfur dioxide	24 hour	--	--	0.04 ppm (105 µg/m ³)
	3 hour	--	0.5 ppm (1,300 µg/m ³) ^h	--
	1 hour	75 ppb	--	0.25 ppm (655 µg/m ³)
Lead ^f	30-day average	--	--	1.5 µg/m ³
	Calendar quarter	1.5 µg/m ³	Same as primary standard	--
	Rolling 3-month average ^g	0.15 µg/m ³		--
Visibility-reducing particles	8 hour	No national standards		Extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more (0.07 to 30 miles for Lake Tahoe) because of particles when the relative humidity is less than 70%. Method: Beta attenuation and transmittance through filter tape.
Sulfates	24 hour			25 µg/m ³
Hydrogen sulfide	1 hour			0.03 ppm (42 µg/m ³)
Vinyl chloride ^f	24 hour			0.01 ppm (26 µg/m ³)

Source: ARB 2012a

Notes:

mg/m³ = milligrams per cubic meter; PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million; µg/m³ = micrograms per cubic meter.



Pollutant	Averaging Time	National ^a		California ^b
		Primary ^{c, d}	Secondary ^e	Concentration ^c

^a National standards (other than those for ozone and particulate matter and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact U.S. Environmental Protection Agency for further clarification and current federal policies.

^b California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility-reducing particles—are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

^c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

^d National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

^e National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

^f The California Air Resources Board has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

^g National lead standard, rolling 3-month average: final rule signed October 15, 2008.

^h On June 2, 2010, the U.S. EPA established a new 1-hour SO₂ standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older parosoniline methods until the new FRM have adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO₂ standard of 0.14 ppm and the annual primary SO₂ standard of 0.030 ppm, effective August 23, 2010. The secondary SO₂ standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

Ozone (O₃)

Ozone is a colorless, odorless gas that primarily exists in the upper atmosphere (stratosphere) as the ozone layer and in the lower atmosphere (troposphere) as a pollutant. Tropospheric ozone is a principal cause of lung and eye irritation in the urban environment. It is the principal component of smog, which is formed in the troposphere through a series of reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_x) in the presence of sunlight. Therefore, ROG and NO_x are precursors of ozone. ROG and NO_x emissions are both considered critical in ozone formation. Control strategies for ozone have focused on reducing these emissions from vehicles, industrial processes using solvents and coatings, and consumer



products. Ozone concentrations are generally greatest in the summer, when atmospheric inversions are greatest and the presence of sunlight and heat is high.

Particulate Matter (PM)

PM is a complex mixture of extremely small particles and liquid droplets. PM is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of particulates include windblown dust and ocean spray. Some particles are emitted directly into the atmosphere. Others, referred to as secondary particles, result from gases that are transformed into particles through physical and chemical processes in the atmosphere.

The size of PM is directly linked to the potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects such as aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems such as heart attacks and irregular heartbeat. Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. EPA groups PM into two categories, coarse PM or PM₁₀, and fine PM or PM_{2.5}, as described below.

Inhalable coarse particles (PM₁₀), such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads. Control of PM₁₀ is primarily achieved through the control of dust at construction and industrial sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads.

PM₁₀ includes the subgroup of finer particles (PM_{2.5}), such as those found in smoke and haze, with an aerodynamic diameter of 2.5 microns or smaller. These finer particles pose an increased health risk because they can deposit deep in the lungs and contain substances that are particularly harmful to human health. Sources of fine particles include all types of combustion activities such as motor vehicles, power plants, wood burning, and certain industrial processes. PM_{2.5} is the major cause of reduced visibility (haze) in California.

Carbon Monoxide (CO)

CO is a colorless and odorless gas that, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Overall, CO emissions are decreasing because of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO concentrations are typically higher in the winter;



therefore, California has required the use of oxygenated gasoline in the winter months to reduce CO emissions.

In addition to regional CO emissions, localized CO emissions can be of concern. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called “hotspots,” that can be hazardous to human receptors adjacent to the intersections. Severe vehicle congestion is determined by level of service (LOS) analysis for roadways and intersections. According to the Transportation Project-level Carbon Monoxide Protocol (CO Protocol) (UCD ITS 1996), localized CO impacts are typically of concern at signalized intersections that are frequently congested and operate at unacceptable LOS.

Nitrogen Dioxide (NO₂)

NO₂ is a gas that is a product of the combustion of fossil fuels generated from vehicles and stationary sources, such as power plants and boilers. NO₂ can cause lung damage. As noted above, NO₂ is a type of NO_x and is a principal contributor to ozone and smog production.

Sulfur Dioxide (SO₂)

SO₂ is a gas that is a product of the combustion of fossil fuels, with the primary source being power plants and heavy industry that utilize coal or oil as fuel. SO₂ is also a product of diesel engine emissions. The human health effects of SO₂ include lung disease and breathing problems for asthmatics. SO₂ in the atmosphere contributes to the formation of acid rain. In the Basin, there is relatively little combustion of coal and oil; therefore, SO₂ is less of a concern than in other parts of the country.

Lead (Pb)

Lead is a highly toxic metal that may cause a range of human health effects. Lead anti-knock additives in gasoline represent a major source of lead emissions to the atmosphere. However, lead emissions have significantly decreased due to the near elimination of leaded gasoline use. Lead-based paint, banned or limited by EPA in the 1980s, is a health hazard when it deteriorates by peeling, chipping, or cracking; or generates lead dust when scraped, sanded, or heated.

Odor

Odor is considered an air quality issue, at the local level (e.g., odor from wastewater treatment) or at the regional level (e.g., smoke from wildfires). An air pollutant means any fume, smoke, PM, vapor, gas, odorous substance, or any combination thereof. Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person’s reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).



Attainment Status in the Basin

Specific geographic areas are classified as either “attainment” or “nonattainment” areas for each pollutant based on the comparison of measured data with federal and state standards. When insufficient data is available to make a determination, regions are designated as “unclassifiable” or “unclassified.” As shown below in **Table 3.1-2**, the Basin currently meets NAAQS for all criteria air pollutants except ozone, PM₁₀, and PM_{2.5} and meets the CAAQS for all criteria air pollutants except ozone, PM₁₀, and PM_{2.5}. Additionally, the Basin is nonattainment for NO₂.

Table 3.1-2
South Coast Air Basin Attainment Status

Pollutant	California Attainment Status	National Attainment Status
Ozone	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Unclassifiable/ Attainment
Nitrogen Dioxide (NO ₂)	Nonattainment	Unclassified/ Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment
Respirable Particulate Matter (PM ₁₀)	Nonattainment	Nonattainment
Fine Particulate Matter (PM _{2.5})	Nonattainment	Nonattainment
Lead	Attainment	Unclassifiable/ Attainment
Sulfates	Attainment	–
Hydrogen Sulfide	Unclassified	–
Vinyl Chloride	Unclassified	–
Visibility Reducing Particles	Unclassified	–

Source: ARB 2011a

Notes:

CO = carbon monoxide; NO_x = oxides of nitrogen; SO_x = sulfur oxides; PM₁₀ = particulate matter with aerodynamic diameter less than 10 microns; PM_{2.5} = particulate matter with aerodynamic diameter less than 2.5 microns.

– = No threshold proposed

Existing Air Quality in the Basin

Ambient air pollutant concentrations in the Basin are measured at various air quality monitoring stations operated by the South Coast Air Quality Management District (SCAQMD) and/or ARB. The air quality monitoring station closest to the project study areas is the Mission Viejo monitoring station, located at 26081 Via Pera. **Table 3.1-3** presents the most recent available data from the Mission Viejo monitoring station as summaries of the exceedances of standards and the highest pollutant levels recorded for years 2009 through 2011.



**Table 3.1-3
Ambient Air Quality Summary – Mission Viejo Monitoring Station**

Pollutant Standards	2009	2010	2011
Carbon Monoxide (CO)			
National maximum 8-hour concentration (ppm)	1.00	0.90	0.95
State maximum 8-hour concentration (ppm)	1.00	0.90	1.03
State maximum 1-hour concentration (ppm)	1.5	1.2	1.4
<u>Number of Days Standard Exceeded</u>			
NAAQS 8-hour (>9.0 ppm)	0	0	0
CAAQS 8-hour (>9.0 ppm)	0	0	0
CAAQS 1-hour (>20.0 ppm)	0	0	0
Nitrogen Dioxide (NO₂)¹			
State maximum 1-hour concentration (ppm)	0.065	0.070	0.061
Annual Average (ppm)	0.013	0.011	*
<u>Number of Days Standard Exceeded</u>			
CAAQS 1-hour	0	0	0
Ozone			
State maximum 1-hour concentration (ppm)	0.121	0.117	0.094
National maximum 8-hour concentration (ppm)	0.095	0.082	0.083
<u>Number of Days Standard Exceeded</u>			
CAAQS 1-hour (>0.09 ppm)	7	2	0
CAAQS 8-hour (>0.070 ppm)/ NAAQS 8-hour (>0.075 ppm)	14/10	2/2	5/2
Particulate Matter (PM₁₀)			
National maximum 24-hour concentration (µg/m ³)	56.0	34.0	48.0
State maximum 24-hour concentration (µg/m ³)	55.0	34.0	47.0
State annual average concentration (µg/m ³)	23.2	*	18.8
<u>Estimated Number of Days Standard Exceeded</u>			
NAAQS 24-hour (>150 µg/m ³)	0.0	0.0	0.0
CAAQS 24-hour (>50 µg/m ³)	6.1	*	0.0
Particulate Matter (PM_{2.5})			
National maximum 24-hour concentration (µg/m ³)	39.2	19.9	33.4
State maximum 24-hour concentration (µg/m ³)	39.2	19.9	33.4



Pollutant Standards	2009	2010	2011
National annual average concentration ($\mu\text{g}/\text{m}^3$)	9.4	7.9	8.5
State annual average concentration ($\mu\text{g}/\text{m}^3$)	9.5	*	*
<u>Estimated Number of Days Standard Exceeded</u>			
NAAQS 24-hour ($>65 \mu\text{g}/\text{m}^3$)	3.5	0.0	0.0

Source: ARB 2011b; EPA 2011a

Notes:

CO = carbon monoxide; NO₂ = nitrogen dioxide; PM₁₀ = particulate matter with aerodynamic diameter less than 10 microns; PM_{2.5} = particulate matter with aerodynamic diameter less than 2.5 microns; * = insufficient data to determine value.

- 1 Monitoring data was obtained from the Costa Mesa monitoring station located on Mesa Verde Drive.

As shown in **Table 3.1-3**, ambient air concentrations of CO and NO₂ in the region did not exceed the NAAQS/CAAQS in 2009, 2010, or 2011. Both the state and federal 8-hour ozone standards were exceeded multiple times in 2009, 2010, and 2011. The state 1-hour ozone standard was exceeded multiple times in 2009 and 2010, but was not exceeded during 2011. The PM₁₀ concentrations did not exceed the federal standards in 2009, 2010, or 2011, but did exceed the state standards in 2009. The PM_{2.5} concentrations exceeded the federal standard in 2009, but did not exceed the standard in the last 2 years.

Sensitive Receptors

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. These sensitive receptors include children, the elderly, people with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent as the majority of the workers tend to stay indoors most of the time.



3.1.2 Regulatory Setting

3.1.2.1 Federal Regulations

At the federal level, EPA is charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress occurred in 1990.

The CAA required EPA to establish primary and secondary NAAQS. The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. EPA is responsible for reviewing all state SIPs to determine conformation to the mandates of the CAAA and to determine whether implementation will achieve air quality goals. If EPA determines an SIP is inadequate, a Federal Implementation Plan (FIP) that imposes additional control measures may be prepared for the nonattainment area.

3.1.2.2 State Regulations

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA was adopted in 1988 and required ARB to establish the CAAQS. ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and criteria air pollutants. In most cases, the CAAQS are more stringent than the NAAQS and incorporate a margin of safety to protect sensitive individuals.

ARB and local air pollution control districts are currently developing plans for meeting new national air quality standards for ozone and PM_{2.5}. California's adopted 2007 State Strategy was submitted to EPA as a revision to the SIP in November 2007. EPA proposed to approve the submitted SIP in September 2011 (EPA 2011b).

3.1.2.3 Local Plans and Policies

South Coast Air Quality Management District

The Basin contains California's largest metropolitan region. The area includes the southern two-thirds of Los Angeles County, all of Orange County, and the western urbanized portions of Riverside and San Bernardino Counties. The Basin covers a total of 6,600 square miles, is home to more than 43 percent of California's population, and generates about 28 percent of the state's total criteria pollutant emissions.

SCAQMD attains and maintains air quality conditions in the Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. SCAQMD prepares plans to attain ambient air quality standards, adopts and enforces rules and regulations concerning sources of air pollution, and issues permits for stationary sources of air pollution. SCAQMD also inspects stationary sources of air pollution and responds to citizen complaints; monitors ambient air quality and



meteorological conditions; and implements programs and regulations required by the CAA, CAAA, and CCAA. Air quality plans applicable to the proposed project are discussed below.

Air Quality Management Plan

SCAQMD and the Southern California Association of Governments (SCAG) prepare the air quality management plan (AQMP), which addresses federal and state CAA requirements. The AQMP describes goals, policies, and programs to improve air quality in the Basin. Two versions (2003 and 2007) of the AQMP are in different stages of approval. The 2003 AQMP was adopted by SCAQMD in August 2003 and approved, with modifications, by ARB in October 2003 (ARB 2003). ARB submitted the SIP to EPA on January 9, 2004; however, this SIP has not been approved, and the 1997 AQMP with 1999 amendments remains the federally approved AQMP.

The 2007 AQMP was adopted by the SCAQMD Governing Board on June 1, 2007. The purpose of the 2007 AQMP is to set forth a comprehensive program that would lead the region into compliance with federal 8-hour ozone and PM_{2.5} air quality standards. ARB adopted the State Strategy for the 2007 SIP, and the 2007 AQMP as part of the SIP on September 27, 2007. On November 28, 2007, ARB submitted an SIP revision to EPA for ozone, PM_{2.5}, CO, and NO₂ in the Basin; this revision is identified as the 2007 South Coast SIP. The 2007 AQMP/2007 South Coast SIP demonstrates attainment of the federal PM_{2.5} standard in the Basin by 2014, and attainment of the federal 8-hour ozone standard by 2023. The SIP also includes a request of reclassification of the ozone attainment designation from “severe” to “extreme,” which would result in a downgrade in severity and would extend the attainment date for the region.

3.1.2.4 Toxic Air Contaminants

In addition to criteria pollutants, air quality regulations also focus on localized hazardous air pollutants, which are also called toxic air contaminants (TACs). For those TACs that may cause cancer there is, in general, no minimum concentration that does not present some risk. This contrasts with the criteria air pollutants, for which acceptable levels of exposure can be determined and ambient standards have been established (i.e., NAAQS).

EPA and ARB have ongoing programs to identify and regulate TACs. Among the many substances identified as TACs are diesel exhaust particulates, asbestos, and lead. The regulation of TACs is generally through statutes and rules that require the use of the maximum or best available control technology (MACT or BACT) to limit TAC emissions.

Particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a TAC by ARB in 1998. The control of diesel PM emissions is a very active current concern of regulatory agencies at all levels. The majority of the estimated local health risk from TACs is from diesel PM. The composition of diesel PM emissions from diesel-fueled engines varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Federal and state efforts to reduce diesel PM emissions have focused on the use of improved fuels, adding particulate filters to engines, and requiring the production of new-technology engines that emit fewer exhaust particulates.



MACT/BACT for asbestos and lead TACs have been identified for many years and there are established rules and procedures to prevent dispersion and inhalation of these substances. Asbestos is a naturally occurring mineral that was used in building materials for thermal and acoustical insulation and fire resistance until the mid-1980s and a partial ban by EPA was imposed in 1989. Lead was used in paint for housing until 1978 when lead-based paint was banned by EPA for use in housing. Asbestos and lead, when disturbed during building demolition, can become airborne as inhalable health hazard pollutants and, therefore, require abatement before demolition.

3.1.3 Thresholds for Determining Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines and guidance from SCAQMD. Pursuant to Appendix G, the proposed project would result in a significant impact on air quality if implementation of the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

The City of Mission Viejo uses significance criteria established by SCAQMD to evaluate air quality impacts. According to these criteria, implementation of the proposed project would be considered significant if it would exceed any of the following:



Mass Daily Thresholds		
Pollutant	Construction ^a	Operation ^b
NO _x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM ₁₀	150 lbs/day	150 lbs/day
PM _{2.5}	55 lbs/day	55 lbs/day
SO _x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and noncarcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants ^c		
NO ₂ 1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state)	
PM ₁₀ 24-hour average annual average	10.4 µg/m ³ (construction) ^d & 2.5 µg/m ³ (operation) 1.0 µg/m ³	
PM _{2.5} 24-hour average	10.4 µg/m ³ (construction) ^d & 2.5 µg/m ³ (operation)	
Sulfate 24-hour average	1 µg/m ³	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) 9.0 ppm (state/federal)	

Source: SCAQMD Rev. March 2009

^a Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea Air Basin and Mojave Desert Air Basin).

^b For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.



Mass Daily Thresholds

- ^c Ambient air quality thresholds for criteria pollutants are based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
- ^d Ambient air quality threshold is based on SCAQMD Rule 403.

Notes:

lbs/day = pounds per day

ppm = parts per million

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

≥ greater than or equal to

3.1.4 Analysis of Environmental Impacts

3.1.4.1 Conflict with or obstruct implementation of the applicable air quality plan

Air quality planning efforts are based on analysis and forecasts of air pollutant emissions throughout the entire region. Consistency with air quality planning efforts is based on the consistency of the General Plan with the regional air quality plan. Emission forecasts rely on projections of vehicle miles traveled (VMT) by the Metropolitan Planning Organizations, such as SCAG, and population, employment, and land use projections made by local jurisdictions, such as the City of Mission Viejo General Plan.

Policies in the General Plan include a variety of actions aimed at cooperating with SCAG and SCAMQD for regional planning efforts. The SCAG 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP) is a comprehensive approach to addressing the region's mobility challenges. On April 4, 2012, the Regional Council of SCAG adopted the 2012-2035 RTP. SCAQMD manages the region's AQMP, which uses information from the RTP to ensure the region is steadily moving toward attainment and maintaining ambient air quality standards. The General Plan includes relevant goals and policies that reflect and respond to the AQMP regional measures and goals. The Land Use Element, supported by the Conservation and Open Space Element in particular, contains policies specifically written to address impacts related to regional air quality goals. Conservation/Open Space Element Policy 8.1 requires the City to work with SCAQMD and SCAG to achieve the goals of the AQMP.

Future development in the City of Mission Viejo would generate VMT and associated emissions of ozone precursors and PM. Future development would also be required to demonstrate compliance with the strategies and measures adopted as part of the Regional Air Quality Strategy (RAQS) and SIP during the environmental review process, as well as with the requirements of SCAQMD to reduce emissions of ROG, NO_x, PM₁₀, and PM_{2.5}. The City of Mission Viejo will continue to coordinate with SCAG and SCAQMD to ensure that all new local land use decisions are incorporated into regional planning and air quality plan updates. Based on the requirements for consistency with emission control strategies in the AQMP and SIP, the General Plan would not conflict with or obstruct the implementation of the RAQS and/or applicable portions of the SIP. The General Plan is consistent with SCAQMD current air quality planning efforts. Therefore, this impact would be **less than significant**.



3.1.4.2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation

The air pollutants of greatest concern in the Basin are ozone, PM₁₀, and PM_{2.5} because of the current nonattainment status for these pollutants. Sources of these pollutants and their precursors include stationary sources (e.g., fuel combustion, waste disposal processes, and industrial processes), area-wide sources (e.g., use of consumer products), and mobile sources (e.g., on-road vehicles). Stationary source emissions are permitted and regulated by SCAQMD and are not anticipated to change unless new stationary sources are constructed. However, if new stationary sources were constructed, they would be subject to SCAQMD's requirements for permitting and must demonstrate that they will not cause or contribute to a violation of an air quality standard. Therefore, future emissions from stationary sources developed under the General Plan were not calculated because these sources would be required to demonstrate that they would not contribute to or violate any air quality standards in order to obtain required permits from SCAQMD.

Future facility development of stationary sources would be required to conduct environmental review pursuant to CEQA prior to approval. Area-source and mobile emissions estimates based on development associated with the General Plan are based on the forecasted buildout of the General Plan land use designations.

Construction

The General Plan would allow for additional commercial and residential development within the City. The increase in density and development potential would also result in additional construction-related air quality emissions. At the time of this writing, the development schedule for these additional uses is unknown and determined by factors outside the City's control, such as market demand and capital availability. It is anticipated that these additional construction emissions would occur over an extended period of time, depending on factors such as the overall economic environment. Therefore, construction emissions resulting from additional development would not likely occur within the same year. Nevertheless, construction projects have the potential to generate criteria air pollutants and precursors that could cause a **significant** impact requiring mitigation.

During construction, criteria air pollutant and precursor emissions would be temporarily and intermittently generated from a variety of sources. Potential demolition, excavation, and site grading activities would generate fugitive PM dust emissions. Fugitive PM dust emissions are primarily associated with ground disturbance and material transport and vary as a function of parameters such as soil silt content and moisture, wind speed, acreage of disturbance area, and the intensity of activity performed with construction equipment. Exhaust emissions from diesel equipment, material transport trips, and construction worker-commute trips also contribute to short-term increases in PM emissions, but to a lesser extent. Exhaust emissions from these construction-related mobile sources would also include ROG and NO_x. In addition, the application of architectural coatings (i.e., interior and exterior surface painting) would result in off-gas emissions of ROG, PM₁₀, and PM_{2.5}.



The timing and intensity of construction activities cannot, at this time, be accurately quantified nor compared with a significance threshold. However, it is anticipated that all construction projects, regardless of size or intensity, would be required to implement best management practices such as SCAQMD Rule 403 (Fugitive Dust) to reduce fugitive PM dust emissions from all construction activities.

Operation

The General Plan would allow an increased intensity of development in the City. The additional development would include land uses such as residential, retail, offices, business park, and general commercial services. Daily activities associated with the operation of these land uses would generate criteria air pollutant and precursor emissions from mobile and area sources. Mobile sources include vehicle trips coming to and leaving from the planned land uses. Area sources include sources such as consumer products (i.e., ROG), natural gas combustion for water and space heating, landscape maintenance equipment, hearth operation in residential homes, and periodic architectural coatings. While construction emissions are considered short term and temporary, operational emissions are considered long term and occur for the lifetime of the project given a project's resulting land uses. Therefore, operational emissions have a greater potential to affect the attainment status and implementation of an air quality plan within an air basin, particularly as a result of increased traffic from additional development. This impact would be **significant** requiring mitigation.

The operational emissions associated with the day-to-day activities of the additional land uses were quantified using the California Emission Estimator Model (CalEEMod) Version 2011.1. CalEEMod allows the user to enter project-specific information such as types of land uses, amount of land uses, and vehicle trip generation rates. CalEEMod was used to model area- and energy-source emissions associated with the proposed General Plan land uses in operational year 2020. The model includes default area- and energy-source assumptions for regions throughout California depending on land use type. For mobile source emissions, the ARB-approved on-road mobile source emissions inventory model EMFAC2011 was used to quantify emissions (ARB 2012b). The model includes the most recent on-road emissions data such as vehicle type distribution (i.e., model year and vehicle type) and emission factors (e.g., per vehicle type, per speed bin). EMFAC2011 can estimate on-road emissions using region-specific parameters such as county, total VMT, and speed bins. **Table 3.1-4** presents the project's daily operational emissions that would be expected to occur in year 2020. This modeling assumes all of the land uses assumed in Table LU-3 in the Land Use Element would be fully developed and operational by the horizon year. Trips associated with implementation of the project were analyzed by ITERIS and are available in Appendix E. As shown in **Table 3.1-4**, daily operational emissions resulting from the proposed project would exceed the SCAQMD thresholds of significance for ROG, NO_x, CO, PM₁₀, and PM_{2.5}. It should be noted that the SCAQMD thresholds of significance are typically applied on a project-level, and not for an entire General Plan. Nevertheless, daily operational emissions in year 2020 would exceed all of the SCAQMD thresholds of significance.



**Table 3.1-4
Summary of Modeled Operational Emissions of Criteria Air Pollutants and Precursors**

	Emissions (lbs/day) ¹				
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}
Area Sources	5,290.57	201.76	14,311.80	1,840.46	1,840.05
Energy	37.56	326.96	180.32	25.95	25.95
Mobile Sources	1,486.60	3,828.40	19,288.60	535.00	235.20
Total	6,814.73	4,357.12	33,780.72	2,401.41	2,101.20
SCAQMD Significance Threshold²	55	100	550	150	55
Exceeds Threshold?	Yes	Yes	Yes	Yes	Yes

Source: AECOM 2012.

Notes:

Totals may not appear to add exactly due to rounding.

lbs/day = pounds per day; CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; PM_{2.5} = particulate matter less than or equal to 2.5 microns in diameter; ROG = reactive organic gases.

¹ Emissions modeled using the CalEEMod (Version 2011.1.1) computer model, based on VMT and speed bin data from the traffic analysis prepared for this project and land uses identified in Table LU-3 of the Land Use Element.

² SCAQMD operational thresholds are the applicable thresholds of significance; however, it should be noted that these thresholds are typically applied at the project-level rather than at the plan-level.

The Conservation and Open Space Element of the General Plan includes a number of goals and policies that address air quality and would reduce criteria pollutant emissions. Specifically, Conservation/Open Space Policy 8.4 requires considering the balance between commercial and residential land uses to reduce the number of vehicle trips and trip lengths (i.e., mobile source emissions), which, as shown in **Table 3.1-4**, account for a majority of NO_x and CO emissions. The Circulation Element of the General Plan also includes a number of goals and policies to reduce mobile source emissions throughout the City. Circulation Goals 13, 14, and 16 all focus on developing feasible alternative modes of transportation for City residents. Alternative modes of transportation such as biking and walking would eliminate whole vehicle trips. Although public transit typically has emissions associated with its operation, a higher number of public transit users would increase the emissions efficiency of public transit (i.e., emissions per rider). Other policies in the Conservation/Open Space Element would continue collaboration with local, state, and federal agencies to meet state and federal ambient air quality standards, integrating air quality planning into land use and transportation planning, and encourage energy conservation programs and design for new development.

Cause CO Hotspots

CO concentration is a direct function of motor vehicle activity, particularly during peak commute hours, and meteorological conditions. Under specific meteorological conditions, CO concentrations may reach unhealthy levels with respect to local sensitive land uses, such as residential areas, schools, preschools, playgrounds, and hospitals. As a result, air districts



typically recommend analysis of CO emissions at a local rather than a regional level. Because increased CO concentrations are usually associated with roadways that are congested and with heavy traffic volume, many air districts have established preliminary screening criteria to determine with fair certainty that, if not violated, project-generated, long-term operational local mobile-source emissions of CO would not result in, or substantially contribute to, emissions concentrations that exceed the 1-hour ambient air quality standard of 20 parts per million (ppm) or the 8-hour standard of 9.0 ppm, respectively.

SCAQMD has not established screening criteria for CO hotspots, but intersections or roadway segments that operate at LOS E or F are typically more likely to generate a CO “hotspot” (i.e., exceedance of the state 1- or 8-hour CO ambient air quality standard). The LOS of an intersection indicates the flow of traffic through an intersection. LOS A would represent a free-flowing intersection, while LOS F would represent a congested intersection where vehicles are idling for extended periods. Intersections with LOS E or below would have considerable delay and slow vehicle speeds traveling through the intersection and therefore have higher potentials to generate a CO hotspot.

Guidelines for the Bay Area Air Quality Management District (BAAQMD) and Sacramento Metropolitan Air Quality Management District (SMAQMD) will be discussed below to illustrate guidelines that have been implemented in other California Air Quality Management Districts. BAAQMD’s CEQA Guidelines suggest that projects that would not violate any of the following preliminary screening criteria would not be anticipated to result in or substantially contribute to an exceedance of CO CAAQS:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing of air is substantially limited.

Furthermore, SMAQMD has developed screening criteria where a project would not result in significant localized CO impacts if the following would occur:

- The project would not result in an affected intersection experiencing more than 31,600 vehicles per hour.
- The project would not contribute traffic to a tunnel, parking garage, bridge, underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air would be substantially limited.



- The mix of vehicles at the intersection is not anticipated to be substantially different from the County average.

As determined in the *Circulation System Level of Service Technical Memorandum* (Appendix E), seven intersections in the project region under 2035 conditions would operate at LOS E or below during AM or PM peak hour conditions. However, the General Plan would not generate conditions where large volumes of vehicles are traveling in an enhanced area for CO hotspots such as a tunnel, bridge, or urban street canyon. Furthermore, the traffic analysis prepared for the project determined that the maximum hourly vehicle volume at an intersection during General Plan buildout conditions is 7,110 vehicles during PM peak hours at the I-5 northbound ramp and Crown Valley intersection. Given the maximum daily volume anticipated at an intersection in 2035, the hourly volumes would not approach any of the screening thresholds discussed above.

The screening criteria developed above by BAAQMD and SMAQMD were developed using conservative assumptions to ensure intersections with volumes under the screening criteria would not cause a CO hotspot. Therefore, it is not anticipated that implementation of the updates and subsequent projects would cause a CO hotspot. It should also be noted that the Circulation Element would include several measures that would reduce congestion along local roads to avoid idling and low-speed movements that can lead to CO hotspots. Circulation Goals 6, 7, 10, and 12 all focus on various aspects of traffic management to improve circulation, vehicle speeds, and idling time citywide. In addition, Growth Management Element Goal 4 would ensure that traffic on streets and at intersections from new development and land use changes would be mitigated to maintain the City's LOS standards. Therefore, the project would not expose sensitive receptors to substantial pollutant concentrations from on-site emissions of criteria pollutants, or off-site emissions of CO during construction activities. Specifically, the CO concentrations resulting from the project would not violate the CAAQS for either the 1-hour period (20 ppm) or the 8-hour period (9.0 ppm). Therefore, this impact is considered **less than significant**.

3.1.4.3 Expose sensitive receptors to substantial pollutant concentrations

Construction

During construction of the additional land uses, heavy-duty construction equipment, on-site generators, and construction worker vehicles could generate diesel PM, which has been identified as a TAC by ARB. Generation of diesel PM from construction projects typically occurs in a single area for a short period. The variable nature of construction activity also affects the amount of time that equipment is typically within a distance that would expose sensitive receptors to substantial concentrations. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (ARB 2005).

The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has with the substance; a longer exposure period to a fixed



amount of emissions would result in higher health risks for the Maximally Exposed Individual (MEI). According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments (HRAs) used to determine the exposure of sensitive receptors to TAC emissions should be based on a 70-year exposure period; however, such assessments should also be limited to the period/duration of activities associated with the project. Building construction activities for individual projects in the General Plan are anticipated to last approximately 6 months to a year. Thus, if the duration of potentially harmful construction activities near a sensitive receptor was 1 year, the exposure would be approximately 1 percent of the total exposure period used for typical health risk calculations.

The OEHHA Guidance Manual for Preparation of Health Risk Assessments (HRA Guidance) (OEHHA 2003) allows a 9-year exposure period to represent the first 9 years of a child's life, which physiologically and behaviorally result in higher exposure levels. However, the HRA Guidance does not support an HRA for exposures of less than 9 years. For cases where exposure would last less than 9 years, OEHHA suggests assuming a minimum exposure of 9 years. Therefore, the exposure period for the most conservative analysis would be approximately 10 percent of the required exposure period. Considering this information, the highly dispersive nature of diesel PM, and the fact that construction activities would occur intermittently and at various locations over approximately 23 years (i.e., 2012 to 2035), it is not anticipated that typical construction projects associated with the updated General Plan would expose sensitive receptors to substantial TAC concentrations. However, without knowing the exact parameters of future construction projects (e.g., duration, activity types, distance to sensitive receptors), it is feasible that certain conditions could lead to a significant impact on sensitive receptors during construction. This impact is considered **significant**.

Operation

The land uses would primarily, though not exclusively, be residential and commercial in nature. All TAC emissions associated with potential residential and commercial land uses would be minimal and would be disposed of properly according to the City Municipal Code and SCAQMD Rule 402 (Nuisances). The General Plan anticipates construction of commercial land uses, which may potentially include stationary sources of TACs, such as dry-cleaning establishments and diesel-fueled back-up generators.

These types of stationary sources, in addition to any other stationary sources, including industrial land uses that may emit TACs would be subject to SCAQMD's Rules and Regulations, including Regulation II (Permits), Regulation III (Fees), and Regulations IV (Prohibitions). The City does not anticipate that any substantial TAC sources would be developed under the General Plan. As presented in Table LU-3 of the Land Use Element, industrial land uses as part of the General Plan will be limited to "Business Park" land uses, which are not typically heavy-duty industrial land uses such as manufacturing plants that tend to generate substantial TAC emissions. The General Plan features policies including continued work with agencies to meet state and federal ambient air quality standards and consideration of environmentally sensitive land uses when siting new land uses.



Buildout of the General Plan is not expected to include significant sources of TAC emissions or expose sensitive receptors to adverse health impacts associated with TAC emissions. Individual projects constructed as part of the General Plan would be consistent with General Plan goals and policies. However, it is possible that long-term operational activities associated with new development could still expose nearby receptors to substantial air quality concentrations. Therefore, the impact is considered **significant**.

3.1.4.4 Create objectionable odors affecting a substantial number of people

As discussed previously, the human response to odors is extremely subjective, and sensitivity to odors varies greatly among the public. The occurrence and severity of odor impacts depends on numerous factors including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating complaints to local governments and regulatory agencies. Projects with the potential to frequently expose individuals to objectionable odors would be deemed to have a significant impact. Typical facilities that generate odors include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities, among others. However, food service, retail and/or residential land uses could also generate substantial odor sources from improper garbage disposal.

SCAQMD CEQA Guidelines consider a project that creates an odor nuisance pursuant to SCAQMD Rule 402 (Nuisances) to also generate a significant odor impact. SCAQMD Rule 402 (Nuisances) considers a source to generate a significant nuisance impact if it would, “discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety or any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property” (SCAQMD 1976).

Construction

Potential sources that may emit odors during construction activities include diesel-fueled construction equipment. Odors from these sources would be localized and generally confined to the immediate area surrounding the proposed project site. Construction equipment exhaust emissions associated with the proposed project would be temporary in nature and intermittent throughout each workday (i.e., one piece of construction equipment would not typically operate all day like a stationary source). Therefore, construction activities would not become a constant source for an extended period of time or a single day, and would typically cease at night due to requirements in the Noise Element. Furthermore, intensive heavy-duty equipment use (i.e., main source of diesel PM) is not typically required for each construction phase. Hence, even during longer construction projects, exhaust emissions would not be generated constantly throughout the construction period. Therefore, given the temporary and intermittent nature of construction exhaust emissions, and the highly dispersive nature of diesel PM, it is not



anticipated that the proposed project’s construction emissions would generate a significant odor impact. In addition, the projects constructed as part of the General Plan would utilize typical construction techniques and comply with SCAQMD Regulation 402. Therefore, this impact is considered **less than significant**.

Operation

Minor sources of odors, such as exhaust from mobile sources and charbroilers associated with commercial uses, are not typically associated with numerous odor complaints but are known to have temporary, less concentrated odors. Development of land uses could include odor-generating facilities, such as light-duty industrial facilities. All new development projects will be required to meet existing regulations, including permitting requirements and disclosure laws. Each project would undergo project-level environmental analysis that would evaluate any minor odor sources and require mitigation to reduce odor emissions per SCAQMD Rule 402 (Nuisance). Therefore, the project would not create objectionable odors affecting a substantial number of people and impacts would be less than significant. With adherence to existing regulations and plans, impacts associated with odors would be reduced to a level **less than significant**.

3.1.5 Mitigation Measures

Implementation of the Mission Viejo updated General Plan would result in significant impacts related to air quality. The following mitigation measures are general and programmatic in nature, and would be refined in project-specific CEQA documents. Individual development projects would be required to undergo project-specific environmental review, and mitigation measures would be identified to reduce any project-specific significant impacts.

3.1.5.1 Conflict with or obstruct implementation of the applicable air quality plan

Impacts are **less than significant**, no mitigation measures are required.

3.1.5.2 Violate any air quality standard or contribute to an existing or projected air quality violation

Construction

AQ-1 Reduce Construction-Related Emissions. The City and project contractors shall implement the following measures during all construction activities involving demolition or exterior construction. Furthermore, a fugitive dust control plan shall be developed and approved by SCAQMD for all projects prior to issuance of a grading permit and commencement of construction activities. The dust control plan shall specifically identify measures that would minimize generation of fugitive dust from all construction activities. In addition, the following standard measures shall be implemented:

- Comply with and implement all applicable SCAQMD rules and regulations that pertain to construction activities (e.g., asphalt paving ROG requirements,



- administrative requirements, fugitive dust management practices). Implement all construction-related requirements recommended by the air district or local government.
- Apply water as necessary to prevent visible dust emissions.
 - Apply water, nontoxic chemical stabilizers, or dust suppressants, or use tarps or other suitable material in all disturbed areas that will not be utilized for 10 days or more.
 - Prevent carryout and track out of fugitive dust on construction vehicles. Methods to limit carryout and track include, but are not limited to, using wheel washers and/or metal tracks at the site egress(es); sweeping any track out on adjacent public streets at the end of each workday; and lining access points with gravel, mulch, or wood chips.
 - Cover or wet the filled cargo compartment of all transport trucks to limit visible dust emissions during transport, and maintain at least 2 feet of freeboard space from the top of a container.
 - Install sandbags or other erosion control measures on sites with a slope greater than 1 percent to prevent silt runoff to public roadways.
 - Maintain all construction equipment according to the manufacturers' specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
 - Minimize idling time either by shutting off equipment when it is not in use or reducing the time of idling to no more than 5 minutes. Provide clear signage regarding idling at site access points.
 - Use alternative fueled (e.g., compressed natural gas [CNG], liquefied natural gas [LNG], propane), or electric-powered construction equipment where feasible.
 - Use equipment with diesel oxidation catalysts, catalyzed diesel PM filters, or other applicable air district-approved, emission reduction retrofit devices where feasible.

Operation

- AQ-2 The City shall work with SCAQMD and new development to identify projects that would cause a significant air quality impact. When significant impacts are determined, the City shall work with new development to ensure all applicable General Plan policies are fulfilled by the project and identify and require the implementation of additional mitigation measures that would be consistent with the General Plan goals and policies to reduce air quality pollutant emissions.
- AQ-3 The City shall work with SCAQMD and SCAG to implement and enforce air quality reduction measures in the AQMP to meet all federal and state ambient air quality



standards. Projects within the City that have significant air quality impacts should be required by the City to implement mitigation consistent with the goals and measures in the AQMP. The City shall participate in any future amendments and updates to the AQMP when possible.

3.1.5.3 Expose sensitive receptors to substantial pollutant concentrations

Construction

AQ-4 Require use of SCAQMD's Localized Significance Thresholds (LST) for construction-related emissions. If construction emissions would exceed the SCAQMD's LSTs, the project shall prepare a health risk assessment of construction emissions and implement all feasible mitigation to reduce impacts to a less-than-significant level (i.e., less than 10 in a million cancer risk and less than 1.0 hazard index).

Operation

AQ-5 If and when needed, which should be determined through the environmental review process under CEQA, a health risk assessment that identifies health risk levels from nearby TAC sources shall be prepared for sensitive land uses (e.g., residential, hospital, convalescent home) that would be developed within 500 feet of I-5 or other stationary sources producing TACs. When health risk levels at the proposed sensitive receptor land uses are determined to exceed applicable significance thresholds, the proposed project shall implement mitigation measures into the project's design and/or implement alternative approaches to land use development that would reduce TAC exposure to proposed or nearby sensitive receptors. These mitigation measures and land use development approaches should use recommendations from ARB and local air districts, if and when possible. Mitigation measures to reduce TAC impacts to a less-than-significant level include, but should not be limited to, setbacks, buffers, and air filters.

3.1.5.4 Create objectionable odors affecting a substantial number of people

Impacts are **less than significant**, no mitigation measures are required.

3.1.6 Significance After Mitigation

3.1.6.1 Conflict with or obstruct implementation of the applicable air quality plan

Impacts from General Plan activities are **less than significant**; no mitigation is necessary.

3.1.6.2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation

Construction

Mitigation Measure AQ-1 is proposed to reduce this impact. Mitigation Measure AQ-1 would ensure that all construction activities associated with the proposed amendments would minimize their fugitive dust and exhaust emissions.



As discussed above, it is not anticipated that construction activities would occur for an extended period or be particularly intensive. Therefore, compliance with all requirements of Mitigation Measure AQ-1 would reduce a majority of project-level construction emissions to a less-than-significant level. However, without complete information of construction parameters, it is not possible to determine that all construction projects would remain less than significant. Therefore, even with fairly short construction periods and implementation of Mitigation Measure AQ-1, construction emissions could remain significant. This impact would remain **significant and unavoidable**.

Operation

Mitigation Measures AQ-2 and AQ-3 are proposed to reduce operational impacts. Mitigation Measure AQ-2 requires review of future development for impacts and project-level mitigations pursuant to the proposed General Plan. Mitigation Measure AQ-3 states the City would require projects that generate a significant air quality impact to implement mitigation pursuant to the AQMP.

Adherence to SCAQMD Rules and Regulations, General Plan policies, and implementation of Mitigation Measures AQ-2 and AQ-3 would reduce the impact associated with operational emissions. However, without the actual project parameters and details, it is not possible to say implementation of these actions above would reduce all projects' air quality emissions to a less-than-significant level. Therefore, despite these mitigation efforts, implementation of the General Plan could result in emissions in excess of thresholds for criteria air pollutants and precursors for which the region is in nonattainment. No additional feasible mitigation is available. The impact would remain **significant and unavoidable**.

3.1.6.3 Expose sensitive receptors to substantial pollutant concentrations

Mitigation Measures AQ-4 and AQ-5 are proposed to reduce construction and operational impacts on sensitive receptors. Mitigation Measures AQ-4 and AQ-5 require completion of SCAQMD's LST, followed by a full health risk assessment if air quality emissions are determined to be significant by the LST. Following a full health risk assessment, Mitigation Measures AQ-4 and AQ-5 require implementation of mitigation measures to reduce any possible significant impacts to a less-than-significant level. Mitigation measures could include setbacks, buffers, and air quality filters.

Implementation of Mitigation Measures AQ-4 and AQ-5, in combination with the policies and goals of the General Plan to consider environmentally sensitive land uses when siting new projects, would reduce impacts on sensitive receptors resulting from construction and operational activities to a **less-than-significant** level.

3.1.6.4 Create objectionable odors affecting a substantial number of people

Impacts from odors as a result of the General Plan are expected to be **less than significant**; no mitigation is required.



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3.2 Greenhouse Gas Emissions

This section provides a description of global climate change, GHG emissions, the existing regulatory framework surrounding GHG emissions, and an analysis of the potential impacts related to GHG emissions that would result from implementation of the project. The GHG emissions associated with construction and operation of the project are quantified and analyzed in the context of the evolving GHG/climate change regulatory environment. The results of the GHG emission calculations and estimates are provided in the Sustainability Action Plan.

3.2.1 Existing Environmental Setting

3.2.1.1 Scientific Basis of Climate Change

Certain gases in Earth's atmosphere, classified as GHGs, play a critical role in determining Earth's surface temperature. Solar radiation enters Earth's atmosphere from space. A portion of the radiation is absorbed by Earth's surface and a smaller portion of this radiation is reflected back toward space. The absorbed radiation is emitted from Earth as low-frequency infrared radiation; however, the infrared radiation is absorbed by GHGs in the atmosphere. As a result, the radiation that otherwise would have escaped back into space is instead "trapped" in the atmosphere, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on Earth.

Key GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Human-caused emissions of these GHGs in excess of natural ambient concentrations have intensified the greenhouse effect, contributing to a trend of unnatural warming of Earth's climate, known as global climate change or global warming. It is unlikely that global climate change of the past 50 years can be explained without acknowledging the contribution from human activities (IPCC 2007).

GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have much longer atmospheric lifetimes of 1 year to several thousand years, which allow GHGs to be dispersed around Earth.

When accounting for GHGs, emissions are expressed in terms of CO₂ equivalents (CO₂e). The concept of CO₂-equivalency is used to account for the different global warming potential (GWP) of GHGs to absorb infrared radiation. This potential, known as the GWP of a GHG, is dependent on the lifetime or persistence of the gas molecule in the atmosphere, its ability to absorb/trap infrared radiation, and the spectrum of light energy (i.e., range of wavelengths and frequencies) absorbed by the gas molecule. Expressing emissions in CO₂e takes the contributions of all GHG emissions and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted. The reference gas for GWP is CO₂; therefore, CO₂ has a GWP of 1. The other main GHGs that have been attributed to human activity include CH₄, which has a GWP of



21, and N₂O, which has a GWP of 310. **Table 3.2-1** presents the GWP and atmospheric lifetimes of common GHGs.

**Table 3.2-1
Global Warming Potentials and Atmospheric Lifetimes of GHGs**

GHG	Formula	100-Year Global Warming Potential ¹	Atmospheric Lifetime (Years)
Carbon Dioxide	CO ₂	1	Variable
Methane	CH ₄	21	12 (±3)
Nitrous Oxide	N ₂ O	310	120
Sulfur Hexafluoride	SF ₆	23,900	3,200

¹ IPCC 1996. GWPs are from the IPCC Second Assessment Report and are used by ARB in the statewide inventory.

Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, scientists who study atmospheric chemistry have found that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 54 percent is sequestered within 1 year through ocean uptake, by northern hemisphere forest regrowth, and other terrestrial sinks; the remaining 46 percent of human-caused CO₂ emissions remains stored in the atmosphere (Seinfeld and Pandis 1998).

Similarly, impacts of GHGs are borne globally, in contrast to the localized effects of criteria air pollutants and TACs. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; suffice it to say, the quantity is enormous, and no single project would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climate. From the standpoint of CEQA, GHG impacts are inherently cumulative.

3.2.1.2 Greenhouse Gas Emission Sources

Human-caused emissions of GHGs are attributable to activities in the transportation, industrial/manufacturing, electric utility, residential, commercial, and agricultural sectors. Emissions of CO₂ are byproducts of fossil fuel combustion while CH₄, a highly potent GHG, is the primary component in natural gas and is also associated with agricultural practices and landfills. N₂O is also largely attributable to agricultural practices and soil management.

3.2.1.3 Global GHG Emissions

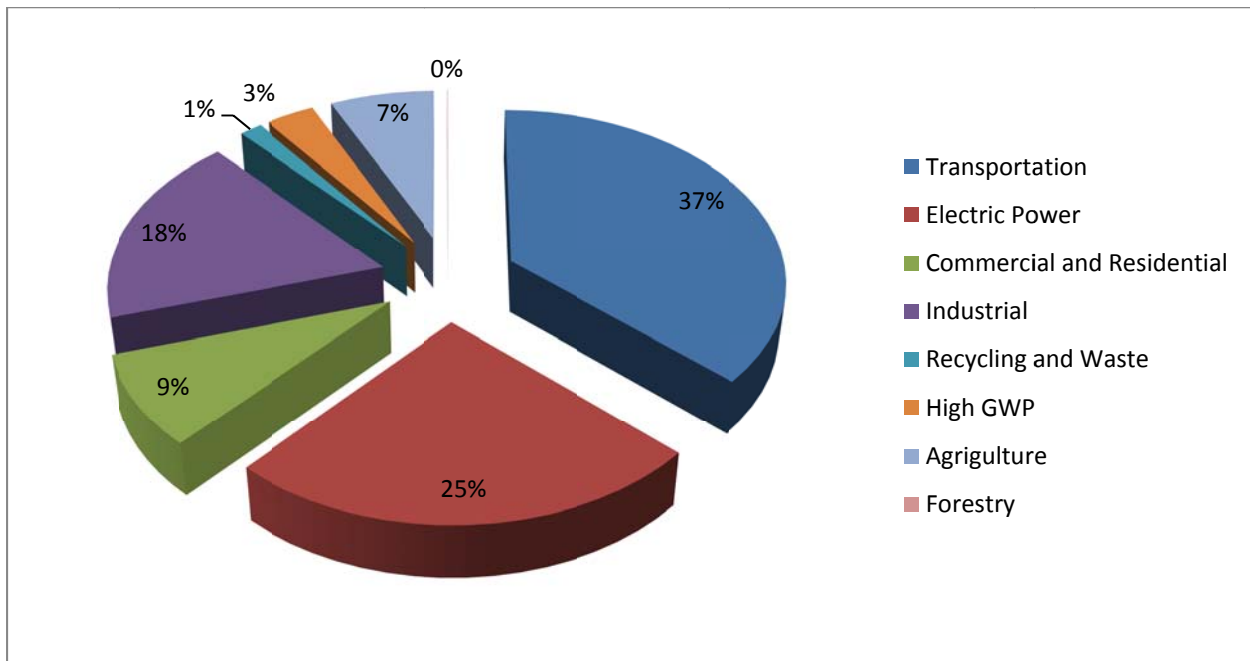
The United Nations estimated that worldwide emissions in 2007 were 22.7 billion MT CO₂e, of which the United States contributed the greatest percentage after China. Their data indicate the top 10 emitters (by country or area) contribute 67 percent of global emissions.



3.2.1.4 California GHG Emissions

ARB performs an annual GHG inventory for emissions and sinks of the six major GHGs listed above. In 2008, California produced 485 million gross MT CO₂e emissions (ARB 2011). California’s 2008 inventory is divided into seven broad sectors and categories: Agriculture, Commercial, Electricity Generation, Forestry, Industrial, Residential, and Transportation (**Figure 3.2.1**). The Transportation sector had the largest percentage of GHG emissions, 37 percent, followed by electricity generation (25 percent), and industrial sources (18 percent). The remaining sectors each accounted for less than 10 percent of overall emissions.

Figure 3.2.1 California’s Greenhouse Gas Emissions by Economic Sector, 2008



Source: ARB 2010a

Notes:

GWP = global warming potential

3.2.1.5 City of Mission Viejo GHG Emissions

The City of Mission Viejo is developing a Sustainability Action Plan that will provide guidance and direction for future and existing development in the City. The Sustainability Action Plan is a component of the proposed project.

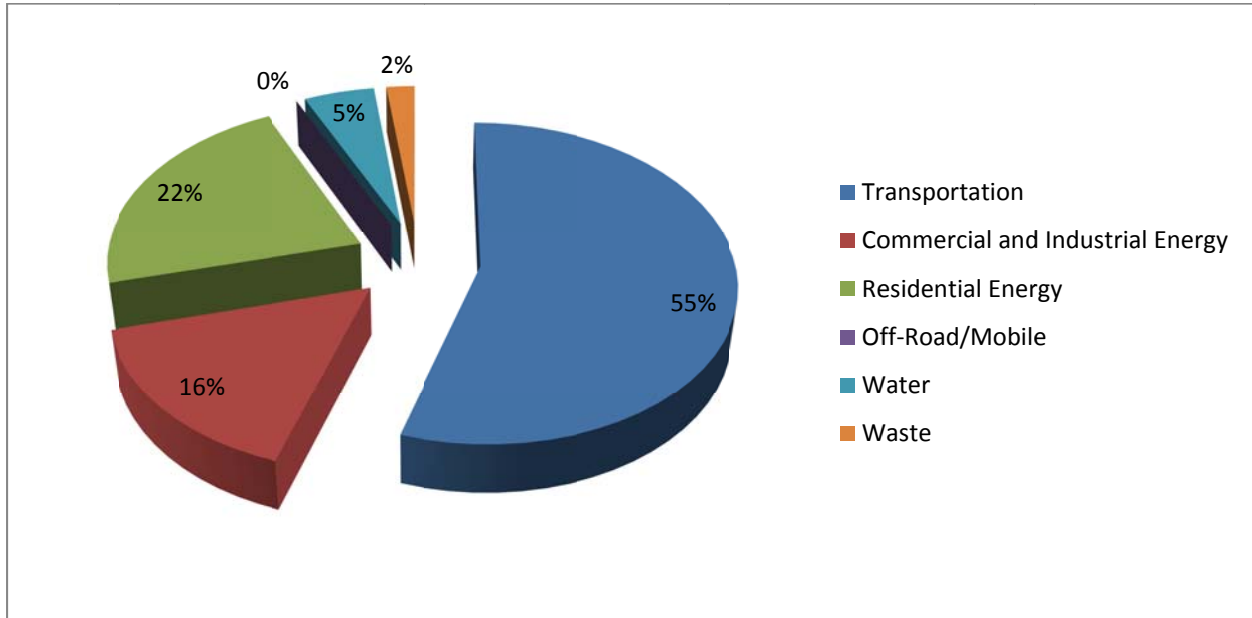
Communitywide Inventory

As part of the Sustainability Action Plan process, the City has prepared a communitywide GHG emissions inventory for the 2008 baseline year. Total communitywide GHG emissions generated in the City for the year 2008 are estimated at 725,833 MT CO₂e (**Figure 3.2.2**). Transportation is the largest emissions sector, accounting for approximately 55 percent for



emissions, followed by residential and nonresidential energy consumption at 22 and 16 percent of total emissions, respectively. Other sectors included in the inventory include water, waste, and off-road vehicle and equipment.

Figure 3.2.2 Mission Viejo Communitywide Greenhouse Gas Emissions, 2008



Source: Sustainability Action Plan Figure 3.1, prepared by AECOM 2012

The City also prepared communitywide GHG emission projections for future years under a business-as-usual (BAU) scenario. A BAU scenario includes those emissions that are anticipated with future growth (population and employment) and consumption if the Sustainability Action Plan were not adopted.

Table 3.2-2 shows the future emissions for years 2020 and 2035. The expected increase in emissions in 2020 would be approximately 3 percent over 2008 levels. The expected increase in emissions in 2035 would be approximately 8 percent over 2008. Transportation remains the largest emissions sector and accounts for a proportionally greater amount of total emissions in the future, representing 57 percent of total emissions by 2035.

Electricity and natural gas emissions also increase over time but account for proportionally fewer total emissions. The remaining sectors (i.e., water, waste, and off-road equipment each account for 5 percent or fewer of total emissions over time. Per capita emissions and per service population (City residents + employees) are both anticipated to increase over time.

As described in Section 3.2.2, “Regulatory Setting,” GHG reduction measures have been implemented at the state and federal level that would assist the City in lowering GHG emissions in the future. Some of these measures are currently being implemented; however, the full effect of the measures at the City level is not currently known with certainty and therefore



reductions from full implementation are not included in the BAU projections, but rather are included as part of the Sustainability Action Plan as anticipated reductions.

Table 3.2-2
Mission Viejo Communitywide Baseline and Projected Business-as-Usual
Greenhouse Gas Emissions

Emission Sector	2008 Emissions (MT CO ₂ e)	2020 Emissions (MT CO ₂ e)	Increase from 2008 (MT CO ₂ e)	2035 Emissions (MT CO ₂ e)	Increase from 2008 (MT CO ₂ e)
Energy	273,582	277,927	+4,345	278,848	+5,266
Transportation	397,797	415,716	+17,919	452,457	+54,660
Solid Waste	17,296	17,899	+603	18,097	+801
Water	35,424	36,008	+584	36,123	699
Off-Road Mobile	1,737	1,771	+34	1,778	+41
Total	725,833	749,321	+23,487	787,303	+61,468
Percent Change from 2008			+3%		+8%

Source: Sustainability Action Plan Table 3.2, prepared by AECOM 2012

Notes:

Columns may not total the sum of their parts due to rounding.

MT CO₂e = metric tons of carbon dioxide equivalent.

Municipal Operations Inventory

Municipal operations represent a subset of communitywide emissions; that is, they are accounted for in the communitywide emissions inventory shown above. However, because the City has greater opportunity to reduce emissions from City operation, an inventory of municipal operations was also conducted for baseline year 2008 and forecasted for 2020 and 2035. These calculations, shown in **Table 3.2-3**, indicate that City government emissions accounted for 2.4 percent of communitywide emissions in 2008. Emissions from municipal operations are primarily due to natural gas consumption, which accounted for 60 percent of emissions in 2008. Electricity accounted for 17 percent of emissions and other sources, including vehicle fleet, employee commute, solid waste, and water; each accounted for less than 5 percent of total emissions.



**Table 3.2-3
Mission Viejo Municipal Baseline and Projected Business-as-Usual Greenhouse Gas Emissions**

Sector	2008		2020		2035	
	MT CO ₂ e	Percent	MT CO ₂ e	Percent	MT CO ₂ e	Percent
Transportation						
<i>Vehicle Fleet</i>	159	1%	164	1%	166	1%
<i>Employee Commute</i>	719	4%	743	4%	750	4%
Energy						
<i>Electricity</i>	2,921	17%	2,987	17%	3,008	17%
<i>Natural Gas</i>	10,595	60%	10,833	60%	10,911	60%
Generated Solid Waste	99	1%	101	1%	102	1%
Water	3,022	17%	3,090	17%	3,112	17%
Total	17,514		17,918		18,050	

Source: Sustainability Action Plan Table 3.2, prepared by AECOM 2012

Notes:

Columns may not total the sum of their parts due to rounding.

MT CO₂e/yr = metric tons of carbon dioxide equivalent per year.

3.2.1.6 Climate Change Effects

According to the Intergovernmental Panel on Climate Change (IPCC), which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature is expected to increase by 3–7°F by the end of the century, depending on future GHG emission scenarios (IPCC 2007). Potential effects of climate change include loss of snowpack, changes in precipitation, increased temperatures, sea level rise, and increased wildfires. For example, an increase in the global average temperature is expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), and is a major source of supply for the state (including the planning area). An increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be stored as snow in the Sierra Nevada until spring could flow into the Central Valley concurrently with winter storm events. This scenario would place more pressure on California’s levee/flood control system (DWR 2006).

Another outcome of global climate change is sea level rise. Sea levels rose approximately 7 inches during the last century and are predicted to rise an additional 7–22 inches by 2100, depending on the future levels of GHG emissions (IPCC 2007). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion, and disruption of wetlands (CEC



2006). As the existing climate throughout California changes over time, the ranges of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the state if suitable climate conditions were no longer available.

3.2.2 Regulatory Setting

3.2.2.1 Federal Plans, Policies, Regulations, and Laws

EPA is the federal agency responsible for implementing the federal CAA. The Supreme Court of the United States ruled on April 2, 2007, that CO₂ is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs.

Proposed Endangerment and Cause or Contribute Findings for GHG under the CAA

On December 7, 2009, EPA signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs—CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆—in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities, including local governments. However, this action is a prerequisite to finalizing EPA's proposed GHG emission standards for light-duty vehicles, which EPA proposed in a joint proposal including the U.S. Department of Transportation's (DOT) proposed CAFE (Corporate Average Fuel Economy) standards on September 15, 2009.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA published the Final Mandatory Greenhouse Gas Reporting Rule (Reporting Rule) in the Federal Register. The Reporting Rule requires reporting of GHG data and other relevant information from fossil fuel and industrial GHG suppliers, vehicle and engine manufacturers, and all facilities that would emit 25,000 MT or more of CO₂e per year. Facility owners are required to submit an annual report with detailed calculations of facility GHG emissions, due on March 31, for emissions in the previous calendar year. The Reporting Rule would also mandate recordkeeping and administrative requirements to enable EPA to verify the annual GHG emissions reports. Owners of existing facilities that commenced operation prior to January 1, 2011, would be required to submit an annual report for calendar year 2011.



3.2.2.2 State Plans, Policies, Regulations, and Laws

ARB is responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA.

Assembly Bill (AB) 1493

AB 1493, signed in 2002, required that ARB develop and adopt by January 1, 2005, regulations that achieve “the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state.”

In 2004, ARB adopted standards requiring automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily for the transportation of persons), and beginning with the 2009 model year. For passenger cars and light-duty trucks, the GHG emission limits for the 2016 model year are approximately 37 percent lower than the limits for the first year of the regulations, the 2009 model year.

In April 2010, DOT and EPA established GHG emission and fuel economy standards for model year 2012–2016 light-duty cars and trucks. In the fall of 2010, California accepted compliance with these federal GHG standards as meeting similar state standards as adopted in 2004, resulting in the first coordinated national program. The emissions standards will require model year 2016 vehicles to meet an estimated combined average emissions level of 250 grams CO₂ per mile, which is equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO₂ level solely through fuel economy improvements.

On November 16, 2011, DOT, EPA, and the State of California proposed new fuel economy and GHG standards for model year 2017–2025 cars and light-duty trucks. The standards would require these vehicles to meet an estimated combined average emissions level of 163 grams of CO₂ per mile in model year 2025, which is equivalent to 54.5 miles per gallon if the improvements were made solely through fuel efficiency.

Executive Order S-3-05

Executive Order S-3-05, signed in June 2005, declared that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California’s air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established statewide GHG emission targets. Specifically, under Executive Order S-3-05, emissions are to be reduced to 2000 levels by 2010, 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.



Assembly Bill 32, the California Global Warming Solutions Act of 2006

AB 32 was signed in September, 2006. AB 32 requires:

- ARB to adopt a statewide limit on GHG emissions equivalent to 1990 levels to be achieved by 2020;
- ARB to adopt rules and regulations, and authorizes ARB to adopt market-based mechanisms, to achieve the GHG emissions limit;
- Reporting and monitoring of GHG emissions from major-emitting sources.

AB 32 identifies specific dates by which ARB must prepare and approve a Scoping Plan that identifies measures for achieving GHG reductions by 2020. Further, AB 32 states that the GHG emissions limit shall remain in effect beyond 2020 and that ARB shall provide guidance to achieving GHG emissions reductions beyond 2020. AB 32 also recognizes that the Governor's Climate Action Team's role in continuing to coordinate overall climate policy.

Climate Change Scoping Plan

In December 2008, ARB adopted its Climate Change Scoping Plan (Scoping Plan), which contains a comprehensive set of strategies designed to achieve the 2020 GHG emissions limit. The Scoping Plan estimates that reducing emissions to 1990 levels means a 15 percent reduction from current levels. The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The Scoping Plan calls for over half of the reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles;
- the Low-Carbon Fuel Standard;
- energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems; and
- a renewable portfolio standard for electricity production.

In addition, the Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions regarding land use will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors.

Executive Order S-1-07

Executive Order S-1-07, signed in 2007, establishes a goal that the carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10 percent by 2020.



ARB identified this Low Carbon Fuel Standard as a discrete early action item under AB 32, and the final ARB resolution (No. 09-31) was issued on April 23, 2009.

SB 97

Signed in August 2007, SB 97 acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the California Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency, guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions under CEQA. The CEQA amendments became effective on March 18, 2010. The amended CEQA Guidelines establish two new guidance questions in the Environmental Checklist of the CEQA Guidelines Appendix G. The amendments do not establish a GHG emission threshold and allow each lead agency to develop, adopt, and apply its own threshold of significance or those developed by other agencies or experts.

SB 375

Signed in September 2008, SB 375 aligns regional transportation planning efforts, regional GHG-reduction targets, and land use and housing allocations. It requires that Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which would prescribe land use allocations in that MPO's RTP. ARB has established reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets are to be updated every 8 years but can be updated every 4 years if advancements in emission technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG-reduction targets, transportation projects would not be eligible for funding programmed after January 1, 2012.

SB 375 also extends the minimum time period for the Regional Housing Needs Allocation cycle from 5 years to 8 years for local governments located within an MPO that meets certain requirements. City or county land use policies (including General Plans) are not required to be consistent with the RTP (and associated SCS or APS). However, new provisions of CEQA would incentivize qualified projects that are consistent with an approved SCS or APS, which would be categorized as "transit priority projects." ARB adopted regional targets on September 23, 2010 (ARB 2010).

Addressing Climate Change at the Project Level: California Attorney General's Office

In January 2010, the California Attorney General's Office released a document to assist local agencies with addressing climate change and sustainability at the project level under CEQA. The document provides examples of various measures that may reduce the impacts related to climate change at the individual project level. As appropriate, the measures can be included as design features of a project, required as changes to the project, or imposed as mitigation (whether undertaken directly by the project proponent or funded by mitigation fees). The City considered these measures when formulating the Sustainability Action Plan.



3.2.2.3 Local Plans, Policies, and Laws

Southern California Association of Governments and Orange County Council of Governments Sustainable Communities Strategies

Mission Viejo is a member agency of both SCAG and Orange County Council of Governments (OCCOG). To fulfill its commitments as an MPO under SB 375, SCAG adopted an SCS in May 2012 designed to reduce GHG emissions from passenger vehicles by 8 percent per capita by 2020 and 13 percent per capita by 2035 compared to 2005, consistent with regional targets set by the ARB. The SCAG SCS includes provisions established by OCCOG in a Subregional SCS adopted by the OCCOG Board in 2011.

The SCAG SCS focuses the majority of new regional housing and job growth in high-quality transit areas and other opportunity areas in existing main streets, downtowns, and commercial corridors, resulting in an improved jobs-housing balance and more opportunity for transit oriented development (TOD). The SCAG SCS identifies several GHG emission reduction actions and strategies for the state, SCAG, OCCOG, and local jurisdictions. The SCAG SCS recommends that local jurisdictions (a) update zoning codes to accelerate adoption of SCS land use strategies; (b) prioritize transportation investments to support compact infill development that includes a mix of land uses and housing options; (c) develop infrastructure plans and educational programs that promote active transportation options; (d) emphasize active transportation projects as part of complying with the Complete Streets Act (AB 1358); and (e) increase the efficiency of existing transportation systems (SCAG 2011:150–153).

3.2.3 Thresholds for Determining Significance

The impact of the project related to GHG emissions would be considered significant if it would exceed the following thresholds of significance, in accordance with Appendix G of the CEQA Guidelines:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.

The legislation dealing with climate change in California identifies goals for the rate of emissions of GHGs, relative to specific benchmark years. AB 32 requires 1990 GHG emission levels to be achieved by the year 2020, representing about a 16 percent reduction from BAU 2020 emissions levels¹ (ARB 2010b) or a 15 percent reduction from 2004-2008 levels. Neither state legislation nor executive order suggests that California intends to limit population growth

¹ ARB updated the 2020 emissions forecast in 2010 to account for changes in demand forecasts for energy and fuel. In addition, the business-as-usual forecast includes state-level GHG reduction measures, including Pavley I clean car standards and 20 percent renewable portfolio standard.



to reduce the state's GHG emission levels. Therefore, the intent is to accommodate population growth in California, but achieve a lower rate of GHGs despite this larger population. In other words, California jurisdictions must become more GHG efficient.

To meet the goals of AB 32, California would need to generate fewer GHGs than current levels. It is recognized, however, that for most development projects, there is no simple metric available to determine whether the individual project would substantially increase or decrease overall emission levels of GHGs.

At the time of this writing, no federal, state, regional, or local air quality regulatory agency has adopted a quantitative threshold of significance for construction-related GHG emissions.

Section 15064.7 of the State CEQA Guidelines allows public agencies to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. As described in Section 15064.4 of the CEQA Guidelines, a lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Neither SCAQMD nor the City of Mission Viejo has adopted a significance threshold for analyzing GHG emissions from plans or development projects or a methodology for analyzing impacts related to global warming as of the writing of this document.

The ARB *Climate Change Scoping Plan* (ARB 2008) recommends local agencies seek to reduce communitywide emissions by 15 percent below current emissions levels by 2020.

SCAQMD is currently in the process of updating its *Air Quality CEQA Guidelines* and in 2005 developed an air quality guidance document for addressing air quality issues in General Plans. SCAQMD is in the process of developing significance thresholds for plans and is also considering a plan-level significance threshold of 6.6 MT CO₂e/SP/yr by 2020 (SCAQMD 2005). A SCAQMD Working Group has proposed several possible thresholds for analysis of general and area plan impacts, including a 2020 service population metric of 6.6 MT CO₂e/SP/yr (SCAQMD 2009). These efficiency thresholds were developed based on the statewide GHG inventory and



statewide emission reduction goals of AB 32. The working group has also proposed a 2035 service population (SP) metric of 4.1 MT CO₂e/SP/year for General Plans. Other proposed thresholds include a 10,000 MT CO₂e/yr threshold for stationary sources, a performance threshold of 28 percent reduction below BAU emissions and project level land use-based thresholds based on land use type, and residual emissions not to exceed 25,000 MT CO₂e/yr (Table 3.2-4). The proposed thresholds have not been updated to reflect the revisions by ARB that account for adjustments in future emissions due to changes in economic conditions and current state-level legislation.

To date, SCAQMD has only recommended and adopted an Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. The interim guidance includes a quantitative threshold only for Stationary Sources (10,000 MT CO₂e).

**Table 3.2-4
SCAQMD Proposed Greenhouse Gas Significance Thresholds (MT CO₂e/yr)**

Category	Significance Threshold
Construction	30-yr amortization applied to operational ST
Operation—Stationary Sources	10,000
Operation—Project-level Land Uses	R = 3,500; C = 1,400; M = 3,000 Or, RCM = 3,000
Operation—Plan-level Performance Standards	
Compliance Option #1, % Reduction	28%
Compliance Option #3, GHGs/unit	Project Level: 4.6/SP/yr General Plans, etc., 6.6/SP/yr
Maximum Emission Limit	25,000

Source: SCAQMD 2009

Notes:

SCAQMD = South Coast Air Quality Management District; GHG = greenhouse gas; STs = significance thresholds; MT = metric tons; CO₂e = CO₂-equivalency; R = residential land use; C = commercial land use; M = mixed land use; RCM = all land uses

SCAQMD has developed GHG thresholds to evaluate land use development projects within its jurisdiction. The thresholds include an efficiency standard (6.6 MT CO₂e/SP/yr) and a performance standard (28 percent below BAU) that were calculated using a 2020 BAU scenario developed by ARB, which has since been revised. SCAQMD’s proposed thresholds for nonstationary source projects have not yet been adopted and may require additional substantial evidence to demonstrate compliance with the AB 32 Scoping Plan given adjustments to the forecasted emissions scenario.

For the purposes of this EIR, the net change in GHG emissions associated with the proposed project is used to determine whether the project would cause a conflict with the AB 32 Scoping Plan or cause a significant increase in GHG emissions. The threshold used in the analysis of the



proposed project is based on the ARB-recommended approach from the Scoping Plan, which suggests local governments reduce GHG emissions 15 percent below current levels by 2020. The 15 percent reduction level was determined based on existing emissions levels at the time of the recommendation (2008), not projected BAU emissions. Accordingly, the level of reductions necessary for the project to be consistent with the AB 32 Scoping Plan should be derived from its baseline emissions inventory (rather than a projected BAU scenario); therefore the level of reductions would not change based on future economic or legislative conditions. As stated above, the Scoping Plan did not recommend a level of emissions reductions for local governments beyond the year 2020. While climate change will continue to be an issue after 2020, defining the level of reductions necessary for local governments to achieve to be considered less than cumulatively considerable would be speculative at this time.

3.2.4 Analysis of Environmental Impacts

3.2.4.1 Generation of GHG Emissions

Construction

GHG emissions generated by construction of future land uses consistent with the Draft General Plan would be primarily in the form of CO₂. Although emissions of other GHGs, such as CH₄ and N₂O, are important with respect to global climate change, the emission levels of these other GHGs from on- and off-road vehicles used during construction are relatively small compared with the level of CO₂ emissions, even when factoring in the relatively larger global warming potential of CH₄ and N₂O.

Construction-related GHG exhaust emissions would be generated by sources such as heavy-duty off-road equipment, trucks hauling materials to the site, and worker commutes. Construction activities resulting from implementation of the Draft General Plan were anticipated to commence as early as 2012 and last until 2035. During this time, exhaust emission rates of the construction equipment fleet in California are expected to decrease over time due to advancements in engine technology, retrofits, and turnover in the equipment fleet, which would result in increased fuel efficiency, potentially more alternatively fueled equipment, and lower levels of GHG emissions. In addition, while ARB's Scoping Plan does not directly discuss GHG emissions generated by construction activity, it does recommend measures to improve the efficiency of medium- and heavy-duty on-road vehicles and efficiency strategies for off-road vehicles (e.g., forklifts, bulldozers). Existing programs to improve air quality in California, including the Diesel Risk Reduction Plan and the 2007 State Implementation Plan, will result in the accelerated phase-in of cleaner technology for virtually all of California's diesel engine fleets, including construction equipment (ARB 2008). Measures implemented under these plans are likely to result in future fleets of construction equipment that are more GHG-efficient than existing fleets. For these reasons, levels of GHG emissions associated with construction activity are expected to decrease over time as new regulations are developed in response to AB 32.



Neither ARB nor SCAQMD has developed guidance to evaluate construction-related GHG emissions, and neither agency has adopted a quantitative threshold of significance for construction-related GHG emissions. Therefore, the proposed construction threshold identified in **Table 3.2-4** (i.e., a 30-year amortization applied to proposed operational significance thresholds) will be used to provide context of the project's total construction emissions.

The buildout schedule of the proposed project would depend on numerous factors such as prospective developers; market demand; and, most importantly local, state, and federal economic conditions. Therefore, it not possible at the time of this writing to accurately predict the buildout rate of Draft General Plan land uses. However, because GHG emissions are not as time-sensitive as air quality emissions, it is possible to estimate the total Draft General Plan buildout construction emissions without a precise construction schedule. In other words, the total mass GHG emissions are more important whether they occur over 1 year or 23 years, whereas the daily and annual air quality emissions can affect human health and attainment of ambient air quality standards.

Construction-related GHG emissions have been estimated using the California Emissions Estimator Model (CalEEMod), Version 2011.1.1 with emission factors specific to SCAQMD. A summary of GHG emissions generated during the construction of future land uses consistent with the Draft General Plan are provided in **Table 3.2-5**. Construction emissions were assumed to occur equally over the entire General Plan buildout period. Also, because specific project-level information regarding construction is not known at this time, the analysis assumes a default mix of equipment and workers based on the type of development anticipated in the General Plan. The types of development anticipated in the City include residential development, retail, commercial uses, and open space. Detailed model assumptions and output are provided in Appendix B, Air Quality Model Outputs. The average annual GHG emissions resulting from construction of future land uses consistent with the Draft General Plan is estimated to be 3,342 MT CO₂e/year, consisting primarily of emissions from construction vehicles and equipment and worker vehicle trips. Construction-related emissions are generally short term compared to operational emissions (which generate emissions during each year of operation), and there are likely to be additional regulations and policies that reduce construction-related emissions over time.



**Table 3.2-5
General Plan Buildout Average Construction GHG Emissions**

Construction Year	Emissions (MT CO ₂ e/yr) ¹
2012	1,865
2013	4,468
2014	4,469
2015	4,470
2016	4,471
2017	4,455
2018	4,473
2019	4,473
2020	4,491
2021	4,476
2022	4,460
2023	4,460
2024	4,493
2025	4,476
2026	4,476
2027	4,476
2028	4,459
2029	4,476
2030	4,477
2031	4,477
2032	4,494
2033	4,460
2034	4,460
Total GHG Emissions (MT CO ₂ e) ²	100,253
Amortized Annual Emissions	3,342

Note:

MT CO₂e = metric tons of carbon dioxide equivalent.

¹ Construction emissions were estimated assuming buildout of the proposed land uses and construction activities would occur linearly from the time of this writing until December 31, 2034. In reality, some years may generate more or less GHG emissions. Nevertheless, the total and annual average GHG emissions would remain similar to those shown above.

² Totals may not appear to add exactly due to rounding.

The annual average emissions (3,342 MT CO₂e/year), associated with buildout of future land uses consistent with the Draft General Plan would not exceed the residential GHG threshold proposed by SCAQMD, nor would it exceed the maximum emissions threshold. The amortized emissions level would exceed the other proposed land use GHG thresholds, including commercial land use, mixed land use, and all land uses. However, it should be noted that the



emissions shown above in **Table 3.2-5** represent numerous individual projects. Therefore, it is likely that the average annual emissions could consist of different land use development projects in any given year, and those emissions would be divided by their respective project lifetimes to amortize construction emissions. Nevertheless, construction emissions amortized to an annual emissions level would exceed all operational thresholds proposed by SCAQMD.

Therefore, construction emissions impacts at this program-level analysis would be considered **significant**.

Operation

Operational GHG emissions are differentiated by direct and indirect emissions and would be generated by area, mobile, and stationary sources. Direct area-source emissions are those that occur on-site, such as combustion of fuel for activities such as landscape maintenance and from space and water heating. Direct mobile-source emissions include combustion of fuel from vehicle trips by residents and employees, and other vehicle trips that either originate or end in the City.

Indirect emissions are those that occur off-site, but where the consumption activity occurs on-site within the jurisdiction. Examples of indirect emissions include solid waste disposal and wastewater treatment from residential and commercial uses where the consumption occurs at the building, but emissions-generating processes (i.e., solid waste processing and wastewater treatment) occur at an off-site location. Indirect emissions sources also include stationary-source emissions from electricity generation at off-site utility providers. Water consumption would also result in indirect GHG emissions because of the electricity consumption associated with the off-site conveyance, distribution, and treatment of water and wastewater.

Annual GHG emissions during full buildout of the Draft General Plan in 2035 were estimated consistent with acceptable methodology and models, including the ARB-developed Local Government Operations Protocol, and the California Climate Action Registry General Reporting Protocol (ARB 2010c; CCAR 2009). Operational GHG emissions were calculated for the transportation, energy, solid waste, water and wastewater, and area source (e.g., landscaping) emission sectors. Where available, SCAQMD, Mission Viejo, or other site-specific data and emission factors were used to develop operational GHG emissions.

As shown in **Table 3.2-2** above, GHG emissions were projected for years 2020 and 2035 from year 2008 baseline conditions for the Sustainability Action Plan, based on growth projections and land use data consistent with the Draft General Plan (see **Tables 2-1** and **2-2** in Chapter 2, “Project Description”). This represents a BAU scenario assuming consumption rates and practices in year 2008 would continue unaffected until year 2020 and 2035.

As described in Section 3.2.1.5, communitywide GHG emissions are anticipated to increase by 3 percent by 2020 and by 9 percent by 2035 from 2008 without implementation of the project. The Sustainability Action Plan describes a strategy to apply federal, state, and local measures, policies, and goals to reduce projected emissions in 2020 to a level 19 percent below baseline emissions, and to reduce emissions to a level 31 percent below baseline emissions in 2035 (**Table 3.2-6**).



**Table 3.2-6
Recommended Sustainability Action Plan Measures, GHG Emission Reductions,
and Operational GHG Emissions**

GHG Emission Reduction Measure		2020 (MT CO ₂ e/yr)	2035 (MT CO ₂ e/yr)
Statewide Reductions			
AB 1493	Passenger Vehicle and Light-duty Truck Fuel Efficiency Standards	71,904	184,078
LCFS	Low-Carbon Fuel Standard	29,796	20,260
RPS	Renewable Portfolio Standard (33% by 2020)	40,859	39,376
Subtotal Statewide Reductions		142,559	243,714
Local Measures and Actions			
Measure 1	Continue current municipal urban forestry efforts and encourage residents and businesses to plant trees on private property.	130	1,430
	<i>1A: Plant 2,300 new trees (on public and private property) between 2012 and 2035.</i>		
Measure 2	Work with water districts, residents, and businesses to encourage water conservation and reduce water consumption.	2,405	2,476
	<i>2A: Reduce per-capita water consumption by 20% from baseline levels.</i>		
Measure 3	Develop a robust public outreach program to encourage residents and businesses to participate in energy efficiency and renewable energy programs. Additionally, remove or minimize regulatory barriers to the installation of rooftop solar photovoltaic systems or energy efficiency improvements.	4,025	9,743
	<i>3A: Maximize existing outreach efforts that encourage residents and business to participate in existing energy efficiency retrofit programs and renewable energy systems.</i>		



GHG Emission Reduction Measure		2020 (MT CO ₂ e/yr)	2035 (MT CO ₂ e/yr)
Measure 4	Continue to require residents and business to increase waste diversion from landfills.	934	1,193
	<i>4A: Enhanced construction waste diversion.</i>		
	<i>4B: Work with local businesses to increase diversion of food scraps.</i>		
	<i>4C: Work with local residents and businesses to increase diversion of yard waste.</i>		
Measure 5	Reduce communitywide vehicle miles traveled (VMT).	643	1,122
	<i>5A: Promote the use of transportation demand management (TDM) methods.</i>		
	<i>5B: Actively promote transit use as an alternative to single-occupancy vehicle use.</i>		
	<i>5C: Promote alternative transit choices such as walking or bicycling as an alternative to single-occupancy vehicle use.</i>		
Subtotal Local Measures and Actions		8,136	15,963
Total Sustainability Action Plan Emission Reductions		150,695	259,678
Total Business-as-usual GHG Emissions		749,321	787,303
Total Emissions after Reductions		598,626	527,625
Compared to Baseline Communitywide Emissions (725,833 MT CO₂e)		-18%	-27%

The analysis presented in the Sustainability Action Plan and summarized in **Table 3.2-6** demonstrates the potential for the City to achieve and exceed the goal of 15 percent reduction below 2008 levels by 2020, thereby meeting recommended targets for 2020 established in the ARB Scoping Plan. Achieving these reductions relies on full implementation of statewide and local reduction measures and actions identified in the Scoping Plan and Sustainability Action Plan, including energy efficiency, renewable energy resources, water conservation, trip reduction, and enhancement of the urban forest.

The analysis assumes conservative participation rates for local measures and actions to account for the voluntary nature of the proposed measures. Therefore, while the City has some control over the level of outreach, programs, incentives, and other methods to encourage residents and business owners to participate in emission reduction programs, the actual reductions achieved remain somewhat uncertain. Therefore, Chapter 4 of the Sustainability Action Plan



provides for the Sustainability Action Plan to be revised if additional information is available, new regulations are enacted, or the goals of the Sustainability Plan are not being met.

In addition, the reductions assume that state and federal measures would be fully implemented based on assumptions (e.g., vehicle mix; vehicle fleet turnover; estimated consumption of electricity, fuel, and water). While the statewide reductions assumed in the analysis included only those policies and regulations that are currently in place, the City has no direct control over whether these measures will be fully implemented on the schedule proposed. Therefore, the state and Federal GHG reductions also include some uncertainty and will be monitored over time.

As described above, through the Sustainability Action Plan, the City has demonstrated it could achieve emission reduction levels beyond those recommended by the Scoping Plan for 2020, allowing for some level of uncertainty and noncompliance. By reducing 2020 emissions by up to 18 percent below 2008 levels, the City could reduce this impact to a less-than-significant level. However, considerable uncertainty remains regarding whether the proposed statewide and local emission reduction measures will be feasible as applied to future discretionary projects consistent with the Draft General Plan. Furthermore, the City has no direct control over the timing or implementation of statewide reductions that may have local benefits in Mission Viejo. Further, climate change will continue to be an issue after 2020. While additional GHG reductions are anticipated through implementation of the Sustainability Action Plan and no community-level emission reduction targets have been recommended for years beyond 2020, the City's emissions in 2035 would not be on a path of reductions to meet the statewide 2050 goal of 80 percent reduction below baseline emissions. For these reasons, communitywide emissions associated with future land uses consistent with the Draft General Plan would be cumulatively considerable even with implementation of the Sustainability Action Plan, and this impact would be considered **significant**.

3.2.4.2 Conflict with an applicable plan, policy, or regulation adopted to reduce greenhouse gas emissions

To reduce statewide emissions to 1990 levels by 2020, AB 32 directed ARB to develop a plan that would demonstrate achievement of the target. In December 2008, ARB adopted the AB 32 Scoping Plan (Scoping Plan) that outlines proposed GHG reductions from direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, and market-based mechanisms such as cap-and-trade systems. The Scoping Plan did not directly create any regulatory requirements for the City or for projects anticipated under the Draft General Plan. However, preferences and land use development methods to achieve the statewide reduction target are discussed in the Scoping Plan, including compact, mixed-used development; low impact growth in urban areas; improved access to transit; improved jobs-housing balance; preservation of open space; and encouraging fewer vehicle miles traveled.

The Scoping Plan states that regional and local land use planning and zoning improvements will be the primary mechanisms to achieve this type of future development and redevelopment. In addition, ARB's Scoping Plan includes measures that would indirectly address GHG emissions



levels associated with construction activity, including the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a Low Carbon Fuel Standard. Policies formulated under the mandate of AB 32 that are applicable to construction-related activity, either directly or indirectly, are assumed to be implemented during construction of the project if those policies and laws are developed before construction begins. The proposed General Plan Conservation/Open Space Element and Sustainability Action Plan include a number of goals, policies, measures, and actions consistent with the type of development necessary to achieve the GHG emission reduction targets of AB 32. Most importantly, Conservation/Open Space Element Policy 8.2 requires the City to cooperate with ARB to implement GHG reduction plans and programs. With respect to open space preservation described above, Conservation/Open Space Element Policy 2.6 requires long-term preservation of open space throughout the City for a variety of uses. In addition, Policy 3.9 requires preserving public and private open spaces for recreational activities for all ages, cultures, physical abilities, and social types, while Policy 3.10 requires the same equal level of opportunity for passive and active recreational activities. Policy 8.4 requires the consideration of mixing housing and business to reduce vehicle trips and lengths, which would reduce transportation emissions. Furthermore, Policy 8.6 focuses on providing citizens and visitors with feasible alternative modes of transportation that can remove single-occupancy vehicles in the City. Therefore, the Draft General Plan and Sustainability Action Plan would include several policies and goals that target the land use development and transportation portion of long-term operational activities.

The AB 32 Scoping Plan also relies on reducing and increasing the efficiency of energy consumption, water consumption, wastewater generation, and solid waste generation to reduce GHG emissions. The General Plan's Conservation/Open Space Element includes several goals and policies that focus on these technical aspects of GHG reduction as well. Policies 9.1, 9.2, and 9.3 all encourage the distribution of energy efficiency programs and information to the residents and business. Policies 9.6 and 9.7 also would encourage and incentivize energy retrofits and audits to improve existing energy efficiency. Because existing operations and emissions account for a majority of the City's GHG emissions, these policies are critical to achieving established emission reduction targets. Finally, Policies 9.4, 10.1, 10.2, and 10.3 would also affect energy efficiency through code requirements, building standards, and the City's "Green Building Program."

Though water is not a large portion of the City's emissions inventory, it is a scarce resource and accounts for a large portion of statewide energy consumption. The Conservation/Open Space Element has established several policies to conserve, reduce, and make existing water resources more efficient. Policy 5.2 addresses implemented water conservation measures and practices in both residential and nonresidential land uses, while Policies 5.3 and 5.4 address efficiency, conservation, and reduction of indoor and outdoor water use. Policies 5.5 and 5.6 address perhaps the most important aspect of water conservation in water infrastructure. Leaks and inefficiency at the large, infrastructure scale can cause large losses in water, which results in unnecessary treatment, conveyance, and distribution energy consumption.



When considering the General Plan policies established to affect open space, mixed-use development, alternative modes of transportation, energy efficiency, and water conservation, among others, the proposed project includes a number of policies that are consistent with the goals of the AB 32 Scoping Plan. Furthermore, the creation of a Sustainability Action Plan furthers the ability of the proposed project to achieve GHG emission reductions consistent with the AB 32 Scoping Plan. As shown above in **Table 3.2-6**, implementation of statewide and local emission reduction measures and actions described in the Sustainability Action Plan would reduce year 2020 BAU emissions by approximately 18 percent below baseline emissions. Therefore, considering that numerous Draft General Plan policies promote AB 32 Scoping Plan objectives and that implementation of the Sustainability Action Plan would achieve emission reductions in excess of AB 32 goals for the year 2020.

Beyond 2020, AB 32 states that the 1990 emissions limit would remain in effect “unless otherwise amended or repealed.” However, unlike the specific requirements and timelines for achieving GHG emissions reductions by 2020, AB 32 did not provide specific timelines for ARB to develop recommended GHG reduction goals or actions beyond 2020.

The Scoping Plan includes a discussion of GHG reductions beyond 2020, to 2030, stating that to be on the trajectory toward the 2050 goal, Statewide emissions would need to be reduced by an average of four percent per year between 2020 and 2030 and that this goal is achievable through expanding the programs identified in the Scoping Plan. The Scoping Plan does not recommend measures for meeting any specific GHG emissions limits beyond 2020; rather, it presents an example mix of programs already identified in the Scoping Plan that could be expanded to provide additional GHG reductions. Further, the Scoping Plan reiterates the State’s role in the long term goal established in EO S-3-05, which is to reduce GHG emissions 80 percent below 1990 levels by 2050. The Scoping Plan states that this will be achieved through development of new (non fossil-fuel based) technologies and a “shift into a landscape of new ideas, clean energy, and green technology.” While the Scoping Plan does not demonstrate or recommend measures that would achieve the 2050 target, it repeatedly states that the measures “put the State on a path to meet the long-term goal” and “set the State on a trajectory toward 2050”; however states that measures needed to achieve the 2050 goal are “too far in the future to define in detail” and does not present an example framework for achieving this goal.

Similar to the programs identified in the Scoping Plan, the programs identified in the General Plan are expandable and provide a framework for meeting future GHG emissions limits. However, since ARB has not prepared a plan beyond 2020, it is unknown at this time the level of reductions that may be achieved by State measures. In addition, ARB has not established a State-wide or community-wide GHG emissions limit beyond 2020. Therefore, the timing and level of reductions needed beyond 2020 is uncertain, as is the City’s role in developing local measures to parallel the State’s efforts and the **impact would be significant**, and mitigation would be required.



3.2.5 Mitigation Measures

3.2.5.1 Generation of GHG Emissions

Construction

GHG-1 To reduce construction-generated GHG emissions, projects seeking discretionary approval from the City shall implement all feasible measures for reducing GHG emissions associated with construction that are recommended by the City and/or SCAQMD at the time individual portions of the site undergo construction.

The project applicant(s) for any particular discretionary project may submit a report to the City that substantiates why specific measures are considered infeasible for construction of that particular discretionary project and/or at that point in time. By requiring that the list of feasible measures be established prior to the selection of a primary contractor, this measure requires that the ability of a contractor to effectively implement the selected GHG reduction measures be inherent to the selection process.

The recommended measures for reducing construction-related GHG emissions at the time of writing this EIR are listed below. The list will be updated as new technologies or methods become available. The project applicant(s) shall, at a minimum, be required to implement the following:

- Improve fuel efficiency of construction equipment:
 - reduce unnecessary idling (modify work practices, install auxiliary power for driver comfort);
 - perform equipment maintenance (inspections, detect failures early, corrections);
 - train equipment operators in proper use of equipment;
 - use the proper size of equipment for the job; and
 - use equipment with new technologies (repowered engines, electric drive trains).
- Use alternative fuels for electricity generators and welders at construction sites such as propane or solar, or use electrical power.
- Use an ARB-approved low-carbon fuel, such as biodiesel or renewable diesel for construction equipment. Emissions of NO_x from the use of low carbon fuel must be reviewed and increases mitigated. Additional information about low-carbon fuels is available from ARB's Low Carbon Fuel Standard Program.
- Reduce electricity use in the construction offices by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.



- Recycle or salvage nonhazardous construction and demolition debris.
- Use locally sourced or recycled materials for construction materials (goal of at least 20 percent based on costs for building materials, and based on volume for roadway, parking lot, sidewalk, and curb materials).
- Develop a plan to efficiently use water for adequate dust control. This may consist of the use of nonpotable water from a local source.

GHG-2 As a part of a contractor demolition package, require 25 percent of nonhazardous debris (excluding excavated soil and land-clearing debris) to be recycled or salvaged. Work with contractors to share best practices on building recycling and reuse, and demolition techniques to minimize waste, dust generation, water and energy use, and other impacts of construction and demolition work.

GHG-3 Upgrade the local building code to incorporate California Green Building Standards Code requirements on a regular and timely manner as mainline construction practices develop and new materials and building products become available with the goal of meeting the state’s Net Zero Energy goals for new residential development by 2020 and new commercial development by 2030.

Operation

No additional feasible mitigation beyond implementation of the Draft General Plan and Sustainability Action Plan is available to reduce the program-level operational GHG emissions impact to a less-than-significant level.

3.2.5.2 Conflict with an applicable plan, policy, or regulation adopted to reduce greenhouse gas emissions

GHG-4 Update the Sustainability Action Plan to meet any future community-level emissions targets established by the State.

3.2.6 Significance After Mitigation

3.2.6.1 Generation of GHG Emissions

Construction

Mitigation Measures GHG-1, GHG-2, and GHG-3 are proposed to address impacts associated with GHG emissions generated by construction. Mitigation Measure GHG-1 requires discretionary projects to employ project-specific measures to be employed to reduce construction-generated GHG emissions. Mitigation Measure GHG-2 states contractor demolition packages will recycle or salvage a portion of nonhazardous debris. Mitigation Measure GHG-3 states the City will upgrade its local building code to incorporate California Green Building Standards Code requirements on a regular basis to include new practices that will bring new and existing development toward the state’s Net Zero Energy goals by 2020.



Implementation of Mitigation Measures GHG-1, GHG-2, and GHG-3 would reduce construction impacts to a **less-than-significant** level.

Operation

In formulating the Sustainability Action Plan, the City has considered a wide range of emission reduction measures from a variety of reputable sources, including the Attorney General's office recommendations, General Plan policy recommendations published by the California Air Pollution Control Officers Association, and best practices employed by other Orange County and California local jurisdictions preparing General Plan updates and Climate Action Plans. The City has charted an emissions reduction strategy that focuses on maximizing the local benefits of statewide reduction strategies advocated in the Scoping Plan, combined with targeted, but voluntary, local emission reduction measures and actions. In preparing the Sustainability Action Plan, the City has selected those measures and actions it considers feasible, in light of the built-out character of development in Mission Viejo, recognizing that there are limited opportunities to achieve GHG reductions within new development in the City.

Therefore, the City has considered a full range of potential emission reduction strategies, and finds that no additional feasible mitigation is available beyond Draft General Plan policies and programs, and statewide and local reduction measures and actions identified in the Sustainability Action Plan, to reduce this impact to a less-than-significant level. Communitywide emissions associated with future land uses consistent with the Draft General Plan would remain cumulatively considerable even with implementation of the Sustainability Action Plan, and this impact would be considered **significant and unavoidable**.

3.2.6.2 Conflict with an applicable plan, policy, or regulation adopted to reduce greenhouse gas emissions

The type of measures necessary to meet statewide emission reduction levels in 2050 is not currently known. Additional state and federal regulations may be enacted to reduce community-wide emissions, and technologies that cannot currently be anticipated may result in higher energy efficiency or GHG emission reductions that cannot be estimated at present. Therefore, while the implementation of the Sustainability Action Plan will reduce emissions in the future and be updated to meet new emissions requirements, developing additional mitigation to meet statewide emission reduction goals to the year 2050 is currently infeasible and the impact would be considered **significant and unavoidable**.



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3.3 Land Use and Planning

This section discusses the existing environmental conditions and land use characteristics within the City of Mission Viejo. This section evaluates the potential land use impacts associated with implementation of the updates to the Land Use, Conservation/Open Space, and Circulation Elements of the City's General Plan and the Sustainability Action Plan. The proposed project does not include any changes to existing land use designations.

3.3.1 Existing Environmental Setting

Mission Viejo is located east of the Cities of Laguna Hills and Laguna Niguel, north of the City of San Juan Capistrano, west of the City of Rancho Santa Margarita and unincorporated communities of Ladera Ranch and Coto de Caza, and south of the City of Lake Forest. Mission Viejo and the surrounding cities are suburban in nature with mainly residential uses. Residential development in Mission Viejo offers a wide range of housing types, from apartments to single-family dwelling units. Employment opportunities mainly exist within the industrial, business park, and office areas located in the westerly portion of the City. Recreational activities, parkland, and schools exist throughout the community and are located proximal to residential neighborhoods. Major institutional uses located within the southern regional commercial district of the City consist of the Saddleback Community College and Mission Hospital. The City's trail system includes pedestrian and bike trails within open space corridors and along regional trails that link to local and regional parkland.

3.3.1.1 Land Use Designations

Mission Viejo contains a variety of land uses as summarized in **Table 3.3-1** and illustrated in **Figure 3.3-1**. **Table 3.3-1** identifies each land use designation, its associated acreage, and the total land acreage for all planned land uses in the City.

Residential

Residential uses comprise the largest land use within the City at approximately 65 percent of total land area. The majority of dwelling units (approximately 87 percent) are low-density detached and attached homes. Mission Viejo, similar to many of the adjacent cities, is predominantly single-family residential development in a lower-density layout.

The City's residential category is classified into four residential land use designations:

- Residential 3.5: Provides for the development of low density detached and attached family dwellings, with a maximum of 3.5 single family dwelling units per gross acre.
- Residential 6.5: Provides for the development of low to medium density detached and attached single family dwellings (duplexes, condominiums, and townhomes), with a maximum of 6.5 detached or attached single family dwelling units per gross acre.



**Table 3.3-1
General Plan Land Use by Acreage**

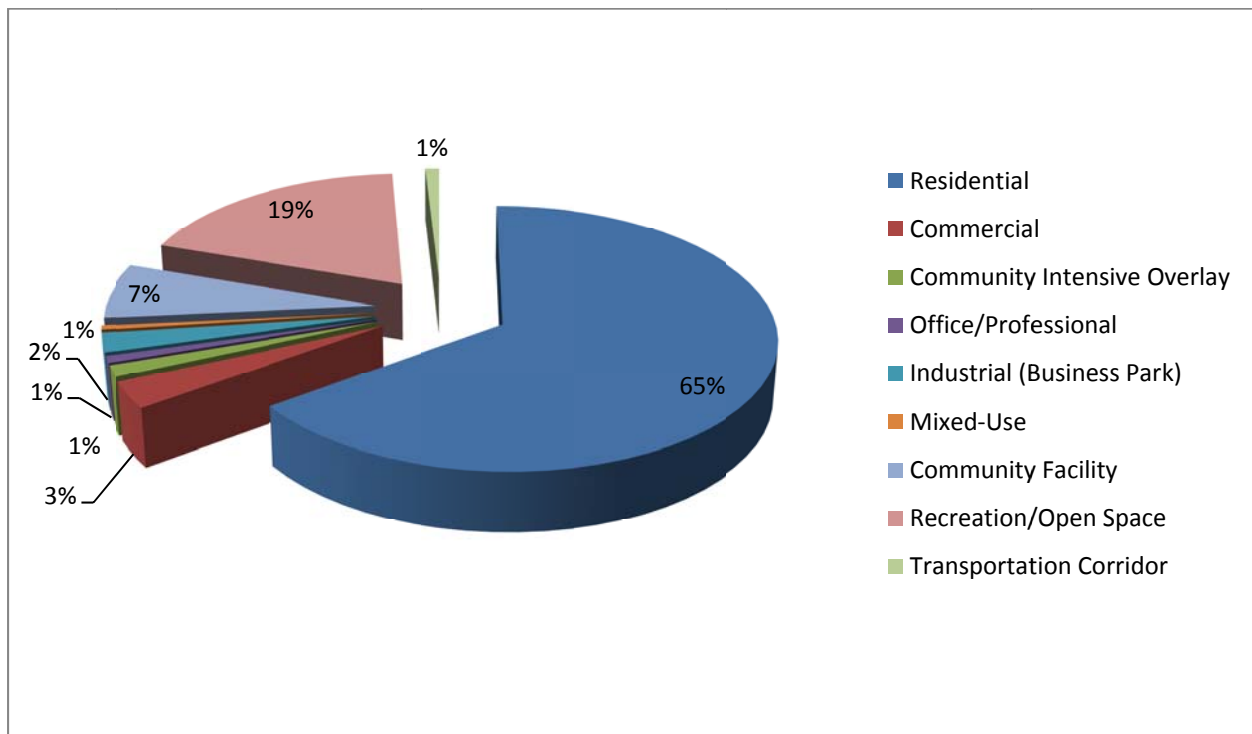
Land Use Category	Acreage	Percentage of Planning Area
Residential	6,974	65%
Commercial	349	3.3%
Commercial Intensive Overlay	153	1.4%
Office/Professional	91	0.9%
Industrial/Business Park	259	2.4%
Mixed Use	55	0.5%
Community Facility	734	6.8%
Recreation/Open Space	2,014	18.8%
Transportation Corridor	97	0.9%
Total	10,727	100%

Source: City of Mission Viejo GIS 2012

Notes:

Totals may not add exactly due to rounding.

Figure 3.3-1 General Plan Land Use



- Residential 14: Provides for the development of medium and higher density detached and attached single family dwellings, as well as multi-family dwellings (apartments), with a maximum of 14 single family or multi family dwelling units per gross acre.



- Residential 30: Provides for the development of higher density single family attached or multi-family dwelling units, with a maximum of 30 single family or multi family dwelling units per gross acre.

Commercial

The City's commercial category is categorized into four commercial land use designations:

- Commercial Neighborhood: Provides for development of smaller-scale business activities which generally include retail or service-oriented functions that serve the needs of local residents. These uses can include grocery stores, clothing stores, professional and business offices, furniture and appliance stores, hardware stores and restaurants. Commercial Neighborhood uses typically occur on 5 to 10 acres of land with approximately 50,000 square feet of building floor area.
- Commercial Community: Provides for development of retail, professional office, and service-oriented business activities which serve a community-wide area and population. Commercial Community uses include the same types allowed in Commercial Neighborhood areas, but may also support larger-scale anchor uses such as junior department stores, home improvement centers, discount stores, furniture/appliance outlets, and entertainment centers. Commercial Community development generally occurs on 10 to 30 acres of land and includes 100,000 to 300,000 square feet of building floor area.
- Commercial Highway: Provides for development of highway-oriented businesses providing goods and services to a broad population utilizing major transportation corridors. Uses within the Commercial Highway category include those described in both the Commercial Neighborhood and Community categories, and also include other uses which serve both local and non-local populations, such as, automobile and motorcycle dealerships, auto service operations, and hotels and motels. Commercial activities are accessed primarily by automobile or public transit, and individual sites may range in size from less than one acre to 30 or more acres of land area.
- Community Regional: Provides for development of large-scale retail and consumer-service business activities which serve a large geographic area and population. Regional centers are intensive commercial projects often containing several major department stores as anchors, large entertainment complexes, and numerous smaller supportive retail and commercial service activities. Commercial Regional uses include the uses permitted in the Commercial Neighborhood, Community, and Highway categories, with some exceptions such as automobile dealerships or professional offices. Commercial Regional development typically occurs on a minimum of 50 acres of land and includes 300,000 to 1,000,000 square feet of building floor area.



Commercial Intensive Overlay

The Commercial Intensive Overlay land use designation permits a greater maximum floor area ratio than that permitted in the base land use designation in areas that require more intensive development, such as near major freeway interchanges. Primary uses include major hotels, corporate headquarters, hospitals and medical offices, and major retail/service commercial. Generally, the borders of the Commercial Intensive Overlay area include commercial, office, and community facility development along both sides of Crown Valley Parkway between I-5 and Los Altos, such as Kaleidoscope, the Shops at Mission Viejo mall, and Mission Hospital Regional Medical Center, and an additional portion of office development along Puerta Real to Via Grande.

Office/Professional

The Office/Professional land use designation includes business activities primarily involved in providing professional or administrative services, such as legal and medical services, financial institutions, corporate offices, government offices, cultural and community facilities, and a wide range of similar uses, which together may constitute major concentrations of employment or community activity. Some small-scale retail and service commercial activities designed to meet the needs of the employee population are allowed as secondary/supportive uses. Office/Professional development is generally located on arterial roadways or near freeways for convenient automobile access and public transit service.

Industrial/Business Park

The Industrial/Business Park land use designation includes research, light manufacturing, business/professional offices, warehousing/distribution, wholesaling, storage, public utilities and uses, and service commercial activities. The Business Park category provides for major employment concentration and is generally served by arterial roadways and freeways, providing automobile and public transit access.

Mixed Use

The Mixed Use land use category includes three mixed use land use designations:

- **Commercial Neighborhood/Community Facility/Residential 14:** This mixed-use designation allows any one of the three categories of use to exist individually on a site, or a combination of any two of the three categories may exist on a site or as a single project to accommodate complementary uses.
- **Commercial Highway/Office Professional:** This mixed-use designation includes both the Commercial Highway and Office Professional categories, and allows either category to exist individually on a site, or allows both categories to be combined on the same site or as a single project.
- **Office Professional/Residential 30/Business Park:** This mixed-use designation includes the Office Professional and Residential 30 and Business Park categories, and allows either



category to exist individually on a site, or allows any one of those categories to exist individually on a site, or to be combined with either or both of the other categories on the same site or as a single project.

Community Facility

The Community Facility land use designation includes a wide range of public, quasi-public, and private uses, such as school sites, churches, childcare centers, government administrative offices and facilities, public utilities, libraries, museums, art galleries, community theaters, hospitals, and cultural and recreational activities. Included in this category are Saddleback Community College and other institutions of higher learning. In addition, community facility uses are allowed under a number of other land use designations.

Recreation/Open Space

Recreation and Open Space constitute the second largest land use in Mission Viejo, comprising almost 19 percent of the City. The Recreation/Open Space land use designation includes both public and private recreational uses necessary to meet the active and passive recreational needs of City residents. Active recreation activities include golf courses/driving ranges, equestrian centers, community recreational facilities, public parklands, and indoor and outdoor sports and athletic facilities. Passive recreation uses include museums, galleries, nature preserves, outdoor theater, designated open space, and similar uses.

Transportation Corridor

The Transportation Corridor land use designation applies to land within I-5, the Foothill Transportation Corridor, and the Southern California Regional Rail Authority (SCRRA) railway corridors. Lands within these corridors are reserved for transportation purposes as their primary use. Secondary uses such as open space linkages and landscaped areas, public and private parking areas, and other transportation-related activities and facilities are allowed.

3.3.1.2 Specific Plan Study Area

The Specific Plan is a development tool that can be utilized to better manage development in certain areas within a city. Two areas within Mission Viejo are being considered for Specific Plans. The first Specific Plan Study Area lies in the southern portion of the City, generally bordered by the Southern California Edison Easement to the north, Via Escolar to the south, the eastern City limits to the east, and I-5 to the west. An additional portion of the City along Cabot Road located south of Oso Parkway is also included. This area represents a major urban activity center in the City and includes major commercial and employment uses, including the Shops at Mission Viejo Mall, auto dealerships along I-5, and office developments along Crown Valley Parkway. Major community facilities also occur in the area such as Saddleback Community College and Mission Hospital Regional Medical Center. Residential uses include a range of housing types and densities.

The second Specific Plan Study Area lies in the City's geographic center and is generally bordered by the intersection of Marguerite Parkway and La Paz Road to the north and the



intersection of Marguerite Parkway and Oso Parkway to the south. This area includes a civic center with a city hall and public library; several large commercial centers with retail stores, offices, restaurants, automobile repair shops, and churches; Avalon Mission Viejo Apartments; Thomas R. Potocki Conference Center; Norman P. Murray Community and Senior Center; Oso Viejo Community Park; Newhart Middle School; World Cup sports fields; and Oso Creek and existing trail system.

3.3.1.3 Surrounding Land Uses

The Cities of Laguna Hills and Laguna Niguel border Mission Viejo to the west and are primarily suburban in character. The City of Rancho Santa Margarita and unincorporated communities of Ladera Ranch and Coto de Caza border Mission Viejo to the east with low-density residential and open space/recreation uses such as the Tijera Creek Golf Club. The City of San Juan Capistrano borders Mission Viejo to the south and is also suburban in nature with primarily residential uses. The City of Lake Forest lies to the north of Mission Viejo with adjacent land uses including single-family residential and light industrial/business parks.

3.3.2 Regulatory Setting

There are numerous laws, regulations, policies, programs, codes, and ordinances that regulate land use development within the City. To simplify the volume and complexity of these regulations, this inventory focuses on laws, regulations, and programs that affect land use designations and zoning. Laws, regulations, and programs that indirectly affect land use planning, such as traffic and air quality regulations, are included in applicable subsections of Chapter 3.0 of this EIR (Sections 3.1 through 3.5).

3.3.2.1 Federal Regulations

There are no federal plans, policies, regulations, and laws related to land use and planning that apply to the updated General Plan for the purpose of determining land use and planning impacts.

3.3.2.2 State Regulations

California Planning and Zoning Law

The legal framework in which California cities and counties exercise local planning and land use functions is provided in the California Planning and Zoning Law, Government Code Sections 65000 et seq. Under state planning law, each city and county is required to adopt a General Plan “for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning” (Section 65300). The California Supreme Court has called the General Plan the “constitution for future development.” The General Plan expresses the community’s development goals and embodies public policy relative to the distribution of future land uses, both public and private. A General Plan consists of a number of elements, including Land Use, Circulation, Housing, Conservation, Open Space, Noise, And Safety; other elements may be included at the discretion of the jurisdiction that relate to the physical



development of the county or city. The General Plan must be comprehensive and internally consistent. Of particular importance is the consistency between the Circulation And Land Use elements; the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other public utilities and facilities must be consistent with the general distribution and intensity of land for housing, business, industry, open space, education, public areas, waste disposal facilities, agriculture, and other public and private uses.

In addition, every jurisdiction is governed by its own set of local policies, regulations, and ordinances set forth in its General Plan and municipal code. A city's Municipal Code, including the zoning ordinance, is the primary tool used to implement the goals and policies of its General Plan. Zoning ordinances provide detailed direction related to development standards; permitted, conditionally permitted, and prohibited uses; and other regulations such as parking standards and sign regulations.

3.3.2.3 Regional Plans and Policies

Southern California Association of Governments

SCAG is a regional council of government agency for six counties in the Southern California region, including Orange County. As a designated MPO, SCAG is mandated by the federal government to research and prepare plans for transportation, air quality, growth management, and hazardous waste management. Additional mandates exist at the state level, including the preparation of the Regional Housing Needs Assessment (RHNA) and implementation of the recently adopted Sustainable Communities Strategy (SCS).

The SCS was required by the 2008 SB 375, and after 4 years of planning was adopted in April 2012 as part of the 2012 RTP, aimed at a sustainable future for the region. More specifically, SCS includes the following goals: establish and meet a regional GHG emission reduction target for cars and light trucks through the SCS; integrate SCAG's planning process for transportation, growth, land use/housing, and the environment; provide an interactive and participatory outreach process for all stakeholders; develop strategies through the SCS that incorporate and are respectful of local and subregional priorities, plans, and projects; and comply with the provisions of SB 375. The SCS relies on increased investment (i.e., \$246 billion) in public transit and more walkable, transit-accessible land use patterns to reduce pollution while preserving farmland and natural areas.

Orange County Local Agency Formation Commission (OC LAFCO)

Government Code Section 56000 et seq., titled the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, requires that each county must have a local agency formation commission (LAFCO), which is the agency that has the responsibility to create orderly local government boundaries, with the goals of encouraging orderly growth, efficient public services for cities and special districts, the preservation of prime agricultural and open space lands, and discouraging urban sprawl. While LAFCOs have no direct authority over land use, their actions determine which government will be responsible for new planning areas.



The Orange County Local Agency Formation Commission (OC LAFCO) has jurisdiction over Orange County. Periodically OC LAFCO prepares Municipal Service Review (MSR) studies for unincorporated county communities and island areas. MSR studies are state-mandated special studies designed to help public agencies plan for future growth, challenges, and changes. These studies lay the foundation for Sphere of Influence updates (i.e., the agency’s probable future service boundaries and areas of future growth) and possible future annexations of land. For Mission Viejo, the City’s Sphere of Influence boundary is co-terminus with its City boundary. The City is actively monitoring the future governance of the unincorporated areas east and southeast of the City, including the planned communities of Las Flores, Ladera Ranch, and the Ranch Plan.

Airport Land Use Commission (ALUC)

In each county containing a public use airport, an Airport Land Use Commission (ALUC) is required to assist local agencies in ensuring compatible land uses in the vicinity of existing or proposed airports; to coordinate planning at state, regional, and local levels; to prepare and adopt an airport land use plan as required by PRC Section 21675; to review plans or regulations submitted by local agencies; and to review and make recommendations regarding the land uses, building heights, and other issues relating to air navigation safety and promotion of air commerce.

The Orange County Airport Land Use Commission (OC ALUC) reviews general plans for consistency with the Airport Environs Land Use Plan (AELUP). On July 21, 2005, the OC ALUC adopted Resolution No. 2005-1 confirming that the AELUP for the Marine Corps Air Station (MCAS) El Toro was no longer applicable to the MCAS El Toro property or its environs, and the AELUP no longer had any legal effect. The City of Irvine is currently developing the former MCAS with a new planned community development called “Heritage Fields” and the “Great Park.”

Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP)

The County of Orange has prepared a Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) for the central, coastal, and southern subregions of Orange County. The NCCP/HCP for these subregions was prepared in cooperation with the U.S. Fish and Wildlife Service and the CDFW. The intent of the NCCP/HCP program is to provide long-term, regional production of natural vegetation and wildlife diversity, while allowing compatible land use and appropriate development and growth. The NCCP/HCP is accomplished with the institution of a subregional Habitat Reserve System, and is implemented through a coordinated program to manage biological resources within the habitat reserve.



National Pollutant Discharge Elimination System (NPDES)

Mission Viejo is under the jurisdiction of the San Diego Regional Water Quality Control Board (SDRWQCB) which implements the National Pollutant Discharge Elimination System (NPDES) permit for the San Diego area (including southern Orange County). The NPDES permit, a requirement under the Clean Water Act, addresses pollution from urban runoff that impacts water quality of receiving waters (such as streams and lakes). Under the NPDES permit, each jurisdiction must implement measures to reduce urban runoff during all phases of land use development, starting with planning, during construction, and after completion of the development. Requirements include incorporating best management practices to reduce water runoff from new and redevelopment sites, construction activities, and existing uses; reporting any violations to the SDRWQCB; and educating the community of the negative water quality impacts from urban runoff. Starting in 2010, the City must also adopt a Standard Storm Water Mitigation Plan to implement low impact development techniques for new and redevelopment sites; the City must also develop a Hydromodification Management Plan to manage increases in runoff discharge rates and durations from new and redevelopment sites.

Water District Master Plans

El Toro Water District, Moulton Niguel Water District, and Santa Margarita Water District distribute water and maintain sewer service for the City of Mission Viejo. Each water district has a master plan for the provision of the water and sewer services. Water districts are required to address water supply, treatment, distribution infrastructure, reclamation, water conservation, meter retrofitting, and water storage contingency plans. Local water management plans are supplemental to the regional plans prepared by the Metropolitan Water District of Southern California (MWDSC) and the Municipal Water District of Orange County (MWDOC). The Land Use Plan addresses the need to coordinate with the water districts to ensure adequate water is available to existing and future development.

3.3.2.4 Local Plans and Policies

City of Mission Viejo Development Code

The City's adopted comprehensive Development Code is the primary implementation tool for the Land Use Element and its associated goals and policies. The Development Code is required to be consistent with the City's General Plan. A Zoning Map (see **Figure 3.3-2, Mission Viejo Zoning Map**), consistent with the Land Use Policy Map, was adopted as part of the Development Code. Together, the Development Code and Zoning Map are used to identify the specific types of use, intensity, and development standards applicable to given parcels or areas of land.

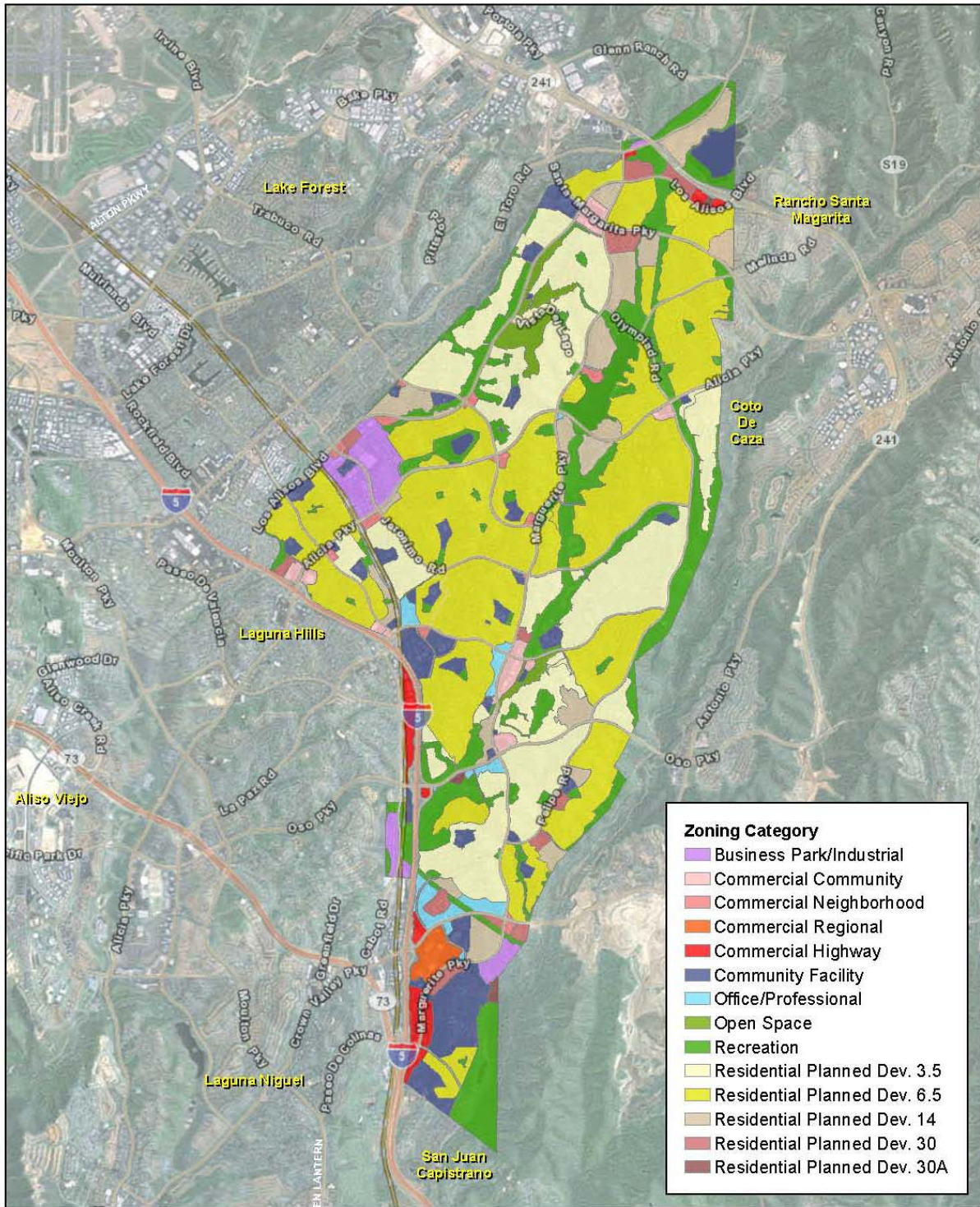


Figure 3.3-2
Mission Viejo Zoning Map



Mission Viejo Community Development Agency

The Mission Viejo Community Development Agency's (CDA) Project Area was initially adopted by the City Council by Ordinance No. 92-86 on July 13, 1992. The purpose of the CDA was to carry out the Community Development Plan.

However, on February 1, 2012, all redevelopment agencies were dissolved by the State Legislation pursuant AB 26, and the City became the "Successor Agency" to the CDA. In 2011, the City established the Mission Viejo Housing Authority (MVHA) to be the Housing Successor to the CDA. All housing assets, including encumbered funds in the former CDA's Low and Moderate Income Housing Fund, were transferred to the MVHA. At this time, the future disposition of Low and Moderate set-aside funds is uncertain.

City's Habitat Conservation Plan

The City will work with the U.S. Fish and Wildlife Service to pursue grant funding to create an HCP for portions of Mission Viejo. The City desires to improve open spaces to assist in the protection of sensitive plants, animals, and their habitats in the City. For example, the City is specifically interested in the conservation potential of undeveloped City-owned property along the north side of El Toro Road easterly of SR-241, 60 acres of property easterly of Los Alisos Boulevard and Vista del Lago, and property along the east edge of Mission Viejo generally located between Alicia Parkway and Oso Parkway bordering O'Neill Regional Park. Development of a draft HCP would include protection, restoration, and management of open space lands within the City while allowing for needed urban development. The HCP will include the placement of conservation easements on property identified by the City to be protected from future development. This HCP will maintain or improve the status of threatened and endangered species and assist in eliminating the need for future listings of species under the Federal and State Endangered Species Acts. Specifically, the HCP will benefit the federally threatened coastal California gnatcatcher and the federally and state endangered least Bell's vireo. The HCP will also benefit other native plants and animals and be complementary to the recently completed Orange County Southern Subregion Habitat Conservation Plan. The City's HCP will be the basis for continued conservation of important biological resources while accommodating planned housing and economic growth.

City of Mission Viejo Master Plan of Drainage

The City of Mission Viejo Public Works Department administers the Master Plan of Drainage for the City. The Master Plan of Drainage is an inventory of the storm drain system, ensuring proper drainage to prevent flooding from surface water runoff. This plan is coordinated closely with the County of Orange Flood Control District. The County of Orange Flood Control District maintains county flood channels running through the City.

3.3.3 Thresholds for Determining Significance

The impact of the project related to land use and planning would be considered significant if it would exceed the following thresholds of significance, in accordance with Appendix G of the *CEQA Guidelines*:



- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

3.3.4 Analysis of Environmental Impacts

The City of Mission Viejo is nearly built out, with few vacant parcels. Updates to the Land Use Element of the General Plan focus on aligning existing and future land uses with the intent of the General Plan by reflecting the community’s goals to maintain its form and character, maintain a quality living environment for the residents, strengthen the community’s distinctive image, diversify and expand the local economy, provide for public facilities to meet community needs, promote health and wellness within the community, and preserve natural areas that make the City unique.

3.3.4.1 Conflict with an adopted land use plan, policy, or regulation

Implementation of the proposed project, the update to the General Plan, and the Sustainability Action Plan would have a significant environmental impact if it would conflict with any of applicable regional and local land use plans and/or regulations as described in Section 3.3.2. The potential conflicts with the applicable regional and local plans are described below. The discussion below mainly focuses on policies/plans that have been included in the update to the Land Use Element.

Southern California Association and Governments

The updates to the General Plan do not introduce new land uses nor do they change any of the existing land uses. The updates include additional goals, policies, and programs that aim at improved air quality, reduced air and GHG emissions, increased walkability, and improved quality of life and sustainability for the future of the City. The recently adopted SCS also includes goals and policies that are in line with the updated General Plan and the Sustainability Action Plan by promoting public transit, and more walkable, transit-accessible land use patterns to reduce pollution while conserving open space. Therefore, implementation of the proposed project would further promote the goals of SCE and result in **less-than-significant impacts**.

Orange County Airport Land Use Commission (OC ALUC)

The City of Mission Viejo is not located within 2 miles of a public airport. The closest airport to the City of Mission Viejo is John Wayne Airport, located approximately 15 miles northwest of the proposed project. The OC ALUC reviews the establishment of heliports/helistops for consistency with the AELUP for heliports. Currently, one private heliport is operating in the City. Mission Hospital has an existing heliport for medical emergencies on top of the west wing of their five-story bed tower building on the upper hospital campus off Medical Center Road, south of Crown Valley Parkway. No helicopters are based at the hospital. The site plan permit



for the bed tower and attendant helipad was approved by the City's Planning Commission in 1989.

The proposed project includes updates to the Land Use Element, including the addition of a section titled "Airport Land Use Consistency," which outlines the City's provisions for consistency with the AELUP and OC ALUC. As such, implementation of the proposed project would not result in conflicts with the AELUP and OC ALUC and would result in **less-than-significant** impacts.

National Pollutant Discharge Elimination System (NPDES), Water District Master Plans and City of Mission Viejo Master Plan of Drainage

The City of Mission Viejo has ground and surface water resources such as Lake Mission Viejo, Upper Oso Reservoir, El Toro Reservoir, Aliso Creek, Oso Creek, and Trabuco Creek that are subject to various sources of pollution associated with urban runoff. To protect public safety and these water resources, the quality of the City's water resources would need to be monitored and protected. In addition, the City promotes the conservation of water resources in order to sustain existing and future economic population and growth.

The proposed project contains updates to the Land Use Element, including updates to goals and policies relating to water and sewer service, storm drainage, and urban runoff control. These goals and their associated policies comply with existing General Plan goals and policies to protect and preserve natural resources. Updated water quality policies to control urban runoff and prevent pollutants from disturbing natural water bodies and drainage systems are part of the proposed project and would comply with the NPDES, Water District Master Plans and the City's Master Plan of Drainage. As such, implementation of the proposed project would result in **less-than-significant** impacts.

City of Mission Viejo Development Code

As mentioned under Local Plans and Policies, Development Code contains various regulations governing land use in the City. It is the primary implementation tool for the goals and policies of the Mission Viejo General Plan. The updates to the Land Use Element of the General Plan include incorporation of the Public Facilities Element into the Land Use Element and additional land use plans, programs, goals, and policies that would not affect the existing land uses. As the updates do not include revisions to the land uses that would be in conflict with the Development Code, the Development Code would remain consistent with the General Plan. Therefore, implementation of the proposed project would result in **less-than-significant** impacts.

Mission Viejo Community Development Area

Please see *Mission Viejo Community Development Agency* under Section 3.3.2.4, above. As of February 1, 2012, all redevelopment agencies were dissolved by the State Legislation, and the City became the "Successor Agency" to the CDA, and all housing assets were transferred to the MVHA.



The proposed General Plan updates include incorporation of the Public Facilities Element into the Land Use Element and additional plans, programs, goals, and policies without any changes to or intensification of the land uses. Since, these updates do not include changes to the existing land use and do not directly implement any specific development proposals, no conflicts with the CDA would be anticipated. Therefore, implementation of the proposed project would result in **less-than-significant** impacts in light of the recent changes to the CDA.

3.3.4.2 Conflict with an applicable conservation plan or Natural Community Conservation Plan (NCCP)

The City currently participates in regional and state efforts for NCCP/HCP programs for multi-species habitat protection. The proposed project includes updates to the Conservation and Open Space Element, including a measure stating that the City will work with the U.S. Fish and Wildlife Service to pursue grant funding to create an HCP for portions of the City that would protect, restore, and manage open space lands within the City while allowing for needed urban development. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would provide adaptation strategies focused on the preservation of critical habitat areas. The proposed project, therefore, would comply with the intent of the NCCP/HCP program, which is to provide long-term, regional production of natural vegetation and wildlife diversity, while allowing compatible land use and appropriate development and growth. Therefore, impacts associated with implementing the proposed project would be **less than significant**.

3.3.5 Mitigation Measures

3.3.5.1 Conflict with an adopted land use plan, policy, or regulation

Impacts from General Plan activities are **less than significant**; no mitigation is necessary.

3.3.5.2 Conflict with an applicable conservation plan or Natural Community Conservation Plan (NCCP)

Impacts from General Plan activities are **less than significant**; no mitigation is necessary.

3.3.6 Significance After Mitigation

3.3.6.1 Conflict with an adopted land use plan, policy, or regulation

Land Use impacts as a result of the General Plan are expected to be **less than significant**; no mitigation is required.

3.3.6.2 Conflict with an adopted land use plan, policy, or regulation

Land Use impacts as a result of the General Plan are expected to be **less than significant**; no mitigation is required.



3.4 Noise

This section includes a description of ambient noise conditions, a summary of applicable regulations related to noise and vibration, and an analysis of the potential impacts resulting from the implementation of the update to the City of Mission Viejo General Plan. Mitigation measures are recommended, as necessary, to reduce significant noise impacts. Noise modeling and vibration calculations are provided in Appendix C of this EIR.

3.4.1 Existing Environmental Setting

3.4.1.1 Terminology and Definitions

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Caltrans 2009).

In its most basic form, a continuous sound can be described by its frequency or wavelength (pitch) and its amplitude (loudness). Frequency is expressed in cycles per second, or hertz. Frequencies are heard as the pitch or tone of sound. High-pitched sounds produce high frequencies; low-pitched sounds produce low frequencies. Sound pressure levels are described in units called the decibel (dB).

Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease.

Several rating scales (or noise “metrics”) exist to analyze adverse effects of noise on a community. These scales include the equivalent noise level (L_{eq}), the community noise equivalent level (CNEL), and the day-night average sound level (L_{dn}). Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq} , meaning the equivalent noise level for that period of time. The period of time averaging may be specified; $L_{eq(3)}$ would be a 3-hour average. When no period is specified, a 1-hour average is assumed. It is important to understand that noise of short duration, that is, times substantially less than the averaging period, is averaged into ambient noise during the period of interest. Thus, a loud noise lasting many seconds or a few minutes may have minimal effect on the measured sound level averaged over a 1-hour period.

To evaluate community noise impacts, a descriptor was developed that accounts for human sensitivity to nighttime noise. The descriptor is called the L_{dn} , which represents the 24-hour average sound level with a penalty for noise occurring at night. The L_{dn} computation divides the 24-hour day into two periods: daytime (7:00 a.m. to 10:00 p.m.), and nighttime (10:00 p.m. to 7:00 a.m.). The nighttime sound levels are assigned a 10-dBA penalty prior to averaging with daytime hourly sound levels. CNEL is similar to L_{dn} except that it separates a 24-hour day into



three periods: daytime (7:00 a.m. to 7:00 p.m.), evening (7:00 p.m. to 10:00 p.m.), and nighttime (10:00 p.m. to 7:00 a.m.). The evening nighttime sound levels are assigned a 10-dBA penalty prior to averaging with daytime hourly sound levels.

Groundborne Vibration and Noise

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of groundborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (FTA 2006).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2006). This is based on a reference value of 1 microinch per second ($\mu\text{in}/\text{sec}$).

The background vibration-velocity level in residential areas is usually approximately 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006).

Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Construction activities can generate groundborne vibrations, which can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack façades, and disturb occupants (FTA 2006).

Construction vibrations can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, horizontal directional drilling, and



compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment. **Table 3.4-1** describes the general human response to different levels of groundborne vibration-velocity levels.

**Table 3.4-1
Human Response to Different Levels of Groundborne Noise and Vibration**

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if an infrequent number of events occur per day.

Source: FTA 2006

Note:

VdB = vibration decibels referenced to 1 microinch per second and based on the root mean square velocity amplitude.

The existing vibration environment, similar to that of the noise environment, is dominated by transportation-related vibration from roadways in the planning area. Heavy truck traffic on local and regional roadway networks can generate groundborne vibration, which varies considerably depending on vehicle type, weight, and pavement conditions. However, groundborne vibration levels generated from vehicular traffic are not typically perceptible outside of the right-of-way for major roadways and streets with a large capacity of heavy vehicle traffic. The major vibration source within Mission Viejo would be any rail traffic and long-term construction projects.

3.4.1.2 Ambient Noise Environment

The City of Mission Viejo is a mix of urbanized and suburban areas, and is subject to numerous noise sources, primarily vehicular traffic on major roadways, and rail traffic. The City is also subject to typical urban noise sources such as construction, police and fire department sirens, landscaping equipment, barking dogs, high altitude jet aircraft, and car alarms.

Major noise sources in the City include vehicular traffic on I-5, SR-241 and major arterials throughout the City. Truck traffic is prevalent on I-5 and major roadways and generates higher noise levels relative to other vehicle types that travel on local roadways. Train traffic on the Metro Link rail line, which is generally oriented parallel to I-5, is another major source of noise in the City. Rail traffic is generally limited to daily passenger transit and occasional freight traffic.

The nearest public airport is John Wayne International Airport, located approximately 15 miles west of Mission Viejo. Mission Viejo is located entirely outside of the present and future 60-dBA CNEL noise contour for John Wayne International Airport; therefore, airport operations do not substantially affect the ambient noise environment of Mission Viejo

Non-transportation noise sources would include construction projects, industrial areas, residential and commercial heating, ventilation, and air conditioning (HVAC) systems, loading docks, parking areas, commercial/retail centers, event venues (e.g., sports fields, amphitheaters), and any other miscellaneous sources not associated with transportation.



3.4.1.3 Traffic Noise

Vehicular traffic is the most common source of noise experienced throughout the City. Primary sources of traffic noise include I-5, SR-241, and major arterials (e.g., Avery Parkway, Crown Valley Parkway, Oso Parkway, Santa Margarita Parkway, Marguerite Parkway, and Alicia Parkway) throughout the City.

Existing vehicle traffic noise levels in the City were modeled by AECOM using Sound Plan, version 7.0, a complex noise modeling software package that incorporates various standards, including the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and the Federal Transit Administration’s (FTA) train noise and vibration assessment methodologies. Topographic data was taken from United States Geographic Survey (USGS) data. Traffic data used in the modeling was provided by the project traffic consultant (Iteris 2012). Existing traffic noise modeling is intended to establish a baseline for existing noise conditions generated due to traffic operations within Mission Viejo. Sound Plan calculates noise levels based on reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors. Truck usage and vehicle speeds on study area roadways were estimated from field observations and posted speed limits. Caltrans traffic volume data was used for calculating freeway noise (Caltrans 2011).

**Table 3.4-2
Summary of Modeled Existing Traffic Noise Levels in the Planning Area**

Roadway	Segment	CNEL, 100 Feet from Roadway Centerline (dBA)	Distance (feet) from Roadway Centerline to CNEL Contour			
			70 dBA	65 dBA	60 dBA	55 dBA
El Toro Rd.	Santa Margarita Pkwy. to Painted Trails	66	50	108	232	501
Los Alisos Blvd.	W. City Limit to Jeronimo Blvd.	67	63	136	292	630
	Jeronimo Blvd. to Trabuco Rd.	67	62	134	289	622
	Trabuco Rd. to Vista Del Lago	67	59	127	275	592
	Vista Del Lago to Santa Margarita Pkwy.	67	60	129	278	600
	Santa Margarita Pkwy. to E. City Limit	63	35	76	164	352
Alicia Pkwy.	Muirlands Blvd. to Jeronimo Rd.	70	106	228	491	1,057
	Jeronimo Rd. to Trabuco Rd.	69	86	185	399	860
	Trabuco Rd. to Marguerite Pkwy.	68	73	157	339	731
	Marguerite Pkwy. to Olympiad Rd.	68	76	164	354	763
	Olympiad Rd. to E. City Limit	68	76	164	354	763



Roadway	Segment	CNEL, 100 Feet from Roadway Centerline (dBA)	Distance (feet) from Roadway Centerline to CNEL Contour			
			70 dBA	65 dBA	60 dBA	55 dBA
La Paz Rd.	W. City Limit to Chrisanta Dr.	67	60	130	280	602
	Chrisanta Dr. to Marguerite Pkwy.	66	56	120	258	555
	Marguerite Pkwy. to Olympiad Rd.	63	35	76	164	353
Oso Pkwy.	I-5 to Marguerite Pkwy.	69	88	190	409	882
	Marguerite Pkwy. to Felipe Rd.	68	78	169	363	782
	Felipe Rd. to E. City Limit	69	84	182	391	843
Felipe Rd.	La Paz Rd. to Oso Pkwy.	64	37	79	170	366
	Marguerite Pkwy. to E. City Limit	63	36	78	168	363
Crown Valley Pkwy.	I-5 Fwy. to Marguerite Pkwy.	71	112	242	522	1,124
	Marguerite Pkwy. to E. City Limit	69	88	190	410	882
Avery Pkwy.	E. of Marguerite Pkwy.	55	10	22	47	102
Santa Margarita Pkwy.	W. City Limit to Los Alisos Blvd.	67	64	137	296	637
	Los Alisos Blvd. to Marguerite Pkwy.	67	61	131	282	560
	Marguerite Pkwy. to Melinda Rd.	68	71	152	328	707
Melinda Rd.	Olympiad Rd. to Santa Margarita Pkwy	61	27	58	124	267
Olympiad Rd.	Marguerite Pkwy. to Melinda Rd.	63	32	70	151	325
	Melinda Rd. to Alicia Pkwy.	62	29	63	135	291
	Alicia Pkwy. to Jeronimo Rd.	64	42	89	193	415
	Jeronimo Rd. to La Paz Rd.	64	37	79	170	367
Trabuco Rd.	N. City Limit to Los Alisos Rd.	66	52	113	243	523
	Los Alisos Blvd. to Alicia Pkwy.	66	51	109	235	505
	Alicia Pkwy. to Marguerite Pkwy.	63	35	76	165	354
Jeronimo Rd.	Los Alisos Blvd. to Alicia Pkwy.	64	41	88	189	407
	Alicia Pkwy. to Marguerite Pkwy.	64	38	81	174	375
	Marguerite Pkwy. to Olympiad Rd.	62	28	59	128	275
Muirlands Blvd.	Los Alisos Blvd. to Alicia Pkwy.	63	34	74	160	344
	Alicia Pkwy. to La Paz Rd.	63	34	73	157	338



Roadway	Segment	CNEL, 100 Feet from Roadway Centerline (dBA)	Distance (feet) from Roadway Centerline to CNEL Contour			
			70 dBA	65 dBA	60 dBA	55 dBA
Marguerite Pkwy.	El Toro Rd. to Los Alisos Blvd.	63	36	77	166	359
	Los Alisos Blvd. to Santa Margarita Pkwy.	63	33	70	151	325
	Santa Margarita Pkwy. to Olympiad Rd.	66	53	115	248	534
	Olympiad Rd. to Alicia Pkwy.	66	51	109	235	505
	Alicia Pkwy. to Trabuco Rd.	64	40	86	184	397
	Trabuco Rd. to Jeronimo Rd.	65	48	104	224	483
	Jeronimo Rd. to La Paz Rd.	67	62	134	288	621
	La Paz Rd. to Oso Pkwy.	67	66	142	305	658
	Oso Pkwy. to Crown Valley Pkwy.	67	67	145	312	673
	Crown Valley Pkwy. to Avery Pkwy.	66	57	122	262	565

Notes:

dBA = A-weighted decibels; CNEL = Community Noise Equivalent Level

Table 3.4-2 summarizes the modeled traffic CNEL 100 feet from the centerline of each major roadway in the City. Traffic noise level modeling occurs at this distance because 100 feet is used as a reference distance for determining increase in traffic noise levels and is not necessarily the location of sensitive receptors. Traffic noise modeling is based on existing average daily traffic (ADT) volumes, and the modeled noise level at 100 feet is used to determine distances from the roadway centerlines to the 60 dBA, 65 dBA, and 70 dBA CNEL traffic noise contours assuming no topography or intervening structures. **Figures 3.4-1** and **3.4-2** show the 60 L_{dn}, 65 L_{dn}, and 70 L_{dn} noise contours under existing conditions. As shown in **Table 3.4-2**, the location of the 65 dBA L_{dn} contour ranges from 74 to 1,148 feet from the centerline of the modeled roadways. The extent to which existing land uses in Mission Viejo are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise. Refer to Appendix C for complete modeling inputs and results.

3.4.1.4 Aircraft Noise

The nearest airport is the former MCAS at El Toro; however, this airport is closed and does not generate aircraft noise. The nearest public use airport is the John Wane International Airport, approximately 15 miles north of Mission Viejo. Due to the distance to this airport, aircraft noise is a minor contributor to ambient background noise within Mission Viejo.



3.4.2 Regulatory Setting

Various private and public agencies have established noise guidelines and standards to protect citizens from potential hearing damage and other adverse physiological and social effects associated with noise. The following section provides a general description of the applicable regulatory requirements for the planning area, including federal, state, regional, and local guidelines.

3.4.2.1 Federal Regulations

Federal Noise Control Act of 1972

EPA's Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in the EPA rulings in prior years remain in place by designated federal agencies where relevant.

Title 49 Chapter 65 of the United States Code of Federal Regulations (CFR) provides the authority to set standards and regulate noise in commerce to protect the public health, safety, and welfare. The Department of Labor sets workplace noise standards through the Occupational Safety and Health Administration. The Department of Housing and Urban Development set standards for federally funded housing. The US Department of Transportation (USDOT) regulates roadway, rail, and aircraft noise through FHWA, Federal Rail Administration (FRA) and FTA, and the Federal Aviation Administration (FAA), respectively.

3.4.2.2 State Regulations

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation. State regulatory guidelines governing noise levels generated by individual motor vehicles (i.e., Caltrans, and the California Vehicular Code) and those governing occupational noise control (i.e., Occupational Safety and Health Administration) are not applicable to planning efforts nor are these areas typically subject to CEQA analysis. Thus, these regulatory guidelines are not included in this analysis.

Title 24

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise attributable to outside noise sources. Title 24 also specifies that acoustical studies be prepared whenever a residential building or



structure is proposed to be located within exterior CNEL or L_{dn} contours of 60 dBA or greater attributable to an existing or adopted freeway, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source. The acoustical analysis must show that the building has been designed to limit intruding noise to an interior level not exceeding 45 dBA CNEL/ L_{dn} for residential dwellings.

OPR General Plan Guidelines

The State of California General Plan Guidelines (State of California 2003), published by the state Governor's Office of Planning and Research (OPR), provides guidance for the acceptability of specific land use types within areas of specific noise exposure. **Table 3.4-4** presents acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. General Plan guidelines are advisory in nature. Local jurisdictions, including Mission Viejo, have the responsibility to set specific noise standards based on local conditions.

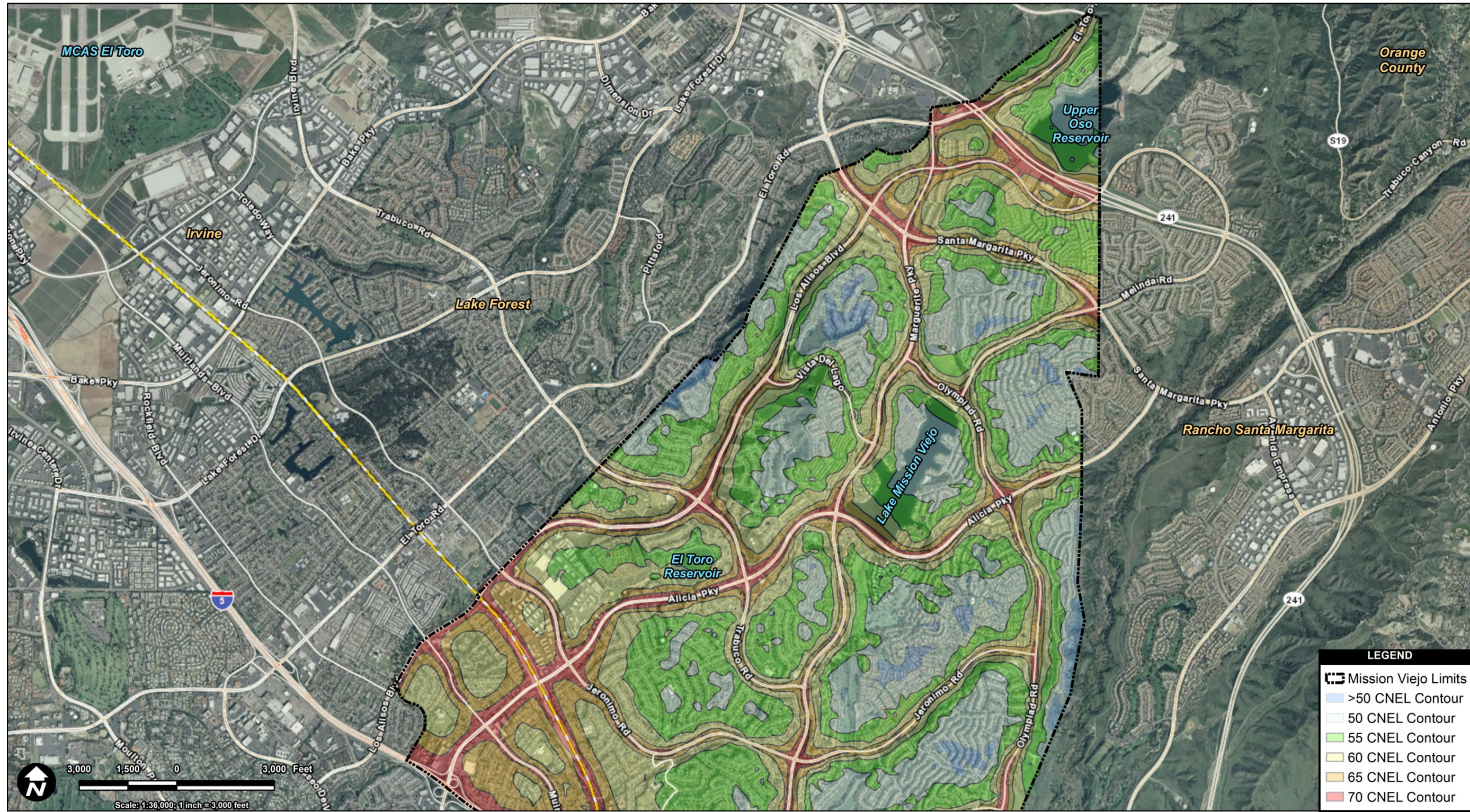
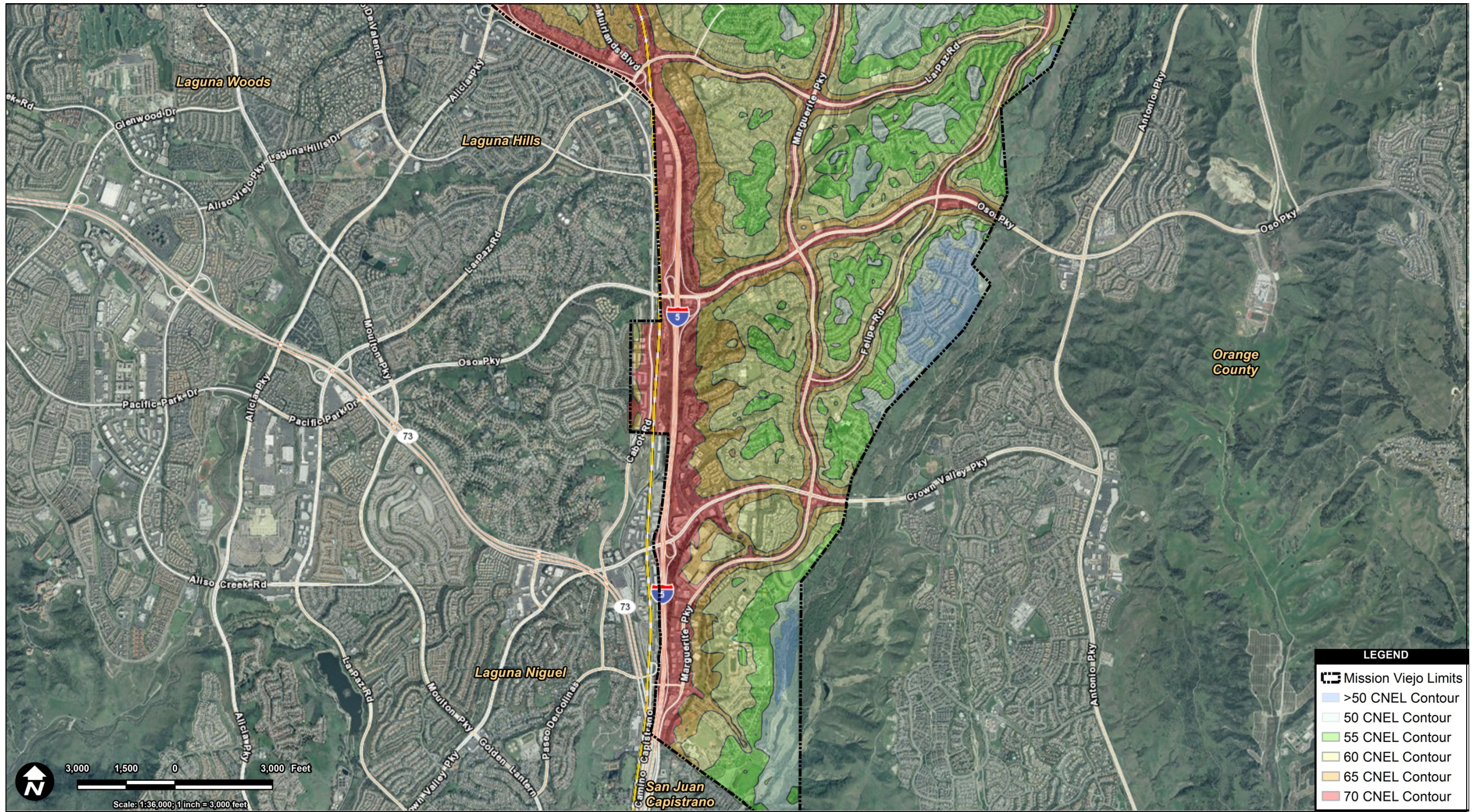


Figure 3.4-1
Existing Noise Contours - North



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Source: ESRI 2010; Sound Plan 2010.

Figure 3.4-2
Existing Noise Contours - South



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**Table 3.4-3
Land Use Noise Compatibility Guidelines**

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dB)			
	Normally Acceptable ¹	Conditionally Acceptable ²	Normally Unacceptable ³	Clearly Unacceptable ⁴
Residential-Low Density Single Family, Duplex, Mobile Home	<60	55-70	70-75	75+
Residential-Multiple Family	<65	60-70	70-75	75+
Transient Lodging, Motel, Hotel	<65	60-70	70-80	80+
School, Library, Church, Hospital, Nursing Home	<70	60-70	70-80	80+
Auditorium, Concert Hall, Amphitheater		<70	65+	
Sports Arenas, Outdoor Spectator Sports		<75	70+	
Playground, Neighborhood Park	<70		67.5-75	72.5+
Golf Courses, Stable, Water Recreation, Cemetery	<75		70-80	80+
Office Building, Business Commercial and Professional	<70	67.5-77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	<75	70-80	75+	

Source: State of California 2003

Notes:

dBA = A-weighted decibels; L_{dn} = day-night average noise level; CNEL = Community Noise Equivalent Level.

¹ Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

² New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

³ New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

⁴ New construction or development should generally not be undertaken.

3.4.2.3 Local Plans and Policies

Mission Viejo Noise Element

The Noise Element of the Mission Viejo General Plan establishes limitations on sound levels to be received by various land uses. New development may cause existing noise-sensitive land



uses to be affected by noise generated from new developments, or it may create or locate a sensitive use in such a place that it is adversely affected by noise. The Noise Element identifies rail and traffic on public roadways as the major sources of noise in Mission Viejo. The Noise Element uses the same exterior noise level standards shown in **Table 3.4-3**.

Mission Viejo Municipal Code (Noise Control)

The Mission Viejo Municipal Code (Title 9, Chapter 9.22 of the Mission Viejo Municipal Code [Chapter 9.22, *Noise Control*]) prohibits disturbing, excessive, or offensive noise. Noise level limits are provided for residential property in **Table 3.4-4** and interior noise level limits are presented in **Table 3.4-5**. Where the measured ambient noise levels exceed the limits shown in **Tables 3.4-4** and **3.4-5**, the Municipal Code includes allowances for an increase of the noise levels limit such that it equals the ambient levels. Furthermore, the Municipal Code allows the City to grant variances from the noise limitations for temporary on-site noise sources, subject to terms and conditions intended to achieve compliance. The Municipal Code also establishes noise exemptions for the operation of construction equipment between 7:00 a.m. and 8:00 p.m. Monday through Saturday, and prohibits construction on Sundays and Holidays.

**Table 3.4-4
Residential Property Line Noise Level Limits**

Noise Level	Time Period
55 dBA	7:00 a.m.—10:00 p.m.
50 dBA	10:00 p.m.— 7:00 a.m.

**Table 3.4-5
Residential Property Interior Noise Level Limits**

Noise Level	Time Period
55 dBA	7:00 a.m.—10:00 p.m.
45 dBA	10:00 p.m.— 7:00 a.m.

Degradation of the Ambient Community Noise Environment

In addition to the criteria described above, another consideration in defining impact criteria is based on the degradation of the existing ambient noise environment. In community noise assessments, it is “generally not significant” if no noise-sensitive sites are located within the project vicinity, or if increases in community noise levels associated with implementation of the project would not exceed +3 dBA at noise-sensitive locations in the project vicinity (Caltrans 2009). A limitation in using a single value to evaluate an impact related to a noise level increase would be the failure to account for the preexisting ambient noise environment to which a person has become accustomed. Studies assessing the percentage of people highly annoyed by changes in ambient noise levels indicate that when ambient noise levels are low, a greater change is needed to cause a response. As ambient noise levels increase, a lesser change in noise



levels is required to elicit significant annoyance. The significance criteria listed in **Table 3.4-6** are based on published guidance from the Governor’s OPR and are considered to correlate well with human response to changes in ambient noise levels and assess degradation of the ambient community noise environment.

**Table 3.4-6
Significant Change in Ambient Noise Levels**

Existing Ambient Noise Level, L _{dn} /CNEL	Significant Increase
< 60 dBA	+ 5 dBA or greater
> 60 dBA	+ 3 dBA or greater

Sources: Adapted from FICON 1992; Caltrans 2009; State of California 2003

Vibration and Groundborne Noise Impact Regulations

CEQA states that the potential for any excessive groundborne noise and vibration levels must be analyzed; however, it does not define the term “excessive” vibration. Numerous public and private organizations and governing bodies have provided guidelines to assist in the analysis of groundborne noise and vibration; however, the federal, state, and local governments have yet to establish specific groundborne noise and vibration requirements. Additionally, no federal, state, or local vibration regulations or guidelines are directly applicable to the General Plan.

Publications of FTA and Caltrans are two of the seminal works for the analysis of groundborne noise and vibration relating to transportation and construction-induced vibration. The project is not subject to FTA or Caltrans regulations; however, these guidelines serve as a useful tool to evaluate vibration impacts. Therefore, for this analysis, the FTA and Caltrans guidance outlined below is used to establish CEQA significance criteria. Caltrans guidelines recommend that a standard of 0.2 in/sec PPV not be exceeded for the protection of normal residential buildings, and that 0.08 in/sec PPV not be exceeded for the protection of old or historically significant structures (Caltrans 2004). With respect to human response within residential uses (i.e., annoyance, sleep disruption), FTA recommends a maximum acceptable vibration standard of 80 VdB (FTA 2006).

3.4.3 Thresholds for Determining Significance

The impact of the project related to noise would be considered significant if it would exceed the following thresholds of significance, in accordance with Appendix G of the *CEQA Guidelines*:

- Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or Municipal Code, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;



- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

3.4.4 Analysis of Environmental Impacts

Generally, a project may have a significant effect on the environment if it would substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been implemented. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local planning criteria or ordinances, or substantially increase noise levels at noise-sensitive land uses.

For the project, the significance of anticipated noise effects is based on a comparison between predicted noise levels and noise criteria defined by the City. For this project, noise impacts are considered significant if existing or proposed noise-sensitive land uses would be exposed to noise levels in excess of applicable standards as described above (see Section 3.4.2, Regulatory Setting), and if implementation of the General Plan would result in an increase in ambient noise levels in excess of those listed in **Table 3.4-5**.

3.4.4.1 Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or Municipal Code, or applicable standards of other agencies

Long-term buildout of the General Plan would result in additional stationary and mobile noise sources. Due to the potential for land uses to be located in areas where noise levels could exceed the compatibility guideline of the Noise Element and/or exceed the noise levels of the Municipal Code (Noise Control), this impact would be significant.

Implementation of the General Plan would result in fluctuations in land use development and open space policies over time. Due to future residential development and increased mixed uses within the Mission Viejo in accordance with the General Plan buildout, the numbers of noise-sensitive receptors would increase. Consequently, potential changes in in the type of development over time could result in locating noise-sensitive land uses near existing noise-generating transportation sources. **Figures 3.4-1** and **3.4-2** depict the existing traffic noise-level contours in Mission Viejo. As shown in **Table 3.4-2**, noise levels in excess of 65 dBA could occur along project roadways for distances between 74 to 1,148 feet. Based on existing ambient noise levels in the City, noise intrusion could occur affecting future residential development as envisioned by the General Plan. Although specific development details are not available, this is considered a **significant** impact.

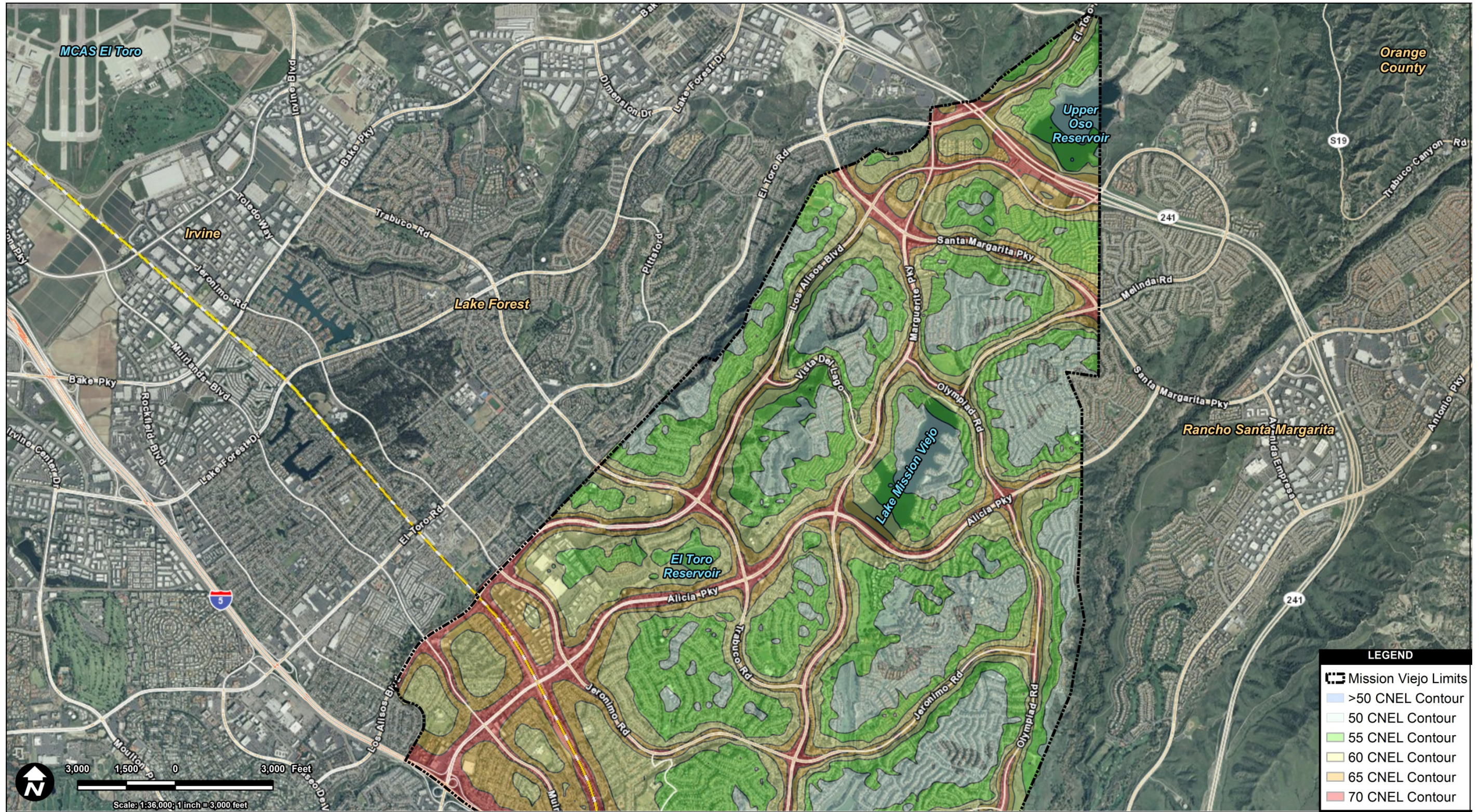


Figure 3.4-3
Future Noise Contours-North



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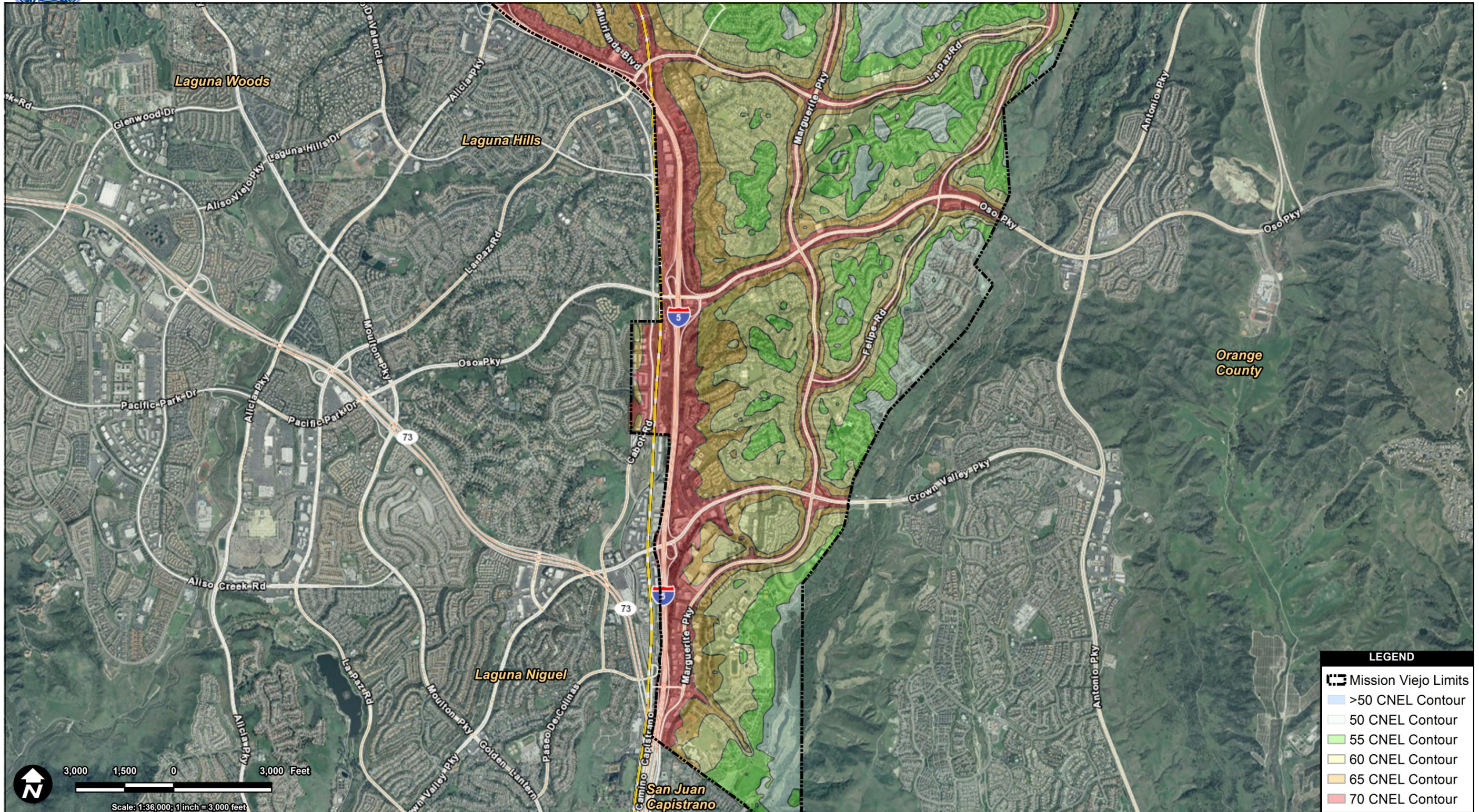


Figure 3.4-4
Future Noise Contours-South



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The increased development of new residential and mixed-use land uses in the City would create the potential for additional stationary sources of noise, such as pool pumps and air conditioners. These additional noise sources could generate noise that would affect adjacent residential uses. New noise-sensitive land uses could also be located in areas affected by existing stationary source noise, which would impact new noise-sensitive receptors in these areas. As a result, this impact is **significant**.

3.4.4.2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels

Short-term project-generated construction source vibration levels could exceed Caltrans' recommended standard of 0.2 in/sec PPV with respect to the prevention of structural damage for normal buildings and the FTA maximum acceptable vibration standard of 80 VdB with respect to human response for residential uses (i.e., annoyance) at vibration-sensitive land uses. However, vibration from vehicular traffic and industrial and commercial operations would not exceed recommended standards. Overall, this impact would be **significant**.

Mission Viejo consists of mostly suburban environments with groundborne noise and vibration generated by light industrial operations, traffic, and rail operations. Additionally, short-term intermittent groundborne noise and vibration may be generated by construction activities. Groundborne vibration levels associated with freight and roadway traffic rarely exceed criteria established for evaluation of building damage or human annoyance (Caltrans 2004).

Construction-Induced Vibration

Construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Ground vibration levels associated with various types of construction equipment are summarized below in **Table 3.4-7**. Based on the representative vibration levels presented for various construction equipment types, sensitive receptors located within proximity of substantial construction activities could be exposed to groundborne vibration levels exceeding the recommended FTA and Caltrans guidelines of 80 VdB and 0.2 in/sec PPV, respectively. However, as no site or development specific data is available, program-level vibration impacts from construction would be **significant**.

Transportation-Induced Vibration

Vehicles traveling on the local and regional roadway network are generally supported on flexible suspension systems and therefore are not an efficient source of ground vibration. However, vehicles can cause vibration when they roll over pavement surfaces that are not smooth. These discontinuities typically develop as a result in cracking, potholes, or misaligned expansion joints caused by settling of pavement section or the support structures of a span, due to normal geological conditions or fault activity. When these discontinuities develop, vehicles passing over the imperfection impart energy into the ground, generating vibration.



**Table 3.4-7
Representative Vibration Source Levels for Construction Equipment**

Equipment		PPV at 25 feet (in/sec) ^{1, 3}	Approximate L _v (VdB) at 25 feet ²
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Heavy-duty Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: FTA 2006

¹ Where PPV is the peak particle velocity.

² Where L_v is the RMS velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.

³ Vibration levels can be approximated at other locations and distances using the above reference levels and the following equation: $PPV_{equip} = PPV_{ref} (25/D)^{1.1}$ (in/sec); where “PPV_{ref}” is the given value in the above table is the distance for the equipment to the new receiver in feet.

Groundborne vibration levels from automobile traffic are generally overshadowed by vibration generated by heavy trucks that roll over the same uneven roadway surfaces. However, due to the rapid drop-off rate of groundborne vibration and the short duration of the associated events, vehicular traffic-induced groundborne vibration is rarely perceptible outside the roadway right-of-way, or results in vibration levels that cause damage to buildings in the roadway vicinity.

Permanent General Plan-related vibration sources would consist of heavy trucks and buses on new roadways, realigned roadways, and freight and commuter rail line operations.

Groundborne vibration levels associated with roadway traffic rarely exceed criteria established for evaluation of building damage or human annoyance (Caltrans 2004).

To evaluate rail vibration impacts at residential receptors, the FTA Transit Noise and Vibration Impact Assessment manual general vibration assessment methods were applied to the General Plan area (FTA 2006). The nearest residences within Mission Viejo are greater than 100 feet from the rail line. According to the FTA methodology, general vibration impacts to sensitive receptors from passenger and freight rail would be approximately 77.6 VdB and 0.03 PPV at 100 feet (FTA 2006). This would be less than the recommended 80 VdB and 0.2 PPV for impacts to sensitive receptors. Therefore, groundborne vibration levels attributable to transportation



sources are not anticipated to exceed the threshold of significance for exposing sensitive receptors to vibration and groundborne noise. This impact is **less than significant**.

3.4.4.3 A substantial temporary or periodic and permanent increase in ambient noise levels in the project vicinity above levels existing without the project

Temporary or Periodic

Short-term construction source noise levels could exceed the applicable standards at nearby noise-sensitive receptors. In addition, if construction activities were to occur during more noise-sensitive hours, construction source noise levels could also result in annoyance and/or sleep disruption to occupants of existing and proposed noise-sensitive land uses and create a substantial temporary increase in ambient noise levels. This impact would be **significant**.

Implementation of the updates to the General Plan could result in new development within Mission Viejo, which would generate noise during construction activity. Future, new development potential would be throughout the City at large where existing development has not reached the development potential allowed by the existing General Plan designations or where redevelopment of existing land uses would occur.

Construction activity within these development areas would have the potential to impact noise-sensitive land uses. **Table 3.4-8** illustrates typical noise levels associated with the operation of construction equipment at a distance of 50 feet. As shown, construction equipment generates high levels of intermittent noise ranging from 55 dBA to 95 dBA and would typically result in hourly noise levels ranging from 75–80 dBA L_{eq} at 50 feet. Noise levels on this order could result in a significant impact where noise-sensitive land uses adjoin construction sites. Although construction activities would result in noticeable noise increase in such locations, this impact would be short term and would cease upon completion of construction.

The City Municipal Code exempts construction-generated noise that occurs Monday through Saturday between 7:00 a.m. and 8:00 p.m. This regulatory exemption reflects the City's acknowledgement that construction noise is a necessary part of new development and does not create an unacceptable public nuisance when conducted within the least noise-sensitive hours of the day. However, if construction activities were to occur during the more noise-sensitive hours (e.g., evening, nighttime, early morning) or if construction equipment is not properly equipped with noise control devices, new project-generated noise levels from construction sources could exceed the applicable standards and result in a substantial temporary increase in the ambient noise environment at nearby noise-sensitive receptors. As a result, this impact is considered **significant**.



**Table 3.4-8
Construction Equipment Noise Levels**

Equipment Item	Typical Maximum Noise Level (dB) at 50 Feet
Backhoes	80
Bulldozers	85
Front Loaders	80
Graders	85
Paver	85
Roller	85
Scrapers	85
Tractors	84
Slurry Trencher	82
Dump Truck	84
Pickup Truck	55
Concrete Mixer Truck	85
Concrete Pump Truck	82
Crane	85
Man Lift	85
Compressors	80
Generator	82
Pumps	77
Compactor	80
Jack Hammers	85
Impact Pile Drivers	95
Pneumatic Tools	85
Rock Drills	85
Concrete Saws	90
Vibrating Hopper	85
Welding Machine / Torch	73

Source: Bolt, Beranek and Newman Inc. 1971; FTA 2006

Notes:

dBA = A-weighted decibels

Noise levels are for equipment fitted with properly maintained and operational noise control devices, per manufacturer specifications.



Permanent

To examine traffic noise impacts, traffic noise levels associated with the General Plan were calculated for roadway segments in the planning area using the same methods used to calculate the existing traffic noise levels presented in **Table 3.4-2** and shown in **Figures 3.4-1** and **3.4-2**. Modeled future traffic noise levels were compared with the existing conditions, with implementation of the General Plan update. ADT volumes and distributions of those volumes were obtained from the traffic analysis prepared for the General Plan (Iteris 2012). Vehicle speeds and truck volumes on local area roadways were calculated from field observations, photography surveys, and the 2010 Annual Average Daily Truck Traffic on the California State Highway System prepared by Caltrans (2011).

Table 3.4-9 summarizes modeled CNEL values at 100 feet from the roadway centerline for affected roadway segments in the planning area under existing and future conditions with General Plan implementation. The traffic model included generalized topography data available from the USGS. The traffic noise levels presented represent an application of conservative traffic noise modeling methodologies, which assume no shielding from existing or proposed structures. Actual traffic noise exposure levels at noise-sensitive receptors in the project vicinity would vary depending on a combination of factors such as variations in daily traffic volumes, shielding provided by existing and proposed structures, and meteorological conditions. Refer to Appendix C for complete modeling inputs and results. **Figures 3.4-3** and **3.4-4** depict future traffic noise contours along modeled roadways within the Mission Viejo planning area.

Long-term project-generated traffic noise levels may exceed the applicable standards and create substantial permanent increases in ambient noise levels at existing and proposed noise-sensitive receptors. However, the proposed General Plan update and Sustainability Action Plan would not result in permanent increases over existing noise levels greater than 2 dBA along any affected roadways. Therefore, the project would result in a **less-than-significant** impact related to permanent increases in transportation noise levels.



**Table 3.4-9
Predicted Traffic Noise Levels 2035 Conditions and Future 2035 General Plan Buildout Conditions**

Roadway	Segment	Existing Conditions	CNEL at 100 Feet, dBA		
			Future 2035 with Project	Project Net Change vs. Existing	Significant Impact?
El Toro Rd.	Santa Margarita Pkwy. to Painted Trails	65.5	66.6	1.1	No
Los Alisos Blvd.	W. City Limit to Jeronimo Blvd.	67.0	67.7	0.7	No
	Jeronimo Blvd. to Trabuco Rd.	66.9	67.0	0.1	No
	Trabuco Rd. to Vista Del Lago	66.6	66.7	0.1	No
	Vista Del Lago to Santa Margarita Pkwy.	66.7	67.2	0.5	No
	Santa Margarita Pkwy. to E. City Limit	63.2	65.1	1.9	No
Alicia Pkwy.	Muirlands Blvd. to Jeronimo Rd.	70.4	70.4	0.0	No
	Jeronimo Rd. to Trabuco Rd.	69.0	68.9	0.1	No
	Trabuco Rd. to Marguerite Pkwy.	68.0	67.5	0.5	No
	Marguerite Pkwy. to Olympiad Rd.	68.2	68.7	0.5	No
	Olympiad Rd. to E. City Limit	68.2	68.2	0.0	No
La Paz Rd.	W. City Limit to Chrisanta Dr.	66.7	67.2	0.5	No
	Chrisanta Dr. to Marguerite Pkwy.	66.2	66.9	0.7	No
	Marguerite Pkwy. to Olympiad Rd.	63.2	64.7	1.5	No
Oso Pkwy.	I-5 to Marguerite Pkwy.	69.2	70.0	0.8	No
	Marguerite Pkwy. to Felipe Rd.	68.4	69.7	1.3	No
	Felipe Rd. to E. City Limit	68.9	70.9	2.0	No
Felipe Rd.	La Paz Rd. to Oso Pkwy.	63.5	64.3	0.8	No
	Marguerite Pkwy. to E. City Limit	63.4	64.4	1.0	No



**Table 3.4-9
Predicted Traffic Noise Levels 2035 Conditions and Future 2035 General Plan Buildout Conditions**

Roadway	Segment	Existing Conditions	CNEL at 100 Feet, dBA		
			Future 2035 with Project	Project Net Change vs. Existing	Significant Impact?
Crown Valley Pkwy.	I-5 Fwy to Marguerite Pkwy.	70.8	72.1	1.3	No
	Marguerite Pkwy. to E. City Limit	69.2	70.1	0.9	No
Avery Pkwy.	E. of Marguerite Pkwy.	55.1	56.8	1.7	No
Santa Margarita Pkwy.	W. City Limit to Los Alisos Blvd.	67.1	68.6	1.5	No
	Los Alisos Blvd. to Marguerite Pkwy.	66.8	67.6	0.8	No
	Marguerite Pkwy. to Melinda Rd.	67.7	68.6	0.9	No
Melinda Rd.	Olympiad Rd. to Santa Margarita Pkwy.	61.4	61.4	0.0	No
Olympiad Rd.	Marguerite Pkwy. to Melinda Rd.	62.7	62.9	0.2	No
	Melinda Rd. to Alicia Pkwy.	62.0	62.3	0.3	No
	Alicia Pkwy. to Jeronimo Rd.	64.3	64.3	0.0	No
	Jeronimo Rd. to La Paz Rd.	63.5	64.5	1.0	No
Trabuco Rd.	N. City Limit to Los Alisos Rd.	65.8	65.6	0.2	No
	Los Alisos Blvd. to Alicia Pkwy.	65.6	64.7	0.9	No
	Alicia Pkwy. to Marguerite Pkwy.	63.2	63.7	0.5	No
Jeronimo Rd.	Los Alisos Blvd. to Alicia Pkwy.	64.1	65.2	1.1	No
	Alicia Pkwy. to Marguerite Pkwy.	63.6	62.9	0.7	No
	Marguerite Pkwy. to Olympiad Rd.	61.6	62.6	1.0	No
Muirlands Blvd.	Los Alisos Blvd. to Alicia Pkwy.	63.0	63.7	0.7	No
	Alicia Pkwy. to La Paz Rd.	62.9	63.0	0.1	No
	El Toro Rd. to Los Alisos Blvd.	63.3	64.8	1.5	No
	Los Alisos Blvd. to Santa Margarita Pkwy.	62.7	63.3	0.6	No



**Table 3.4-9
Predicted Traffic Noise Levels 2035 Conditions and Future 2035 General Plan Buildout Conditions**

Roadway	Segment	Existing Conditions	CNEL at 100 Feet, dBA		
			Future 2035 with Project	Project Net Change vs. Existing	Significant Impact?
Marguerite Pkwy.	Santa Margarita Pkwy. to Olympiad Rd.	65.9	66.4	0.5	No
	Olympiad Rd. to Alicia Pkwy.	65.6	66.0	0.4	No
	Alicia Pkwy. to Trabuco Rd.	64.0	64.0	0.0	No
	Trabuco Rd. to Jeronimo Rd.	65.3	66.5	1.2	No
	Jeronimo Rd. to La Paz Rd.	66.9	67.1	0.2	No
	La Paz Rd. to Oso Pkwy.	67.3	67.3	0.0	No
	Oso Pkwy. to Crown Valley Pkwy.	67.4	67.7	0.3	No
	Crown Valley Pkwy. to Avery Pkwy.	66.3	66.8	0.5	No

Notes:

dBA = A-weighted decibels; CNEL = Community Noise Equivalent Level



3.4.5 Mitigation Measures

Implementation of the Mission Viejo General Plan update would result in significant impacts related to applicable noise level standards, groundborne vibration and noise, and ambient noise levels. The following mitigation measures are general and programmatic in nature, and would be refined in project-specific CEQA documents.

3.4.5.1 *Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or Municipal Code (Noise Control), or applicable standards of other agencies*

N-1 Acoustical studies shall be required for all discretionary projects where any of the following apply:

- The project includes a noise-sensitive land use that is located within the existing or future 60-dBA CNEL contour for transportation noise sources.
- The project will cause future traffic volumes to increase by 25 percent or more on any roadway that fronts residential, institutional, or open space land uses.
- The project will expose a noise-sensitive land use to a stationary noise source exceeding the standards outlined in the Noise Element. Such stationary sources may include mechanical equipment operations, entertainment venues, industrial facilities, and property maintenance.
- The project includes a noise-sensitive land use in the vicinity of existing or proposed commercial and industrial areas.
- The project is a mixed-use development that includes a residential component. The focus of this type of acoustical study is to determine likely interior and exterior noise levels and to recommend appropriate design features to reduce noise.
 - Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance. An acoustical analysis prepared in accordance with the Noise Element shall:
 - be the financial responsibility of the applicant seeking City approval of a project;
 - be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics;
 - include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and predominant noise sources;



- estimate existing and projected cumulative (20 years) noise in terms of CNEL or L_{dn} , and compare those noise levels to the adopted standards and policies of the Noise Element;
- estimate noise exposure after the prescribed mitigation measures have been implemented; and
- describe a post-project assessment program that could be used to evaluate the effectiveness of the proposed mitigation measures.

3.4.5.2 Exposure of persons to or generation of excessive groundborne vibration or noise levels

See Mitigation Measure N-1, above.

N-2 A vibration analysis shall be required as part of all acoustical studies required under Mitigation Measure N-1. Where a noise study is not required, the City shall require construction contractors to implement the following measures during construction activities through contract provisions and/or conditions of approval as appropriate:

- For projects where construction will include vibration-generating activities, such as pile driving, within 100 feet of existing structures, site-specific vibration studies shall be conducted to determine the area of impact and to present appropriate mitigation measures that may include the following:
 - Identify sites that would include vibration compaction activities such as pile driving and have the potential to generate groundborne vibration, and the sensitivity of nearby structures to groundborne vibration. This task should be conducted by a qualified structural engineer.
 - Develop a vibration monitoring and construction contingency plan to identify structures where monitoring would be conducted; set up a vibration monitoring schedule; define structure-specific vibration limits; and address the need to conduct photo, elevation, and crack surveys to document before and after construction conditions. Construction contingencies would be identified for when vibration levels approached the limits.
 - At a minimum, monitor vibration during initial demolition activities and during pile-driving activities. Monitoring results may indicate the need for more or less intensive measurements.
 - When vibration levels approach limits, suspend construction and implement contingencies to either lower vibration levels or secure the affected structures.
 - Conduct post-survey on structures where either monitoring has indicated high levels or complaints of damage have been made. Make appropriate repairs or compensation where damage has occurred as a result of construction activities.



3.4.5.3 A substantial temporary or periodic and permanent increase in ambient noise levels in the project vicinity above levels existing without the project

See Mitigation Measure N-1, above.

N-3 The City shall require construction contractors to implement the following measures during construction activities through contract provisions and/or conditions of approval as appropriate:

- Construction equipment shall be properly maintained per manufacturers' specifications and fitted with the best available noise suppression devices (e.g., mufflers, silencers, wraps).
- Construction operations and related activities associated with the project shall comply with the operational hours outlined in the City of Mission Viejo Municipal Code (Noise Control).
- Construction equipment shall not be idled for extended periods of time in the vicinity of noise-sensitive receptors.
- Locate fixed and/or stationary construction equipment as far as possible from noise-sensitive receptors (e.g., generators, compressors, rock crushers, cement mixers).
- Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on powered construction equipment.
- Where feasible, temporary barriers shall be placed as close to the noise source or as close to the receptor as possible and break the line of sight between the source and receptor where modeled levels exceed applicable standards. Acoustical barriers shall be constructed material having a minimum surface weight of 2 pounds per square foot or greater, and a demonstrated Sound Transmission Class (STC) rating of 25 or greater as defined by American Society for Testing and Materials (ASTM) Test Method E90. Placement, orientation, size, and density of acoustical barriers shall be determined by analysis.

No mitigation measures are required for permanent ambient noise level increases.

3.4.6 Significance After Mitigation

Implementation of mitigation measures described above would avoid and/or reduce impacts related to noise. At the General Plan level, impacts would be reduced to a less-than-significant level. If project-level impacts are identified as subsequent projects are proposed, specific mitigation measures would be required.



3.4.6.1 Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or Municipal Code (Noise Control), or applicable standards of other agencies

Mitigation Measures N-1 and N-3 are proposed to address the impacts and consistency with local/applicable noise level standards through site-specific studies and requirements. Mitigation Measure N-1 requires the City verify projects meet the standards of the Noise Element, enforce the California Noise Insulation Standards, and comply with the Municipal Code. N-3 requires the City to require noise control measures for construction equipment and activities.

The implementation of Mitigation Measures N-1 and N-3 would ensure new development is consistent with local and applicable noise level standards and reduce impacts to a **less-than-significant** level.

3.4.6.2 Exposure of persons to or generation of excessive groundborne vibration or noise levels

The implementation of Mitigation Measures N-1 and N-2 would reduce the groundborne vibration and noise impact of new development associated with the General Plan to a **less-than-significant** level.

3.4.6.3 A substantial temporary or periodic and permanent increase in ambient noise levels in the project vicinity above levels existing without the project

Mitigation Measures N-1 and N-3 are proposed to address the impacts associated with temporary or periodic ambient noise level impacts. Mitigation Measures N-1 and N-3 are proposed to address the impacts and consistency with local/applicable noise level standards through site-specific studies and requirements. Mitigation Measure N-1 requires the City to verify projects meet the standards of the Noise Element, enforce the California Noise Insulation Standards, and comply with the Municipal Code (Noise Control). Mitigation Measure N-3 requires the City to require noise control measures for construction equipment and activities. The implementation of Mitigation Measures N-1 and N-3 would reduce the temporary or periodic ambient noise level impacts to a **less-than-significant** level.

The proposed General Plan update and Sustainability Action Plan would not result in permanent increases over existing noise levels greater than 2 dBA along any affected roadways. Therefore, the project would result in a **less-than-significant** impact related to permanent increases in transportation noise levels.



3.5 Transportation and Traffic

This section describes transportation and traffic conditions in the planning area and analyzes the changes that would occur as a result of implementation of the City's Sustainability Action Plan and analysis of General Plan Buildout circulation system LOS. Information presented in the discussion and subsequent analysis was drawn from technical analyses performed by Iteris (2012) and provided in Appendix D of this EIR.

3.5.1 Existing Environmental Setting

3.5.1.1 Existing Roadway System

The City of Mission Viejo transportation system consists of highways, streets, pedestrian paths, transit routes, and bikeways. The existing roadway network of the Mission Viejo planning area is shown in **Figure 3.5-1**. The Mission Viejo circulation network is connected to a larger regional system. The San Diego Freeway (I-5) provides the City with primary regional connection to other Orange County cities, and those in Los Angeles and San Diego Counties. In addition, the San Joaquin Hills Corridor provides an alternative route to I-5. Access from the City to coastal Orange County is predominantly provided by Crown Valley Parkway and Moulton Parkway to The Street of the Golden Lantern, which connects with the Pacific Coast Highway at northern and central Dana Point, respectively. Access to Riverside and San Bernardino County is provided by the Foothill Transportation Corridor (SR 241).

3.5.1.2 Roadway Classification Standards

The current street classification in the planning area roadway system includes freeways; principal arterials, major arterials, primary arterials, secondary arterials; and collector streets. Two major functions of a roadway are to serve through-traffic and to provide access to adjacent property, and roadways prioritize these two functions differently. Arterials, which mostly consist of the bigger roadways, generally prioritize the movement of traffic over access to individual adjacent properties. Local streets, which mostly consist of smaller roadways, prioritize access to private properties over through-traffic.

Roadways are also intended to provide bicycle and pedestrian access and circulation, and are the backbone of the bicycle and pedestrian network. **Figure 3.5-1** illustrates the major routes and street typologies of the Mission Viejo roadway system, and displays the functional classification for each of these roadways. The entire current roadway system is categorized below.

3.5.1.3 Regional System

Freeways

The City's roadway network can be broadly classified as a limited access freeway system and arterial system. The City's freeway and arterial system is shown in **Figure 3.5-1**. Interstate and regional access to the City is provided predominantly by I-5. In addition, regional access is provided by SR-241.



I-5 follows parallel to the western boundary of the City. This freeway is a facility with four general purpose lanes and one high occupancy vehicle (HOV) lane in each direction for its length of approximately 6 miles through the vicinity of the City. It has five full interchanges within the immediate vicinity of the City. These interchanges are at the following streets:

- Alicia Parkway
- La Paz Road
- Oso Parkway
- Crown Valley Parkway
- Avery Parkway

SR-241 is a toll facility operated by the Transportation Corridor Agency (TCA). The facility has three northbound and two southbound general purpose toll lanes for its length within the City. This facility traverses through approximately 1 mile along the northern edge of the City and has one interchange at Los Alisos Boulevard within City limits. In addition, there are two interchanges at Portola Parkway and Santa Margarita Parkway, just outside the City's jurisdiction, that provide easy access to the facility.

The San Joaquin Corridor (SR-73), another toll facility that traverses outside the western boundary of the City, is a contributor to the City's regional accessibility.

Arterials

Having an undulating terrain, the arterials serving the City of Mission Viejo are predominantly curvilinear, following the local topology. In general, the City has a network of very prominent north-south and east-west corridors. Due to its geographic shape, the City has more east-west accesses than north-south accesses.

Marguerite Parkway is the City's only continuous north-south arterial that, for the most part, parallels I-5 and provides the City with an alternate route to the freeway in periods of peak hour freeway congestion. It is a four-lane divided facility. In addition, Felipe Road and Olympiad Road are the other north-south arterial. Felipe Road, a four-lane undivided road is between Marguerite Parkway and La Paz Road. North of La Paz Road, Felipe Road becomes Olympiad Road, terminating at Marguerite Parkway, north of Vista Del Lago. Located to the west of I-5 is Cabot Road, a four-lane road between South City Limits to Oso Parkway.

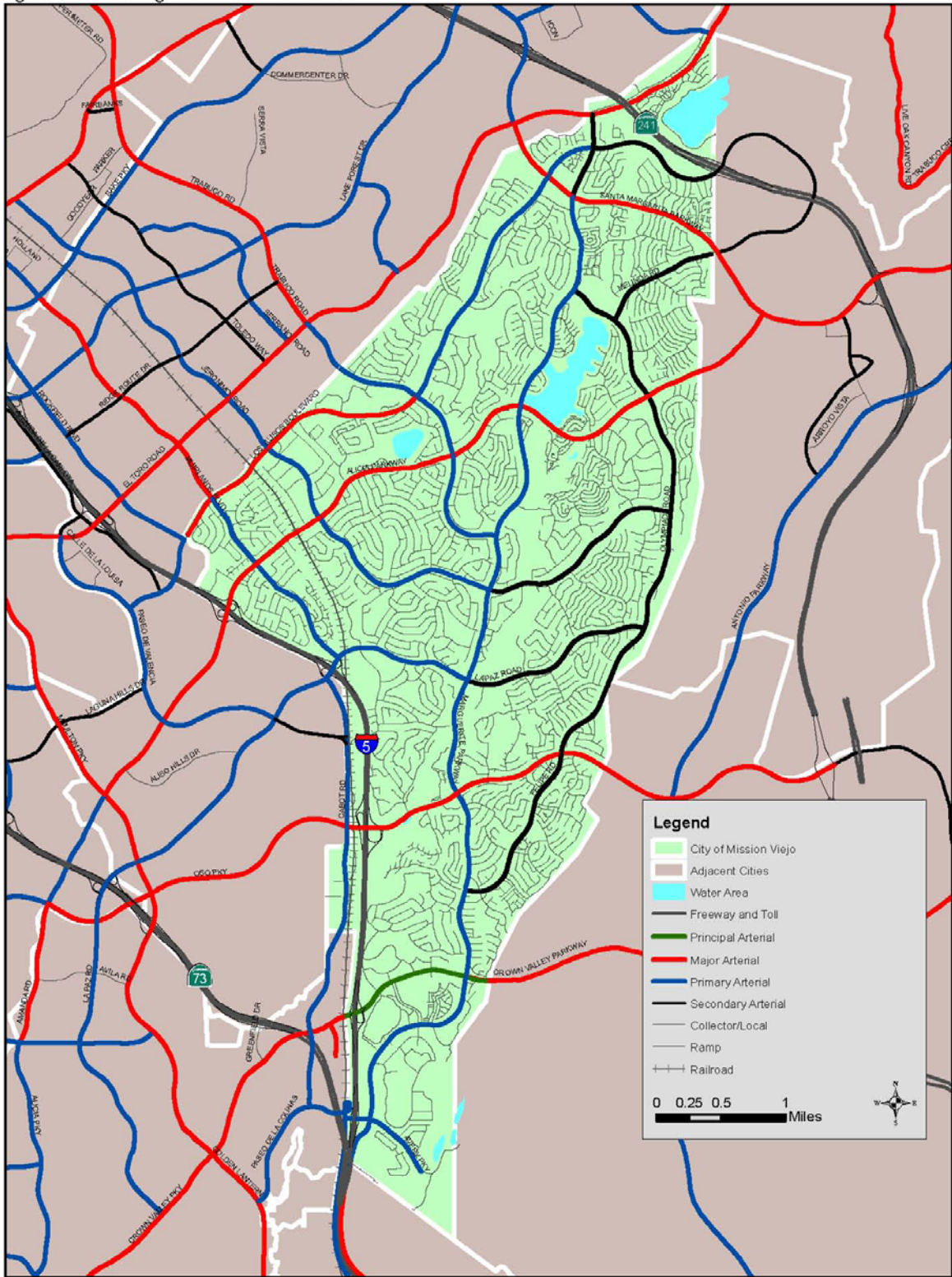


Figure 3.5-1
Existing Roadway Facility Types



Key east-west arterials include Los Alisos Boulevard, Alicia Parkway, Jeronimo Road, La Paz Road, Muirlands Boulevard, Oso Parkway, and Crown Valley Parkway. Of these, Jeronimo Road, Muirlands Boulevard, and La Paz Road terminate within the City. Crown Valley Parkway, Oso Parkway, and Alicia Parkway are six-lane divided arterials. Crown Valley Parkway is the only arterial with a segment that is eight lanes divided; this segment is immediately east of I-5. Los Alisos Boulevard, a six-lane divided facility becomes a four-lane divided arterial east of Trabuco Road. Jeronimo Road and La Paz Road are both four-lane divided facilities. Muirlands Boulevard, a four-/six-lane divided facility, is between Los Alisos Boulevard and La Paz Road.

The City also has a few other key arterials, namely Trabuco Road, El Toro Road, Santa Margarita Parkway, and Melinda Road. El Toro Road is a six-lane divided facility within the City and traverses only through its northern edge. Santa Margarita Parkway, a six-lane divided facility, also passing through the northern part of the City, traverses southeast to east and connects the City with the neighboring community of Rancho Santa Margarita. Melinda Road, which varies between being a four-lane divided to a four-lane undivided facility, originates from Olympiad Road and terminates into Los Alisos Boulevard outside the City’s east limit. This arterial also provides connection with the neighboring Rancho Santa Margarita. Trabuco Road, a four-lane divided facility, enters the City as a north-south arterial to follow the local terrain to become an east-west facility terminating at Marguerite Parkway.

Table 3.5-1 lists the existing roadway facility types in the City, along with their description and classification as specified in the Orange County Master Plan of Arterial Highways (MPAH).

Table 3.5-1 Roadway Facility Type with MPAH Classification and Description

Facility Type	MPAH Classification	Characteristics
8-Lane Divided	Principal	Primarily serves through traffic with limited local access
6-Lane Divided	Major	Serves mostly through traffic with some local access allowed
4-Lane Divided	Primary	Serves through and local traffic
4-Lane Undivided	Secondary	Serves mostly local traffic
2-Lane Undivided	Collector	Serves local traffic

The description of each class is briefly described below:

Principal Arterials are eight-lane divided roadways that accommodate 45,000 to 60,000 vehicles on an average weekday. They connect directly to freeways and do not allow for on-street, curbside parking.

Major Arterials are six-lane divided roadways that accommodate 30,000 to 45,000 vehicles on an average weekday. They facilitate traffic circulation within a city and, similar to principal arterials, do not allow for on-street, curbside parking.



Primary Arterials are four-lane divided roadways that accommodate 20,000 to 30,000 vehicles on an average weekday. They provide for easy circulation within a city and may allow for limited on-street, curbside parking.

Secondary Arterials are four-lane undivided roadways that accommodate 10,000 to 20,000 vehicles on an average weekday and allow for on-street parking.

Collectors are typically two-lane undivided roadways that accommodate 7,500 to 10,000 vehicles per average weekday. They collect and distribute traffic to higher-capacity arterials. Similar to the Secondary Arterials, this facility allows for on-street parking.

Public Transportation

Bus Service

Bus service for the City of Mission Viejo is operated by OCTA. Nine OCTA bus routes (82, 85, 86, 87, 89, 91, 191, 212, and 216) serve various activity centers located throughout the City. **Figure 3.5-2** illustrates the OCTA-operated bus routes that serve the City. Most of the bus routes that serve the City offer more services for residents west of Marguerite Parkway, with the exception of Route 82 and Route 87. These routes connect the City with the neighboring community of Rancho Santa Margarita on the east.

OCTA operates several fixed bus routes that directly serve the City. Fixed routes offered by OCTA include local bus routes and express bus routes.

Local bus routes provide shuttle service to various cities within Orange County, while express bus routes provide faster connections to places both within and outside the County of Orange and only operate during peak commuter periods. Six local routes serve the City. Of these, Route 91 has route variations, thereby offering additional transit flexibility. With the exception of Route 86 and Route 87, all other local routes that serve the City provide service on Sundays and holidays as well as on weekdays.

There are two intra-county express routes serving the City, both offering only weekday service.

OCTA offers a variety of fare structures to suit different needs and requirements. These fare structures vary from being a regular fare to day pass, weekly pass, 15-day pass, or 30-day pass.

Railroad Operations

The railroad operations in the City are categorized into three types: commuter, passenger, and freight rail. Metrolink, the commuter rail service for the City of Mission Viejo, is provided by the Southern California Regional Rail Authority (SCRRA) and OCTA, while the freight rail is provided by the Burlington Northern Santa Fe (BNSF). **Figure 3.5-2** also shows the rail routes traversing through the City. As the figure indicates, the Laguna Niguel/Mission Viejo train station is located outside the City's jurisdictional boundary. Public transportation to the train station is served by OCTA Routes 85 and 91.

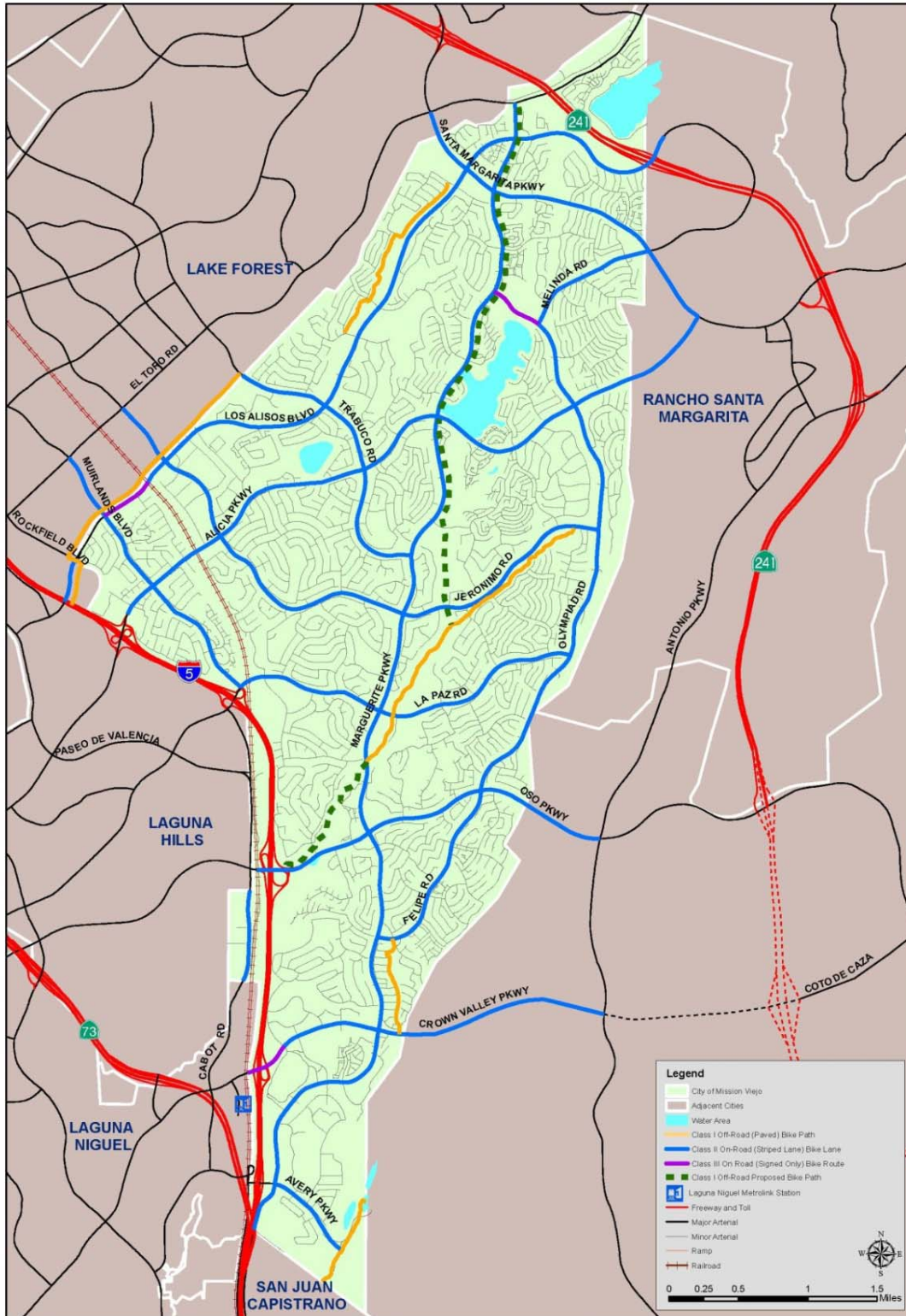


Figure 3.5-2
Existing Public Transportation and Railroad



Metrolink operates two commuter rail lines, which connect the City, via the Laguna Niguel/Mission Viejo Station to other important destinations in the region. The two lines are the Orange County Line and Inland Empire-Orange County Line. The Orange County Line offers direct connections to Los Angeles Union Station to the north and Oceanside to the south.

Park and Ride

Public transportation within the City of Mission Viejo is supported by Park and Ride lots, which enable transit riders to park cars and avail the bus system. The City has two Park and Ride lots as can be seen in **Figure 3.5-2**. These are located off Alicia Parkway, between Jeronimo Road and Trabuco Road; the other lot is at the corner of Marguerite Parkway and Felipe Road. In addition, two Park and Ride lots are in the immediate vicinity outside the City. One is located outside the City's northern limits, off Portola Parkway; the other is located off the northwestern limits, off El Toro Road. Both lots are located in the neighboring City of Lake Forest.

Bikeway System

The OCTA Commuter Bikeways Strategic Plan identifies 47.5 miles of bikeways within the City. It classifies bikeways into three types:

Class I Bike Path – Provides for bicycle travel on a right-of-way completely separated from the street. Totalling 4 miles, this facility is located along Aliso Creek, Los Alisos Boulevard, and Endidad, through the Jeronimo Open Space and Oso Viejo Community Park through Cordova Park.

Class II Bike Lane – Provides as a striped lane for a one-way travel within the street. This facility is available virtually along most arterial street network in the City and totals 39.5 miles.

Class III Bike Routes – Provides routes that are signed but not striped. Located along portions of Santa Margarita Parkway, Crown Valley Parkway, Marguerite Parkway, Olympiad Road, Trabuco Road, La Paz Road, and Los Alisos Boulevard, this facility totals 4 miles in length.

Figures 3.5-3a and 3.5-3b illustrate the existing and proposed system of bikeways in the City.

Pedestrian and Trail Facilities

Pedestrian paths are primarily developed as part of the roadway and trail systems of a City and reflect the interconnected nature of circulation and transportation systems as a whole. The provision of sidewalks, and the design and construction of pedestrian walkways in developments also encourage non-automobile movements and provide a safe pedestrian system capable of linking commercial, residential, and open spaces. The City's Development Code governing transportation demand management identifies facilities-based improvements that can be accomplished in conjunction with new development to promote alternative modes such as bicycling and walking. Such improvements include integrating on-site sidewalks to connect to off-site external pedestrian systems, bike trails with project development, providing on-site bicycle parking, and providing transit waiting shelters.

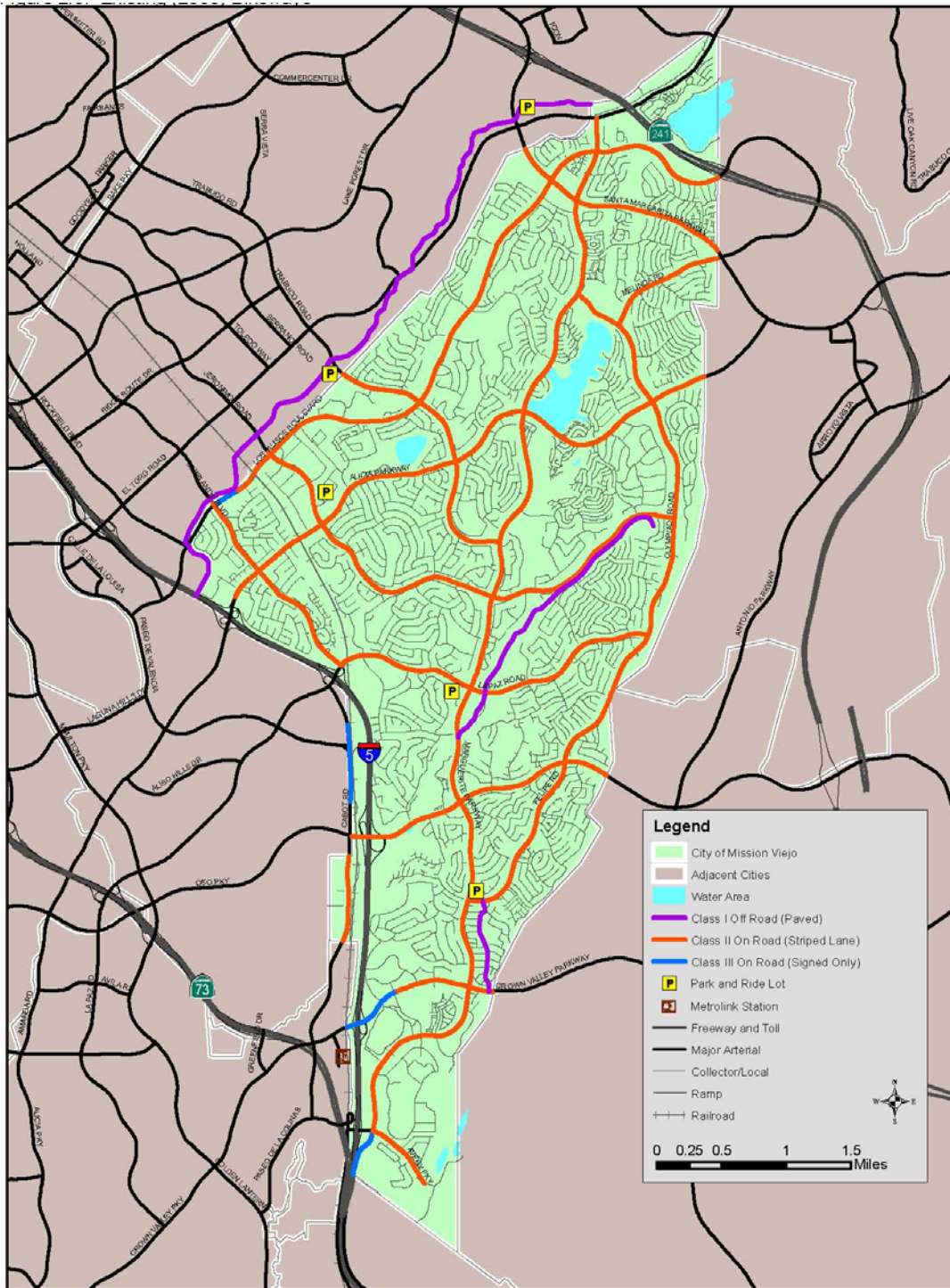
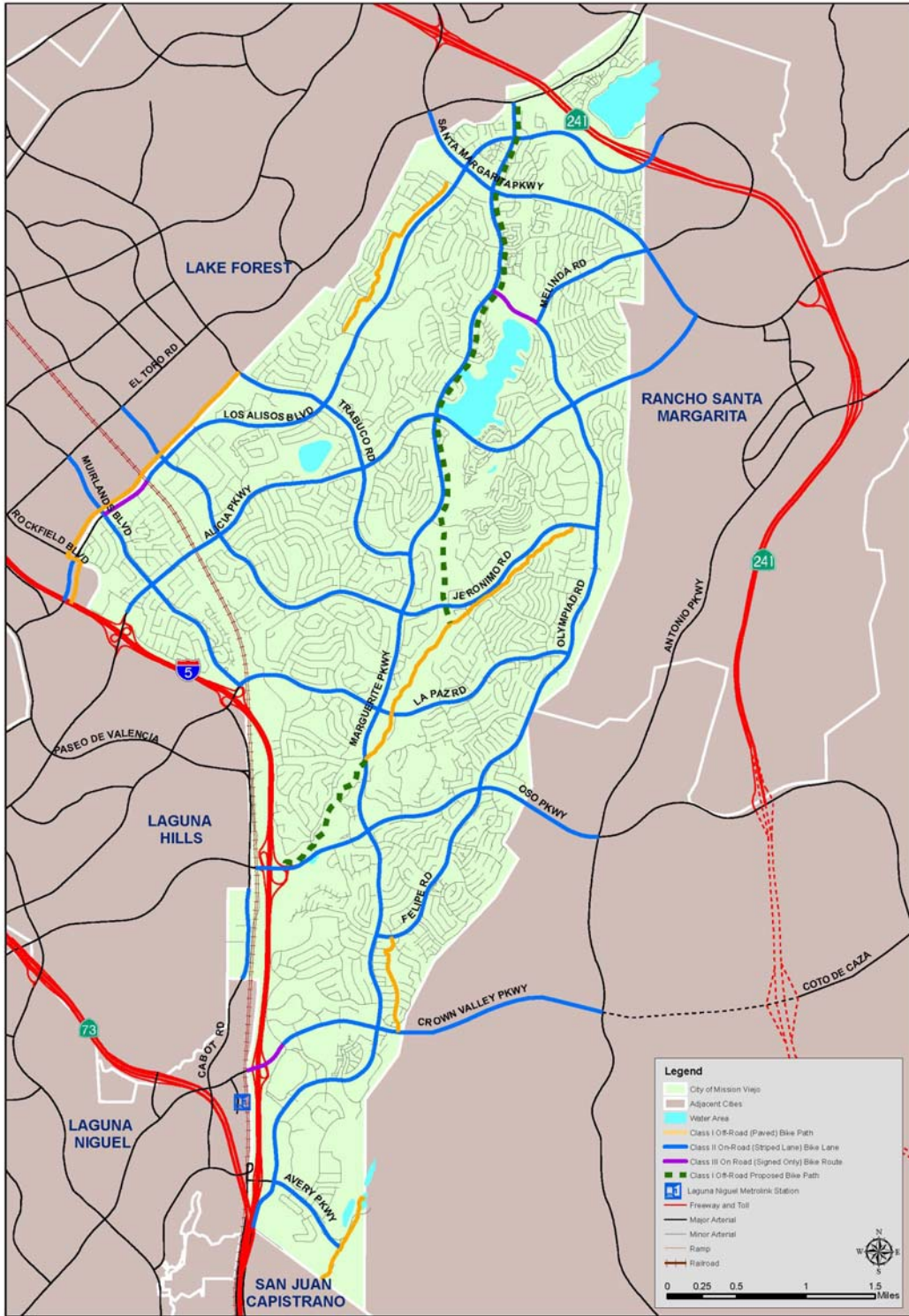


Figure 3.5-3a
Existing Bikeways



**Figure 3.5-3b
Bikeway Plan**



The City has established local trails throughout the City and has participated in the County's Master Plan of Regional Riding and Hiking Trails, which establishes standards for trail development.

Local trails consist of the Southern California Edison Easements, the Wilderness Glen Trail, the Oso Creek Trail, and the Jeronimo greenbelt. These trails connect parkland and other open space features. There are also popular walking trails around and above Lake Mission Viejo. Two regional off-road trails traverse the City: The Aliso Creek Trail, which presently commences at Cook's Corner near the Cleveland National Forest and terminates at Niguel Road, at which point the trail joins on-/off-road trails that lead to the Pacific Ocean. The Arroyo Trabuco Trail potentially commences in Trabuco Canyon at the Cleveland National Forest boundary, extends southwesterly along Arroyo Trabuco, and joins the San Juan Creek Trail to terminate near Doheny State Beach. The five major trail corridors to be completed, enhanced, and expanded are shown on the General Plan Figure COS-6 and **Figure 3.5-4** and are as follows:

Completion of Arroyo Trabuco Trail coordination with County – The County-designated regional Arroyo Trabuco Trail connects the Cleveland National Forest to the Pacific Ocean. A portion of this corridor travels through southeastern Mission Viejo along the Trabuco Creek. The City will cooperate with the County, landowners, and other communities to complete and enhance this trail and develop linkages from this trail to other recreation and open space features in the City. The trail has been implemented from Avery Parkway to the southern City border. The emphasis will be to complete the trail from Avery to the north, connecting with the trails in Rancho Santa Margarita and other City facilities.

Enhancement of Aliso Creek Trail – The County-designated Aliso Creek Trail also connects the Cleveland National Forest to the Pacific Ocean. This trail travels along the northeastern City boundary. Linkages will be established and enhanced between this trail and the Oso Creek Trail.

Completion of Wilderness Glen Trail – Local segments along the Wilderness Glen Trail will be completed and will be connected to the open space system. Directions to the nearby Aliso Creek Trail will be provided on-site.

Completion of Naciente Trail – The Naciente Ridge runs along the City's eastern boundary and provides an opportunity for the public to enjoy a view of the City to the west and the Arroyo Trabuco to the east. Portions of the trail are completed; however, there are possibilities of extending the existing trail to the city parks located along Felipe Road and Marguerite Parkway. Access to O'Neill Regional Park via this trail may be provided subject to County approval.

Enhancement of Oso Creek Trail – This local trail travels from Marguerite Parkway, along the Oso Creek and the Jeronimo Greenbelt, connecting to the Naciente Ridge Trail along the Southern California Edison (SCE) Easement. The Oso Creek Bicycle Trail Feasibility Report identifies means of connecting the existing Class II bicycle trail along Camino Capistrano in Laguna Niguel with the Aliso Creek Trail in North Mission Viejo, thereby providing a new north-south linkage for cyclists.

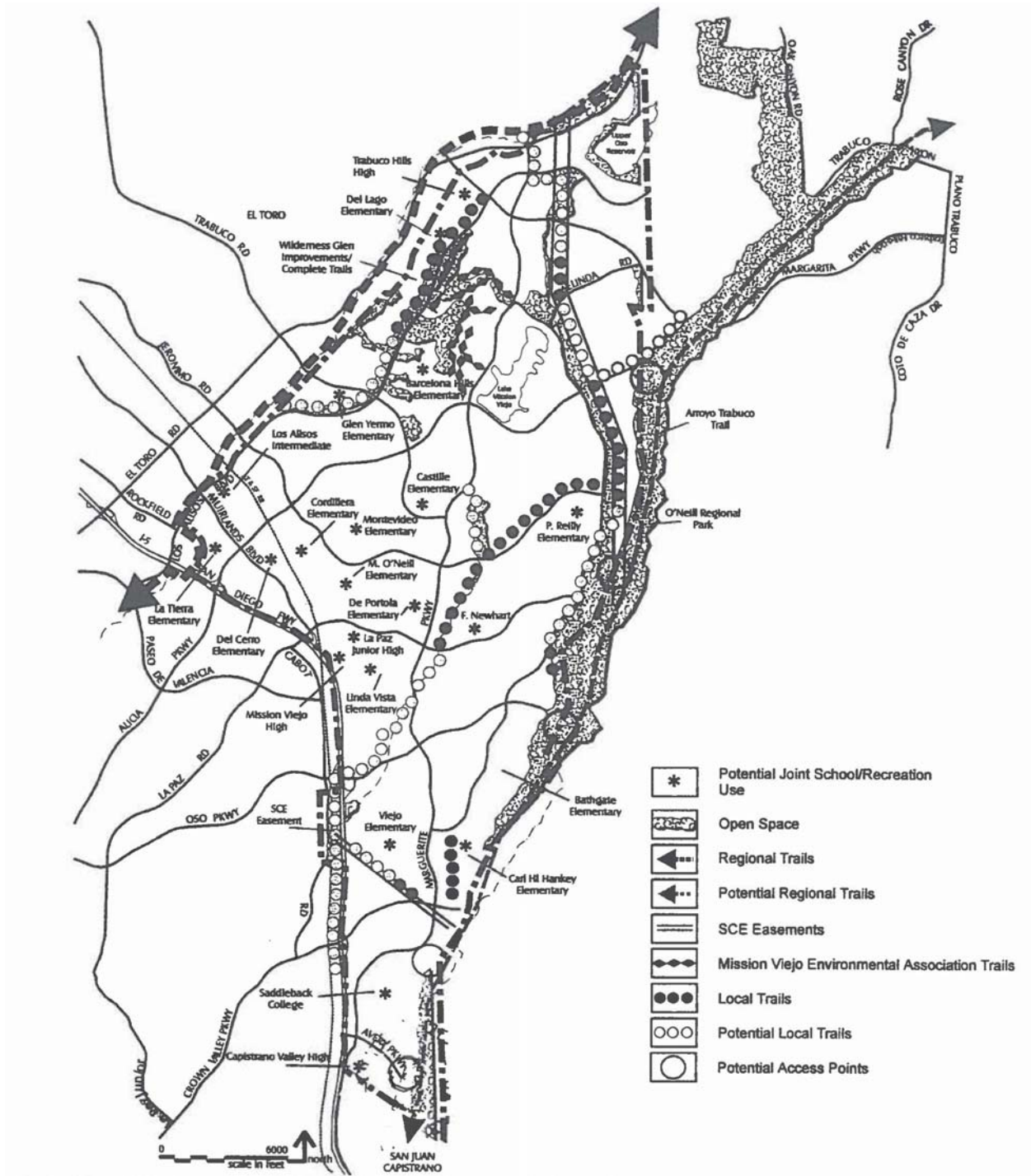


Figure 3.5-4
Existing and Proposed Trails



In addition, connectors could be provided on the Oso Creek Trail between the Marguerite Recreation Center and the Montanoso Recreation Center, and to the Arroyo Trabuco Trail in O’Neill Regional Park. Another possibility is connecting the trail to Alicia Parkway and Lake Mission Viejo. During development review, opportunities for extending the Oso Creek Trail should be considered even if the alignment was not analyzed in the Oso Creek Bicycle Trail Feasibility Report.

3.5.1.4 Performance Criteria – Level of Service Standards

Intersection capacity utilization (ICU) is a methodology to quantify LOS for an intersection. The methodology calculates the ratio of the sum of the critical volume to saturated flow rates, telling how much reserve capacity is available or how much the intersection is over capacity. The primary output from ICU is analogous to the intersection’s volume-to-capacity (V/C) ratio. The City’s acceptable threshold for intersections is LOS D or better, except for all intersections on the County’s Congestion Management Plan (CMP) arterials, where LOS E is acceptable. El Toro Road and Crown Valley Parkway are the two CMP arterials that serve the City of Mission Viejo.

The following assumptions, consistent with the countywide CMP assumptions, were incorporated into the ICU computations:

- 1,700 vehicles per hour of green time in through lanes
- 1,700 vehicles per hour of green time in turn lanes
- 5 percent of total intersection capacity lost due to the clearance interval

Peak hour LOS was determined for each study intersection based on the calculated ICU. LOS is a qualitative measure that gives insight on how an intersection is performing and identifies the extra capacity available to handle traffic fluctuation and incidents. It is dependent on several factors, including speed and travel time through an intersection, queuing, traffic interruptions, freedom to maneuver, safety, and driving comfort and convenience. LOS designations range from grades of “A” (excellent, free flow) through “F” (failure, jammed conditions). **Table 3.5-2** below summarizes LOS descriptions and corresponding V/C ratios for roadway segments.

Table 3.5-2 Level of Service Definition for Intersections

Level of Service	Volume-to-Capacity Ratio	Definition
A	0.00-0.60	EXCELLENT. Free flow, light volumes
B	0.61-0.70	VERY GOOD. Free to stable flow, light to moderate volumes
C	0.71-0.80	GOOD. Stable flow, moderate volumes, freedom to maneuver noticeably restricted
D	0.81-0.90	FAIR. Approaches unstable flow, moderate to heavy volumes, limited freedom to maneuver
E	0.91-0.99	POOR. Extremely unstable flow, heavy volumes, maneuverability and psychological comfort extremely poor



Level of Service	Volume-to-Capacity Ratio	Definition
F	Varies (≥ 1.00)	FAILURE. Forced or breakdown conditions, slow speeds, tremendous delays with continuously increasing queue lengths

Source: Highway Capacity Manual Special Report 209, Transportation Research Board, 2000

3.5.1.5 Existing Traffic Conditions

Table 3.5-3 presents existing 2008 arterial LOS based on counts collected throughout the City. Under base year 2008 conditions, the following segments operate below acceptable LOS thresholds. Per the City's General Plan Circulation Element, the desired daily LOS threshold for arterial segments is D, except for Crown Valley Parkway which allows LOS E as a CMP facility. The following segments operate in excess of the City's General Plan LOS threshold under existing conditions:

- Alicia Parkway between Muirlands Boulevard and Jeronimo Road
- La Paz Road between Muirlands Boulevard and Chrisanta Drive
- Crown Valley Parkway east of I-5
- Avery Parkway between I-5 and Marguerite Parkway
- Medical Center Road between Crown Valley Parkway and the Hospital Entrance

The deficient segments are primarily facilities providing access to I-5. These freeway access segments all are located immediately east of I-5 and, as such, arterial performance can be managed through efficient intersection control. While three of the four deficient segments operate at LOS F, the highest V/C ratio is 1.05, or 5 percent over the planning capacity of the facility. Overall, the citywide circulation system appears to operate efficiently with expected congestion on key corridors that access I-5.



Table 3.5-3: Existing Arterial Daily Level of Service

Arterial	From	To	Class	Capacity	ADT	V/C	LOS
Los Alisos Blvd.	I-5	Muirlands Blvd.	4D	37,500	27,300	0.73	C
	Muirlands Blvd.	Jeronimo Rd.	6D	56,300	27,600	0.49	A
	Jeronimo Rd.	Trabuco Rd.	6D	56,300	27,100	0.48	A
	East of Trabuco Rd.		4D	37,500	22,700	0.61	B
	West of Santa Margarita Pkwy.		4D	37,500	15,400	0.41	A
	Santa Margarita Pkwy	Marguerite Pkwy.	4D	37,500	9,700	0.26	A
	Marguerite Pkwy.	SR-241	4U	25,000	11,200	0.45	A
Melinda Rd.	Olympiad Rd.	Santa Margarita Pkwy.	4D	37,500	7,800	0.21	A
Alicia Pkwy.	I-5	Muirlands Blvd.	8D	75,000	57,900	0.77	C
	Muirlands Blvd.	Jeronimo Rd.	6D	56,300	58,600	1.04	F
	Jeronimo Rd.	Trabuco Rd.	6D	56,300	40,800	0.72	C
	Trabuco Rd.	Marguerite Pkwy.	6D	56,300	29,800	0.53	A
	Marguerite Pkwy.	Olympiad Rd.	6D	56,300	29,700	0.53	A
La Paz Rd.	East of Olympiad Rd.		6D	56,300	27,200	0.48	A
	Muirlands Blvd.	Chrisanta Dr.	4D	37,500	38,000	1.01	F
	Spadra Ln.	Marguerite Pkwy.	4D	37,500	25,000	0.67	B
	East of Marguerite Pkwy.		4D	37,500	16,800	0.45	A
Estanciero Dr.	West of Olympiad Rd.		4D	37,500	11,400	0.30	A
	Chrisanta Dr.	Montanoso Dr.	2U	12,000	3,400	0.28	A
	Montanoso Dr.	Marguerite Pkwy.	2U	12,000	7,500	0.63	B
Oso Pkwy.	Cabot Rd.	I-5	7D	65,700	53,700	0.82	D
	I-5	Marguerite Pkwy.	6D	56,300	49,300	0.88	D
	Marguerite Pkwy.	Pacific Hills Dr.	6D	56,300	41,400	0.73	C
	West of Felipe Rd/Olympiad Rd.		6D	56,300	39,900	0.71	C
	East of Felipe Rd/Olympiad Rd.		6D	56,300	41,200	0.73	C
Crown Valley Pkwy.	East of I-5		8D	75,000	78,400	1.05	F
	West of Marguerite Pkwy.		6D	56,300	32,800	0.58	A
	East of Marguerite Pkwy.	Montanoso Dr.	6D	56,300	38,100	0.68	B
Avery Pkwy.	I-5	Marguerite Pkwy.	4D	37,500	35,100	0.94	E
	East of Marguerite Pkwy.		4D	37,500	3,500	0.09	A
Muirlands Blvd.	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	18,300	0.49	A
	Alicia Pkwy.	La Paz Rd.	4D	37,500	14,400	0.38	A
Jeronimo Rd.	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	15,600	0.42	A
	Alicia Pkwy.	Marguerite Pkwy.	4D	37,500	14,500	0.39	A
	Marguerite Pkwy.	Olympiad Rd.	4D	37,500	10,600	0.28	A
Trabuco Rd.	North of Los Alisos Blvd.		4D	37,500	19,600	0.52	A
	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	16,100	0.43	A
	Alicia Pkwy.	Marguerite Pkwy.	4D	37,500	12,100	0.32	A
Olympiad Rd.	Marguerite Pkwy.	Melinda Rd.	4D	37,500	10,600	0.28	A
	Melinda Rd.	Alicia Pkwy.	4D	37,500	9,300	0.25	A
	Alicia Pkwy.	Jeronimo Rd.	4D	37,500	15,000	0.40	A



Arterial	From	To	Class	Capacity	ADT	V/C	LOS
	Jeronimo Rd.	La Paz Rd.	4D	37,500	15,700	0.42	A
Felipe Rd.	La Paz Rd.	Oso Pkwy.	4D	37,500	15,200	0.41	A
	Oso Pkwy.	Marguerite Pkwy.	4D	37,500	15,500	0.41	A
Santa Margarita Pkwy.	North of Los Alisos Blvd.		6D	56,300	32,400	0.58	A
	Los Alisos Blvd.	Marguerite Pkwy.	6D	56,300	26,400	0.47	A
	Marguerite Pkwy.	Melinda Rd.	6D	56,300	25,800	0.46	A
El Toro Rd.	East of Marguerite Pkwy.		6D	56,300	13,400	0.24	A
Marguerite Pkwy.	El Toro Rd.	Los Alisos Blvd.	4D	37,500	12,900	0.34	A
	Los Alisos Blvd.	Santa Margarita Pkwy.	4D	37,500	12,000	0.32	A
	Santa Margarita Pkwy.	Olympiad Rd.	4D	37,500	24,000	0.64	B
	Olympiad Rd.	Alicia Pkwy.	4D	37,500	22,400	0.60	A
	Alicia Pkwy.	Trabuco Rd.	4D	37,500	14,200	0.38	A
	Trabuco Rd.	Jeronimo Rd.	4D	37,500	25,000	0.67	B
	Jeronimo Rd.	La Paz Rd.	4D	37,500	28,900	0.77	C
	La Paz Rd.	Oso Pkwy.	4D	37,500	30,500	0.81	D
	Oso Pkwy.	Felipe Rd.	4D	37,500	29,800	0.79	C
	Felipe Rd.	Crown Valley Pkwy.	4D	37,500	32,700	0.87	D
	South of Crown Valley Pkwy.		4D	37,500	26,500	0.71	C
	North of Avery Pkwy.		4D	37,500	27,900	0.74	C
South of Avery Pkwy.		4U	25,000	18,400	0.74	C	
Vista Del Lago	Los Alisos Blvd.	Canaveras	2U	12,000	3,600	0.30	A
	Canaveras	Marguerite Pkwy.	2U	12,000	2,900	0.24	A
Puerta Real	Via Grande	Las Ramblas	4D	37,500	5,600	0.15	A
	Las Ramblas	Crown Valley Pkwy.	4D	37,500	9,300	0.25	A
Medical Center Rd.	Crown Valley Pkwy.	Hospital Entrance	2U	12,000	11,600	0.97	E
	Hospital Entrance	Marguerite Pkwy.	2U	12,000	9,500	0.79	C
Cabot Rd.	South of Oso Pkwy.		4D	37,500	12,800	0.34	A
	Deficient segment						

Source: City of Mission Viejo



Table 3.5-4 presents existing 2008 ICU LOS based on intersection turning movement counts collected for the critical intersections throughout the City. Under base year 2008 conditions, three intersections operate below acceptable LOS thresholds:

- I-5 northbound ramp/Avery Parkway (PM peak hour)
- Marguerite Parkway/Oso Parkway (AM peak hour)
- Marguerite Parkway/Crown Valley Parkway (PM peak hour)

Future planned improvements at this interchange are expected to improve operations at the Avery Parkway/I-5 freeway interchange. Improvements to the Marguerite Parkway/Oso Parkway intersection will serve future forecast volumes and enable the intersection to operate at LOS D or better. Improvements along Crown Valley Parkway after 2008 are expected to serve future forecast volumes at the Marguerite Parkway/Crown Valley Parkway intersection. Appendix A within the Traffic Study includes the peak hour intersection ICU worksheets.

Table 3.5-4: Existing Intersection Peak Hour Level of Service

	Intersection	AM Peak Hour		PM Peak Hour		Notes
		ICU	LOS	ICU	LOS	
1	I-5 SB Ramp/Alicia	0.71	C	0.80	C	
2	I-5 NB Ramp/Alicia	0.49	A	0.70	B	
3	I-5 SB Ramp-Cabot/La Paz	0.64	B	0.85	D	
4	I-5 NB Ramp-Muirlands/La Paz	0.56	A	0.65	B	
5	Cabot/Oso	0.56	A	0.61	B	
6	I-5 SB Ramp/Oso	0.85	D	0.77	C	
7	I-5 NB Ramp/Oso	0.69	B	0.89	D	
8	I-5 SB Ramp/Crown Valley	0.67	B	0.80	C	
9	I-5 NB Ramp/Crown Valley	0.60	A	0.66	B	
10	Puerta Real/Crown Valley	0.65	B	0.74	C	3 EB/WB Through on CV
11	Medical Center/Crown Valley	0.57	A	0.64	B	3 EB/WB Through on CV
12	Los Altos/Crown Valley	0.50	A	0.47	A	3 EB/WB Through on CV
13	Bellogente/Crown Valley	0.52	A	0.42	A	3 EB/WB Through on CV
14	I-5 SB Ramp/Avery	0.55	A	0.73	C	
15	I-5 NB Ramp/Avery	0.70	B	0.94	E	Existing geometry (2EBT)
16	Muirlands/Los Alisos	0.70	B	0.82	D	
17	Muirlands/Alicia	0.74	C	0.80	C	
18	Jeronimo/Los Alisos	0.75	C	0.83	D	
19	Via Fabricante/Alicia	0.79	C	0.75	C	
20	Jeronimo/Alicia	0.67	B	0.64	B	
21	Chrisanta/La Paz	0.78	C	0.70	B	
22	Trabuco/Los Alisos	0.90	D	0.78	C	
23	Trabuco/ Alicia	0.62	B	0.61	B	
24	Los Alisos/Santa Margarita	0.80	C	0.79	C	
25	Marguerite/El Toro	0.31	A	0.49	A	
26	Marguerite/Los Alisos	0.39	A	0.49	A	
27	Marguerite/Santa Margarita	0.77	C	0.72	C	
28	Marguerite/Olympiad	0.47	A	0.70	B	



	Intersection	AM Peak Hour		PM Peak Hour		Notes
		ICU	LOS	ICU	LOS	
29	Marguerite/Alicia	0.73	C	0.78	C	
30	Marguerite/Trabuco	0.64	B	0.60	A	
31	Marguerite/Jeronimo	0.89	D	0.64	B	
32	Marguerite/La Paz	0.67	B	0.79	C	
33	Marguerite/Oso	0.95	E	0.83	D	2007 Geometrics, de facto RT
34	Marguerite/Felipe	0.77	C	0.76	C	
35	Marguerite/Crown Valley	0.83	D	1.21	F	2007 Geometrics
36	Marguerite/Medical Center	0.57	A	0.65	B	
37	Marguerite/Avery	0.71	C	0.87	D	
38	Glenn Ranch/El Toro	0.41	A	0.53	A	
39	SR-241 NB Ramps/Los Alisos	0.49	A	0.36	A	
40	SR-241 SB Ramps/Los Alisos	0.57	A	0.44	A	
41	Santa Margarita/Melinda	0.65	B	0.59	A	
42	Olympiad/Melinda	0.39	A	0.42	A	
43	Olympiad/Alicia	0.66	B	0.73	C	
44	Olympiad/Jeronimo	0.53	A	0.37	A	
45	Olympiad-Felipe/La Paz	0.44	A	0.44	A	
46	Felipe/Oso	0.87	D	0.78	C	
47	Jardines/Crown Valley	0.64	B	0.50	A	3 EB/WB Through on CV
48	Modesto/Trabuco	0.52	A	0.53	A	
50*	Charlinda/Alicia	0.53	A	0.66	B	
51	Kaleidoscope/Crown Valley	0.44	A	0.58	A	
	Deficient Peak Hour Operations					

Source: City of Mission Viejo

* The intersection numbers correspond to the Mission Viejo Traffic Analysis Model (MVTAM). Omission of #49 is not a typo.

3.5.1.6 Parking

Parking availability is important for the overall quality of life in Mission Viejo and the vitality of tax-generating commercial, retail, entertainment, and service uses. A lack of parking frustrates residents, businesses, and visitors, while too much parking wastes valuable land and impedes the area's economic, aesthetic, and environmental objectives. Greater management of parking spaces in the planning area can help achieve mobility, environmental, and community development goals. As portions of the planning area develop or redevelop, additional parking may be necessary to accommodate greater intensity of development. Current parking standards of the Zoning Ordinance, as compared to similar jurisdictions and updated parking codes, provide marginally less parking for commercial uses and marginally more parking for public and service uses. Utilization and availability of parking within the planning area are adequate for standard daily use.

3.5.2 Regulatory Setting

The following provides a general description of the applicable regulatory requirements for the planning area, including federal, state, regional, and local guidelines.



3.5.2.1 Federal Regulations

Department of Transportation Act of 1966

Section 4(f) of the Department of Transportation Act of 1966 specifies that a transportation project requiring the use of publicly owned parks, recreation areas, historic sites (including those owned privately), wildlife and waterfowl refuges, and many other types of resources can be approved only if there is no feasible and prudent alternate to using that land and if the project is planned to minimize harm to the property.

General procedures are as follows:

A specific finding is required. Section 4(f) lands may be used for Federal Aid highways only if:

1. There is no prudent and feasible alternative to using that land; and
2. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Each project proposal must include a Section 4(f) avoidance alternative (Caltrans 2011).

Surface Transportation Assistance Act (STAA)

In 1982, the federal government passed the Surface Transportation Assistance Act (STAA). This act requires states to allow larger trucks on the “National Network,” which is composed of the Interstate System plus the non-Interstate Federal-Aid Primary System. “Larger trucks” includes (1) doubles with 28.5-foot trailers, (2) singles with 48-foot semi-trailers and unlimited kingpin-to-rear axle (KPRA) distance, (3) unlimited length for both vehicle combinations, and (4) widths up to 102 inches. SR-78 in the planning area is defined as an STAA route.

3.5.2.2 State Regulations

California Department of Transportation (Caltrans)

Caltrans is the primary state agency responsible for transportation issues. One of its duties is the construction and maintenance of the state highway system. Caltrans has established standards for roadway traffic flow and has developed procedures to determine if intersections require improvements. For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. For projects that would not physically affect facilities, but may influence traffic flow and levels of services at such facilities, Caltrans may recommend measures to mitigate the traffic impacts of such projects.

California Transportation Commission (CTC)

The CTC consists of nine members appointed by the Governor. CTC is responsible for the programming and allocating of funds for the construction of highway, passenger rail, and transit improvements throughout the state. CTC is responsible for adopting the State Transportation Improvement Program and the State Highway Operation and Protection Program.



Assembly Bill (AB) 32

With AB 32, the Global Warming Solutions Act of 2006, the State of California committed itself to reducing GHG emissions to 1990 levels by 2020. ARB is coordinating the response to comply with AB 32.

In 2007, ARB adopted a list of early action programs that could be put in place by January 1, 2010. In 2008, ARB defined its 1990 baseline level of emissions, and by 2011 it will complete its major rule making for reducing GHG emissions. Rules on emissions, as well as market-based mechanisms like the proposed cap and trade program, took effect January 1, 2012.

On December 11, 2008, ARB adopted its Proposed Scoping Plan for AB 32. This scoping plan included the approval of SB 375 as the means for achieving regional transportation-related GHG targets. SB 375 provides guidance on how curbing emissions from cars and light trucks can help the state comply with AB 32.

SB 375

SB 375 has four key components. First, SB 375 requires regional GHG emissions targets. ARB's Regional Targets Advisory Committee will guide the adoption of targets to be met by 2020 and 2035 for each MPO in the state. For Mission Viejo, the MPO is SCAG (see below). These targets, which MPOs may propose themselves, will be updated every 8 years in conjunction with the revision schedule for housing and transportation elements.

Second, MPOs will be required to create an SCS that provides a plan for meeting regional targets. The SCS and the RTP must be consistent, including action items and financing decisions. If the SCS does not meet the regional target, the MPO must produce an Alternative Planning Strategy that details an alternative plan to meet the target.

Third, SB 375 requires that regional housing elements and transportation plans (also prepared by SCAG as the MPO for the Orange County region; Mission Viejo is a member agency) be synchronized on 8-year schedules. In addition, RHNA allocation numbers must conform to the SCS. If local jurisdictions are required to rezone land as a result of changes in the housing element, rezoning must take place within 3 years.

Finally, MPOs must use transportation and air emissions modeling techniques consistent with guidelines prepared by the CTC. Regional Transportation Planning Agencies (such as SCAG) are encouraged, but not required, to use travel demand models consistent with the CTC guidelines.

AB 1358 – California Complete Streets Act of 2008

Supporting some of the previously referenced regulations/requirements, the California Complete Streets Act of 2008 (AB 1358) requires circulation elements as of January 1, 2011, to accommodate the transportation system from a multi-modal perspective, including public transit, walking, and biking, which have traditionally been marginalized in comparison to autos in contemporary American urban planning.



3.5.2.3 Local Plans and Policies

Southern California Association of Governments

SCAG is a regional council of government agency for six counties in the Southern California region, including Orange County. As a designated MPO, SCAG is mandated by the federal government to research and prepare plans for transportation, growth management, hazardous water management, and air quality. Additional mandates exist at the state level, including the preparation of the RHNA.

Congestion Management Program (CMP)

The goals of the 2011 Orange County CMP are to support regional mobility and air quality objectives by reducing traffic congestion; to provide a mechanism for coordinating land use and development decisions that support the regional economy; and to determine gas tax fund eligibility.

To meet these goals, the CMP contains a number of policies designed to monitor and address system performance issues. OCTA developed the policies that makeup Orange County's CMP in coordination with local jurisdictions, Caltrans, and the SCAQMD.

City of Mission Viejo Development Code

The City's adopted comprehensive Development Code is the primary implementation tool for the Land Use and Circulation Element and the goals and policies it contains. The Development Code is required to be consistent with the City's General Plan. A Zoning Map, consistent with the Land Use Policy Map, was adopted as part of the Development Code. Together, the Development Code and Zoning Map are used to identify the specific types of use, intensity, and development standards applicable to given parcels or areas of land.

County of Orange Master Plan of Regional Riding and Hiking Trails

The County of Orange Master Plan of Regional Riding and Hiking Trails provides policies and programs to implement the future development and operation of the countywide trails system. The plan includes an inventory of existing and proposed trails, and standards and criteria for new trails. The City has incorporated the County's trails criteria into the Conservation and Open Space Element.

3.5.3 Thresholds for Determining Significance

The impact of the project related to transportation and traffic would be considered significant if it would exceed the following thresholds of significance, in accordance with Appendix G of the CEQA Guidelines:

- Conflict with an a applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and nonmotorized travel and relevant components of the circulation system, including but not limited to intersection, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;



- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways
- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

3.5.4 Analysis of Environmental Impacts

Impact analysis in this section used the Mission Viejo Traffic Analysis Model (MVTAM). The model was developed in support of the General Plan and corresponding Circulation Element update. MVTAM was developed to be consistent with the Orange County Transportation Analysis Model (OCTAM) version 3.1, which was based on Orange County Projections (OCP) 2000 demographic data forecasts.

The primary objective of the model update was to utilize the most current available demographic data assumptions to provide modeling analysis to support the Sustainability Action Plan base year 2008 and horizon year 2035. An interim 2020 year scenario is required for the Climate Action Plan so a 2020 scenario was developed through interpolation of 2008 and 2035 trip tables. The impact analysis presented below utilizes the significance criteria stated above to address impacts that the Initial Study disclosed as potentially significant.

3.5.4.1 *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit*

MVTAM Update

Network

The MVTAM base year network was updated to reflect 2008 base year conditions from the original 2003 base year network. The 2003 MVTAM network was updated based on City comments to reflect 2008 conditions within the City and the network was compared and updated to be consistent with the OCTAM 3.3 base year 2008 network outside of the City. Similarly, for 2035 conditions, the previous future MVTAM network, which represented 2025 conditions, was updated consistent with the 2035 OCTAM 3.3 MPAH network. As such, the 2035 network continues to include the 241 completion project that extends the toll facility to I-5 from its current terminus at Oso Parkway.



Land Use/Demographic Data

MVTAM was developed as a land use-based subarea model that converts land use to socioeconomic data consistent with procedures outlined in the Orange County Subarea Modeling Guidelines Manual. General Plan land use was input into the model and converted to population, housing, and employment variables for use in trip generation.

The trip generation component of MVTAM was slightly modified to read the socioeconomic data developed by the City rather than convert land use into socioeconomic data. **Table 3.5-5** presents the base year 2008 and horizon year 2035 socioeconomic assumptions for Mission Viejo.

Table 3.5-5: Socioeconomic Data Assumptions

Analysis Year	Population	Dwelling Units		Employment		Other
		Single Family	Multi-Family	Retail	Service	
2008	98,988	24,470	9,575	9,446	18,620	9,100
2035	102,985	24,470	10,225	9,180	19,915	9,015

Source: City of Mission Viejo

Traffic Analysis Zones

The primary issue with updating the citywide model was the zone structure of the various datasets. MVTAM was developed to be consistent with OCTAM 3.1 while the OCP 2010 dataset was developed for the OCTAM 3.3 zone structure. A comprehensive process was developed to convert the OCP 2010 data into the MVTAM zonal structure. Please refer to Appendix D for a more detailed discussion of how this effort was accomplished.

FRATAR Process/Traffic Assignment

Once trips are generated within the City based on MVTAM demographic trip rates, they are distributed based on a FRATAR process. The FRATAR process from the original MVTAM was retained although the trips external to Mission Viejo were updated to be consistent with those obtained from a preliminary version of OCTAM 3.4, which incorporates the preliminary draft OCP 2010 dataset. The FRATAR process maintains citywide productions and attractions to evaluate full buildout and absorption of citywide land uses.

Table 3.5-6 presents vehicle miles travelled (VMT), vehicle hours travelled (VHT), vehicle trips, and average trip length for trips that begin and/or end within the City. To develop VMT and VHT summaries, all citywide trips were compressed into the following trip types:

- Internal to Internal: trips that begin and end within Mission Viejo
- Internal to External: trips that begin in Mission Viejo and end outside of Mission Viejo
- External to Internal: trips that begin outside of Mission Viejo and end in Mission Viejo



Trips that begin and end outside of Mission Viejo are not included in the summaries. **Table 3.5-6** includes base year 2008, interim year 2020, and horizon year 2035 VMT, VHT, vehicle trip, and average trip length summaries. Under base year 2008 conditions, there are approximately 330,800 daily trips within the City. This internal to internal value goes down from 2008 to 2020 and from 2020 to 2035. The rationale for the reduction in internal of trips is the significant increase in development immediately adjacent to the City, specifically Ladera and Rancho Mission Viejo, along with minimal growth within the City.

Since demographics within the City remain relatively stable as the City is generally built out, specifically on the residential side, there are more opportunities for trips that begin within the City to go outside of the City to reach their desired destination. Overall citywide trips increase slightly between 2008 and 2020, increasing by 1 percent and by an additional 1.2 percent between 2020 and 2035. Since trips within the City are reduced, VMT and VHT for internal to internal trips are reduced for the interim and horizon years. Due to the slight increase in internal to external trips and external to internal trips, VMT and VHT associated with these trips increase slightly.

Table 3.5-7 presents another summary of VMT and VHT for Mission Viejo. Table 3.5-7 also includes average speed by facility type and summarizes these measures of effectiveness by assignment time period.



Table 3.5-6: Mission Viejo Trip Statistics

2008								
		Mission Viejo	External MV	Total				
VMT	Mission Viejo	330,762	2,094,995	2,425,757				
	External MV	2,077,355		2,077,355				
	Total	2,408,117	2,094,995	4,503,112				
VHT	Mission Viejo	649,677	3,364,013	4,013,690				
	External MV	3,436,907		3,436,907				
	Total	4,086,584	3,364,013	7,450,597				
Vehicle Trips	Mission Viejo	155,919	202,450	358,369				
	External MV	202,631		202,631				
	Total	358,550		561,000				
Average Trip Length (mi)	Mission Viejo	2.1	10.3	6.8				
	External MV	10.3		10.3				
	Total	6.7	10.3	8.0				
2020								
% Difference from 2020								
		Mission Viejo	External MV	Total	Mission Viejo	External MV	Total	
VMT	Mission Viejo	315,952	2,156,137	2,472,089	Mission Viejo	-4.5%	2.9%	1.9%
	External MV	2,151,528		2,151,528	External MV	3.6%		3.6%
	Total	2,467,480	2,156,137	4,623,617	Total	2.5%	2.9%	2.7%
VHT	Mission Viejo	617,402	3,308,904	3,926,306	Mission Viejo	-5.0%	-1.6%	-2.2%
	External MV	3,393,236		3,393,236	External MV	-1.3%		-1.3%
	Total	4,010,638	3,308,904	7,319,542	Total	-1.9%	-1.6%	-1.8%
Vehicle Trips	Mission Viejo	150,648	207,772	358,420	Mission Viejo	-3.4%	2.6%	0.0%
	External MV	207,985		207,985	External MV	2.6%		2.6%
	Total	358,633	207,772	566,405	Total	0.0%	2.6%	1.0%
Average Trip Length (mi)	Mission Viejo	2.1	10.4	6.9	Mission Viejo	-1.2%	0.3%	1.9%
	External MV	10.3		10.3	External MV	0.9%		0.9%
	Total	6.9	10.4	8.2	Total	2.4%	0.3%	1.7%
2035								
% Difference from 2020								
		Mission Viejo	External MV	Total	Mission Viejo	External MV	Total	
VMT	Mission Viejo	297,913	2,274,533	2,572,446	Mission Viejo	-5.7%	5.5%	4.1%
	External MV	2,265,735		2,265,735	External MV	5.3%		5.3%
	Total	2,563,648	2,274,533	4,838,181	Total	3.9%	5.5%	4.6%
VHT	Mission Viejo	590,453	3,714,975	4,305,428	Mission Viejo	-4.4%	12.3%	9.7%
	MV	3,770,679		3,770,679	External MV	11.1%		11.1%
	Total	4,361,132	3,714,975	8,076,107	Total	8.7%	12.3%	10.3%
Vehicle Trips	Mission Viejo	144,045	214,528	358,573	Mission Viejo	-4.4%	3.3%	0.0%
	External MV	214,536		214,536	External MV	3.1%		3.1%
	Total	358,581	214,528	573,109	Total	0.0%	3.3%	1.2%
Average Trip Length (mi)	Mission Viejo	2.1	10.6	7.2	Mission Viejo	-1.4%	2.2%	4.0%
	External MV	10.6		10.6	External MV	2.1%		2.1%
	Total	7.1	10.6	8.4	Total	3.9%	2.2%	3.4%



Table 3.5-7: Mission Viejo Circulation System Measures of Effectiveness

		Facility Type									
		Toll	Freeway	HOV	Ramp	Major	Primary	Secondary	Commuter	Centroid	Total
2008											
VMT	AM	20,275	252,557	53,165	16,560	128,831	167,385	8,865	11,154	28,011	686,803
	PM	21,024	346,27	66,513	21,898	177,685	240,924	13,978	16,696	45,346	950,335
	MD	12,976	228,464	46,227	24,791	150,567	198,288	11,761	10,780	46,356	730,208
	NT	10,897	314,601	30,248	16,476	100,151	108,996	6,229	5,489	23,482	616,569
	Daily	65,172	1,141,892	196,151	79,725	557,233	715,593	40,834	44,120	143,195	2,983,915
VHT	AM	321	5,790	952	1,896	4,662	5,620	288	2,232	934	22,694
	PM	340	7,530	1,126	4,397	6,111	8,216	453	2,143	1,512	31,827
	MD	200	3,57	666	1,609	4,420	5,592	350	520	1,545	18,478
	NT	168	4,884	434	668	2,899	2,930	184	234	783	13,184
	Daily	1,028	21,779	3,178	8,570	18,092	22,358	1,275	5,129	4,773	86,182
SPEED	AM	63.2	43.6	55.9	8.7	27.6	29.8	30.8	5.0	30.0	30.3
	PM	61.9	46.0	59.1	5.0	29.1	29.3	30.9	7.8	30.0	29.9
	MD	64.9	63.9	69.4	15.4	34.1	35.5	33.6	20.7	30.0	39.5
	NT	64.9	64.4	69.7	24.7	34.6	37.2	33.9	23.4	30.0	46.8
	Daily	63.4	52.4	61.7	9.3	30.8	32.0	32.0	8.6	30.0	34.6
2020											
VMT	AM	22,588	260,928	57,071	15,138	131,485	155,128	8,433	9,333	27,662	687,764
	PM	23,830	359,090	71,619	15,138	181,934	224,099	13,097	15,326	44,902	954,070
	MD	14,635	240,386	51,745	24,884	156,856	186,160	10,275	10,491	45,931	741,362
	NT	12,003	366,023	34,801	17,493	104,016	101,902	5,096	5,375	23,340	670,049
	Daily	73,055	1,226,426	215,235	77,688	574,291	667,290	36,901	40,525	141,836	3,053,246
VHT	AM	363	6,094	1,049	1,296	4,335	5,089	278	2,086	922	21,512
	PM	395	8,098	1,270	2,733	5,866	7,418	443	1,975	1,497	29,696
	MD	226	3,762	748	1,454	4,595	5,211	309	504	1,531	18,339
	NT	185	5,763	500	745	3,015	2,740	152	229	778	14,107
	Daily	1,168	23,716	3,566	6,229	17,81	20,458	1,182	4,795	4,728	83,653
SPEED	AM	62.3	42.8	54.4	11.7	30.3	30.5	30.4	4.5	30.0	32.0
	PM	60.3	44.3	56.4	7.4	31.0	30.2	29.6	7.8	30.0	32.1
	MD	64.9	63.9	69.2	17.1	34.1	35.7	33.3	20.8	30.0	40.4
	NT	64.9	63.5	69.7	23.5	34.5	37.2	33.6	23.4	30.0	47.5
	Daily	62.5	51.7	60.4	12.5	32.3	32.6	31.2	8.5	30.0	36.5
Difference (2020 vs. 2008)											
VMT	AM	11.4%	3.3%	7.3%	-8.6%	2.1%	-7.3%	-4.9%	-16.3%	-1.2%	0.1%
	PM	13.3%	3.7%	7.7%	-7.9%	2.4%	-7.0%	-6.3%	-8.2%	-1.0%	0.4%
	MD	12.8%	5.2%	11.9%	0.4%	4.2%	-6.1%	-12.6%	-2.7%	-0.9%	1.5%
	NT	10.2%	16.3%	15.1%	6.2%	3.9%	-6.5%	-18.2%	-2.1%	-0.6%	8.7%
	Daily	12.1%	7.4%	9.7%	-2.6%	3.1%	-6.8%	-9.6%	-8.1%	-0.9%	2.3%
VHT	AM	13.0%	5.3%	10.2%	-31.6%	-7.0%	-9.4%	-3.5%	-6.5%	-1.2%	-5.2%
	PM	16.4%	7.5%	12.8%	-37.8%	-4.0%	-9.7%	-2.2%	-7.8%	-1.0%	-6.7%
	MD	12.8%	5.2%	12.2%	-9.6%	3.9%	-6.8%	-11.7%	-2.9%	-0.9%	-0.8%
	NT	10.2%	18.0%	15.0%	11.5%	4.0%	-6.5%	-17.3%	-2.2%	-0.6%	7.0%
	Daily	13.6%	8.9%	12.2%	-27.3%	-1.6%	-8.5%	-7.3%	-6.5%	-0.9%	-2.9%
SPEED	AM	-1.4%	-1.8%	-2.6%	33.7%	9.7%	2.3%	-1.4%	-10.5%	0.0%	5.6%
	PM	-2.6%	-3.6%	-4.6%	48.2%	6.7%	3.0%	-4.2%	-0.4%	0.0%	7.6%
	MD	0.0%	0.0%	-0.2%	11.1%	0.2%	0.8%	-1.0%	0.3%	0.0%	2.3%
	NT	0.0%	-1.4%	0.0%	-4.8	-0.1%	0.0%	-1.1%	0.1%	0.0%	1.6%
	Daily	-1.3%	-1.4%	-2.2%	34.1%	4.7%	1.9%	-2.5%	-1.7%	0.0%	5.4%
2035											
V	AM	35,749	275,821	62,811	15,310	143,689	162,865	10,551	9,866	28,196	744,856



		Facility Type									
		Toll	Freeway	HOV	Ramp	Major	Primary	Secondary	Commuter	Centroid	Total
	PM	40,720	388,188	79,758	20,066	199,719	235,930	16,334	15,530	45,778	1,042,023
	MD	20,636	259,807	58,788	25,640	172,146	191,720	12,685	10,731	46,808	798,960
	NT	16,635	423,782	41,141	18,214	114,668	105,241	6,909	5,431	23,848	755,870
	Daily	113,741	1,347,598	242,498	79,230	630,222	695,755	46,479	41,557	144,629	3,341,709
VHT	AM	670	7,130	1,253	1,394	4,870	5,551	351	2,208	940	24,367
	PM	861	9,840	1,493	2,680	6,603	8,092	562	2,041	1,526	33,699
	MD	318	4,115	855	1,598	5,045	5,383	380	521	1,560	19,774
	NT	256	6,810	590	810	3,317	2,838	204	231	795	15,850
	Daily	2,105	27,896	4,191	6,481	19,834	21,864	1,49	5,001	4,821	93,690
SPEED	AM	53.4	38.7	50.1	11.0	29.5	29.3	30.1	4.5	30.0	30.6
	PM	47.3	39.4	53.4	7.5	30.2	29.2	29.0	7.6	30.0	30.9
	DM	64.9	63.1	68.8	16.0	34.1	35.6	33.4	20.6	30.0	40.4
	NT	64.9	62.2	69.7	22.5	34.6	37.1	33.9	23.6	30.0	47.7
	Daily	54.0	48.3	57.9	12.2	31.8	31.8	31.0	8.3	30.0	35.7
VMT	AM	35,749	275,821	62,811	15,310	143,689	162,865	10,551	9,866	28,196	744,856
	PM	40,720	388,188	79,758	20,066	199,719	235,930	16,334	15,530	45,778	1,042,023
	MD	20,636	259,807	58,788	25,640	172,146	191,720	12,685	10,731	46,808	798,960
	NT	16,635	423,782	41,141	18,214	114,668	105,241	6,909	5,431	23,848	755,870
	Daily	113,741	1,347,598	242,498	79,230	630,222	695,755	46,479	41,557	144,629	3,341,709
Difference (2035 vs. 2020)											
VMT	AM	58.3%	5.7%	10.1%	1.1%	9.3%	5.0%	25.1%	5.7%	1.9%	8.3%
	PM	70.9%	8.1%	11.4%	-0.5%	9.8%	5.3%	24.7%	1.3%	2.0%	9.2%
	MD	41.0%	8.1%	13.6%	3.0%	9.7%	3.0%	23.5%	2.3%	1.9%	7.8%
	NT	38.6%	15.8%	18.2%	4.1%	10.2%	3.3%	35.6%	1.0%	2.2%	12.8%
	Daily	55.7%	9.9%	12.7%	2.0%	9.7%	4.3%	26.0%	2.5%	2.0%	9.4%
VHT	AM	84.6%	17.0%	19.5%	7.5%	12.3%	9.1%	26.5%	5.8%	1.9%	13.3%
	PM	117.9%	21.5%	17.6%	-1.9%	12.6%	9.1%	26.9%	3.3%	2.0%	13.5%
	MD	41.0%	9.4%	14.3%	9.9%	9.8%	3.	23.1%	3.3%	1.9%	7.8%
	NT	38.5%	18.2%	18.1%	8.6%	10.0%	3.6%	34.2%	0.6%	2.2%	12.4%
	Daily	80.2%	17.6%	17.5%	4.1%	11.4%	6.9%	26.7%	4.3%	2.0%	12.0%
SPEED	AM	-14.3%	-9.7%	-7.9%	-5.9%	-2.7%	-3.7%	-1.1%	-0.1%	0.0%	-4.4%
	PM	-21.6%	-11.0%	-5.3%	1.4%	-2.5%	-3.5%	-1.7%	-1.9%	0.0%	-3.8%
	MD	0.0%	-1.2%	-0.6%	-6.2%	0.0%	-0.3%	0.3%	-1.0%	0.0%	-0.1%
	NT	0.0%	-2.0%	0.1%	-4.1%	0.2%	-0.3%	1.0%	0.4%	0.0%	0.4%
	Daily	-13.6%	-6.6%	-4.1%	-2.0%	-1.5%	-2.4%	-0.6%	-1.7%	0.0%	-2.3%

Table 6 in the Iteris Traffic Study (Appendix D), presents VMT and VHT summaries for the citywide circulation system for use in development of the Sustainability Action Plan. The key finding in Table 6 is that, while total VMT increases between 2008 and 2020 by approximately 2 percent, total VHT decreases by approximately 3 percent. While VMT increases citywide, the amount of VMT in the lower speed bins is reduced while the VMT in the >60 miles per hour speed bins increases, which indicates how the system performance is improving.

2035 Level of Service Summary

Daily and Peak Hour Roadway Segment LOS

Table 3.5-8 presents the 2035 forecast arterial LOS summary. In general, the future circulation system throughout the City operates well. Future arterial operations are generally consistent with existing condition LOS. While five arterial segments were found to exceed the City’s LOS



thresholds under existing conditions, four of those five remain deficient under 2035 conditions with two additional segments deteriorating to deficient conditions. The additional deficient segments are Oso Parkway east of Felipe Road/Olympiad Road, which deteriorates to a V/C ratio of 0.92 and LOS E, and Marguerite Parkway between Felipe Road and Crown Valley Parkway, which deteriorates to a V/C ratio of 0.91 and LOS E. Planned improvements to La Paz Road through the addition of one lane in each direction from I-5 to Chrisanta Drive improves the LOS to acceptable conditions along La Paz Road. Additional mitigation has not been identified for the arterial segments that operate at deficient levels under future conditions. The arterial conditions are general planning level standards, but operations are defined based on peak hour operating conditions. If the intersections associated with the deficient segments operate at acceptable conditions, then the arterial segment is expected to operate at an acceptable peak hour condition. For example, the segment of Medical Center Road south of Crown Valley experiences daily traffic volumes in excess of the standard planning daily capacity of a two-lane facility. However, the intersection of Medical Center Road/Crown Valley Parkway operates at LOS A during both the AM and PM peak hours. The peaking characteristics associated with a hospital do not conform to the typical morning and afternoon commute peak hours and therefore this intersection operates acceptably during the traditional commute peak hours. As a result, it is unnecessary to upgrade the segment of Medical Center Drive south of Crown Valley Parkway based on the planning level daily deficiency identified in **Table 3.5-8**.

The following segments operate in excess of the City's LOS threshold under future conditions:

- Alicia Parkway between Muirlands Boulevard and Jeronimo Road
- Crown Valley Parkway east of I-5
- Avery Parkway between I-5 and Marguerite Parkway
- Medical Center Road between Crown Valley Parkway and the Hospital Entrance
- Oso Parkway east of Felipe Road/Olympiad Road
- Marguerite Parkway between Felipe Road and Crown Valley Parkway

Based on the above, the impact to daily and peak hour roadway segment LOS would be considered **significant**. Mitigation measures have been identified in **Table 3.5-9**; however, impacts would remain **significant and unavoidable**.

Intersection ICU LOS

Table 3.5-9 presents the 2035 forecast intersection ICU LOS.

Under future conditions, the following citywide intersections are forecast to operate at or below the City's LOS D threshold:

- I-5 northbound ramp/Oso Parkway (PM peak hour LOS E)
- I-5 northbound ramp/Avery Parkway (PM peak hour LOS F)



- Trabuco Road/Los Alisos Boulevard (AM peak hour LOS E)
- Los Alisos Boulevard/Santa Margarita Parkway (AM and PM peak hour LOS E/E)
- Marguerite Parkway/Jeronimo Road (AM peak hour LOS E)
- Marguerite Parkway/Avery Parkway (AM and PM peak hour LOS E/E)
- Felipe Road/Oso Parkway (AM and PM peak hour LOS E/E)

Based on the above, the impact to intersection ICU LOS is **significant**. Mitigation measures have been identified in **Table 3.5-9** for the deficient intersections.

While trips associated with City growth are limited since the City has only a few undeveloped parcels of land remaining, the increase in deficient intersections is generally the result of growth in adjacent jurisdictions to Mission Viejo. Most of the deficient intersections under 2035 conditions operate at LOS E with seven of the 10 deficient peak hours operating at an ICU of less than 0.95. The majority of these locations operated at just under the 0.91 ICU LOS E threshold under existing conditions so any growth pushes these locations into the LOS E range. The I-5 northbound ramp/Avery Parkway intersection operates at LOS E under existing conditions and LOS F under future conditions. This intersection is currently being evaluated to develop an ultimate configuration to satisfy future traffic demands by OCTA and Caltrans. As a preferred alternative for the ultimate intersection configuration has not yet been selected, the future baseline geometrics maintain the existing geometrics. A minor improvement that results in acceptable operations has been identified. The minor intersection improvement noted is not expected to match a more extensive improvement that has yet to be developed by OCTA and Caltrans, and when that more extensive improvement is designed and implemented, future operations are expected to be better than the results shown in **Table 3.5-9**.



Table 3.5-8: Future Arterial Daily Level of Service

	From	To	Existing (Base Year 2008)					2035				
			Class	Capacity	ADT	V/C	LOS	Class	Capacity	ADT	V/C	LOS
Los Alisos Blvd.	I-5	Muirlands Blvd.	4D	37,500	27,300	0.73	C	6D	56,300	28,700	0.51	A
	Muirlands Blvd.	Jeronimo Rd.	6D	56,300	27,600	0.49	A	6D	56,300	32,700	0.58	A
	Jeronimo Rd.	Trabuco Rd.	6D	56,300	27,100	0.48	A	6D	56,300	27,700	0.49	A
	East of Trabuco Rd.		4D	37,500	22,700	0.61	B	4D	37,500	23,800	0.63	B
	West of Santa Margarita Pkwy.		4D	37,500	15,400	0.41	A	4D	37,500	16,400	0.44	A
	Santa Margarita Pkwy.	Marguerite Pkwy.	4D	37,500	9,700	0.26	A	4D	37,500	10,700	0.29	A
	Marguerite Pkwy.	SR-241	4U	25,000	11,200	0.45	A	4U	25,000	14,500	0.58	A
Melinda Rd.	Olympiad Rd.	Santa Margarita Pkwy.	4D	37,500	7,800	0.21	A	4D	37,500	8,200	0.22	A
Alicia Pkwy.	I-5	Muirlands Blvd.	8D	75,000	57,900	0.77	C	8D	75,000	60,700	0.81	D
	Muirlands Blvd.	Jeronimo Rd.	6D	56,300	58,600	1.04	F	6D	56,300	60,900	1.08	F
	Jeronimo Rd.	Trabuco Rd.	6D	56,300	40,800	0.72	C	6D	56,300	42,900	0.76	C
	Trabuco Rd.	Marguerite Pkwy.	6D	56,300	29,800	0.53	A	6D	56,300	30,800	0.55	A
	Marguerite Pkwy.	Olympiad Rd.	6D	56,300	29,700	0.53	A	6D	56,300	31,500	0.56	A
	East of Olympiad Rd.		6D	56,300	27,200	0.48	A	6D	56,300	27,600	0.49	A
La Paz Rd.	Muirlands Blvd.	Chrisanta Dr.	4D	37,500	38,000	1.01	F	6D	56,300	38,800	0.69	B
	Spadra Ln.	Marguerite Pkwy.	4D	37,500	25,000	0.67	B	4D	37,500	26,100	0.70	B
	East of Marguerite Pkwy.		4D	37,500	16,800	0.45	A	4D	37,500	17,600	0.47	A
	West of Olympiad Rd.		4D	37,500	11,400	0.30	A	4D	37,500	11,600	0.31	A
Estanciero Dr.	Chrisanta Dr.	Montanoso Dr.	2U	12,000	3,400	0.28	A	2U	12,000	3,500	0.29	A
	Montanoso Dr.	Marguerite Pkwy.	2U	12,000	7,500	0.63	B	2U	12,000	7,600	0.63	B
Oso Pkwy.	Cabot Rd.	I-5	7D	65,700	53,700	0.82	D	7D	65,700	56,200	0.86	D
	I-5	Marguerite Pkwy.	6D	56,300	49,300	0.88	D	8D	75,000	51,400	0.69	B
	Marguerite Pkwy	Pacific Hills Dr.	6D	56,300	41,100	0.73	C	8D	75,000	47,100	0.63	B
	West of Felipe Rd./Olympiad Rd.		6D	56,300	39,900	0.71	C	6D	56,300	47,400	0.84	D
	East of Felipe Rd./Olympiad Rd.		6D	56,300	41,200	0.73	C	6D	56,300	52,300	0.93	E
Crown Valley Pkwy.	East of I-5		8D	75,000	78,400	1.05	F	8D	75,000	82,300	1.10	F
	West of Marguerite Pkwy.		6D	56,300	32,800	0.58	A	8D	75,000	33,500	0.45	A
	East of Marguerite Pkwy.		6D	56,300	38,100	0.68	B	8D	75,000	39,900	0.53	A
Avery Pkwy.	I-5	Marguerite Pkwy.	4D	37,500	35,100	0.94	E	4D	37,500	38,400	1.02	F
	East of Marguerite Pkwy.		4D	37,500	3,500	0.09	A	4D	37,500	5,300	0.14	A
Muirlands Blvd.	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	18,300	0.49	A	4D	37,500	18,500	0.49	A
	Alicia Pkwy.	La Paz Rd.	4D	37,500	14,400	0.38	A	4D	37,500	15,900	0.42	A
Jeronimo Rd.	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	15,600	0.42	A	4D	37,500	26,300	0.70	B
	Alicia Pkwy.	Marguerite Pkwy.	4D	37,500	14,500	0.39	A	4D	37,500	15,400	0.41	A



Chapter 3 – Environmental Setting and Impact Analysis

	From	To	Existing (Base Year 2008)					2035				
			Class	Capacity	ADT	V/C	LOS	Class	Capacity	ADT	V/C	LOS
	Marguerite Pkwy.	Olympiad Rd.	4D	37,500	10,600	0.28	A	4D	37,500	10,600	0.28	A
Trabuco Rd.	North of Los Alisos Blvd.		4D	37,500	19,600	0.52	A	4D	37,500	21,200	0.57	A
	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	16,100	0.43	A	4D	37,500	17,300	0.46	A
	Alicia Pkwy.	Marguerite Pkwy.	4D	37,500	12,100	0.32	A	4D	37,500	13,700	0.37	A
Olympiad Rd.	Marguerite Pkwy.	Melinda Rd.	4D	37,500	10,600	0.28	A	4D	37,500	11,500	0.31	A
	Melinda Rd.	Alicia Pkwy.	4D	37,500	9,300	0.25	A	4D	37,500	10,000	0.27	A
	Alicia Pkwy.	Jeronimo Rd.	4D	37,500	15,000	0.40	A	4D	37,500	15,800	0.42	A
	Jeronimo Rd.	La Paz Rd.	4D	37,500	15,700	0.42	A	4D	37,500	16,500	0.44	A
Felipe Rd.	La Paz Rd.	Oso Pkwy.	4D	37,500	15,200	0.41	A	4D	37,500	16,000	0.43	A
	Oso Pkwy.	Marguerite Pkwy.	4D	37,500	15,500	0.41	A	4D	37,500	16,300	0.43	A
Santa Margarita Pkwy.	North of Los Alisos Blvd.		6D	56,300	32,400	0.58	A	6D	56,300	40,400	0.72	C
	Los Alisos Blvd.	Marguerite Pkwy.	6D	56,300	26,400	0.47	A	6D	56,300	32,100	0.57	A
	Marguerite Pkwy.	Melinda Rd.	6D	56,300	25,800	0.46	A	6D	56,300	30,300	0.54	A
El Toro Rd.	East of Marguerite Pkwy.		6D	56,300	13,400	0.24	A	6D	56,300	15,000	0.27	A
Marguerite Pkwy.	El Toro Rd.	Los Alisos Blvd.	4D	37,500	12,900	0.34	A	4D	37,500	17,600	0.47	A
	Los Alisos Blvd.	Santa Margarita Pkwy.	4D	37,500	12,000	0.32	A	4D	37,500	12,600	0.34	A
	Santa Margarita Pkwy.	Olympiad Rd.	4D	37,500	24,000	0.64	B	4D	37,500	25,800	0.69	B
	Olympiad Rd.	Alicia Pkwy.	4D	37,500	22,400	0.60	A	4D	37,500	23,500	0.63	B
	Alicia Pkwy.	Trabuco Rd.	4D	37,500	14,200	0.38	A	4D	37,500	14,900	0.40	A
	Trabuco Rd.	Jeronimo Rd.	4D	37,500	25,000	0.67	B	4D	37,500	26,300	0.70	B
	Jeronimo Rd.	La Paz Rd.	4D	37,500	28,900	0.77	C	4D	37,500	30,300	0.81	D
	La Paz Rd.	Oso Pkwy.	4D	37,500	30,500	0.81	D	4D	37,500	31,900	0.85	D
	Oso Pkwy.	Felipe Rd.	4D	37,500	29,800	0.79	C	4D	37,500	31,300	0.83	D
	Felipe Rd.	Crown Valley Pkwy.	4D	37,500	32,700	0.87	D	4D	37,500	34,300	0.91	E
	South of Crown Valley Pkwy.		4D	37,500	26,700	0.71	C	4D	37,500	28,000	0.75	C
	North of Avery Pkwy.		4D	37,500	27,900	0.74	C	4D	37,500	30,000	0.80	C
South of Avery Pkwy.		4U	25,000	18,400	0.74	C	4U	25,000	22,000	0.88	D	
Vista Del Lago	Los Alisos Blvd.	Canaveras	2U	12,000	3,600	0.30	A	2U	12,000	3,700	0.31	A
	Canaveras	Marguerite Pkwy.	2U	12,000	2,900	0.24	A	2U	12,000	2,900	0.24	A
Puerta Real	Via Grande	Las Ramblas	4D	37,500	5,600	0.15	A	4D	37,500	5,900	0.16	A
	Las Ramblas	Crown Valley Pkwy.	4D	37,500	9,300	0.25	A	4D	37,500	9,800	0.26	A
Medical Center Rd.	Crown Valley Pkwy.	Hospital Entrance	2U	12,000	11,600	0.97	E	2U	12,000	11,700	0.98	E
	Hospital Entrance	Marguerite Pkwy.	2U	12,000	9,500	0.79	C	2U	12,000	9,800	0.82	D
Cabot Rd.	South of Oso Pkwy.		4D	37,500	12,800	0.34	A	4D	37,500	13,400	0.36	A
	Deficient segment											



Table 3.5-9: Future Intersection Peak Hour Level of Service

Intersection		Base Year 2008					2035					2035 Mitigated			
		PM Peak		PM Peak		Notes	AM Peak		PM Peak		Notes	AM Peak		PM Peak	
		ICU	LOS	ICU	LOS		ICU	LOS	ICU	LOS		ICU	LOS	ICU	LOS
1	I-5 SB Ramp / Alicia	0.71	C	0.80	C		0.75	C	0.84	D					
2	I-5 NB Ramp / Alicia	0.49	A	0.70	B		0.51	A	0.74	C					
3	-5 SB Ramp-Cabot / La Paz	0.64	B	0.85	D		0.69	B	0.89	D					
4	I-5 NB Ramp - Muirlands / La Paz	0.56	A	0.65	B		0.61	B	0.68	B					
5	Cabot / Oso	0.56	A	0.61	B		0.63	B	0.66	B					
6	I-5 SB Ramp / Oso	0.85	D	0.77	C		0.89	D	0.81	D					
7	I-5 NB Ramp / Oso	0.69	B	0.89	D		0.73	C	0.93	E	Add NBR (Existing PM ICU just under threshold)	0.65	B	0.86	D
8	I-5 SB Ramp / Crown Valley	0.67	B	0.80	C		0.70	B	0.84	D					
9	I-5 NB Ramp / Crown Valley	0.60	A	0.66	B		0.63	B	0.70	B					
10	Puerta Real / Crown Valley	0.65	B	0.74	C	3 EB/WB Through on CV	0.67	B	0.87	D	4 EB/WB Through on CV				
11	Medical Center / Crown Valley	0.57	A	0.64	B	3 EB/WB Through on CV	0.50	A	0.55	A	4 EB/WB Through on CV				
12	Los Altos / Crown Valley	0.50	A	0.47	A	3 EB/WB Through on CV	0.44	A	0.42	A	4 EB/WB Through on CV				
13	Bellogente / Crown Valley	0.52	A	0.42	A	3 EB/WB Through on CV	0.45	A	0.37	A	4 EB/WB Through on CV				
14	I-5 SB Ramp / Avery	0.55	A	0.73	C		0.58	A	0.78	C					
15	I-5 NB Ramp / Avery	0.70	B	0.94	E	Existing geometry (2EBT)	0.86	D	1.02	F	Add NBR	0.75	C	0.85	D
16	Muirlands / Los Alisos	0.70	B	0.82	D		0.75	C	0.87	D					
17	Muirlands / Alicia	0.74	C	0.80	C		0.81	D	0.83	D					
18	Jeronimo / Los Alisos	0.75	C	0.83	D		0.83	D	0.87	D					
19	Via Fabricanet / Alicia	0.79	C	0.75	C		0.83	D	0.77	C					
20	Jeronimo / Alicia	0.67	B	0.64	B		0.71	C	0.68	B					
21	Chrisanta / La Paz	0.78	C	0.70	B		0.81	D	0.73	C					
22	Trabuco / Los Alisos	0.90	D	0.78	C		0.94	E	0.82	D	Add NBL (Exist AM ICU just under threshold)	0.85	D	0.82	D
23	Trabuco / Alicia	0.62	B	0.61	B		0.66	B	0.61	B					
24	Los Alisos / Santa	0.80	C	0.79	C		0.92	E	0.92	E	Add 2 nd NBL	0.76	C	0.86	D



Chapter 3 – Environmental Setting and Impact Analysis

Intersection	Base Year 2008					2035					2035 Mitigated			
	PM Peak		PM Peak		Notes	AM Peak		PM Peak		Notes	AM Peak		PM Peak	
	ICU	LOS	ICU	LOS		ICU	LOS	ICU	LOS		ICU	LOS	ICU	LOS
	Margarita													
25	Marguerite / El Toro	0.31	A	0.49	A		0.51	A	0.71	C				
26	Marguerite / Los Alisos	0.39	A	0.49	A		0.63	B	0.69	B				
27	Marguerite / Santa Margarita	0.77	C	0.72	C		0.84	D	0.85	D				
28	Marguerite / Olympiad	0.47	A	0.70	B		0.50	A	0.73	C				
29	Marguerite / Alicia	0.73	C	0.78	C		0.60	A	0.73	C				
30	Marguerite / Trabuco	0.64	B	0.60	A		0.79	C	0.65	B				
31	Marguerite / Jeronimo	0.89	D	0.64	B		0.93	E	0.67	B	Add NBL (Existing AM ICU just under threshold)	0.82	D	0.69 B
32	Marguerite / La Paz	0.67	B	0.79	C		0.71	C	0.84	D				
33	Marguerite / Oso	0.95	E	0.83	D	2007 Geometrics, de facto RT	0.73	C	0.68	B	Recent improvements assumed for future base			
34	Marguerite / Felipe	0.77	C	0.76	C		0.85	D	0.80	C				
35	Marguerite / Crown Valley	0.83	D	1.21	F	2007 Geometrics	0.72	C	0.70	B	Current geometrics (4 EB/WB Through on CV)			
36	Marguerite / Medical Center	0.57	A	0.65	B		0.59	A	0.71	C				
37	Marguerite / Avery	0.71	C	0.87	D		0.91	E	0.96	E	Current geometrics, Add NBL	0.74	C	0.86 D
38	Glenn Ranch / El Toro	0.41	A	0.53	A		0.57	A	0.67	B				
39	SR-241 NB Ramps / Los Alisos	0.49	A	0.36	A		0.57	A	0.44	A				
40	SR-241 SB Ramps / Los Alisos	0.57	A	0.44	A		0.59	A	0.58	A				
41	Santa Margarita / Melinda	0.65	B	0.59	A		0.74	C	0.69	B				
42	Olympiad / Melinda	0.39	A	0.42	A		0.41	A	0.44	A				
43	Olympiad / Alicia	0.66	B	0.73	C		0.70	B	0.75	C				
44	Olympiad / Jeronimo	0.53	A	0.37	A		0.55	A	0.39	A				
45	Olympiad - Felipe / La Paz	0.44	A	0.44	A		0.65	B	0.62	B				
46	Felipe / Oso	0.87	D	0.78	C		0.93	E	0.93	E	Add NBL & SBL	0.88	D	0.77 C
47	Jardines / Crown Valley	0.64	B	0.50	A	3 EB/WB Through on CV	0.57	A	0.46	A	4 EB/WB Through on CV			
48	Modesto / Trabuco	0.52	A	0.53	A		0.57	A	0.56	A				
50*	Charlinda / Alicia	0.53	A	0.66	B		0.56	A	0.69	B				



Intersection		Base Year 2008				Notes	2035				Notes	2035 Mitigated				
		PM Peak		PM Peak			AM Peak		PM Peak			AM Peak		PM Peak		
		ICU	LOS	ICU	LOS		ICU	LOS	ICU	LOS		ICU	LOS	ICU	LOS	
51	Kaleidoscope / Crown Valley	0.44	A	0.58	A		0.45	A	0.61	B						
	Deficient peak hour operations0.50															

Source: City of Mission Viejo

* The intersection numbers corresponds to the Mission Viejo Traffic Analysis Model (MVTAM). Omission of #49 is not a typo.



3.5.4.2 Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads and highways

The first CMP LOS measurement recorded, which was in 1992 for most CMP intersections, established the baseline for comparing future measurements. During subsequent LOS monitoring, the CMP statute requires that CMPHS intersections maintain a LOS grade of “E” or better, unless the baseline is lower than “E”; in which case, the ICU rating cannot increase by more than 0.1. Within the City of Mission Viejo, Crown Valley Parkway is identified as a CMP roadway. The 2011 LOS ratings for the CMP intersections have been mapped in Figure 3 of the Orange County CMP, which shows that Crown Valley Parkway maintains LOS B. As such, no specific CMP assessment is required.

Additionally, as indicated below, the Mission Viejo Circulation Element provides a comprehensive system of bicycle lanes, trails, and pathways to enhance connectivity within the planning area. The Circulation Element also provides a series of policies to enhance rail, including Metrolink; Park and Ride lots; and bus transit systems. The Circulation Element also identifies a series of goals and policies to ensure the integrity and service levels of these facilities are maintained.

With adherence to and implementation of the General Plan policies, program-level impacts to alternative transportation would be **less than significant**.

3.5.4.3 Result in inadequate emergency access

The impact analysis presented below utilizes the significance criteria stated above to address impacts that the Initial Study disclosed as potentially significant.

The intersection LOS impacts summarized in **Table 3.5-9** will generate traffic congestion at intersections that will also have the potential to impede emergency access.

Policies in the General Plan include a variety of actions aimed at ensuring emergency response readiness. The Safety Element (currently contained within the Land Use Element) in particular contains policies specifically written to address impacts related to emergency preparedness.

With adherence to current state and federal regulations, and the implementation of the General Plan policies, program-level impacts to emergency access would be **less than significant**.

3.5.4.4 Conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

The impact analysis presented below utilizes the significance criteria stated above to address impacts that the Initial Study disclosed as potentially significant.



Planned development capacity in the Mission Viejo planning area under the General Plan would occur primarily through infill and redevelopment. Long-term buildout of the General Plan would result in fluctuations in land use development and mix of uses over time, subsequently increasing sidewalks and other pedestrian infrastructure available throughout the planning area. The Mission Viejo Circulation Element provides a comprehensive system of bicycle lanes, trails, and pathways to enhance connectivity within the planning area. The Circulation Element also provides a series of policies to enhance rail, including Metrolink; Park and Ride lots; and bus transit systems. Additionally, the Circulation Element identifies a series of goals and policies to ensure the integrity and service levels of these facilities are maintained.

With adherence to and implementation of the General Plan policies, program-level impacts to alternative transportation would be **less than significant**.

3.5.5 Mitigation Measures

Implementation of the Mission Viejo General Plan would result in significant impacts related the effectiveness of the circulation system performance. The following mitigation measures are general and programmatic in nature, and would be refined in project-specific CEQA documents. Implementation of the following programmatic mitigation measures will reduce potential impacts.

3.5.5.1 Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit

Peak Hour Intersection Level of Service

TT-1 The City shall implement the improvements to intersections listed below that have been identified in **Table 3.5-9**. All of the improvements include additional turn lane capacity provisions. These provisions will require further evaluation to ensure the improvements are appropriate and necessary. Prior to implementation of the identified improvements, the intersections should be monitored to ensure the improvements are ultimately necessary as the surrounding developments mature.

- I-5 northbound ramp/Oso Parkway (PM peak hour LOS E)
- I-5 northbound ramp/Avery Parkway (PM peak hour LOS F)
- Trabuco Road/Los Alisos Boulevard (AM peak hour LOS E)
- Los Alisos Boulevard /Santa Margarita Parkway (AM and PM peak hour LOS E/E)
- Marguerite Parkway/Jeronimo Road (AM peak hour LOS E)
- Marguerite Parkway/Avery Parkway (AM and PM peak hour LOS E/E)



- Felipe Road/Oso Parkway (AM and PM peak hour LOS E/E)
- TT-2 Support alternative modes of travel by continuously developing and supporting these modes of travel. This can continually occur by:
- Continued implementation and update of the Bicycle Master Plan and integrating it with a Pedestrian Master Plan;
 - Update and maintain City Roadway Standards to consider the public realm of the street and implement complete streets, as appropriate;
 - Consider development of a neighborhood electric vehicle (NEV) master plan to encourage use of no emission vehicles on appropriate facilities. Coordinate with SCAG and the State Legislature to allow NEVs on public roadways with greater than 35 miles per hour posted speed limit;
 - Develop innovative funding mechanisms (such as fee districts or Transnet funding) to assist in implementing, operating, and maintaining the proposed shuttle system and bike share facilities within the City;
 - Work with developers to integrate bicycle and pedestrian amenities within their development plans.

Daily and Peak Hour Roadway Segment Volumes

Impacts related to daily and peak hour roadway segment volumes are depicted above in **Table 3.5-8**. Additional mitigation has not been identified for the arterial segments that operate at deficient levels under future conditions. The arterial conditions are general planning-level standards, but operations are defined based on peak hour operating conditions. If the intersections associated with the deficient segments operate at acceptable conditions, then the arterial segment is expected to operate at an acceptable peak hour condition.

3.5.5.2 Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways

As previously described, Figure 3 of the 2011 Orange County CMP shows that Crown Valley Parkway maintains LOS B and no evaluation is necessary.

Impacts related to consistency with CMP are **less than significant**; no mitigation is necessary.

3.5.5.3 Result in inadequate emergency access

Impacts related to emergency are **less than significant**; no mitigation is necessary.



3.5.5.4 Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

Impacts related to transit, bicycle, and pedestrian facilities are **less than significant**; no mitigation is necessary.

3.5.6 Significance After Mitigation

3.5.6.1 Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit

Peak Hour Segment Level of Service

While five arterial segments were found to exceed the City's LOS thresholds under existing conditions, four of those five remain deficient under 2035 conditions with two additional segments deteriorating to deficient conditions. The two deficient segments are Oso Parkway east of Felipe Road/Olympiad Road, which deteriorates to a V/C ratio of 0.92 and LOS E, and Marguerite Parkway between Felipe Road and Crown Valley Parkway, which deteriorates to a V/C ratio of 0.91 and LOS E. As stated above, additional mitigation has not been identified for the arterial segments that operate at deficient levels under future conditions. The arterial conditions are general planning-level standards, but operations are defined based on peak hour operating conditions. If the intersections associated with the deficient segments operate at acceptable conditions, then the arterial segment is expected to operate at an acceptable peak hour condition. Nevertheless, the impact at the segments of Oso Parkway east of Felipe Road/Olympiad Road, which deteriorates to a V/C ratio of 0.92 and LOS E, and Marguerite Parkway between Felipe Road and Crown Valley Parkway, which deteriorates to a V/C ratio of 0.91 and LOS E are **considered significant and unavoidable**.

Peak Hour Intersection Level of Service

Mitigation Measures TT-1 and TT-2 are proposed to address the impact on peak hour intersection LOS. Mitigation Measure TT-1 identifies potential improvements to intersections that would reduce impacts to intersection LOS. Mitigation Measure TT-2 supports alternative modes of travel by various methods to generally reduce vehicle trips within the planning area.

Therefore implementation of Mitigation Measures TT-1 and TT-2, in combination with the policies of the General Plan, would reduce program-level impacts associated with peak hour intersection LOS to a **less-than-significant** level.



3.5.6.2 Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways

Impacts to County CMP roadway (Crown Valley Parkway) as a result of the General Plan are expected to be **less than significant**; no mitigation is required.

3.5.6.3 Result in inadequate emergency access

Impacts to emergency access as a result of the General Plan are expected to be **less than significant**; no mitigation is required.

3.5.6.4 Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities

Impacts to public transit, bicycle and pedestrian facilities as a result of the General Plan are expected to be **less than significant**; no mitigation is required.



CHAPTER 4 – ANALYSIS OF LONG-TERM EFFECTS

This chapter includes an analysis of the long-term effects of the updates to the Land Use, Conservation/Open Space, and Circulation Elements of the General Plan. CEQA requires the discussion of the cumulative impacts, growth-inducing impacts, and long-term impacts of the proposed project. The following sections address these issues as they relate to implementation of the updates to the Mission Viejo General Plan.

4.1 Cumulative Impacts

This section discusses the cumulative impacts associated with the implementation of the Mission Viejo General Plan. CEQA Guidelines define a cumulative impact as one in which two or more individual effects, that when considered together, are considerable or that compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that 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 (CEQA Guidelines Section 15355).

CEQA Guidelines Section 15130 describes the requirements for the discussion of cumulative impacts in an EIR. It states that an EIR will discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. The discussion will reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as much detail as is provided for the impacts attributable to the project alone. In addition, the CEQA Guidelines allow for a project's contribution to be rendered less than cumulatively considerable with implementation of appropriate mitigation.

CEQA Guidelines Section 15130(b) presents two possible approaches for analyzing cumulative impacts:

- A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency; or
- A summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a General Plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.



The regional growth projections method is appropriate in evaluating cumulative impacts of the Mission Viejo General Plan because it provides general growth projections for the region and considers long-term growth.

SCAG’s Regional Council adopted the SCS for incorporation into the 2012 RTP on April 4, 2012. The 2012 RTP/SCS includes a baseline Growth Forecast that is based on adopted General Plan land uses for all jurisdictions. The Growth Forecast is also used to provide inputs for air quality management plans. It should be noted that the baseline Growth Forecast functions as a planning tool and does not predict the course of future events. Experience shows that these forecasts are most reliable at the regional and county levels and less so for smaller areas like cities and census tracts.

The geographic area that could be affected by implementation of the Mission Viejo updated General Plan varies depending on the type of environmental resource being considered. The general geographic area associated with different environmental effects of the Mission Viejo General Plan defines the boundaries of the area considered in the cumulative impact analysis. **Table 4-1** presents the general geographic areas associated with the different resources addressed in this Program EIR analysis.

**Table 4-1
Geographic Scope of Cumulative Impacts**

Resource Issue	Geographic Area
Air Quality	SCAQMD
Greenhouse Gas Emissions	Statewide
Land Use and Planning	South Orange County Region
Noise	South Orange County Region
Transportation and Traffic	South Orange County Region

4.1.1 Air Quality

The General Plan and the related cumulative projects are under the jurisdiction of SCAQMD and are all located in the South Coast Air Basin (Basin). By its nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the air basin, and this regional impact is a cumulative impact; projects within the air basin would contribute to this impact only on a cumulative basis. No single project would be sufficient in size, by itself, to result in nonattainment of the regional air quality standards. Instead, a project’s emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. All new development that results in an increase in air pollutant emissions above those assumed in regional air quality plans contributes to cumulative air quality impacts.

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. Per CEQA Guidelines Section 15064(h)(4), the existence of significant



cumulative impacts caused by other projects alone shall not constitute substantial evidence that the project's incremental effects are cumulatively considerable.

The determination of cumulative air quality impacts for construction-generated ozone emissions is based on whether the General Plan would result in emissions that exceed the applicable project-level thresholds of significance. Considering the nonattainment status of SCAQMD for PM_{2.5}, PM₁₀, ozone, and NO₂ construction of the project could result in a cumulatively considerable incremental contribution to a significant cumulative impact even with the application of Mitigation Measure AQ-1. This cumulative impact would be significant and unavoidable.

The update of the General Plan and its subsequent implementation would result in emissions that exceed the thresholds of significance. Therefore, the General Plan would result in a cumulatively considerable incremental contribution to a significant cumulative long-term operational air quality impact even with the application of Mitigation Measures AQ-2 and AQ-3. This cumulative impact would be significant and unavoidable.

The traffic modeling for cumulative conditions, which includes traffic generated by implementation of the General Plan, indicates that less-than-significant air quality impacts from mobile sources of CO would occur. CO emission factors in future years are expected to be lower than current levels due to more stringent vehicle emissions standards and improvements in vehicle emissions technology as well as City policies, including but not limited to, promoting walkability. Thus, ambient local CO concentrations under cumulative conditions would continue to decline. Therefore, 1- and 8-hour CO concentrations for the future cumulative conditions would not be anticipated to exceed the significance thresholds of 20 ppm and 9.0 ppm, respectively. Consequently, the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact from exposure of sensitive receptors to CO emissions from mobile sources.

Activities related to temporary, short-term construction and long-term operation of the projects developed as part of the General Plan could expose nearby existing off-site or proposed on-site sensitive receptors to TAC emissions. Because the use of mobilized equipment would be temporary, diesel PM from construction activities would not expose sensitive receptors to significant levels of TACs. Additionally, all activities (construction and operation) emitting TACs would be subject to the City Municipal Code and SCAQMD Rule 402 (Nuisances) and Regulation II (Permits), Regulation III (Fees), and Regulations IV (Prohibitions). Therefore, the General Plan would not result in a cumulatively considerable incremental contribution to a significant cumulative impact.

As discussed earlier, the General Plan would not create objectionable odors affecting a substantial number of people and impacts would be less than significant. The projects constructed as part of the General Plan would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Minor sources of odors, such as exhaust from mobile sources and charbroilers associated with commercial uses, are not typically associated with numerous odor complaints but are known to have temporary,



less concentrated odors. Individual development projects will be required to undergo project-specific environmental review and mitigation measures will be identified to reduce any project-specific significant impacts. Therefore, the General Plan would not create objectionable odors affecting a substantial number of people and impacts would be less than significant. Additionally, individual projects would be subject to compliance with SCAQMD Regulation 402. Therefore, implementation of the General Plan update would not result in a considerable incremental contribution to a significant cumulative impact.

4.1.2 Greenhouse Gas Emissions

The analysis of GHG emissions, and the associated contribution to climate change, is inherently a cumulative impact issue. Therefore, project- and plan-level impacts of GHG emissions are treated as the same as cumulative impacts. No separate cumulative impact discussion is needed. Consistent with the discussion in Section 3.2, the General Plan's incremental contribution to global climate change would be cumulatively considerable.

4.1.3 Land Use and Planning

The General Plan update for the Land Use Element includes incorporation of the Public Facilities Element; incorporation of the Healthy Community initiative; additional land use plans and programs; additional goals and policies related to public facilities and a healthy community; land use related to airport land use consistency; and additional Specific Plan study area. Implementation of the General Plan update would not result in changes to land use designations or intensification of land uses. Implementation of the General Plan update would not physically divide established communities within the City of Mission Viejo or adjacent jurisdictions. Additionally, the General Plan contains policies and implementation programs intended to ensure that development is compatible with existing regional plans. SCAG and OCCOG are the regional organizations that provide guidance and planning for the region. Potential development under the General Plan would be implemented according to the recommended distribution and intensity identified in the Land Use Element. Therefore, implementation of the General Plan update would not result in a considerable incremental contribution to a significant cumulative land use impact.

4.1.4 Noise

Development associated with implementing the updates to the General Plan will result in an increase in noise levels over time related to construction, transportation, and other sources. Enforcement of federal, state, and local regulations, in combination with Mitigation Measures N-1 through N-3 in Section 3.4, *Noise* will reduce potential impacts associated with noise to a less-than-significant level. Other communities within the region will also experience an increase in noise levels associated with future growth and each of these communities is subject to federal, state, and local regulations and environmental mitigation designed to control noise levels. This regulatory approach to noise control in the region avoids a significant cumulative impact. As a result, implementation of the General Plan update would not result in a considerable incremental contribution to a significant cumulative noise impact.



4.1.5 Transportation and Traffic

Implementation of the General Plan would result in an increased residential population and, nonresidential day-time population. This expected growth would have impacts on the LOS of several intersections, and numerous roadway segment volumes during the peak hours.

While five arterial segments were found to exceed the City's LOS thresholds under existing conditions, four of those five remain deficient under 2035 conditions with two additional segments deteriorating to deficient conditions. The two deficient segments are Oso Parkway east of Felipe Road/Olympiad Road, which deteriorates to a V/C ratio of 0.92 and LOS E, and Marguerite Parkway between Felipe Road and Crown Valley Parkway, which deteriorates to a V/C ratio of 0.91 and LOS E. As stated in Section 3.5, additional mitigation has not been identified for the arterial segments that operate at deficient levels under future conditions. The arterial conditions are general planning-level standards, but operations are defined based on peak hour operating conditions. If the intersections associated with the deficient segments operate at acceptable conditions, then the arterial segment is expected to operate at an acceptable peak hour condition. Nevertheless, the impacts at the segments of Oso Parkway east of Felipe Road/Olympiad Road and Marguerite Parkway between Felipe Road and Crown Valley Parkway are considered significant and unavoidable.

Mitigation Measures TT-1 and TT-2 are proposed to address the impact on peak hour intersection LOS. Mitigation Measure TT-1 identifies potential improvements to intersections that would reduce impacts to intersection LOS. Mitigation Measure TT-2 supports alternative modes of travel by various methods to generally reduce vehicle trips within the planning area. Therefore, implementation of Mitigation Measures TT-1 and TT-2, in combination with the policies of the General Plan, would reduce program-level impacts associated with peak hour intersection LOS to a less-than-significant level.

Thus, implementation of the General Plan update would result in considerable incremental contributions to significant cumulative impacts related to daily and peak hour roadway segment LOS and intersection ICU LOS.

However, implementation of the proposed project would not result in considerable incremental contribution to significant cumulative impacts related to CMP, emergency access and policies associated with alternative transportation.

4.2 Growth-Inducing Impacts

A project is defined as growth inducing when it directly or indirectly fosters economic growth, population growth, or additional housing; when it removes obstacles for growth; and/or when it encourages or facilitates other activities that could significantly affect the environment (CEQA Guidelines Section 15126.2). Growth inducement is generally dependent on the presence or lack of existing utilities, and municipal or public services. Examples of growth-inducing actions include developing water, wastewater, fire, or other types of services in previously un-served areas; extending transportation routes into previously undeveloped areas; and establishing



major new employment opportunities. Once services are extended into a project area, economic pressures to develop are anticipated.

The purpose of the proposed project is to update the Land Use, Conservation/Open Space, and Circulation Elements of the Mission Viejo General Plan in order to provide decision-makers with a solid basis for decisions related to land use and development. The updated Mission Viejo General Plan would be guided by interrelated policies and programs in addition to the Sustainability Action Plan policies to reinforce the City's vision for a sustainable future. Accordingly, the General Plan is premised on a certain amount of growth taking place, even though the City is largely built out. Orange County, as well as the entire southern California region, has experienced dramatic growth for decades and this trend is expected to continue but at a slower pace. The focus of the General Plan, then, is to provide a framework in which the growth can be managed and to tailor it to suit the needs of the community and surrounding area.

The General Plan contains a Growth Management Element with goals and an Implementation Plan that provides a framework for accommodating the orderly growth of the City. The Implementation Plan also ensures that land use decisions adequately manage traffic, transportation capacity, and LOS conditions on the City's existing and planned circulation system.

Therefore, the proposed update to the General Plan and the Sustainability Action Plan would not be growth inducing or set any new precedents for growth. Instead, the General Plan adequately plans for expected growth to occur. Additionally, the General Plan provides appropriate land use designations and a land use pattern that provides sufficient land for orderly development. The General Plan also contains policies that address the provision of sufficient services and infrastructure as growth occurs and to accommodate projected growth. Therefore, growth-inducing related impacts would be less than significant.

4.3 Significant Irreversible Environmental Changes

Section 15126(f) of the CEQA Guidelines requires that an EIR describe any significant irreversible environmental changes that would be involved in the proposed action should it be implemented.

Implementation of the proposed project would result in permanent changes to the existing environment, which has been described throughout this EIR. While the General Plan focuses development or redevelopment in limited areas as described throughout this EIR, some undeveloped land would still be converted to urbanized uses. These conversions are considered a permanent change and would occur directly through construction of development on undeveloped land. Implementation of the General Plan would result in significant irreversible impacts to air quality and GHG emissions. Impacts to these resources would represent a significant and irreversible environmental change.



Development pursuant to the General Plan would result in the irreversible consumption of nonrenewable resources. This use would have an incremental and irreversible effect on such resources. The irreversible commitment of limited resources is inherent in any development project or, in the case of the General Plan, cumulative development projects. Resources anticipated to be irreversibly committed over the life of the General Plan include, but are not limited to, lumber and other related forest products; sand, gravel, and concrete; petrochemicals; construction materials; steel, copper, lead, and other metals; and water. Development associated with the General Plan represents a long-term commitment to the consumption of fossil fuel oil and natural gas. These increased energy demands relate to construction, lighting, heating, and cooling of residences and buildings, and transportation to and from the planning area.

4.4 Summary of Impact Conclusions

Based on the analysis throughout Chapter 3.0 of this EIR, implementation of the Mission Viejo General Plan would result in environmental impacts under one of the following categories: significant and unavoidable (SU); significant but mitigated (SM) to a level less than significant; or less than significant (LTS) without mitigation. **Table 4-2** summarizes the significance of program-level and cumulative impacts associated with the implementation of the Mission Viejo General Plan.



**Table 4-2
Summary of Environmental Significance Conclusions
for the Mission Viejo General Plan**

Environmental Resource Issue Area and Topic Analyzed	Program-Level Significance	Cumulatively Considerable?
3.1 AIR QUALITY		
Conflict with or obstruct implementation of the applicable air quality plan	LTS	No
Violate any air quality standard or contribute substantially to an existing or projected air quality violation	SU	Yes
Expose sensitive receptors to substantial pollutant concentrations	SM	No
Create objectionable odors affecting a substantial number of people	LTS	No
3.2 GREENHOUSE GAS EMISSIONS		
Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	Construction: LTS Operation: SU	Yes
Conflict with an applicable plan, policy, or regulation adopted to reduce greenhouse gas emissions	SU	Yes
3.3 LAND USE AND PLANNING		
Physically divide an established community	LTS	No
Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect	LTS	No
3.4 NOISE		
Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or Municipal Code, or applicable standards of other agencies	SM	No
Exposure of persons to or generation of excessive groundborne vibration or noise levels	SM	No
A substantial temporary or periodic and permanent increase in ambient noise levels in the project vicinity above levels existing without the project	Temporary increase: SM Permanent increase: LTS	No
3.5 TRANSPORTATION AND TRAFFIC		
Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but	Daily and peak hour roadway segment LOS: SU Intersection ICU LOS: LTS	Yes



**Table 4-2
Summary of Environmental Significance Conclusions
for the Mission Viejo General Plan**

Environmental Resource Issue Area and Topic Analyzed	Program-Level Significance	Cumulatively Considerable?
not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit		
Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways	LTS	No
Result in inadequate emergency access	LTS	No
Conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities	LTS	No

Notes:

- LTS Less than Significant
- SU Significant and Unavoidable
- SM Significant but Mitigated



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CHAPTER 5 – ALTERNATIVES

5.1 Rationale for Alternatives Selection

CEQA requires the consideration of alternative development scenarios and the analysis of impacts associated with the alternatives. Through comparison of these alternatives to the project, the advantages of each can be weighed and analyzed. Section 15126.6 of the CEQA Guidelines requires that an EIR “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” The emphasis is added to stress that the alternatives analysis should look for ways to further mitigate the effects of the project. Thus, the selection and analysis of project alternatives presented in this section do not include any alternatives that assume intensification of development beyond that associated with the General Plan.

Additionally, the CEQA Guidelines state:

- The specific alternative of “no project” shall also be evaluated along with its impact. If the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. [Section 15126.6(e)(1)(2)]
- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The range of potential alternatives to the project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly discuss the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts. (Section 15126.6[a][c])

In addition to focusing on alternatives capable of either eliminating any significant environmental effects of the project or reducing them to a less-than-significant level, the following analysis examines variations of the project that were considered during update of the General Plan and that may be considered further during the public hearing process. The alternatives analyzed in the Program EIR are general in nature, as is the project. The degree of specificity used in the alternatives analysis is related to the general level of information



associated with implementation of the updates to the General Plan. Development over the entire project area is addressed in the alternatives analysis, rather than specific development projects, even though implementation of the General Plan update would not result in any changes to land use designations or intensification of land uses. The following project alternatives are examined:

- No Project/Existing General Plan Alternative
- Land Use Alternative, Re-Zoning Existing Undeveloped Parcels
- Circulation Alternative, Expanding Bike Paths

These alternatives were developed in the course of project planning and environmental review. The discussion in this section provides:

A description of alternatives considered;

- An analysis of whether each alternative meets most of the basic objectives of the project as described in Chapter 2.0, Project Description, of this Program EIR; and
- A comparative analysis of the alternatives under consideration and the project. The focus of this analysis is to determine if alternatives are capable of eliminating or reducing the significant environmental effects of the project to a less-than-significant level. **Table 5-1** summarizes the comparison of impacts of each alternative to the project.

**Table 5-1
Comparison of Impacts of Alternatives to the Project**

Environmental Impact	No Project/Existing General Plan Alternative	Land Use Alternative, Re-Zoning Existing Undeveloped Parcels	Circulation Alternative, Expanding Bike Paths
Air Quality	Greater	Lesser	Lesser
Greenhouse Gas Emissions	Greater	Lesser	Lesser
Land Use and Planning	Similar	Similar	Similar
Noise	Similar	Lesser	Lesser
Transportation and Circulation	Similar	Lesser	Lesser
Conclusion	Environmentally Inferior	Environmentally Superior	Environmentally Superior



5.1.1 Alternatives Considered but Rejected

The City of Mission Viejo considered a range of alternatives during preparation of the updates to the General Plan and Sustainability Action Plan, and multiple land use configurations and options were considered. Land use changes were developed and reviewed to determine feasibility in light of the proposed project objectives.

Several alternatives were determined infeasible and rejected at this time. These alternatives included (1) reducing density and intensity citywide; (2) reducing the density and intensity of the neighboring communities that generate traffic coming through Mission Viejo; and (3) no additional development within Mission Viejo. These alternatives were considered, as they all presented potential for reducing environmental impacts. However, none of these alternatives was deemed feasible as (1) the City has few remaining undeveloped parcels of land; (2) the City does not have jurisdiction over the neighboring communities; and (3) based on review of the existing level of development, the City has few remaining undeveloped parcels, and the General Plan allows development of those parcels in light of the 2035 General Plan buildout for the City. Additionally, as required by the state law and as stated in the City's Housing Element, the City has to identify potential sites for compliance with the Regional Housing Needs Assessment (RHNA) and to accommodate the housing needs of all economic segments of the City. By proposing to reduce future development of the remaining parcels, the City would not be in compliance with the state law and the City's Housing Element. Therefore, in light of these rationales, the above alternatives were rejected and deemed infeasible.

5.1.2 Project Location Alternative

The CEQA Guidelines recommend considering an alternative location to reduce potential impacts of a project. However, the policies and programs of the General Plan are specific to the geographic context of Mission Viejo. Buildout pursuant to the General Plan at another location is not applicable for a plan that pertains only to properties within the City. Thus, this Program EIR does not examine the Alternate Project Location alternative.

5.2 Project Alternatives

5.2.1 No Project/Existing General Plan Alternative

This alternative is analyzed within this Program EIR as it is required under CEQA Guidelines Section 15126.6(e). According to Section 15126.6(e)(2) of the CEQA Guidelines, the "no project" analysis shall discuss, "...what is reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." When the project is the update to the General Plan in light of the existing level of development in addition to revision of the existing General Plan elements goals/policies, in this case Land Use, Conservation/Open Space and Circulation Element goals/policies, CEQA Guidelines §15126.6(e)(3)(A) states that "the No Project Alternative will be the continuation of the existing plan...into the future." So, for the purposes of this Program EIR, the No Project Alternative represents development under the currently adopted General Plan in the absence of the updates, as further described below. This alternative, however, does not



represent a “no build” scenario in which no future development or redevelopment would occur.

5.2.1.1 Description of the Alternative

The No Project/Existing General Plan Alternative assumes that the updates to the General Plan would not be adopted and implemented. Instead, the planning and development process within the City boundaries would occur according to the existing 1999 General Plan Land Use, Conservation/Open Space and Circulation Elements.

In accordance with the state Law, general plans go through updates in order to stay compliant. The last update to the Land Use, Conservation/Open Space and Circulations Elements occurred in 1999. Under the No Project/Existing General Plan Alternative, the three elements would not be updated; therefore, the General Plan would not be compliant with the state Law.

5.2.1.2 Comparison of Environmental Impacts to the Proposed Project

This section analyzes the impacts related to various environmental resource areas under the No Project/Existing General Plan Alternative. The scoping process and the Initial Study through detailed analysis ruled out impacts for the proposed project under many resource areas and only focused on potential impacts related to air quality, GHG emissions, land use, noise, and traffic. The analysis in the Initial Study determined that the proposed General Plan update and Sustainability Action Plan would result in less-than-significant impacts or no impact to aesthetics, agricultural resources, biological resources, cultural resources, geotechnical, hydrology, hazards and hazardous materials, mineral resources, recreation, public services, and utilities. Therefore, the impact analysis under the No Project/Existing General Plan Alternative also focuses on air quality, GHG emissions, land use, noise, and traffic.

Air Quality

Implementation of the No Project/Existing General Plan Alternative would not reduce the remaining development densities and intensities of land uses nor would it change the types of land uses that are to occur under the proposed project. The updates to the proposed elements focus mainly on updates to the goals and policies and would not change the course of development within the City, as this alternative is not a “no build” scenario.

However, in the absence of the proposed updates to the three elements, specifically the Conservation/Open Space Element, many of the air quality-promoting goals and policies would not be adopted and implemented. The proposed updates to the Conservation/Open Space Element include new sections and related goal and policies pertaining to air quality, climate change, energy conservation, and green building practices. Goal 8 within this Element mandates cooperation with local, regional, and state agencies to improve air quality and reduce GHG emissions. The goal then introduces specific policies that would implement the intent of the goal. Under the No Project/Existing General Plan Alternative, the new air quality-improving updates would not become part of the General Plan. In the absence of said updates, this



alternative would result in greater air quality impacts compared to the proposed project. (Greater impact)

Greenhouse Gas Emissions

Implementation of the No Project/Existing General Plan Alternative would not reduce the remaining development densities and intensities of land uses nor would it change the types of land uses that are to occur under the proposed project. The updates to the proposed elements focus mainly on updates to the goals and policies and would not change the course of development within the City, as this alternative is not a “no build” scenario.

However, in the absence of updates to the proposed elements, specifically the Conservation/Open Space Element, many of the goals and policies promoting reduction of the GHG emissions would not be adopted and implemented. The proposed update to the Conservation/Open Space Element includes new sections and related goal and policies pertaining to air quality, climate change, energy conservation, and green building practices. Goals 8, 9, and 10 of the updated Conservation/Open Space Element encourage and mandate cooperation with local, regional, and state agencies to improve air quality and reduce GHG emissions; to incorporate mixed-use development to minimize the length and frequency of vehicle trips; to implement energy conservation programs and site design practices that reduce and conserve energy; and to adopt building and site design standards that reduce energy costs. The goals include specific policies that would implement the intent of the goals. Under the No Project/Existing General Plan Alternative, the new, innovative updates and measures to improve energy efficiency and reduce GHG emissions would not become part of the General Plan. In the absence of these goals and policies, this alternative would result in greater impacts related to GHG emissions compared to the proposed project. (Greater impact)

Land Use and Planning

Implementation of the No Project/Existing General Plan Alternative would not reduce the remaining development densities and intensities of land uses nor would it change the types of land uses that are to occur under the proposed project. As such, development of future residential and nonresidential land uses would remain the same. Development under either this alternative or the proposed General Plan would not physically divide communities or conflict with habitat plans as the City has not adopted the Multiple Habitat Conservation Plan (MHCP) subarea plan. Implementation of the No Project/Existing General Plan Alternative would result in similar impacts to land use and planning when compared to the General Plan. (Similar impact)

Noise

Implementation of the No Project/Existing General Plan Alternative would continue the current General Plan for Mission Viejo. Density and intensity of land uses within the City would be expected to stay the same. Goals and policies related to noise compatibility between land uses and noise reduction strategies would be similar, as no changes are anticipated with the



proposed project. With this alternative, the potential noise-related impacts would be similar to those with the proposed General Plan. (Similar impact)

Transportation and Traffic

Implementation of the No Project/Existing General Plan Alternative would continue the current General Plan for Mission Viejo. Analysis of the No Project/ Existing General Plan Alternative is based on buildout of the existing General Plan Year 2035 conditions, and it assumes land use and transportation infrastructure are consistent with the Mission Viejo Traffic Analysis Model (MVTAM). These projections generally reflect the implementation of the current General Plan for the City of Mission Viejo and the General Plans of the surrounding South County cities.

Implementation of the No Project/Existing General Plan Alternative would not implement the Circulation Element improvements (**Figure 3.5-3, Master Plan of Bikeways**). However, this alternative would result in slightly lower long-term volumes for the roadway segments studied. Overall, transportation and traffic impacts from the No Project/Existing General Plan Alternative would be similar to the General Plan based on tradeoffs between bikeway improvements and volumes related to land use changes. (Similar impact)

5.2.1.3 Conclusion

The No Project/Existing General Plan Alternative would result in no updates to the existing General Plan. In the absence of the updated goals and policies, the potential impacts of implementing the existing General Plan related to air quality and GHG emissions would be greater. Additionally, the proposed improvements to the bicycle plan as part of the update to the Circulation Element would not occur; however, overall impacts for transportation and traffic would be similar to those of the proposed General Plan. The No Project/Existing General Plan Alternative would also result in similar environmental impacts to the land use and planning and noise.

The No Project/Existing General Plan Alternative would not implement the innovative and progressive goals and policies proposed under the updates to the Land Use, Conservation/Open Space, and Circulation Elements of the General Plan. As such, the No Project/Existing General Plan Alternative would not achieve the objectives of the project. The City is focusing efforts on improving quality of life for the residents of the City by promoting green goals and policies; under this alternative, the proposed goals would not be adopted and implemented. The No Project/Existing General Plan Alternative does not provide updated goals and related tools and implementation programs that address the reductions in air quality and GHG emissions locally and regionally. Based on these factors and the potential impacts, overall the No Project/Existing General Plan Alternative would not be environmentally superior to the proposed project and would fail to meet the objectives of the project.



5.2.2 Land Use Alternative, Re-Zoning Existing Undeveloped Parcels

5.2.2.1 Description of the Alternative

The Re-Zoning Alternative is analyzed within this Program EIR as it would lessen one or more of the significant effects of, and attain most of, the basic project objectives of the General Plan consistent with criteria in CEQA Guidelines Section 15126.6[a][c].

The Re-Zoning Alternative would include the goals, policies, and implementation mechanisms of the updated General Plan. This alternative proposes some modifications in land use designations of specific properties within the City. Given that the City of Mission Viejo has few remaining undeveloped parcels of land, this alternative focuses on the existing undeveloped parcels within the City. Currently, there is approximately 64 acres of undeveloped/vacant land within the City boundaries, and these parcels are scattered throughout the City (see **Table 2-2** and **Figure 2-4** in Section 2.0, *Project Description*). Based on calculations of ADT for the uses in **Table 2-2**, the highest vehicular trips are associated with the Business Park (10.39 acres) and Residential 30 (38.84 acres).

The land use approach would maintain the goals and policies of the proposed General Plan, while shifting future development from Business Park to open space uses. The Re-Zoning Alternative proposes to reduce the Business Park acreage by 50 percent and designate it open space in addition to reducing the Residential 30 acreage by 50 percent and designating it Residential 6.5. Conversion of approximately 5 acres of land from Business Park to open space and Residential 30 to Residential 6.5 would result in reduced vehicular trips and associated air quality and GHG emissions, as well as traffic noise. Even though, as required by state law and the City's Housing Element, the City has to identify and, if needed, rezone, potential sites for the City's RHNA compliance, this alternative does not propose eliminating all residentially-zoned parcels to nonresidential uses. It proposes to convert only 50 percent of existing high-intensity residential parcels to lower-intensity residential uses.

5.2.2.2 Comparison of Environmental Impacts to the Project

Air Quality

The Re-Zoning Alternative would result in reduced square footage of Business Park, additional open space, and a reduction in number of Residential 30 dwelling units compared to the proposed project. The construction impacts related to development of the original Business Park would not occur; therefore, this alternative would result in reduced construction and operational criteria air pollutants and precursor emissions compared to the proposed project. Additionally, impacts associated with CO, TACs, odors, and exposure of sensitive receptors to pollutants would be less than the proposed project. This alternative would result in reduced vehicular trips associated with the reduced square footage of the Business Park and Residential 30. This reduction in average daily trips would result in reduced air emissions. Therefore, the overall air quality impacts of this alternative would be reduced compared to the proposed project. (Less impact)



Greenhouse Gas Emissions

The Re-Zoning Alternative would result in reduced square footage of Business Park, additional open space, and a reduction in number of Residential 30 dwelling units compared to the proposed project. Similar to the proposed project, this alternative would not conflict with applicable plans, policies, or regulations for the purpose of reducing GHG emissions. The construction impacts related to the original Business Park would not occur; therefore, this alternative would result in reduced construction and operational GHG emissions compared to the proposed project. Additionally, this alternative would result in reduced vehicular trips associated with the reduced square footage of the Business Park and Residential 6.5. This reduction in average daily trips would result in reduced GHG emissions. Therefore, the overall GHG impacts of this alternative would be reduced compared to the proposed project. (Less impact)

Land Use and Planning

The Re-Zoning Alternative would result in reduced square footage of Business Park, additional open space, and a reduction in number of Residential 30 dwelling units compared to the proposed project. All policies and programs established to protect communities and community character, and facilitate consistency with applicable land use or habitat conservation plan would remain in place. Additionally, the increase in open space would be more in line with the updated goals and policies of improving quality of life and environmental sustainability. However, this alternative would also reduce the number of jobs in the City. This would potentially impact the jobs/housing balance for Mission Viejo, reducing the employment base and ultimately impacting local economy. Overall, this alternative would result in similar impacts compared to the proposed project. (Similar impact)

Noise

The Re-Zoning Alternative would result in reduced square footage of Business Park, additional open space, and a reduction in number of Residential 30 dwelling units compared to the proposed project. The construction impacts related to development of the original Business Park would not occur; therefore, this alternative would result in reduced construction-related noise impacts. This alternative would result in reduced vehicular trips associated with the reduced square footage of the Business Park and Residential 30. This reduction in average daily trips would result in reduced traffic noise. Therefore, the overall noise impacts of this alternative would be reduced compared to the proposed project. (Less impact)

Transportation and Traffic

The Re-Zoning Alternative would result in reduced square footage of Business Park, additional open space, and a reduction in number of Residential 30 dwelling units compared to the proposed project. The construction impacts related to development of the original Business Park would not occur; therefore, this alternative would result in reduced construction traffic compared to the proposed project. This alternative would result in reduced vehicular trips



associated with the reduced square footage of the Business Park (a reduction of 778 trips per day) and Residential 30 (a reduction of 3,873 trips per day). While allocating additional units to Residential 6.5 would increase the trips for this use by 733 trips per day, overall this alternative would result in a reduction of 3,918 trips per day and therefore reduced traffic. However, it is likely that the City would still require improvements to the deficient intersections based on an Intersection Capacity Utilization (ICU) analysis. Therefore, in light of the required improvements, the traffic impacts of this alternative would be slightly reduced compared to the proposed project. (Less impact)

5.2.2.3 Conclusion

The Re-Zoning Alternative would implement the goals, policies, and implementation mechanisms of the proposed General Plan, but this alternative includes some modifications in land use designations of existing undeveloped parcels within the City. This alternative proposes to reduce Business Park acreage and designate it to open space in addition to reducing the Residential 30 dwelling units and allocating it to Residential 6.5. This would result in less vehicular trips and associated air quality, GHG emissions, and noise impacts than the proposed General Plan. However, in terms of land use, some employment impacts would occur related to decreased land use allocated to business park/employment uses within the City.

Since this alternative would implement the innovative and progressive goals and policies included in the proposed General Plan, this alternative would achieve most of the objectives of the project. While, overall, this alternative would result in less environmental impacts related to reduced vehicle trips and associated air quality, GHG emissions, and noise, this alternative would result in an impact to employment uses. However, since the Land Use Alternative would result in less environmental impacts overall, this alternative would be environmentally superior to the proposed project.

5.2.3 Circulation Alternative, Expanding Bike Paths

5.2.3.1 Description of the Alternative

The Expanding Bike Paths Alternative is analyzed within this Program EIR as it would lessen one or more of the significant effects of, and attain most of, the basic project objectives of the General Plan consistent with criteria in CEQA Guidelines Section 15126.6[a][c].

This alternative would implement the goals and policies of the proposed General Plan; however, the General Plan Circulation Plan would be revised to include additional bike paths for a total of 0.5 mile. The City of Mission Viejo already has a robust system of Class II bike lanes along arterials, which connect important nodes within the City. While there may be no additional opportunities to expand Class II bike lanes, there is potential to increase Class I bike paths along major parks and open space corridors, providing additional connections throughout the City and reducing single occupancy vehicular trips. This alternative proposes placing Class I bike paths around Lake Mission Viejo and along the I-5 corridor and Oso Creek extending south toward Avery Parkway connecting to the existing Class I bike path at Avery Parkway.



5.2.3.2 Comparison of Environmental Impacts to the Project

Air Quality

The Expanding Bike Paths Alternative would result in modifications to the proposed Circulation Plan and Bikeway Plan to reflect the additional Class I bike paths in the City. The expanded Class I bike paths would result in a better bikeway circulation network within the City that would accommodate and facilitate using this nonvehicular mode of transportation within Mission Viejo. Availability and ease of access would encourage residents of the City to ride their bikes instead of automobiles. Expansion of bike paths and bikeway connectivity would be expected to enhance bicycle opportunities trips, replacing some vehicular trips. Although the extent to which vehicle trips would be reduced by increased bicycle use is unknown, any reduction in vehicle trips would result in associated reductions in air quality impacts. Therefore, the overall air quality impacts of this alternative would be slightly less when compared to the proposed project. (Less impact)

Greenhouse Gas Emissions

The Expanding Bike Paths Alternative would result in modifications to the proposed Circulation Plan and Bikeway Plan to reflect the additional Class I bike paths in the City. The expanded Class I bike paths would result in a better bikeway circulation network within the City that would accommodate and facilitate using this nonvehicular mode of transportation within Mission Viejo. Availability and ease of access would encourage residents of the City to ride bikes instead of automobiles. Expansion of bike paths and bikeway connectivity would be expected to enhance bicycle opportunities, replacing some vehicular trips. Although the extent to which vehicle trips would be reduced by increased bicycle use is unknown, any reduction in vehicle trips would result in associated reductions in GHG impacts. Therefore, the overall GHG emission impacts of this alternative would be slightly less when compared to the proposed project. (Less impact)

Land Use and Planning

The Expanding Bike Paths Alternative would result in modifications to the proposed Circulation Plan and Bikeway Plan to reflect the additional Class I bike paths in the City.. From a land use standpoint, this alternative would be consistent with the overall sustainability vision of the Mission Viejo General Plan in addition to SCAG's most recently adopted SCS, which mandates and sets emission reduction targets and increases funding for bicycling and walking over threefold, from \$1.8 million to \$6.7 million. Additionally, increased bike ridership would promote a healthy community and quality of life for the residents of the City. So, this alternative would meet the objectives of the proposed project. Therefore, the overall land use impacts of this alternative would be similar compared to the proposed project. (Similar impact)

Noise

The Expanding Bike Lanes Alternative would result in modifications to the proposed Circulation Plan and Bikeway Plan to reflect the additional Class I bike paths in the City. The expanded Class



I bike paths would result in a better bikeway circulation network within the City that would accommodate and facilitate using this nonvehicular mode of transportation within Mission Viejo. Availability and ease of access would provide opportunities for residents of the City to ride bikes instead of driving automobiles. Although it is not feasible to quantify the vehicular reduction in light of expanded bikeways within the City, it is assumed expanded bikeways would be conducive to bike riding. An increase in bike ridership may reduce traffic trips within the City and the associated vehicular noise impacts. Therefore, the overall noise impacts of this alternative would be slightly less when compared to the proposed project. (Less impact)

Transportation and Traffic

The Expanding Bike Lanes Alternative would result in modifications to the proposed Circulation Plan and Bikeway Plan to reflect the additional Class I bike paths in the City. The expanded Class I bike paths would result in a better bikeway circulation network within the City that would accommodate and facilitate using this nonvehicular mode of transportation within Mission Viejo. Availability and ease of access would encourage residents of the City to ride bikes instead of driving automobiles. Although it is not feasible to quantify the vehicular reduction in light of expanded bikeways within the City, but it would not be speculative to assume expanded bikeways would be conducive to more residents riding bikes. Increased bike ridership would reduce traffic trips and congestion within the City. Therefore, the overall transportation and traffic impacts of this alternative would be slightly less when compared to the proposed project. (Less impact)

5.2.3.3 Conclusion

This alternative would implement the goals and policies of the proposed General Plan; however, the General Plan Circulation Plan would be revised to include additional bike paths for a total of 0.5 mile. This alternative proposes to increase Class I bike paths along major parks and open space corridors, providing additional connections throughout the City and reducing single occupancy vehicular trips. In addition to capturing vehicular trips, this alternative would further encourage leisure and recreational biking, improving quality of life for the residents, in line with sustainability goals and vision of the General Plan and SCAG's recently adopted SCS, described in Section 3.3, *Land Use*.

This Alternative meets the projects objectives and results in reduced vehicular trips and associated air quality, GH emissions and noise. Therefore, the Circulation Alternative would be environmental superior to the proposed project. However, the proposed level of bicycle path facilities within the City is a policy decision that is balanced by City decision makers with the need for other types of facilities and services. Therefore, the slight reduction in environmental impacts associated with this alternative may or may not be preferable when compared to other needed community facilities or services.



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CHAPTER 7 – PREPARERS OF THE ENVIRONMENTAL DOCUMENT

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Tim Byrne, PE, Associate Vice President



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APPENDICES

Appendix A-1

Notice of Preparation and Initial Study



CITY OF MISSION VIEJO

NOTICE OF PREPARATION AND PUBLIC SCOPING MEETING NOTICE

DATE: March 9, 2012

TO: Responsible Agencies, Other Interested Agencies, and Interested Parties

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report in Compliance with California Code of Regulations, Title 14 (CEQA Guidelines) Section 15082(e), 15103, 15375.

The City of Mission Viejo (City) will be the Lead Agency under the California Environmental Quality Act (CEQA) in the preparation of the environmental impact report (EIR) for the project identified below.

Agencies: The City requests review by your agency regarding the scope and content of the environmental information, which will be included in the EIR. The environmental document to be prepared by the City of Mission Viejo should include any information necessary for your agency to meet any statutory responsibilities related to the proposed project. Your agency would need to use the EIR prepared by the City of Mission Viejo when considering any permit or other approvals necessary to implement the project.

Organizations and Interested Parties: Comments and concerns regarding the environmental issues associated with construction and build-out of this project are requested from organizations and individuals.

CEQA requires a 30-day public review of the Notice of Preparation (March 19 through April 19, 2012). *Due to the time limits mandated by State law, your response must be sent to the City at the earliest possible date but not later than 30 days after receipt of this notice.* Copies of the NOP are available for Public Review at the following locations:

City of Mission Viejo
Community Development Department/Public Counter
200 Civic Center
Mission Viejo, CA 92691

Mission Viejo Library
Reference Desk
100 Civic Center
Mission Viejo, CA 92691

Comments should be made in writing and submitted to:

Mr. Charles E. Wilson, AICP
Director of Community Development
City of Mission Viejo
200 Civic Center
Mission Viejo, California 92691
Phone (949) 470-3053
Facsimile (949) 951-6176

Agency responses to this NOP should include the name of a contact person within the commenting agency.

For the convenience of the interested parties, two public scoping meetings will be held on **Monday, April 2, 2012**, and will include a brief Project overview and discussion of environmental topic issues. The meetings will be held at **2:00 p.m.** and **6:00 p.m.** or soon thereafter, in the City of Mission Viejo Council Chamber located at 200 Civic Center in Mission Viejo. All parties are welcome to attend and present environmental information that they believe should be addressed in the EIR. If you require additional information, please contact the City of Mission Viejo Community Development Department at (949) 470-3053.

PROJECT LOCATION: The proposed project encompasses the City of Mission Viejo, which is located east of the Cities of Laguna Hills and Laguna Niguel, north of the City of San Juan Capistrano, west of the City of Rancho Santa Margarita and unincorporated communities of Ladera Ranch and Coto de Caza, and south of the City of Lake Forest. The City of Mission Viejo and the surrounding cities are suburban in nature with mainly residential uses. The City of Mission Viejo is located approximately 8 miles northeast of the Pacific Ocean, 6 miles west of the Santa Ana Mountains, and approximately 10 miles east of the Crystal Cove State Park.

PROJECT DESCRIPTION: The project is an update of the City of Mission Viejo's General Plan Land Use, Conservation/Open Space and Circulation Elements, and a Sustainability Action Plan. The Sustainability Action Plan will include greenhouse gas emissions (GHG) reduction goals and measures, actions to implement the measures, and metrics to monitor the plan and measure its performance.

If you have any questions related to the proposed project, review process, environmental documentation, or scoping meeting, or if further information is desired, you may contact the Community Development Department at (949) 470-3053.

C.E.W.

Charles E. Wilson, AICP
Director of Community Development

Send proof of publication to:
City of Mission Viejo
200 Civic Center
Mission Viejo, CA 92691
Publish: March 16, 2012



City of Mission Viejo
General Plan Update &
Sustainability Action Plan

California Environmental Quality Act
(CEQA) Initial Study

March 2012

Lead Agency:
City of Mission Viejo
200 Civic Center
Mission Viejo, CA 92691

Prepared By:
AECOM
2737 Campus Drive
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SECTION 1.0 PROJECT DESCRIPTION

1.1 OVERVIEW OF THE PROJECT

The City of Mission Viejo (City) initiated a comprehensive update to their General Plan in 2007. The following are the General Plan elements updated by City staff: Land Use, Conservation/Open Space, and Circulation. It was determined that an environmental impact report (EIR) would be required for the proposed update to the Land Use, Conservation/Open Space, and Circulation Elements; therefore, the proposed project includes the preparation of a program EIR to analyze the impacts related to the comprehensive update of the General Plan's Land Use, Conservation/Open Space, and Circulation elements, as well as the preparation of a Sustainability Action Plan and the related update to the Conservation/Open Space Element. Climate change goals, policies, and implementation measures would be introduced into the Conservation/Open Space Element to provide a strong foundation for the Sustainability Action Plan. The Sustainability Action Plan will be prepared as the primary document designed to implement and achieve such climate change goals and policies.

1.2 PROJECT BACKGROUND

The City of Mission Viejo is located in the south-central portion of Orange County, as shown in Figure 1, Regional Location, and Figure 2, Project Vicinity. Development of the community began in 1965 when a master plan for Mission Viejo was approved by the Orange County Board of Supervisors. Land uses consisted of residential, commercial, industrial, recreational, and public uses designed to meet the growing population of the City. The first General Plan for the City was adopted on October 8, 1990, along with its accompanying EIR. The General Plan was prepared to address issues related to future growth and development in the City of Mission Viejo, while providing a general long-term approach for maintaining and improving the quality of life in the community.

California State law requires each city and county to adopt a comprehensive, long-term general plan for its own physical change, to serve as a blueprint for future growth and development. The general plan must contain policies and programs designed to provide decision makers with a solid basis for land use-related issues. In addition to land use, California law requires the plan to address circulation, housing, conservation of natural resources, preservation of open space, noise environment, and protection of public safety (California Government Code Section 65302). The City of Mission Viejo's General Plan consists of nine elements: Land Use, Housing, Circulation, Conservation/Open Space, Public Safety, Noise, Public Facilities, Economic Development, and Growth Management.

In compliance with California law, the City had initiated a comprehensive update to the General Plan in 2007 to provide an update of five (5) elements. As discussed in section 1.1, the comprehensive update included the Land Use, Noise, Conservation/Open Space, Circulation, and Public Safety elements. The Housing Element is not part of the update since it was updated during a separate process.

After submittal of the comprehensive General Plan update to the Planning and Transportation Commission for review, the planning staff consulted with the California

Office of the Attorney General regarding compliance with Assembly Bill (AB) 32 and environmental processing of the comprehensive update. It was determined that an EIR would be required for the proposed update to the Land Use, Conservation/Open Space, and Circulation Elements, and the existing Negative Declaration would be used to process the update to the Noise and Public Safety elements. City Council subsequently adopted the updated Noise and Public Safety elements on February 2, 2009. Therefore, this proposed project will include a program EIR that would analyze the update to the General Plan's Land Use, Conservation/Open Space, and Circulation elements, as well as the preparation of the Sustainability Action Plan and the related update to the Conservation/Open Space element.

The City's draft Land Use, Conservation/Open Space, and Circulation elements have been updated by City staff, with the following objectives: 1) to correct outdated references in the elements' narrative; 2) to update and correct outdated text, tables, and maps; 3) to review and revise as appropriate the goals and policies of the elements; and 4) to make editorial revisions.

1.3 PROPOSED ACTIONS

The proposed project requires compliance with California Environmental Quality Act (CEQA) and City approval of the program EIR for the update to three (3) of the elements of the General Plan (Land Use, Conservation/Open Space, and Circulation), as well as the preparation of the Sustainability Action Plan and the related update to the Conservation/Open Space element.

The comprehensive update to the General Plan includes the following components:

1) Land Use Element

- The Public Facilities Element has been incorporated into the Land Use Element
- Additional land use plans and programs
- Goals and policies related to law enforcement and protection
- Goals and policies related to the public services such as fire protection, police protection, and emergency services
- Goals and policies related to public and cultural facilities such as the Mission Viejo Civic Center educational facilities, parks and libraries
- Goals and policies related to public utilities and infrastructure such as water, sewer, storm drainage, urban runoff, solid waste, natural gas, electricity, and communities
- Land use related to airport land use consistency
- Additional Specific Plan study area

2) Conservation/Open Space Element

- Additional conservation and open space plans and programs

- Goals, policies and measures related to the ecological and biological resources
 - Goals, policies and measures related to the cultural and historic resources
 - Goals and policies related to park, recreation, and open space
 - Goals and policies related to water supply and conservation, water quality, storm water, and urban runoff management
 - Goals and policies related to air quality, climate change, energy conservation and green building practices
 - Update based on the Sustainability Action Plan
- 3) Circulation Element
- Addition of a Bikeway Plan depicting the City's bicycle network
- 4) In addition, the City is preparing a Sustainability Action Plan to address greenhouse gas (GHG) emission reductions in a manner consistent with Assembly Bill (AB) 32. The Sustainability Action Plan will be prepared to meet requirements for a plan to reduce GHG emissions as described in CEQA Guidelines Section 15183.5.

1.4 STATUTORY AUTHORITY

CEQA applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. The proposed project constitutes a project as defined by CEQA (California Public Resources Code Sections 21000 et seq.). The City of Mission Viejo is the lead agency for compliance with CEQA because pursuant to CEQA Guidelines Section 15367, "Lead Agency" means the public agency which has the principal responsibility for carrying out or approving a project." Additionally, City of Mission Viejo procedures and case law provide guidance to this Initial Study.

Based on the information and analysis contained in this Initial Study, the City of Mission Viejo, as the lead agency, has determined that an EIR would be the proper level of analysis for this project. This conclusion is supported by CEQA Guidelines Section 15063, which states an EIR can be prepared when "the agency determines that there is substantial evidence that any aspect of the project, either individually or cumulatively, may cause a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial." In compliance with CEQA Guidelines Section 15063, the City has prepared an Initial Study to determine if the project may have a significant effect on the environment. The Initial Study checklist form and explanation discussion format meets the requirements of CEQA. Section 15063(d)(3) requires that the entries of the Initial Study checklist identifying environmental effects be briefly explained to indicate that there is some evidence to support the entries. An Initial Study may rely upon expert opinion supported by facts, technical studies, or other substantial evidence to document its findings. An Initial Study is not intended nor required to include a level of detail that would be provided in an EIR.



Figure 1
Regional Location Map

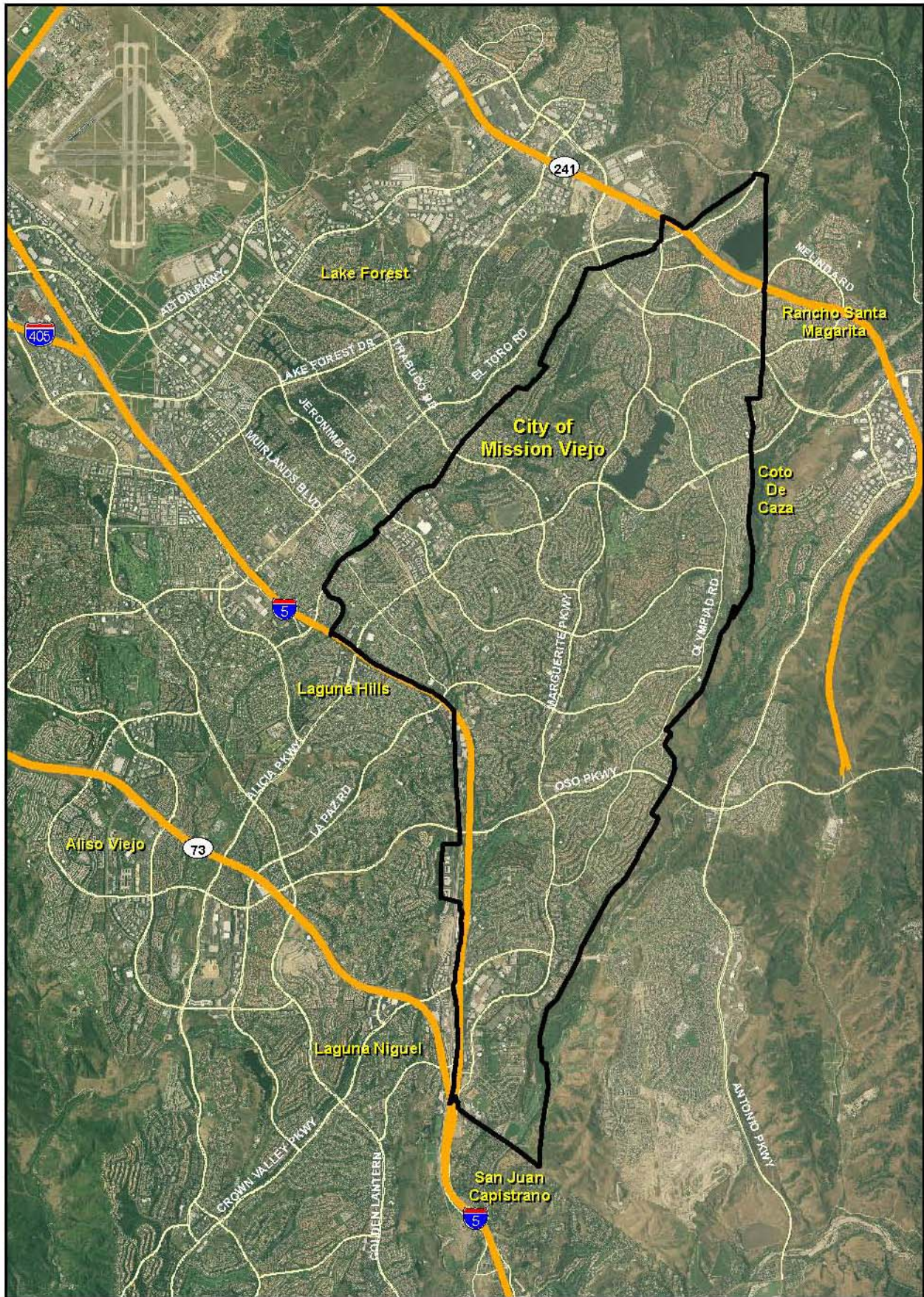


Figure 2
Project Vicinity Map

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SECTION 2.0 INITIAL STUDY CHECKLIST

The initial step in the City's environmental evaluation is the completion of an Environmental Checklist (also known as an "Initial Study") to identify known or potential impacts and eliminate environmental issues that are not relevant to the proposed project, as discussed in Section 2.0. The Initial Study checklist questions are the same as those contained in Appendix G of the CEQA Guidelines. After each issue listed on the checklist, the City has marked "potentially significant impact," "less than significant with mitigation incorporated," "less than significant," or "no impact" depending on the potential of the project to have adverse impacts. If it is determined that the project may have a significant effect on the environment, an EIR will be prepared that focuses on the areas of concern identified by this Initial Study.

The following Initial Study Checklist form was completed in accordance with the City of Mission Viejo's Environmental Checklist Form (revised March 18, 2010) and Section 15063(d) of the CEQA Guidelines (2010).

1. **Project Title:** *City of Mission Viejo General Plan Update and Sustainability Action Plan*
2. **Lead Agency Name and Address:** City of Mission Viejo, 200 Civic Center, Mission Viejo, CA 92691
3. **Contact Person and Phone Number:** Elaine Lister (949) 470-3053
4. **Project Location:** City of Mission Viejo, Orange County, California
5. **Project Sponsor's Name and Address:** Same as Lead Agency
6. **General Plan Designation:** Please see *City of Mission Viejo General Plan* for citywide designations.
7. **Zoning:** Please see *City of Mission Viejo Municipal Code* for citywide zoning.
8. **Description of Project:** The project is an update of the City's General Plan Land Use, Conservation/Open Space and Circulation Elements, and a Sustainability Action Plan. The Sustainability Action Plan will include greenhouse gas emissions (GHG) reduction goals and measures, actions to implement the measures, and metrics to monitor the plan and measure its performance.
9. **Surrounding Land Uses and Setting:** The City of Mission Viejo is located east of the Cities of Laguna Hills and Laguna Niguel, north of the City of San Juan Capistrano, west of the City of Rancho Santa Margarita and unincorporated communities of Ladera Ranch and Coto de Caza, and south of the City of Lake Forest. The City of Mission Viejo and the surrounding cities are suburban in nature with mainly residential uses. The City of Mission Viejo is located approximately 8 miles northeast of the Pacific Ocean, 6 miles west of the Santa Ana Mountains, and approximately 10 miles east of the Crystal Cove State Park.

10. Other public agencies whose approval is required: (e.g., permits, financing approval, or participation agreement.) Not applicable.

11. Sources relied upon in the preparation of environmental checklist:

- *City of Mission Viejo General Plan*
- *City of Mission Viejo Municipal Code*
- *City of Mission Viejo General Plan GPA2007-27 Comprehensive Update Initial Study & Negative Declaration, November 2007*

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below (■) would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

	Aesthetics		Agriculture and Forestry Resources	■	Air Quality
	Biological Resources		Cultural Resources		Geology / Soils
■	Greenhouse Gas Emissions		Hazards & Hazardous Materials		Hydrology / Water Quality
■	Land Use / Planning		Mineral Resources	■	Noise
	Population / Housing		Public Services		Recreation
■	Transportation / Traffic		Utilities / Service Systems	■	Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	
I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	■
I find that the proposed project MAY have a “potential significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	

Signature

Date

Printed Name

For

EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
- 4) “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses,” as described in (5) below, may be cross-referenced).
- 5) Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c)(3)(D). In this case, a brief discussion should identify the following:
 - (a) Earlier Analysis Used. Identify and state where they are available for review.
 - (b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - (c) Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The analysis of each issue should identify: (a) the significance criteria or threshold used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance.

	Potentially Significant Impact	Less than Significant After Mitigation Incorporated	Less than Significant Impact	No Impact
1. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?			■	
b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?			■	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			■	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			■	
2. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use?				■
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			■	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?			■	
d) Result in the loss of forest land or conversion of forest land to non-forest use?				■
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				■
3. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	■			
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.	■			
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-	■			

	Potentially Significant Impact	Less than Significant After Mitigation Incorporated	Less than Significant Impact	No Impact
attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?				
d) Expose sensitive receptors to substantial pollutant concentrations?	■			
e) Create objectionable odors affecting a substantial number of people?			■	
4. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?			■	
b) Have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U. S. Wildlife Service?			■	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			■	
d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?			■	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			■	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?			■	
5. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?			■	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?			■	
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			■	
d) Disturb any human remains, including those interred outside of formal cemeteries?			■	
6. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				

	Potentially Significant Impact	Less than Significant After Mitigation Incorporated	Less than Significant Impact	No Impact
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			■	
(ii) Strong seismic ground shaking?			■	
(iii) Seismic-related ground failure, including liquefaction?			■	
(iv) Landslides?			■	
(b) Result in substantial soil erosion or the loss of topsoil?			■	
(c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			■	
(d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			■	
(e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				■
7. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	■			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	■			
8. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?			■	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?			■	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			■	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				■
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				■

	Potentially Significant Impact	Less than Significant After Mitigation Incorporated	Less than Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				■
g) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?			■	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			■	
9. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?			■	
b) Substantially degrade groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			■	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			■	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or surface runoff in a manner which would result in flooding on- or off site?			■	
e) Create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			■	
f) Otherwise substantially degrade water quality?			■	
g) Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			■	
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			■	
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			■	
j) Inundation by seiche, tsunami, or mudflow?				■

	Potentially Significant Impact	Less than Significant After Mitigation Incorporated	Less than Significant Impact	No Impact
k) Could the proposed project result in an increase in pollutant discharges to receiving waters? Consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical storm water pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash).			■	
l) Could the proposed project result in significant alterations of receiving water quality during or following construction?			■	
m) Could the proposed project result in increased impervious surfaces and associated increased runoff?			■	
n) Could the proposed project create a significant adverse environmental impact to drainage patterns due to changes in runoff flow rates or volumes?			■	
o) Could the proposed project result in increased erosion downstream?			■	
p) Is the project tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, can it result in an increase in any pollutant for which the water body is already impaired?			■	
q) Is project tributary to other environmentally sensitive areas? If so, can it exacerbate already existing sensitive conditions?			■	
r) Could the proposed project have a potentially significant environmental impact on surface water quality, to either marine, fresh, or wetland waters?			■	
s) Could the proposed project have a potentially significant adverse impact on ground water quality?			■	
t) Could the proposed project cause or contribute or exceed applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses?			■	
u) Can the project impact aquatic, wetland, or riparian habitat?			■	
10. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?			■	
b) Conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	■			
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	■			
11. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				■
b) Result in the loss of availability of a locally-important				■

	Potentially Significant Impact	Less than Significant After Mitigation Incorporated	Less than Significant Impact	No Impact
mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				
12. NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	■			
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	■			
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	■			
d) A substantially temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	■			
e) For a project located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				■
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				■
13. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			■	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			■	
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			■	
14. PUBLIC SERVICES. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?			■	
ii) Police protection?			■	
iii) Schools?			■	
iv) Parks?			■	
v) Other public facilities?			■	
15. RECREATION.				
a) Would the project increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the			■	

	Potentially Significant Impact	Less than Significant After Mitigation Incorporated	Less than Significant Impact	No Impact
facility would occur or be accelerated?				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			■	
16. TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	■			
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	■			
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				■
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?			■	
e) Result in inadequate emergency access?	■			
f) Conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	■			
17. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			■	
b) Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			■	
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			■	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			■	
e) Result in a determination by the wastewater treatment provider which services or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			■	
f) Be served by a landfill with sufficient permitted capacity			■	

	Potentially Significant Impact	Less than Significant After Mitigation Incorporated	Less than Significant Impact	No Impact
to accommodate the project's solid waste disposal needs?				
g) Comply with federal, state, and local statutes and regulations related to solid waste?			■	
18. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?			■	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects)?	■			
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	■			

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SECTION 3.0 ENVIRONMENTAL ANALYSIS

The following discussion addresses impacts to various environmental resources and provides explanations for the conclusions contained in the Initial Study Checklist for the proposed project.

3.1. AESTHETICS

Would the project:

a) Have a substantial adverse effect on a scenic vista?

Less than Significant Impact. The proposed project consists of a general plan update and Sustainability Action Plan. The Land Use Element update includes additional goals and policies regarding public services and utilities and provides an overall plan for physical alterations and/or development of properties within Mission Viejo, but does not identify specific development proposals. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City.

The Conservation/Open Space Element update provides direction regarding the conservation, development and utilization of natural resources and open space. Policy 3.7 has been updated to further discuss the preservation of views of significant scenic value, as follows:

Policy 3.7: Preserve views of significant value along streets and highways that adjoin such areas as a lake, hillside, ridgeline, creek, open space, or recreational area.

The proposed project provides an overall plan for development that could affect a view of significant value or conflict with Policy 3.7 but does not identify specific development proposals. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Future development of any property would be required to comply with the City's development standards governing scenic vistas.

The Circulation Element update includes additional information regarding Issue Area 5: Bicycle, Pedestrian and Equestrian Facilities. The Circulation Element discusses the designation of Oso Parkway as a scenic highway by the County of Orange's Master Plan of Scenic Highways. The proposed project provides an overall plan of development, but does not identify specific development proposals for any properties within the viewshed of Oso Parkway at this time. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration.

Since the proposed project does not propose any physical modifications to properties (i.e., grading, construction, etc.), there would not be a substantial adverse effect on a scenic vista.

The Sustainability Action Plan may include provisions for the use of alternative sources of energy, including solar and wind. Solar panels or wind turbines might create an aesthetic impact, but Policy 3.7 described above would control the extent of such impacts by preserving valuable views along streets and highways that adjoin lakes, hillsides, ridgelines, creeks, open space and recreational areas. Therefore, a less than significant impact would occur.

b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

Less than Significant Impact. As discussed in 3.1(a), Oso Parkway is designated as a scenic highway. The proposed project does not authorize any physical alterations and/or development of any properties within the viewshed of Oso Parkway at this time. The proposed project would not have a significant impact to any scenic resources such as trees, rock outcroppings, and historic buildings within a state scenic highway. In addition, updates to the Land Use and Circulation Elements would not include any physical modifications to properties (i.e., grading, construction, etc.). Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Future development of any property, including alternative sources of energy such as solar and wind, would be required to comply with the City's development standards governing scenic resources. A less than significant impact would occur.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. As discussed in 3.1(a), the proposed project does not authorize any physical alterations and/or development of any properties at this time. However, implementation of the Land Use, Conservation/Open Space, and Circulation Elements would include physical modifications to properties (i.e., grading, construction, etc.) as future development projects that are consistent with these Elements are constructed. It is not anticipated that the proposed project would substantially impact the existing visual character or quality of the site and its surroundings, however, these future development projects would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Additionally, future development of any property, including alternative sources of energy such as solar and wind, would be required to comply with the City's development standards governing visual character or quality of a site. Therefore, a less than significant impact would occur.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant Impact. As discussed in 3.1(a), the proposed project does not authorize any physical alterations and/or development of any properties at this time. However, implementation of the Land Use, Conservation/Open Space, and Circulation Elements would include physical modifications to properties (i.e., grading, construction, etc.) as future development projects would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Future development of any property, including alternative sources of energy such as solar and wind, would be required to comply with the City's development standards governing light or glare. Therefore, less than significant light or glare impacts would occur as a result of this project.

3.2. AGRICULTURE AND FOREST RESOURCES

Would the project:

- a) **Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use?**

No Impact. The Land Use Element update includes the applicability of the state-mandated Orange County Local Agency Formation Commission (OC LAFCO), which promotes the preservation of open space and agricultural lands. The City of Mission Viejo does not contain any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance¹; therefore, the proposed project would not involve the conversion of any farmland to nonagricultural use. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies, and the Sustainability Action Plan would not involve the conversion of any farmland to nonagricultural use. No impact would occur to agricultural resources.

- b) **Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

Less than Significant Impact. As discussed in 3.2(a), the City of Mission Viejo does not contain any Williamson Act contract lands or lands zoned for agricultural use. In addition, implementation of the proposed project, including updates to the Land Use, Conservation/Open Space, and Circulation Elements, does not authorize any physical alterations and/or development of any properties at this time; therefore, it would not conflict with zoning for agricultural use or a Williamson Act contract, nor would they conflict with the OC LAFCO. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not conflict with zoning for agricultural use or a Williamson Act contract, nor would the Sustainability Action Plan conflict with the OC LAFCO. Therefore, impacts would be less than significant.

- c) **Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?**

Less than Significant Impact. The City of Mission Viejo does not contain forest land or timberland. In addition, implementation of the proposed project, including updates to the Land Use, Conservation/Open Space, and Circulation Elements, does not authorize any physical alterations and/or development of any properties at this time; therefore, it would not conflict with zoning for forest land, timberland, or timberland-zoned Timberland Production. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not conflict with zoning for agricultural use or a Williamson Act contract, nor would the Sustainability Action Plan conflict with the OC LAFCO. Potential future development would be subject to further

¹ California Department of Conservation, Farmland Mapping and Monitoring Program. *Orange County Important Farmland 2010*, located at http://redirect.conservation.ca.gov/DLRP/fmmp/county_info_results.asp. Accessed September 9, 2011.

discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Therefore, impacts would be less than significant.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. As discussed in 3.2(c), the City of Mission Viejo does not contain forest land. In addition, implementation of the proposed project, including updates to the Land Use, Conservation/Open Space, and Circulation Elements and preparation of a Sustainability Action Plan, does not authorize any physical alterations and/or development of any properties at this time; therefore, it would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact. As discussed above, the City of Mission Viejo does not contain Farmland, lands zoned for agricultural use, or forest lands. Therefore, no impact would occur.

3.3. AIR QUALITY

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant Impact. The Conservation/Open Space Element update includes the addition of air quality as a topic of discussion in order to address reducing pollutant levels through stationary source, mobile source, transportation and land use control, and energy conservation measures. Applicable air quality plans include the South Coast Air Quality Management Plan, which includes a comprehensive analysis of future emission forecasts for the South Coast Air Basin (SCAB) that includes the build-out of Mission Viejo; and the City of Mission Viejo Green Building Program, which includes requirements for better indoor air quality. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies, including methodologies related to air quality. The proposed project's consistency with these applicable air quality plans and programs will be further analyzed in the EIR.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potentially Significant Impact. According to the Conservation/Open Space Element update, air quality within the SCAB does not meet state and federal standards.

As part of the EIR, air quality impacts will be analyzed in accordance with South Coast Air Quality Management District (SCAQMD)-recommended methodologies and standards. Increases in air pollutant and precursor emissions, and exposure to TACs and odors will be compared with applicable thresholds. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies, including methodologies related to air quality. This issue will be analyzed further in the EIR.

- c) **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

Potentially Significant Impact. As discussed in 3.3(a), the proposed project's consistency with the regional South Coast Air Quality Management Plan will be further analyzed in the EIR. The air quality analysis will include short-term increases in criteria air pollutants and precursor emissions, long-term regional criteria air pollutants and precursor emissions, long-term local mobile-source impacts from carbon monoxide, short- and long-term TAC emissions, and potential exposure of existing and proposed sensitive uses to existing and proposed odor sources and pollutant concentrations, respectively. The region is non attainment for ozone, PM10 and PM2.5. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies, including methodologies related to air quality. The project's contribution to the regional criteria pollutants and cumulative air quality impact will be analyzed further in the EIR.

- d) **Expose sensitive receptors to substantial pollutant concentrations?**

Potentially Significant Impact. The air quality analysis will include potential exposure of existing and proposed sensitive uses to existing and proposed air pollutant emission sources, respectively. Short- and long-term TAC emissions will be assessed for the potential to result in the exposure of existing sensitive uses to levels that exceed the recommended thresholds. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not expose sensitive receptors to substantial pollutant concentrations. This issue will be analyzed further in the EIR.

- e) **Create objectionable odors affecting a substantial number of people?**

Less than Significant Impact. Updates to the Land Use, Conservation/Open Space, and Circulation Elements provide an overall plan for physical alterations and/or development of properties within Mission Viejo, but do not identify specific development proposals. The City does not anticipate that the proposed project would create objectionable odors; however, future development projects would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not create objectionable odors. Therefore, a less-than-significant impact would occur.

3.4. BIOLOGICAL RESOURCES

Would the project:

- a) **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?**

Less than Significant Impact. The City of Mission Viejo contains many important ecological and biological resources, such as Aliso, Oso, and Trabuco Creeks, the oak

woodland, and the coast Live Oak (*Quercus agrifolia*), which was named the Official City Tree by the City Council on April 9, 1990. The Conservation/Open Space Element update includes Goal 1, and related policies, to “protect and enhance the significant ecological and biological resources within and surrounding the community”. The City is committed to work with the U.S. Fish and Wildlife Service to pursue grant funding to create a Habitat Conservation Plan for portions of the City. The City desires to improve open spaces to assist in the protection of sensitive plants, animals, and their habitats in the City.

The proposed project consists of a general plan update and Sustainability Action Plan and would provide an overall plan of development but does not identify specific development proposals for any properties at this time that would physically alter habitat and/or wildlife resources. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to habitats or species, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would provide adaptation strategies focused on the preservation of critical habitat areas. Therefore, impacts to biological resources in general, and candidate, sensitive or special status species in particular would be less than significant. This issue will not be analyzed further in the EIR.

b) Have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U. S. Wildlife Service?

Less than Significant Impact. The three riparian corridors that exist within the City occur along the Aliso Creek, north of the Upper Oso Reservoir, along portions of Oso Creek, and along Trabuco Creek which runs through the southeast edge of the City. The regionally significant riparian corridors along Aliso and Trabuco Creeks begin in the Cleveland national forest and terminate at the Pacific Ocean. Riparian open space also exists along Oso Creek which extends from Lake Mission Viejo to west of Interstate 5. The proposed project consists of a general plan update and Sustainability Action Plan and does not include any physical alterations and/or development of any properties at this time that would physically alter riparian habitat and/or wildlife resources. In addition, the City is committed to work with the U.S. Fish and Wildlife Service to pursue grant funding to create a Habitat Conservation Plan for portions of the City.

As discussed in 3.4(a), the proposed project does not authorize any physical alterations and/or development of any properties at this time. However, implementation of the Land Use, Conservation/Open Space, and Circulation Elements would include physical modifications to properties (i.e., grading, construction, etc.) as future development projects would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to habitats or species, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would provide adaptation strategies focused on the preservation of critical habitat areas. Therefore, impacts to biological

resources in general and riparian or other sensitive natural communities in particular would be less than significant.

- c) **Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

Less than Significant Impact. The Conservation/Open Space Element update includes Goal 1 along with policies related to the preservation and protection of natural plant and animal communities including wetlands. Updates to the Land Use, Conservation/Open Space, and Circulation Elements would not include any physical modifications to properties (i.e., grading, construction, etc.). Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to federally protected wetlands, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would provide adaptation strategies focused on the preservation of critical habitat areas. Therefore, impacts to wetlands would be less than significant.

- d) **Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

Less than Significant Impact. As discussed in 3.4(a), the Conservation/Open Space Element update includes Goal 1 along with policies related to the preservation and protection of natural plant and animal communities, including resident or migratory fish or wildlife species, established native resident migratory wildlife corridors, and native wildlife nursery sites. In particular, Policy 1.5 states the following:

Policy 1.5: Establish and manage wildlife habitat corridors within public parks and natural resource protection areas where appropriate to allow for wildlife use.

The proposed project provides an overall plan for physical alterations and/or development of properties within Mission Viejo but does not identify any specific development proposals. However, implementation of the Land Use, Conservation/Open Space, and Circulation Elements are not anticipated to substantially impact any resident or migratory fish or wildlife species, or established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites because these future development projects would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to the movement of any resident or migratory species, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would provide adaptation strategies focused on the preservation of critical habitat areas. Therefore, less than significant impacts would occur.

- e) **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

Less than Significant Impact. The Conservation/Open Space Element update includes policies protecting biological and natural resources within the City. The proposed project provides an overall plan of development but does not identify specific development proposals for any properties that would impact biological resources. Potential future development would need to be consistent with these policies and would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not conflict with any local policies or ordinances protecting biological resources. Therefore, impacts would be less than significant.

- f) **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?**

Less than Significant Impact. The City currently participates in regional and state efforts for Natural Community Conservation Plan/Habitat Conservation Plan Programs (NCCP)/(HCP) for multi-species habitat protection. In addition, the City will work with the U.S. Fish and Wildlife Service to pursue grant funding to create a Habitat Conservation Plan for portions of the City that would protect, restore, and manage open space lands within the City while allowing for needed urban development. The Habitat Conservation Plan will include the placement of conservation easements on property identified by the City to be protected from future development; maintain or improve the status of threatened and endangered species and assist in eliminating the need for future listings of species under the Federal and State Endangered Species Acts; benefit the federally threatened coastal California gnatcatcher and the federally and state endangered least Bell's vireo; and benefit other native plants and animals and be complementary to the recently completed Orange County Southern Subregion Habitat Conservation Plan. The City desires to improve open spaces to assist in the protection of sensitive plants, animals, and their habitats in the City. Implementation of the Land Use, Conservation/Open Space, and Circulation Elements would include physical modifications to properties (i.e., grading, construction, etc.) as future development projects that are consistent with these Elements are constructed. It is not anticipated that the proposed project would impact biological resources that would be subject to a conservation plan, however, these future development projects would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not conflict with any local policies or ordinances protecting biological resources. Therefore, less than significant impacts would occur.

3.5. CULTURAL RESOURCES

Would the project:

- a) **Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?**

Less than Significant Impact. The City contains riparian corridors and lands that may contain cultural resources, mainly located along the City's eastern border in undeveloped areas. According to the Conservation/Open Space Element, studies associated with the Foothill Transportation Corridor have identified lands that contain archaeological and paleontological resources. The lands surrounding the Upper Oso Reservoir contain a high potential for historical and cultural resources for the area. The Conservation/Open Space Element update includes goals and policies geared towards the protection of natural and cultural resources, including Policy 1.2 which states the following:

Policy 1.2: Utilize a development review process to mitigate the impacts of development on sensitive lands such as steep slopes, wetlands, cultural resources, oak woodlands and sensitive habitats.

In addition, the Land Use Element update includes a citywide comprehensive strategy for planning, management, and implementation of public facilities including cultural facilities such as libraries, museums, and art galleries. The Community Facility land use designation contains recreational and/or cultural facilities.

Updates to the Land Use, Conservation/Open Space, and Circulation Elements would not conflict with the goals and policies of the General Plan, including Policy 1.2, and would not conflict with current land use designations for cultural facilities. The proposed project consists of a general plan update and Sustainability Action Plan. The proposed project provides an overall plan for but does not identify specific development proposals that could change the significance of a cultural or historic resource at this time. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not cause a substantial adverse change in the significance of a historical resource. Therefore, impacts to cultural and historical resources would be less than significant.

- b) **Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?**

Less than Significant Impact. As discussed in 3.5(a), lands have been identified in the City that contain archaeological and paleontological resources. Updates to the Land Use, Conservation/Open Space, and Circulation Elements do not identify specific development proposals that would change the significance of an archaeological resource. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not cause a substantial

adverse change in the significance of a archaeological resource. Therefore, the proposed project would have less than significant impacts to archaeological resources.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant Impact. As discussed in 3.5(a), the proposed project consists of a general plan update and Sustainability Action Plan and provides an overall plan for development of properties within Mission Viejo. Implementation of the Land Use, Conservation/Open Space, and Circulation Elements do not identify specific development proposals that would directly or indirectly destroy a unique paleontological resource, sites or geologic feature at this time. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not directly or indirectly affect a unique paleontological resource or site or geologic feature. Therefore, the proposed project would have less than significant impacts to paleontological or geologic resources.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant Impact. As discussed in 3.5(a), updates to the Land Use, Conservation/Open Space, and Circulation Elements would not authorize any physical modifications to properties (i.e., grading, construction, etc.) that would disturb human remains at this time as future development projects would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not disturb any human remains. Therefore, impacts to human remains would be less than significant.

3.6. GEOLOGY AND SOILS

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than Significant Impact. The City of Mission Viejo is located in the seismically active region of Southern California. There are numerous known earthquake faults in Southern California, including the Whittier, Norwalk, El Modena, Sierra Madre, Newport-Inglewood, San Andreas, and Elsinore faults. The Conservation/Open Space Element update includes Policy 1.1 that discusses the need for appropriate development techniques for grading as well as soil management practices, as follows:

Policy 1.1: *Preserve and protect important natural plant and animal communities and their associated habitats, such as areas supporting rare and endangered species, riparian areas, wildlife movement corridors, wetlands, and significant tree stands through appropriate site planning and grading techniques, revegetation, and soil management practices and other resource management techniques.*

However, updates to the Land Use, Conservation/Open Space, and Circulation Elements would not authorize any physical modifications to properties (i.e., grading, excavation, etc.) or specific development proposals at this time that would expose people or structures to adverse effects associated with the rupture of a known earthquake fault. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City, and would be subject to all applicable federal, state, and local codes relative to seismic criteria. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not expose people or structures to potential substantial adverse effects. Therefore, impacts related to risk of loss, injury, or death involving earthquake fault rupture would be less than significant.

ii) Strong seismic ground shaking?

Less than Significant Impact. As discussed in 3.6(a), there are numerous known earthquake faults in the Southern California area, which could produce significant ground shaking. However, updates to the Land Use, Conservation/Open Space, and Circulation Elements would not authorize any physical modifications to properties (i.e., grading, excavation, etc.) or specific development proposals at this time that would expose people or structures to adverse effects associated with strong seismic ground shaking. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City, and all potential future development would be subject to all applicable federal, state, and local codes relative to seismic criteria. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not expose people or structures to potential substantial adverse effects. Therefore, impacts related to risk of loss, injury, or death involving seismic ground shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact. According to California Geological Survey, there are areas within the City of Mission Viejo that are considered “Liquefiable Areas,” which could produce seismic-related ground failure including liquefaction.² The proposed project provides an overall plan for development but does not identify specific development proposals for any properties within Mission Viejo. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration, and would be subject to all applicable federal, state, and local codes relative to seismic criteria. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not

² Department of Conservation, California Geological Survey. *Seismic Hazards Zones*. Website: <http://www.conservation.ca.gov/cgs/shzp/Pages/Index.aspx>, accessed May 3, 2010.

expose people or structures to potential substantial adverse effects. Therefore, impacts related to risk of loss, injury, or death involving seismic-related ground failure would be less than significant.

iv) Landslides?

Less than Significant Impact. According to the California Geological Survey, there are areas within the City of Mission Viejo that may be susceptible to landslides.³ However, the proposed project does not authorize any physical alterations and/or development of any properties at this time. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration, and would be subject to all applicable federal, state, and local codes relative to seismic criteria. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not expose people or structures to potential substantial adverse effects. Therefore, impacts related to risk of loss, injury, or death involving landslides would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. As discussed in 3.6(a)(i), the Conservation/Open Space Element update includes Policy 1.1 that discusses the need for appropriate development techniques for grading as well as soil management practices. The proposed project provides an overall plan for development within Mission Viejo but does not identify specific development proposals that would result in substantial soil erosion or the loss of topsoil. Updates to the Land Use, Conservation/Open Space, and Circulation Elements would not involve any development activities (i.e., grading, excavation, etc.). Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration, and all potential future development would be subject to all applicable federal, state, and local codes relative to soil erosion or the loss of topsoil. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not result in substantial soil erosion or the loss of topsoil. Therefore, impacts related to soil erosion would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact. As discussed in 3.6(a)(iii), the City of Mission Viejo includes possible liquefaction areas. In addition, the Conservation/Open Space Element update includes Policy 1.1 that discusses the need for appropriate development techniques for grading as well as soil management practices. However, the proposed project does not authorize any physical alterations and/or development of any properties at this time. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration, and all potential future development would be subject to all applicable federal, state, and local codes relative to unstable soils and

³ Department of Conservation, California Geological Survey. *Seismic Hazards Zones*. Website: <http://www.conservation.ca.gov/cgs/shzp/Pages/Index.aspx>, accessed May 3, 2010.

geologic units. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not authorize development of properties on a unstable geologic unit or soil. Therefore, impacts related to on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse would be less than significant.

- d) **Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?**

Less than Significant Impact. Implementation of the proposed project would not result in substantial risks to life or property due to expansive soil. Implementation of the Land Use, Conservation/Open Space, and Circulation Elements does not authorize any physical alterations and/or development of any properties at this time. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration, and would be subject to all applicable federal, state, and local codes relative to expansive soil. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not authorize development of properties on expansive soil. Therefore, impacts related to expansive soil would be less than significant.

- e) **Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

No Impact. Updates to the Land Use, Conservation/Open Space, and Circulation Elements would not involve the use of septic tanks or alternative waste water disposal systems. Therefore, no impacts related to wastewater disposal would occur.

3.7. GREENHOUSE GAS EMISSIONS

Would the project:

- a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

Potentially Significant Impact. AB 32, the *California Global Solutions Warming Act*, requires the California Air Resources Board to adopt a statewide greenhouse gas emissions limit equivalent to statewide GHG emission levels for the year 1990, to be achieved by 2020. GHG emissions anticipated with implementation of the proposed project in 2020 and 2035 will be calculated, presented, and analyzed in the EIR. The City will use plan-level GHG emissions thresholds drafted or adopted by the South Coast Air Quality Management District at the time the EIR is prepared to determine significance of this impact.

Within the Sustainability Action Plan, the City will quantify and forecast municipal and community-wide GHG emissions and propose appropriate and feasible emission reduction measures. The EIR will analyze potential for these measures to reduce emissions anticipated with implementation of the proposed project.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Potentially Significant Impact. The potential for the proposed project to conflict with the AB 32 Scoping Plan and Orange County Sustainable Communities Strategy (SCS) will be further analyzed in the EIR. Within the Sustainability Action Plan, the City will quantify and forecast municipal and communitywide GHG emissions, and propose appropriate and feasible emission reduction measures. The EIR will analyze potential for these measures to reduce emissions anticipated with implementation of the proposed project. The Sustainability Action Plan will be prepared to meet the requirements of a plan for the reduction of GHG emissions described in CEQA Guidelines Section 15183.5.

3.8. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

Less than Significant Impact. Implementation of the proposed project does not authorize any physical alterations and/or development of any properties at this time; therefore, it does not involve the routine transport, use, or disposal of hazardous materials. Updates to the Land Use, Conservation/Open Space, and Circulation Elements would not involve any development activities (grading, construction, etc.). Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and does not involve the routine transport, use, or disposal of hazardous materials. Therefore, impacts related to hazards to the public or the environment would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?

Less than Significant Impact. Implementation of the proposed project does not authorize any physical alterations and/or development of any properties at this time; therefore, it would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Updates to the Land Use, Conservation/Open Space, and Circulation Elements would not involve any development activities (grading, construction, etc.) or the use of hazardous materials. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, significant hazards to the public or the environment would be less than significant.

- c) **Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

Less than Significant Impact. A number of schools exist within the City of Mission Viejo. Implementation of the proposed project, including updates to the Land Use, Conservation/Open Space, and Circulation Elements, does not authorize any physical alterations and/or development of any properties at this time; therefore, it would not involve hazardous materials or acutely hazardous materials, substances, or waste, nor would it emit hazardous emissions. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not involve hazardous materials or acutely hazardous materials, substances, or waste, nor would it emit hazardous emissions. Therefore, impacts to existing or proposed schools would be less than significant.

- d) **Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

No Impact. No hazardous materials sites, per Government Code Section 65963.5, are located within the City of Mission Viejo.⁴ Therefore, no significant hazards to the public or the environment would occur.

- e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

No Impact. The Land Use Element update provides a discussion on “Airport Land Use Consistency” for the City. The Airport Land Use Commission (ALUC) reviews general plans for consistency with the County’s Airport Environs Land Use Plan (AELUP). The ALUC adopted Resolution No. 2005-1 confirming that the AELUP for the Marine Corps Air Station (MCAS) El Toro was no longer applicable since it has been decommissioned as an air station in 1999. Updates to the Land Use, Conservation/Open Space, and Circulation Elements would not conflict with the AELUP. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not conflict with the AELUP.

The proposed project would not result in a safety hazard for people since the City of Mission Viejo is not located within 2 miles of a public airport. The closest airport to the City of Mission Viejo is John Wayne Airport, located approximately 15 miles northwest of the proposed project. Currently, there is one heliport operating in the City at Mission Hospital; however, no helicopters are based at the hospital. Therefore, no impacts would occur.

⁴ California Department of Toxic Substances Control, Hazardous Waste and Substances Site List. Website: <http://www.calepa.ca.gov/sitecleanup/corteselist/SectionA.htm>, accessed May 3, 2010.

- f) **For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

No Impact. As discussed in 3.8(e), the proposed project would not result in a safety hazard. The proposed project is not located within the vicinity of a private airstrip. Therefore, no impacts would occur.

- g) **Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Less than Significant Impact. The City of Mission Viejo has adopted an Emergency Operations Plan consistent with the State Emergency Management System requirements, outlining the City's response to emergency situations associated with natural disasters, technological incidents, and national security emergencies.⁵ The General Plan also identifies evacuation routes to be used in the event of a major emergency that requires the evacuation of all or part of the City of Mission Viejo.⁶

The Land Use Element update includes provisions regarding emergency services, including Goal 5 as below.

Goal 5: Maintain exceptional levels of law enforcement, fire protection, and paramedic services for the community.

The proposed project provides an overall plan for development that could potentially conflict with Goal 5 but does not identify specific development proposals. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not impair implementation of or physically interfere with an emergency evacuation plan. Therefore, impacts to an adopted emergency response plan or emergency evacuation plan would be less than significant.

- h) **Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

Less than Significant Impact. As discussed in 3.7(a), the proposed project does not authorize any physical alterations and/or development of any properties at this time. Implementation of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, impacts related to significant risk of loss, injury, or death involving wildland fires would be less than significant.

⁵ City of Mission Viejo General Plan, *Public Safety Element*, adopted February 2, 2009.

⁶ Ibid.

3.9. HYDROLOGY AND WATER QUALITY

Would the project:

a) **Violate any water quality standards or waste discharge requirements?**

Less than Significant Impact. Potable water distribution and wastewater collection and treatment are provided to the City by three water districts: Moulton-Niguel Water District, Santa Margarita Water District, and El Toro Water District. Each water district has a master plan for the provision of the water and sewer service. The City of Mission Viejo is under the jurisdiction of the San Diego Regional Water Quality Control Board (SDRWQCB) which implements the National Pollutant Discharge Elimination System (NPDES) permit for the San Diego area (including southern Orange County). Under the NPDES permit, a requirement under the Clean Water Act, each jurisdiction must implement measures to reduce urban runoff during all phases of land use development starting with: planning, during construction, and after completion of the development. Local water management plans are supplemental to the regional plans prepared by the Metropolitan Water District of Southern California (MWDSC) and the Municipal Water District of Orange County (MWDOC). Starting in 2009, the City was required to comply with new waste discharge requirements which included the development of a standard storm water mitigation plan and a plan to implement low impact development (LID) for new and redevelopment sites and the development of a Hydromodification Management Plan (HMP) to manage increases in runoff discharge rates and durations from new and redevelopment sites.

The Land Use Element update provides goal and policies directed toward maintaining water quality and sewer service in the City, including Goals 9 and 10, as follows:

Goal 9: Maintain a consistent level of quality water and sewer services.

Goal 10: Provide necessary storm drainage and reduce the discharge of pollutants and runoff flow from urban development to the maximum extent practicable.

In addition, the Conservation/Open Space Element update discusses the City's dependence on imported water for its urban activities. The City of Mission Viejo has ground and surface water resources such as Lake Mission Viejo, Upper Oso Reservoir, El Toro Reservoir, Aliso Creek, Oso Creek, and Trabuco Creek that are subject to various sources of pollution associated with urban runoff. Goals 5, 6, and 7, and related policies, promote the conservation of water resources while minimizing the effects of stormwater and urban runoff pollution.

Goal 5: Promote an adequate supply of water through the conservation of water resources.

Goal 6: Promote a safe supply of potable water for community uses.

Goal 7: Reduce urban runoff flow and the discharge of pollutants from existing and new development.

The proposed project provides an overall plan for development that could affect conflict with Goal 5 but does not identify specific development proposals. Potential future

development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to water quality or waste discharge, mitigation measures to reduce those impacts to a less than significant level will be applied. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not violate any water quality standards or waste discharge requirements. Therefore, impacts to hydrology and water quality would be less than significant.

- b) Substantially degrade groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?**

Less than Significant Impact. As discussed in 3.9(a), the proposed project does not authorize any physical alterations and/or development of any properties at this time. However, implementation of the Land Use, Conservation/Open Space, and Circulation Elements, including Policy 5.1, could include physical modifications to properties (i.e., grading, construction, etc.) as future development projects that are consistent with these Elements are constructed. It is not anticipated that the proposed project would substantially impact the groundwater supplies or recharge or local groundwater table. Future development projects would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to groundwater supplies or recharge, mitigation measures to reduce those impacts to a less than significant level will be applied. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would provide adaptation strategies focused on water supply. Impacts would be less than significant.

- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

Less than Significant Impact. Storm drainage facilities are provided to the City under contract with the Orange County Flood Control District. The City's Master Plan of Drainage identifies existing facilities and deficiencies in the City and a program to correct known problem areas. Goal 10 of the Land Use Element update ensures the maintenance of drainage facilities in the City. The policies associated with Goal 7 of the Conservation/Open Space Element update discuss the need to utilize site preparation, grading, and best management practices to ensure erosion and sediment control. Implementation of the Land Use Element, Conservation/Open Space Element, and Circulation Element would include physical modifications to properties (i.e., grading, construction, etc.). It is not anticipated that the proposed project would result in substantial erosion or siltation on- or off-site as future development projects would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to an existing drainage pattern, mitigation measures to reduce those impacts to a less than significant level will be applied. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not alter any existing drainage pattern that could

result in substantial erosion or siltation on- or off-site. Therefore, impacts to hydrology and water quality would be less than significant.

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or surface runoff in a manner which would result in flooding on- or off site?**

Less than Significant Impact. As discussed in 3.9(c), Goal 7 of the Conservation/Open Space Element update discusses the need to reduce runoff from existing and new development. The proposed project provides an overall plan of development but does not identify specific development proposals for any properties that would propose any alterations to the existing drainage pattern of the area. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to an existing drainage pattern, mitigation measures to reduce those impacts to a less than significant level will be applied. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not alter any existing drainage pattern that could result in flooding on- or off-site. Therefore, impacts to hydrology and water quality would be less than significant.

- e) Create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

Less than Significant Impact. As discussed in 3.9(c), Goal 10 and related policies of the Land Use Element update and Goal 7 and related policies of the Conservation/Open Space Element update are relevant to the maintenance of storm drainage and the control of urban runoff. The proposed project provides an overall plan of development but does not identify specific development proposals for any properties that would create or contribute runoff. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, impacts to hydrology and water quality would be less than significant.

- f) Otherwise substantially degrade water quality?**

Less than Significant Impact. As discussed in 3.9(a), the proposed project provides an overall plan of development but does not identify specific development proposals for any properties that would substantially degrade water quality. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to an existing drainage pattern, mitigation measures to reduce those impacts to a less than significant level will be applied. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not

substantially degrade water quality. Therefore, impacts to hydrology and water quality would be less than significant.

g) Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Less than Significant Impact. The General Plan identifies certain areas of the City of Mission Viejo that fall within a 100-year floodplain.⁷ The proposed project provides an overall plan for development that could place housing within a 100-year floodplain but does not identify specific development proposals. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not place housing within a 100-year floodplain. Therefore, impacts would be less than significant.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Less than Significant Impact. It is not anticipated that the proposed project would place structures within a 100-year flood hazard area. As discussed in 3.9(g), potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not place structures within a 100-year hazard area. Therefore, impacts would be less than significant.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less than Significant Impact. As discussed in 3.9(d)(g)(h), the proposed project provides an overall plan of development but does not identify specific development proposals for any properties that would expose people or structures to a significant risk of loss, injury, or death involving flooding. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not expose people or structures to a significant risk of loss, injury or death due to flooding. Therefore, impacts would be less than significant.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. According to the California Geological Survey, the City of Mission Viejo is not subject to tsunami-related inundation as it is not located within the range of a tsunami hazard zone.⁸ The proposed project would not be subject to inundation by seiche, tsunami, or mudflow. Therefore, no impacts would occur.

⁷ City of Mission Viejo General Plan Public Safety Element, *Flood Hazard Zones*, adopted February 2, 2009.

⁸ Department of Conservation, California Geological Survey. *Orange County Tsunami Inundation Maps*. Website: http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/Orange/Pages/Orange.aspx, accessed May 4, 2010.

- k) **Could the proposed project result in an increase in pollutant discharges to receiving waters? Consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical storm water pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash).**

Less than Significant Impact. As discussed in 3.9(e), the proposed project provides an overall plan of development but does not identify specific development proposals for any properties that would provide substantial additional sources of polluted runoff. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to receiving waters, mitigation measures to reduce those impacts to a less than significant level will be implemented. Therefore, impacts to hydrology and water quality would be less than significant.

- l) **Could the proposed project result in significant alterations of receiving water quality during or following construction?**

Less than Significant Impact. As discussed in 3.9(k), the proposed project the proposed project provides an overall plan of development but does not identify specific development proposals for any properties that would result in a significant alteration of receiving water quality. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to receiving water quality, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not alter receiving water quality. Therefore, impacts to hydrology and water quality would be less than significant.

- m) **Could the proposed project result in increased impervious surfaces and associated increased runoff?**

Less than Significant Impact. As discussed in 3.9(d)(e), the proposed project does not identify specific development proposals for any properties that would create or contribute to runoff. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts involving increased runoff from impervious surfaces, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not result in increased impervious surfaces and associated increased runoff. Therefore, impacts to hydrology and water quality would be less than significant.

- n) **Could the proposed project create a significant adverse environmental impact to drainage patterns due to changes in runoff flow rates or volumes?**

Less than Significant Impact. As discussed in 3.9(c)(d), the proposed project does not identify specific development proposals for any properties that would propose any

alterations to the existing drainage patterns of the area or result in changes in runoff flow rates or volumes. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to drainage patterns, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not create a significant adverse environmental impact to drainage patterns. Therefore, impacts to hydrology and water quality would be less than significant.

o) Could the proposed project result in increased erosion downstream?

Less than Significant Impact. As discussed in 3.9(c), the proposed project does not identify specific development proposals for any properties that would result in increased erosion on- or off-site. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts involving erosion downstream, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not result in increased erosion downstream. Therefore, impacts to hydrology and water quality would be less than significant.

p) Is the project tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, can it result in an increase in any pollutant for which the water body is already impaired?

Less than Significant Impact. Three major creeks traverse the City of Mission Viejo: Aliso Creek, Oso Creek, and Trabuco Creek. These creeks are not considered impaired. In addition, the proposed project does not identify specific development proposals for any properties that would result in an increase in any pollutant. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to an already impaired water body, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not be tributary to an already impaired water body. Therefore, impacts to hydrology and water quality would be less than significant.

q) Is project tributary to other environmentally sensitive areas? If so, can it exacerbate already existing sensitive conditions?

Less than Significant Impact. The General Plan discusses environmentally sensitive areas within the City of Mission Viejo, including riparian corridors and biologically sensitive lands.⁹ The proposed project does not identify specific development proposals for any properties that would exacerbate already existing sensitive conditions. Potential

⁹ City of Mission Viejo General Plan Conservation/Open Space Element, adopted February 2, 2009.

future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to environmentally sensitive areas, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not be tributary to other environmentally sensitive areas. Therefore, impacts would be less than significant.

r) Could the proposed project have a potentially significant environmental impact on surface water quality, to either marine, fresh, or wetland waters?

Less than Significant Impact. As discussed in 3.9(q), the proposed project does not identify specific development proposals for any properties that involve development activities that could potentially have an impact on surface water quality, marine, fresh, or wetland waters. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to surface water quality or wetland waters, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not have a significant environmental impact on surface water quality or wetland waters. Therefore, impacts would be less than significant.

s) Could the proposed project have a potentially significant adverse impact on ground water quality?

Less than Significant Impact. As discussed in 3.9(a)(b), the proposed project does not identify specific development proposals for any properties that would deplete groundwater supplies or interfere with groundwater recharge, nor would they violate any water quality standards. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to groundwater quality, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not have a significant environmental impact on groundwater quality. Therefore, no impacts to hydrology and water quality would be less than significant.

t) Could the proposed project cause or contribute or exceed applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses?

Less than Significant Impact. As discussed in 3.9(s), the proposed project does not identify specific development proposals for any properties that could adversely impact groundwater quality. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to groundwater receiving water quality, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve

climate change goals and policies and would not contribute or exceed applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses. Therefore, impacts to hydrology and water quality would be less than significant.

u) Can the project impact aquatic, wetland, or riparian habitat?

Less than Significant Impact. As discussed in 3.9(q), the General Plan discusses environmentally sensitive areas within the City of Mission Viejo, including riparian corridors and biologically sensitive lands.¹⁰ However, the proposed project does not identify specific development proposals for any properties that could adversely impact aquatic, wetland, or riparian habitat. Should additional environmental analysis identify any significant impacts to aquatic, wetland or riparian habitat, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not impact aquatic, wetland, or riparian habitat. Therefore, impacts to hydrology and water quality would be less than significant.

3.10. LAND USE AND PLANNING

Would the project:

a) Physically divide an established community?

Less than Significant Impact. The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would physically divide an established community. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to land use and planning, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not physically divide an established community. Therefore, impacts would be less than significant.

b) Conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Potentially Significant Impact. Regional planning agencies, such as the Southern California Association of Governments (SCAG) and the Orange County Council of Governments (OCCOG), implement regional land use plans in an effort to address planning issues such as air quality, water quality, transportation, affordable housing, and habitat conservation. The City of Mission Viejo has an adopted General Plan and Development Code, Specific Plans and a Community Development Plan. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies. The potential implications of the proposed project and its associated impacts will be further analyzed in the EIR.

¹⁰ City of Mission Viejo General Plan Conservation/Open Space Element, adopted February 2, 2009.

- c) **Conflict with any applicable habitat conservation plan or natural community conservation plan?**

Potentially Significant Impact. The City currently participates in regional and state efforts for Natural Community Conservation Plan/Habitat Conservation Plan Programs (NCCP)/(HCP) for multi-species habitat protection. In addition, the City will work with the U.S. Fish and Wildlife Service to pursue grant funding to create a Habitat Conservation Plan for portions of the City that would protect, restore, and manage open space lands within the City while allowing for needed urban development. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would provide adaptation strategies focused on the preservation of critical habitat areas. The potential implications of the proposed project and its associated impacts will be further analyzed in the EIR.

3.11. MINERAL RESOURCES

Would the project:

- a) **Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

No Impact. The County of Orange General Plan Resources Element includes an inventory of the county-wide resources including mineral resources. There are no known mineral resources of value to the region located in Mission Viejo. Implementation of the proposed project would not result in the loss of availability of a known mineral resource. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not result in the loss of availability of a known mineral resource. Therefore, no impacts to mineral resources would occur.

- b) **Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

No Impact. As discussed in 3.11(a), there are no known mineral resources of value to the region located in Mission Viejo; therefore, implementation of the proposed project would not result in the loss of availability of a locally important mineral resource recovery site. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not result in the loss of availability of a locally important mineral resource recovery site. Therefore, no impacts to mineral resources would occur.

3.12. NOISE

Would the project:

- a) **Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

Potentially Significant Impact. As part of the EIR, a noise analysis would be conducted that would include an assessment of potential short-term temporary noise impacts with respect to nearby sensitive receptors and their relative exposure, as well as potential long-term mobile-, area-, and stationary-source noise impacts, respectively. In

addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies. The potential implications of the proposed project and its associated impacts would be further analyzed in the EIR. Compatibility with the existing General Plan as well as applicable federal, state, and local regulations, would be addressed in the EIR.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Potentially Significant Impact. As discussed in 3.12(a), the EIR would analyze the potential short-term temporary noise impacts with respect to nearby sensitive receptors and their relative exposure, as well as potential long-term mobile-, area-, and stationary-source noise impacts, respectively. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies. The potential implications of this update and its associated impacts would be further analyzed in the EIR.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. As discussed in 3.12(a), the EIR would analyze potential short-term temporary noise impacts with respect to nearby sensitive receptors and their relative exposure, as well as potential long-term mobile-, area-, and stationary-source noise impacts, respectively. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies. The potential implications of this update and its associated impacts would be further analyzed in the EIR.

d) A substantially temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. As discussed in 3.12(a), the EIR would analyze potential short-term and long-term noise impacts. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies. The potential implications of the proposed project and its associated impacts would be further analyzed in the EIR.

e) For a project located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The City of Mission Viejo is not located within 2 miles of a public airport. The closest airport to the City of Mission Viejo is John Wayne Airport, located approximately 15 miles northwest of the proposed project. Therefore, no impacts would occur.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The City of Mission Viejo is not located within the vicinity of a private airstrip. Therefore, no impacts would occur.

3.13. POPULATION AND HOUSING

Would the project:

- a) **Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

Less than Significant Impact. The update to the Land Use and Circulation Elements discusses the growing population of Southern California and the need to update infrastructure in order to support existing and future development. The Land Use Element update provides additional information on Specific Plan areas that are prime for future development. In addition, the Circulation Element update includes a Bikeway Plan that depicts the City's network of bikeways, such as striped bike lanes and off-street facilities. These bikeways, however, are not growth-inducing and would not contribute to a substantial population growth in the area, either directly or indirectly. The proposed project provides an overall plan for development that could involve any development activities, such as new homes, businesses, roads, or other infrastructure, but does not identify specific development proposals. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to population and housing, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not indirectly or directly induce population growth. Therefore, impacts to population and housing would be less than significant.

- b) **Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

Less than Significant Impact. As discussed in 3.13(a), the proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would displace substantial numbers of existing housing. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to population and housing, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not displace substantial numbers of existing housing, necessitating the construction of replacement housing. Therefore, impacts to population and housing would be less than significant.

- c) **Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

Less than Significant Impact. As discussed in 3.13(b), it is not anticipated that the proposed project would displace substantial numbers of people, necessitating the construction of replacement housing. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project

development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to population and housing, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not displace substantial numbers of people, necessitating the construction of replacement housing. Impacts to population and housing would be less than significant.

3.14. PUBLIC SERVICES

Would the project:

- a) **Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:**

- i) **Fire protection?**

Less than Significant Impact. The Orange County Fire Authority (OCFA) provides fire protection for the City of Mission Viejo. There are three fire stations located throughout the City, although stations located outside the City may also respond to areas within the City. OCFA has adopted the following service standards for fire protection response:

- OCFA responds within 5 minutes or less to emergencies, 80 percent of the time; and
- Paramedics arrive on-scene within 8 minutes, 90 percent of the time.

According to the Land Use Element update, the level of service for fire protection is adequate and meets the local criteria established. The Land Use Element update includes goals and policies associated with the provision of public services, such as Goal 5.

Goal 5: Maintain exceptional levels of law enforcement, fire protection, and paramedic services for the community.

The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would result in adverse physical impacts associated with the provision of new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to public services, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not result in adverse physical impacts associated with the provision of new or physically altered fire protection facilities in order to maintain acceptable

service rations, response times, or other performance objectives for fire protection. Therefore, impacts to fire protection would be less than significant.

ii) Police protection?

Less than Significant Impact. The Orange County Sheriff's Department (OCSD) provides law enforcement for the City of Mission Viejo and is the largest city served by OCSD. The Sheriff substation that serves the City is located in Aliso Viejo. Approximately thirty deputies, four investigators, and one investigative assistant are assigned to the City. OCSD has adopted the following service standards for law enforcement response:

- Respond within 5 minutes or less to calls of life- or property-threatening incidents in progress; and
- Respond within 20 minutes or less to a non-emergency.

According to the Land Use Element update, the level of service for law enforcement is adequate and meets the local criteria established. As discussed in 3.14(a)(i), the Land Use Element update includes goals and policies associated with the provision of public services, such as Goal 5.

The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would result in adverse physical impacts associated with the provision of new or physically altered police protection facilities in order to maintain acceptable service rations, response times, or other performance objectives for police protection. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to public services, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not result in adverse physical impacts associated with the provision of new or physically altered fire protection facilities in order to maintain acceptable service rations, response times, or other performance objectives for police protection. Therefore, impacts to police protection would be less than significant.

iii) Schools?

Less than Significant Impact. The City of Mission Viejo is served by two school districts: Saddleback Valley Unified School District and Capistrano Unified School District. The City's educational facilities include three high schools, one continuation high school, three junior high schools, one Kindergarten through 8th grade, 13 elementary schools, and one special facility for the handicapped within the City boundaries. In addition, Saddleback Community College located in the southern portion of the City, serves as a regional community college. The City cooperates with the school districts in maintaining adequate levels of service through the following standard:

- The City shall provide the school districts with timely and accurate data on development permits issued and development projections in order for the districts to determine future educational needs throughout each school district.

The Land Use Element update includes goals and policies associated with the provision of educational facilities, such as Goal 7.

Goal 7: Work with and support efforts by local school and community college districts to provide high quality public education.

The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would result in adverse physical impacts associated with the provision of new or physically altered school facilities or create a need for new school facilities. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to public services, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not result in adverse physical impacts associated with the provision of new or physically altered school facilities or create a need for new school facilities. Therefore, impacts to school facilities would be less than significant.

iv) Parks?

Less than Significant Impact. The City of Mission Viejo has both public and private parks. In 2006, the City Council adopted a Community Services Master Plan that provides guidance towards the orderly development of recreation programs, recreation facilities, parks, and open space areas in the City. The Conservation/Open Space Element update includes goals and policies associated with the provision of parks, including Goals 3 and 4.

Goal 3: Provide for the orderly development of exceptional recreation programs, recreation facilities, parks, and open space areas in the City.

Goal 4: Establish a long-term funding mechanism for the acquisition, development and maintenance of future city park facilities.

The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would result in adverse physical impacts associated with the provision of new or physically altered park facilities or create a need for new park facilities. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to public services, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not result in adverse physical impacts associated with the provision of new or physically altered park facilities or create a need for new park facilities. Therefore, impacts to park facilities would be less than significant.

v) Other public facilities?

Less than Significant Impact. Other public service facilities include the Mission Viejo Civic Center, which consists of the City Hall facility and the Mission Viejo Library. The City of Mission Viejo opened a new city-owned City Hall facility on May 11, 2002. Services and facilities provided at the Civic Center include administrative resources, development permit processing, council chamber, sheriff facilities, an emergency operations center, and conference facilities. In 1997, the Mission Viejo Library opened as a city-operated library and completed an expansion of the facility in 2002. The Land Use Element update includes goals and policies associated with the provision of public service facilities, including Goals 6 and 8.

Goal 6: Maintain the Civic Center as a high quality facility that meets the needs and expectations of the residents and businesses.

Goal 8: Provide exceptional library service and facilities.

The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would result in adverse physical impacts associated with the provision of new or physically altered public facilities or create a need for new public facilities. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to public services, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not result in adverse physical impacts associated with the provision of new or physically altered public facilities or create a need for new public facilities. Therefore, impacts to public facilities would be less than significant.

3.15. RECREATION

Would the project:

- a) Increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

Less than Significant Impact. As discussed in 3.14 (a)(iv), the City Council adopted a Community Services Master Plan that provides guidance towards the orderly development of recreational facilities. The City's recreational components consist of public and private parks, golf courses, regional trails, greenbelts, utility easements, recreational centers, and Lake Mission Viejo. The City has both public and private parks and facilities at the community and neighborhood level.

Goals 3 and 4 of the Conservation/Open Space Element update, and related policies, are associated with the provision of parks. The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would increase the use of existing neighborhood or regional parks or other recreational facilities that could lead to substantial physical deterioration of the facility. Potential future development would be subject to further

discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to recreation, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not increase the use of existing neighborhood or regional parks or other recreational facilities that could lead to substantial physical deterioration of the facility. Therefore, impacts to recreation would be less than significant.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less than Significant Impact. As discussed in 3.15(a), it is not anticipated that the proposed project would include new recreational facilities or the expansion of existing recreation facilities. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to recreation, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not include new recreational facilities or the expansion of existing recreation facilities. Therefore, impacts to recreation would be less than significant.

3.16. TRANSPORTATION / TRAFFIC

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Potentially Significant Impact. The EIR would analyze the update to the existing Circulation Element and assess associated impacts related to any conflict with the applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. In support of the update to the Circulation Element as well as the Sustainability Action Plan, the Mission Viejo Traffic Analysis Model (MVTAM) would be updated with the most current available demographic data assumptions to model the capacity utilization of intersections and roadways within the City, level of service, vehicle miles traveled (VMT), vehicle hours traveled (VHT), vehicle trips and trip generation within the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies, including those related to transportation and traffic. This issue will be further analyzed in the EIR.

- b) **Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

Potentially Significant Impact. As discussed in 3.16(a), as part of the proposed project, the EIR would assess potential impacts related to conflict with the applicable congestion management program and its components. In support of the update to the Circulation Element as well as the Sustainability Action Plan, the MVTAM would be updated with the most current available demographic data assumptions to model the capacity utilization of intersections and roadways within the City, level of service, VMT, VHT, vehicle trips and trip generation within the City. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies, including those related to transportation and traffic. This issue would be further analyzed in the EIR.

- c) **Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

No Impact. The proposed project is a general plan update and Sustainability Action Plan and would not involve any development activities involving air traffic. Therefore, no impacts to air traffic patterns would occur.

- d) **Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?**

Less than Significant Impact. The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would involve any development activities that would substantially increase hazards to a design feature or incompatible uses. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not involve any development activities that would substantially increase hazards to a design feature or incompatible uses. Therefore, impacts would be less than significant.

- e) **Result in inadequate emergency access?**

Potentially Significant Impact. As discussed in 3.16(a), as part of the proposed project, the update to the Circulation Element would be analyzed in the EIR and potential impacts related to inadequate emergency access would be assessed. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies, including those related to transportation and traffic. This issue will be further analyzed in the EIR.

- f) **Conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?**

Potentially Significant Impact. The Circulation Element update includes a Bikeway Plan that depicts the City's network of bikeways, such as striped bike lanes and off-

street facilities. The EIR would analyze the update to the Circulation Element and assess associated impacts related to the alternative transportation systems, including public transit, bicycle, and pedestrian facilities. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies, including those related to transportation and traffic. This issue will be further analyzed in the EIR.

3.17. UTILITIES AND SERVICE SYSTEMS

Would the project:

- a) **Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

Less than Significant Impact. As discussed previously, potable water distribution and wastewater collection and treatment are provided to the City by three water districts: Moulton-Niguel Water District, Santa Margarita Water District, and El Toro Water District. Most of the sewage collection facilities were constructed relatively recently and provide adequate collection and treatment of the City's wastewater. Most of the sewage generated in Mission Viejo is treated at the Moulton Niguel/Santa Margarita Water District wastewater reclamation facility in Mission Viejo. Each water district has a master plan for the provision of the water and sewer service. The City of Mission Viejo is under the jurisdiction of SDRWQCB which implements the NPDES permit for the San Diego area (including southern Orange County). The Land Use Element update and the Conservation/Open Space Element update include goals and policies related to wastewater treatment.

The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would involve any development activities that would exceed treatment requirements of the SDRWQCB. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to utilities and service systems, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not involve any development activities that would exceed treatment requirements of the SDRWQCB. Therefore, impacts related to wastewater treatment would be less than significant.

- b) **Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

Less than Significant Impact. As discussed in 3.17(a), most of the sewage collection facilities were constructed relatively recently and provide adequate collection and treatment of the City's wastewater. The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would involve any development activities that would require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are

filed with the City. Should additional environmental analysis identify any significant impacts to utilities and service systems, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not involve any development activities that would require or result in construction of new or expanded water or wastewater facilities. Therefore, impacts related to new water or wastewater treatment facilities would be less than significant.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. The City's Master Plan of Drainage identifies existing facilities and deficiencies in the City and a program to correct known problem areas. Goal 10 of the Land Use Element update ensures the maintenance of drainage facilities in the City. The policies associated with Goal 7 of the Conservation/Open Space Element update discusses the need to utilize site preparation, grading, and best management practices to ensure erosion and sediment control.

As discussed in 3.17(a), it is not anticipated that the proposed project would involve any development activities that would require or result in construction of new storm water drainage facilities or expansion of existing facilities. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City. Should additional environmental analysis identify any significant impacts to utilities and service systems, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not require or result in construction of new storm water drainage facilities or expansion of existing facilities. Therefore, impacts related to stormwater drainage would be less than significant.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less than Significant Impact. As previously discussed, the City depends on imported water for its urban activities. Urban development depends on adequate water supplies of water. The City promotes the conservation of water resources in order to sustain existing and future economic population and growth. As discussed in 3.17(a), it is not anticipated that the proposed project would involve any development activities that would require water supplies from existing or new entitlements and resources. Should additional environmental analysis identify any significant impacts to utilities and service systems, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not require water supplies from existing or new entitlements and resources. Therefore, impacts related to water supplies would be less than significant.

- e) **Result in a determination by the wastewater treatment provider which services or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

Less than Significant Impact. As discussed in 3.17(a), it is not anticipated that the proposed project would involve any development activities that would require wastewater services. Therefore, impacts related to adequate capacity for wastewater treatment would be less than significant.

- f) **Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?**

Less than Significant Impact. The County of Orange Integrated Waste Management Department manages solid waste disposal for all of Orange County and operates three active landfills and four household hazardous waste collection centers, and monitors twelve closed landfills. They are responsible for coordinating with the cities, sanitary districts and commercial haulers to ensure proper disposal of solid waste. The County of Orange Integrated Waste Management Department has adopted a Countywide Integrated Waste Management Plan to plan and facilitate the proper disposal of the County's waste.

The update to the Land Use Element includes Goal 11 and related policies regarding the management of solid waste disposal.

Goal 11: Provide necessary control of solid waste generation and disposal.

The proposed project provides an overall plan for development but does not identify specific development proposals. It is not anticipated that the proposed project would involve any development activities that would require landfill or solid waste disposal services. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to utilities and service systems, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would not involve any development activities that would require landfill or solid waste disposal services. Therefore, impacts related to solid waste disposal would be less than significant.

- g) **Comply with federal, state, and local statues and regulations related to solid waste?**

Less than Significant Impact. As discussed in 3.17(f), the City of Mission Viejo complies with the Countywide Integrated Waste Management Plan to plan and facilitate the proper disposal of the County's waste. However, it is not anticipated that the proposed project would involve any development activities that would require solid waste disposal services. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to utilities and service systems, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability

Action Plan will be prepared to implement and achieve climate change goals and policies and would comply with federal, state, and local statutes and regulations related to solid waste. Therefore, impacts related to compliance with federal, state, and local statutes would be less than significant.

3.18. MANDATORY FINDINGS OF SIGNIFICANCE

- a) **Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?**

Less than Significant Impact. The update to the Land Use Element, Conservation/Open Space Element, and Circulation Element includes goals, policies and measures related to natural and cultural resources and the overall protection of the environment.

As previously discussed in Section 3.4 (Biological Resources) and Section 3.5 (Cultural Resources), the proposed project consists of a general plan update and Sustainability Action Plan. It would provide an overall plan of development but does not identify specific development proposals for any properties at this time that would have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. Potential future development would be subject to further discretionary consideration and environmental analysis once detailed project development plans are filed with the City for consideration. Should additional environmental analysis identify any significant impacts to habitats or species or important examples of California history or prehistory, mitigation measures to reduce those impacts to a less than significant level will be implemented. In addition, a Sustainability Action Plan will be prepared to implement and achieve climate change goals and policies and would provide adaptation strategies focused on the preservation of critical habitat areas. Therefore, impacts to biological and cultural resources in general, and candidate, sensitive or special status species in particular would be less than significant.

- b) **Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects)?**

Potentially Significant Impact. As discussed in this Initial Study in Section 3.3 (Air Quality), Section 3.7 (Greenhouse Gas Emissions), Section 3.10 (Land Use and Planning), Section 3.12 (Noise), and Section 3.16 (Transportation/Traffic), the proposed project could have impacts that are individually limited but cumulatively considerable. This issue will be further analyzed in the EIR.

- c) **Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

Potentially Significant Impact. As discussed in this Initial Study in Section 3.3 (Air Quality), Section 3.7 (Greenhouse Gas Emissions), Section 3.10 (Land Use and Planning), Section 3.12 (Noise), and Section 3.16 (Transportation/Traffic), the proposed project could have environmental effects that cause substantial adverse effects on human beings, directly or indirectly. This issue will be further analyzed in the EIR.

Appendix A-2

Comment Letters Received on Notice of Preparation



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

March 28, 2012

Charles E. Wilson, AICP
Director of Community Development
City of Mission Viejo
200 Civic Center
Mission Viejo, CA 92691

Notice of Preparation of a CEQA Document for the General Plan Update EIR & Sustainability Action Plan

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft CEQA document. Please send the SCAQMD a copy of the Draft EIR upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to the SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. The lead agency may wish to consider using land use emissions estimating software such as the recently released CalEEMod. This model is available on the SCAQMD Website at: <http://www.aqmd.gov/ceqa/models.html>.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has developed a methodology for calculating PM_{2.5} emissions from construction and operational activities and processes. In connection with developing PM_{2.5} calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM_{2.5} emissions and compare the results to the recommended PM_{2.5} significance thresholds. Guidance for calculating PM_{2.5} emissions and PM_{2.5} significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

PM 1:11 MAR30'12 CHUCD

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at <http://www.aqmd.gov/ceqa/handbook/LST/LST.html>.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA web pages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: <http://www.aqmd.gov/prdas/aqguide/aqguide.html>. In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: <http://www.arb.ca.gov/ch/handbook.pdf>. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (<http://www.aqmd.gov>).

The SCAQMD staff is available to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. If you have any questions regarding this letter, please call Ian MacMillan, Program Supervisor, CEQA Section, at (909) 396-3244.

Sincerely,



Ian MacMillan

Program Supervisor, CEQA Inter-Governmental Review
Planning, Rule Development & Area Sources



ORANGE COUNTY FIRE AUTHORITY

P. O. Box 57115, Irvine, CA 92619-7115 • 1 Fire Authority Road, Irvine, CA 92602

Keith Richter Fire Chief

(714) 573-6000

www.ocfa.org

April 16, 2012

City of Mission Viejo
Community Development Director: Charles E Wilson
200 Civic Center
Mission Viejo, CA 92691

Re: General plan Update

Dear Mr. Wilson,

Thank you for the opportunity to comment on the above project. The Orange County Fire Authority (OCFA) provides fire protection and emergency medical services response to the project area. Services include: structural fire protection, emergency medical and rescue services, hazardous inspections and response, and public education activities. OCFA also participates in disaster planning as it relates to emergency operations, which includes high occupant areas and schools sites and may participate in community disaster drills planned by others.

The OCFA has reviewed the subject document and has no comment at this time. Please contact me at 714-573-6199 if you need further information on this matter.

Sincerely,

Michele Hernandez
Management Analyst, Strategic Services
michelehernandez@ocfa.org



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CHIEF EXECUTIVE OFFICE

Will Kempton
Chief Executive Officer

April 18, 2012

Mr. Charles E. Wilson, AICP
Director of Community Development
City of Mission Viejo
200 Civic Center
Mission Viejo, CA 92691

Subject: Notice of Preperation of a Draft Environmental Impact Report for the City of Mission Viejo General Plan Update and Sustainability Action Plan.

Dear Mr. Wilson:

The Orange County Transportation Authority (OCTA) has reviewed the above-referenced document. The following comment is provided for your consideration:

- If the City of Mission Viejo (City) is considering any potential changes to the Master Plan of Arterial Highways (MPAH) facility, please reference the OCTA MPAH Guidance document for appropriate amendment procedures. (http://www.octa.net/pdf/mpah_guidelines.pdf)

If you have any questions or comments, please contact Ed Alegre by phone at (714) 560-5738 or by email at ealegre@octa.net.

Sincerely,

Charles Larwood
Manager, Transportation Planning

c: Ed Alegre, OCTA

PH 216 APR 12 09:09 AM

DEPARTMENT OF TRANSPORTATION

District 12
3347 Michelson Drive, Suite 100
Irvine, CA 92612-8894
Tel: (949) 724-2241
Fax: (949) 724-2592



*Flex your power!
Be energy efficient!*

April 19, 2012

Elaine Lister
City of Mission Viejo
200 Civic Center
Mission Viejo, California 92611

File: IGR/CEQA
SCH#: 2012031065
Log #: 2962
I-5, SR-241

Subject: City of Mission Viejo General Plan Update & Sustainability Action Plan

Dear Ms. Lister,

Thank you for the opportunity to review and comment on the **Notice of Preparation (NOP) for the City's General Plan Update & Sustainability Action Plan**. The update is for several elements of the General Plan: Land Use, Conservation/Open Space, and Circulation. The Sustainability Action Plan will be prepared as the primary document designed to implement and achieve such climate change goals and policies. The planning area is consistent with the existing City of Mission Viejo boundaries and its sphere of influence.

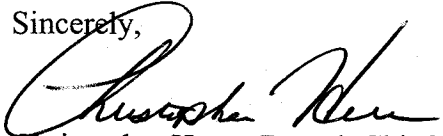
The Department of Transportation (Department) is a responsible agency on this project and we have the following comments:

1. The issues of greatest concern to Caltrans are those that may impact traffic circulation and increase demand on State Transportation Facilities. For all major new developments within the City that may require new or improved access, new signals or any improvements at or near Interstate 5 will require close coordination with Caltrans. This requirement should be included in the Land Use and Circulation Elements of the General Plan and the Environmental Impact Report.
2. In the Circulation Element, the City should include a policy and/or goal to work with Caltrans to develop needed improvements to the State Highway System within the jurisdiction of the City of Mission Viejo, particularly for the Interstate 5 intersections at Crown Valley Parkway, as well as Avery Parkway, Oso Parkway, and Alicia Parkway.
3. The Department has interest in working cooperatively to establish a Traffic Impact Fee (TIF) program with the City of Mission Viejo. Local development project applicants would pay their "fair share" to an established fund for future transportation improvement projects. If a TIF program is already in place, or a new TIF program is being considered, the Department would like an opportunity to participate in the process.
4. The Circulation Element should acknowledge the Departments' standard of maintaining a target Level of Service (LOS) at the transition between LOS D and LOS E on State highway facilities. For future projects that may impact State facilities, the Department recommends the City continue to work with the Department on thresholds of significance related to all

State facilities that experience unacceptable LOS (worse than the operating standard of LOS D).

Please continue to keep us informed of this project and any future developments, which could potentially impact the State Transportation Facilities. If you have any questions or need to contact us, please do not hesitate to call Marlon Regisford at (949) 724-2241.

Sincerely,



Christopher Herre, Branch Chief
Local Development/Intergovernmental Review

C: Scott Morgan, Office of Planning and Research



State of California -The Natural Resources Agency

DEPARTMENT OF FISH AND GAME

South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
<http://www.dfg.ca.gov>

EDMUND G. BROWN JR., Governor

CHARLTON H. BONHAM, Director



April 19, 2012

Mr Charles E. Wilson
Director of Community Development
City of Mission Viejo
200 Civic Center
Mission Viejo, California 92691
Fax #: (949) 951-6176

**Subject: Comments on the Notice of Preparation of a Programmatic Draft
Environmental Impact Report for City of Mission Viejo General Plan
Update and Sustainability Action Plan Orange County, CA
SCH#2012031065**

Dear Mr. Wilson:

The Department of Fish and Game (Department) has reviewed the above-referenced Notice of Preparation (NOP), dated March 9, 2012, for a program Draft Environmental Impact Report (DEIR) relative to impacts to biological resources, received by the Department on March 19, 2012. The proposed project includes the preparation of a program DEIR to analyze the impacts related to the comprehensive update of the General Plan's Land Use, Conservation/Open Space, and Circulation elements, as well as the preparation of a Sustainability Action Plan and the related update to the Conservation/Open Space Element. Climate change goals, policies, and implementation measures would be introduced into the Conservation/Open Space Element to provide a strong foundation for the Sustainability Action Plan. The Sustainability Action Plan will be prepared as the primary document designed to implement and achieve such climate change goals and policies.

The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (CEQA Guidelines §15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (CESA; Fish and Game Code §2050 et seq.) and Fish and Game Code section 1600 et seq.

The City of Mission Viejo (City) is located in the south-central portion of Orange County, and located east of the cities of Laguna Hills and Laguna Niguel, north of the City of San Juan Capistrano, west of the City of Rancho Santa Margarita and unincorporated communities of Ladera Ranch and Coto de Caza, and south of the City of Lake Forest. The City of Mission Viejo and the surrounding cities are suburban in nature with mainly residential uses. The City of Mission Viejo is located approximately 8 miles northeast of the Pacific Ocean, 6 miles west of the Santa Ana Mountains, and approximately 10 miles east of the Crystal Cove State Park.

The objectives of the General Plan Update are to address issues related to future growth and development, long-term approach for quality of life in the community, and address greenhouse gas emission reductions in a manner consistent with Assembly Bill 32 and CEQA Guidelines

Conserving California's Wildlife Since 1870

PH 3:04 APR 19 '12 ONUCD

Mr Charles E. Wilson

April 19, 2012

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section 15183.5. The program DEIR will focus on the broad effects that can be reasonably expected to follow from the certification of the comprehensive General Plan update, and will not be detailed as environmental documents on the specific construction projects that would follow.

To enable Department staff to adequately review and comment on the proposed project we recommend the following information, where applicable, be included in the DEIR:

1. The NOP cover page states that the City is circulating the NOP of a DEIR in compliance with California Code of Regulations, Title 14 (CEQA Guidelines) section 15082(e), 15103, 15375. Section 1.3 of the Initial Study (IS) states that a program Environmental Impact Report will be prepared but the IS does not cite relevant sections of CEQA Guidelines. The Department recommends the City prepare a program DEIR pursuant to CEQA Guidelines section 15168(a)(3). A program EIR can "provide an occasion for a more exhaustive consideration of effects of alternatives than would be practical in an EIR on an individual action" (CEQA Guidelines §15168(b)(1)), and "ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis" (CEQA Guidelines §15168(b)(2)). In addition we recommend that the program DEIR provide a level of detail sufficient to completely compare and contrast the potential biological impacts of the proposed project alternatives.
2. The Conservation Element combines several important areas commonly associated with open space, including recreation, trails, biological conservation, water-resource issues, global climate change, etc. We recommend including a Recreation Element in the General Plan, so that a clear distinction can be made between more conservation-oriented land uses and active recreational uses which may compete with conservation goals.
3. The DEIR should include a complete description of the project and all project alternatives. This should consist of:
 - a. Narrative, tables, and figures that describe/depict the following for proposed project and each project alternative: (i) the habitat types within the project area, (ii) relative footprints of the various proposed land uses on the biological resources, and (iii) project distribution of the human population.
 - b. Text of any proposed amendments or updates to existing ordinances, policies, or Specific Plans proposed to be components of the project.
 - c. A thorough discussion of any modifications to the Local/Regional Trail Network.

The descriptions and analyses of the alternatives should ensure that alternatives to the proposed project are fully considered and evaluated. The analyses must include alternatives that avoid or otherwise reduce impacts to biological resources.

4. To provide a complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, sensitive, and locally unique species and sensitive habitats. The DEIR should include the following information:
 - a. A thorough assessment of rare plants and rare natural communities, following the Department's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (see <http://www.dfg.ca.gov/habcon/plant/>), (hard copy available upon request).

Mr Charles E. Wilson

April 19, 2012

Page 3 of 5

- b. An inventory of rare, threatened, and endangered, and other sensitive species on site and within the area of potential effect. Species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, §15380). This should include sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.
 - c. The DEIR should include measures to fully avoid and otherwise protect Rare Natural Communities (Attachment 1) from project-related impacts. The Department considers these communities as threatened habitats having both regional and local significance.
 - d. The Department's Biogeographic Data Branch in Sacramento should be contacted at (916) 322-2493 (www.dfg.ca.gov/biogeodata) to obtain current information on any previously reported sensitive species and habitats, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code. Also, any Significant Ecological Areas or Environmentally Sensitive Habitats or any areas that are considered sensitive by the local jurisdiction that are located in or adjacent to the project area must be addressed.
5. To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the DEIR.
- a. Per CEQA Guidelines, section 15125(c), information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis placed on resources that are rare or unique to the region.
 - b. Project impacts should also be analyzed relative to their effects on off-site habitats and populations. Specifically, this should include nearby public lands, open space, adjacent natural habitats, and riparian ecosystems. Impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas are of concern to the Department and should be fully evaluated and provided. The analysis should also include a discussion of the potential for impacts resulting from such effects as increased vehicle traffic, outdoor artificial lighting, noise and vibration.
 - c. A cumulative effects analysis should be developed as described under CEQA Guidelines, section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.
 - d. Impacts to migratory wildlife affected by the project should be fully evaluated including proposals to remove/disturb native and ornamental landscaping and other nesting habitat for native birds. Impact evaluation may also include such elements as migratory butterfly roost sites and neo-tropical bird and waterfowl stop-over and staging sites. All migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. section 10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of birds and their active nests, including raptors and other migratory nongame birds as listed under the MBTA.

Mr Charles E. Wilson

April 19, 2012

Page 4 of 5

- e. Proposed project activities (including disturbances to vegetation) should take place outside of the breeding bird season (February 1 - September 1) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). If project activities cannot avoid the breeding bird season, nest surveys should be conducted and active nests should be avoided and provided with a minimum buffer as determined by a biological monitor (the Department recommends a minimum 500-foot buffer for all active raptor nests).
 - f. Impacts to all habitats from City or County required Fuel Modification Zones (FMZ). Areas slated as mitigation for loss of habitat shall not occur within the FMZ.
6. The DEIR should include mitigation polices and a set of objective criteria for meeting these polices. The program DEIR should propose guidelines for mitigation measures to facilitate processing of discretionary projects within areas of the project footprint that are not covered by established habitat conservation plans.
 7. The Department considers adverse impacts to a species protected by the California Endangered Species Act (CESA), for the purposes of CEQA, to be significant without mitigation. As to CESA, take of any endangered, threatened, or candidate species that results from the project is prohibited, except as authorized by state law (Fish and Game Code, §§ 2080, 2085.) Consequently, if the Project, Project construction, or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, the Department recommends that the project proponent seek appropriate take authorization under CESA prior to implementing the project. Appropriate authorization from the Department may include an incidental take permit (ITP) or a consistency determination in certain circumstances, among other options (Fish and Game Code §§ 2080.1, 2081, subds. (b),(c)). Early consultation is encouraged, as significant modification to a project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that the Department issue a separate CEQA document for the issuance of an ITP unless the project CEQA document addresses all project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.
 8. The Department opposes the elimination of watercourses (including concrete channels) and/or the canalization of natural and manmade drainages or conversion to subsurface drains. All wetlands and watercourses, whether intermittent, ephemeral, or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic habitat values and maintain their value to on-site and off-site wildlife populations. The Department recommends a minimum natural buffer of 100 feet from the outside edge of the riparian zone on each side of drainage.
 9. The Department also has regulatory authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed. For any such activities, the project applicant (or "entity") must provide written notification to the Department pursuant to section 1600 et seq. of the Fish and Game Code. Based on this notification and other information, the Department determines whether a Lake and

Mr Charles E. Wilson

April 19, 2012

Page 5 of 5

Streambed Alteration Agreement (LSA) with the applicant is required prior to conducting the proposed activities. The Department's issuance of a LSA for a project that is subject to CEQA will require CEQA compliance actions by the Department as a Responsible Agency. The Department as a Responsible Agency under CEQA may consider the local jurisdiction's (lead agency) Negative Declaration or Environmental Impact Report for the project. To minimize additional requirements by the Department pursuant to section 1600 et seq. and/or under CEQA, the document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA.

10. The California Wildlife Action Plan, a Department guidance document, identified the following stressors affecting wildlife and habitats within the project area: 1) growth and development; 2) water management conflicts and degradation of aquatic ecosystems; 3) invasive species; 4) altered fire regimes; and 5) recreational pressures. The Department looks forward to working with the Lead Agency to minimize impacts to fish and wildlife resources with a focus on these stressors.

Thank you for this opportunity to provide comments. Please contact Mr. Matthew Chirdon, Staff Environmental Scientist, at (858) 467-4284 if you have any questions and for further coordination on the proposed project.

Sincerely,



FOR
Stephen M. Juarez
Environmental Program Manager
South Coast Region

Attachment: (1) Rare Natural Communities

cc: Scott Morgan, State Clearinghouse, Sacramento
Matthew Chirdon, CDFG, San Diego

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net



April 6, 2012

Ms. Elaine Lister, Planner

City of Mission Viejo

200 Civic Center
Mission Viejo, CA 92691

Re: SCH#2012031065 CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the "General Plan Update EIR and Sustainability Action Plan;" located in the City of Mission Viejo; Orange County, California

Dear Ms. Lister:

The Native American Heritage Commission (NAHC) is the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604). The court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources, impacted by proposed projects including archaeological, places of religious significance to Native Americans and burial sites. The NAHC wishes to comment on the proposed project.

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ... objects of historic or aesthetic significance.' In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect.

The NAHC Sacred Lands File (SLF) search resulted as follows: **Native American cultural resources were not identified** within the project area identified. Also, the absence of archaeological resources does not preclude their existence. . California Public Resources Code §§5097.94 (a) and 5097.96 authorize the NAHC to establish a Sacred Land Inventory to record Native American sacred sites and burial sites. These records are exempt from the provisions of the California Public Records Act pursuant to California Government Code §6254(r). The purpose of this code is to protect such sites from vandalism, theft and destruction. The NAHC "Sacred Sites," as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC

Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the list of Native American contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Special reference is made to the *Tribal Consultation* requirements of the California 2006 Senate Bill 1059: enabling legislation to the federal Energy Policy Act of 2005 (P.L. 109-58), mandates consultation with Native American tribes (both federally recognized and non federally recognized) where electrically transmission lines are proposed. This is codified in the California Public Resources Code, Chapter 4.3 and §25330 to Division 15.

Furthermore, pursuant to CA Public Resources Code § 5097.95, the NAHC requests that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties pursuant to CA Public Resources Code §5097.95. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and Section 2183.2 that requires documentation, data recovery of cultural resources.

Consultation with tribes and interested Native American consulting parties, on the NAHC list, if the project is under federal jurisdiction, should be conducted in compliance with the requirements of federal NEPA and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (4)(f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

Confidentiality of "historic properties of religious and cultural significance" should also be considered as protected by California Government Code §6254(r) and may also be protected under Section 304 of the NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be

followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery'.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,



Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

Native American Contacts

Orange County

April 6, 2012

Juaneno Band of Mission Indians Acjachemen Nation

David Belardes, Chairperson

32161 Avenida Los Amigos Juaneno

San Juan Capistrano CA 92675 m

chiefdavidbelardes@yahoo.

(949) 493-4933 - home

(949) 293-8522

Juaneño Band of Mission Indians

Sonia Johnston, Tribal Chairperson

P.O. Box 25628 Juaneno

Santa Ana , CA 92799

sonia.johnston@sbcglobal.

714-323-8312

714-998-0721

Juaneno Band of Mission Indians Acjachemen Nation

Anthony Rivera, Chairman

31411-A La Matanza Street Juaneno

San Juan Capistrano CA 92675-2674

arivera@juaneno.com

(949) 488-3484

(949) 488-3294 - FAX

(530) 354-5876 - cell

Juaneno Band of Mission Indians

Anita Espinoza

1740 Concerto Drive Juaneno

Anaheim , CA 92807

neta777@sbcglobal.net

(714) 779-8832

Juaneno Band of Mission Indians

Alfred Cruz, Cultural Resources Coordinator

P.O. Box 25628 Juaneno

Santa Ana , CA 92799

alfredgcruz@sbcglobal.net

714-998-0721

714-998-0721 - FAX

714-321-1944 - cell

United Coalition to Protect Panhe (UCPP)

Rebecca Robles

119 Avenida San Fernando Juaneno

San Clemente CA 92672

rebrobles1@gmail.com

(949) 573-3138

Juaneno Band of Mission Indians

Adolph 'Bud' Sepulveda, Vice Chairperson

P.O. Box 25828 Juaneno

Santa Ana , CA 92799

bssepul@yahoo.net

714-838-3270

714-914-1812 - CELL

bsepul@yahoo.net

Juaneno Band of Mission Indians Acjachemen Nation

Joyce Perry, Representing Tribal Chairperson

4955 Paseo Segovia Juaneno

Irvine , CA 92612

949-293-8522

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2012031065; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the General Plan Update EIR and Sustainability Action Plan; located in the City of Mission Viejo; Orange County, California,

From: [Elaine Lister](#)
To: [Hokuki, Alia](#)
Cc: [Chuck Wilson](#)
Subject: FW: public scoping feedback from OCGWC (Sierra Club)
Date: Wednesday, April 04, 2012 1:51:29 PM
Attachments: [mvsapletter.doc](#)

Please find attached from Laura. She spoke at the Scoping meeting Monday night. I have her speaker slip and will e-mail it over to you.

Elaine

From: Jackson, Laura [mailto:Laura.Jackson@tais.toshiba.com]
Sent: Wednesday, April 04, 2012 12:24 PM
To: Elaine Lister
Cc: pfcsage@cox.net; cbuck@Exchange.FULLERTON.EDU; chrislunghino@gmail.com; Denise Matson
Subject: public scoping feedback from OCGWC (Sierra Club)

Hi Elaine,

Please attached comments from me on behalf of the Sierra Club local chapter and OC Global Warming Committee. I look forward to engaging with the city on this project. By updating our plans to achieve increased sustainability, we can make meaningful improvements to support the health and well being of Mission Viejo residents and the surrounding area for years to come.

Sincerely,

Laura Jackson

office: 949-587-6578
mobile: 949-300-3645

This message may contain confidential information. If you are not the intended recipient of this e-mail, do not disseminate, distribute or copy this e-mail and delete this e-mail from your system.

To: City of Mission Viejo Planning Department

Attn: Elaine Lister

RE: General Plan Update and Sustainability Action Plan EIR

Dear Elaine,

Thanks for welcoming public comment on this Plan. I have composed a partial list of ideas I would like to see included in the Mission Viejo SAP:

As soon as possible (low/no cost)

- Educate and support residents to make sustainable choices by
 - o Offer a 1/2 day course to residents on Household Sustainability. Based on successful pilot program with city staff. (See Denise Matson)
 - o Continue educating residents via media regarding energy audits, renewable energy, responsible water use, greener transportation alternatives.
 - o Partner with schools on focused sustainability efforts in area of household sustainability and district level sustainable practices.
 - o Incentivize residents to reduce landscape water usage by making better planting and watering choices.
 - o Offer separate recycling containers at all city trash receptacles.
 - o Continue to encourage shopping locally and use of MV and other local farmers market, other local sources of produce.
 - o Work with HA's as needed to ensure all residents have access to recycling bins in their neighborhood

- Educate and support businesses to make sustainable choices by
 - o Initiate a voluntary program for food service businesses to compost and use sustainable packaging for take-out containers, reusable or compostable bags.
 - o Offer incentives and recognition for participation.

Within 2-5 years

- Work with WM to offer and/or support curbside compost collection, initially in more dense housing areas where home composting is less practical.
- Encourage green transportation by adding
 - o Multi-use bike/walking route adjacent to Amtrak in MV to improve rail connections between cities for cyclists and for Metro link users and well as recreational cyclists and walkers.
 - o More, safe, street-adjacent bike trails/paths that connect with neighboring cities and protect riders from traffic while encouraging greener commuting.
 - o Offer enhanced bike security (such as token-operated locking stations) and bike riding incentives for local schools (such as bike lending/exchange) to support students using bikes for transportation in conjunction with ride safe program.
- Expand renewable energy production by implementing
 - o Additional solar energy collection at city facilities such as recreation centers and over parking at NPM,etc.
 - o EV charging stations in MV Mall and City facilities, in conjunction with solar installation where possible.
 - o Explore solar leasing option where practical and to reduce cost.

Beyond 5 years

- 20% reduction in vehicular traffic and resulting improved air quality through increased use of public and alternative, greener transportation.
- 20 % reduction in use of non-native/water intensive landscaping in private homes and city facilities.
- Recognition in OC for Mission Viejo as a leading force in implementing city-wide sustainable practices, extensive reduction in fossil fuel and other energy waste, investment in renewable energy technology, expanded water conservation and reclamation, dramatically reduced household and city waste production, higher rate of household recycling.

Please contact me if you have any questions or would like to discuss further. I envision local Sierra Club members and other volunteers working with the City to help facilitate some of these actions. I look forward to reviewing your response and working together on this long term project.

Best regards,

Laura Jackson

MV city advocate

OC Global Warming Committee

Sierra Club – Angeles Chapter

From: [Elaine Lister](#)
To: [Hokuki, Alia](#)
Cc: [Henderson, Jeff](#)
Subject: FW: [Mission Viejo Life Blog] Comment: "Two public scoping meetings planned for April 2 "
Date: Friday, March 30, 2012 1:47:17 PM

Alia,

FYI- This is a rather odd format for public comments, but this guy also called me regarding the scoping meeting. I've highlighted his comments below. I think he may show up to comment on Monday.

Elaine

-----Original Message-----

From: Bill Ring [mailto:wordpress@missionviejolife.org]
Sent: Tuesday, March 27, 2012 7:01 AM
To: BlogNews
Subject: [Mission Viejo Life Blog] Comment: "Two public scoping meetings planned for April 2 "

New comment on your post "Two public scoping meetings planned for April 2 "

Author : Bill Ring (IP: 68.5.99.249 , ip68-5-99-249.oc.oc.cox.net) E-mail : billring@cox.net

URL :

Whois : <http://ws.arin.net/cgi-bin/whois.pl?queryinput=68.5.99.249>

Comment:

In 2008, South Coast AQMD passed AQMD Rule 445 dealing with the health risks of Wood Smoke. The rising popularity of backyard portable wood burning fire pits poses a health risk, not from the fire but from the night-long smoldering of the fire through most of the night. This quite often occurs during our pleasant summer nights when downwind neighbors have their windows open. According to AQMD, if you can smell smoke you are breathing in fine particles that can be hazaordous to our health. Since most, if not all homes built in Mission Viejo have a natural gas pipe extending in the back yard, why not recommend that if homeowners want the enjoyment of a fire pit, they consider their neighbors and use natural gas or propane as the fuel source.

Bill Ring

You can see all comments on this post here:

<http://missionviejolife.org/2012/03/23/two-public-scoping-meetings-planned-for-april-2/#comments>

Trash it: <http://missionviejolife.org/wp-admin/comment.php?action=trash&c=15800>

Spam it: <http://missionviejolife.org/wp-admin/comment.php?action=spam&c=15800>

Appendix B

Air Quality Model Outputs

Group	Area	Scenario	Sub-Area	Calendar Year	Season	Title	Vehicle Population	VMT	Trips
1	Los Angeles	0	ALL	2020	Annual	Los Angeles (ALL) 2020 Annual	78,576.82	4,621,901.00	507,421.02
1	Los Angeles	1	Los Angeles (MD)	2020	Annual	Group #1 (Los Angeles), Scenario #1 - Los Angeles (MD) 2020	78,576.82	4,621,901.00	507,421.02
1	Los Angeles	2	Los Angeles (SC)	2020	Annual	Group #1 (Los Angeles), Scenario #2 - Los Angeles (SC) 2020			

Group	Area	Scenario	Sub-Area	Total TOG	Total ROG	Total CO	Total NOx	Total CO2	Total CO2 (Pavley I + LCFS)
1	Los Angeles	0	ALL	0.85	0.74	9.64	1.91	2,426.12	1,831.85
1	Los Angeles	1	Los Angeles (MD)	0.85	0.74	9.64	1.91	2,426.12	1,831.85
1	Los Angeles	2	Los Angeles (SC)	0.00	0.00	0.00	0.00	0.00	0.00

Group	Area	Scenario	Sub-Area	Total PM10	Total PM2_5	Total SOx	Fuel GAS (1000 gal)	Fuel DSL (1000 gal)
1	Los Angeles	0	ALL	0.27	0.12	0.02	234.86	21.58
1	Los Angeles	1	Los Angeles (MD)	0.27	0.12	0.02	234.86	21.58
1	Los Angeles	2	Los Angeles (SC)	0.00	0.00	0.00		

Mission Viejo Transportation Emissions

Pollutant	Tons/Day	Tons/year	Pounds Per Day
ROG	0.74	258	1,487
NOX	1.91	664	3,828
CO	9.64	3,347	19,289
SOX	0.02	8	46
PM10	0.27	93	535
PM2.5	0.12	41	235

**Mission Viejo Operational Emissions
CalEEMod and EMFAC2011**

Daily Emissions

Source Category	ROG	NOX	CO	SOX	PM10	PM2.5
Area	5,290.57	201.76	14,311.80	27.70	1,840.46	1,840.05
Energy	37.56	326.96	180.32	2.05	25.95	25.95
Mobile	1,486.60	3,828.40	19,288.60	46.00	535.00	235.20
Total Daily	6,814.73	4,357.12	33,780.72	75.75	2,401.41	2,101.20

source emissions
calculated using

Annual Emissions

Source Category	ROG	NOX	CO	SOX	PM10	PM2.5
Area	410	9	744	0	37	37
Energy	7	60	33	0	5	5
Mobile	258	664	3,347	8	93	41
Total Daily	674	733	4,123	9	134	82

source emissions
calculated using

**Mission Viejo General Plan
Construction Emissions**

Construction Year	Emissions (MT CO2e/yr)
2012	1,865
2013	4,468
2014	4,469
2015	4,470
2016	4,471
2017	4,455
2018	4,473
2019	4,473
2020	4,491
2021	4,476
2022	4,460
2023	4,460
2024	4,493
2025	4,476
2026	4,476
2027	4,476
2028	4,459
2029	4,476
2030	4,477
2031	4,477
2032	4,494
2033	4,460
2034	4,460
	100,253
Amortized (30 years)	3,342

Source: CalEEMod Version 1.1

CalEEMod Outputs are Available at the City of Mission Viejo
Upon Request

Appendix C

Noise Modeling and Vibrations Calculations

Noise Modeling and Vibration Calculations are Available at the
City of Mission Viejo Upon Request

Appendix D

Circulation System Level of Service Technical Memorandum

MISSION VIEJO
GENERAL PLAN BUILDOUT
CIRCULATION SYSTEM LEVEL OF SERVICE
TECHNICAL MEMORANDUM

Submitted by:



Submitted to:

City of Mission Viejo

February 27, 2012

[J11-1640]

INTRODUCTION

This technical memorandum summarizes the update of the Mission Viejo Traffic Analysis Model (MVTAM) for application in development of the City's Climate Action Plan and analysis of General Plan Buildout circulation system level of service. The existing version of MVTAM was developed in the early 2000's and was found to be consistent by the Orange County Transportation Authority for local application. The model was developed in support of the General Plan and corresponding Circulation Element Update. MVTAM was developed to be consistent with the Orange County Transportation Analysis Model (OCTAM) version 3.1 which was based on Orange County Projections (OCP) 2000 demographic data forecasts.

The primary objective of the model update was to utilize the most current available demographic data assumptions to provide modeling analysis to support the Climate Action Plan. Preliminary draft OCP 2010 data was provided by OCTA for use in updating MVTAM for base year 2008 and horizon year 2035. An interim 2020 year scenario is required for the Climate Action Plan so a 2020 scenario was developed through interpolation of 2008 and 2035 trip tables.

MVTAM UPDATE

NETWORK

The MVTAM base year network was updated to reflect 2008 base year conditions from the original 2003 base year network. The 2003 MVTAM network was updated based on City comments to reflect 2008 conditions within the City and the network was compared and updated to be consistent with the OCTAM 3.3 base year 2008 network outside of the City. Since the network is based on the original tiered zone structure for subarea models, minimal network detail exists north of SR-22. For areas south of SR-22, the network was updated to reflect OCTAM 3.3 base year 2008 assumptions where appropriate. Similarly, for 2035 conditions, the previous future MVTAM network, which represented 2025 conditions, was updated consistent with the 2035 OCTAM 3.3 MPAH network. As such, the 2035 network continues to include the 241 Completion Project that extends the toll facility to I-5 from its current terminus at Oso Parkway.

LAND USE/DEMOGRAPHIC DATA

MVTAM was developed as a land use-based subarea model that converts land use to socioeconomic data consistent with procedures outlined in the Orange County Subarea Modeling Guidelines Manual. General Plan land use was input into the model and converted to population, housing and employment variables for use in trip generation. A preliminary OCP 2010 dataset was provided by OCTA for incorporation into MVTAM. Mission Viejo provided input to the Center for Demographic Research in terms of socioeconomic data and the data provided was incorporated directly into the preliminary draft OCP dataset.

The trip generation component of MVTAM was slightly modified to read the socioeconomic data developed by the City rather than convert land use into socioeconomic data. Table 1 presents the base year 2008 and horizon year 2035 socioeconomic assumptions for Mission Viejo.

TABLE 1: SOCIOECONOMIC DATA ASSUMPTIONS

Analysis Year	Population	Dwelling Units		Employment		
		Single Family	Multi-Family	Retail	Service	Other
2008	98,988	24,470	9,575	9,446	18,620	9,100
2035	102,985	24,470	10,225	9,180	19,915	9,015

Source: City of Mission Viejo

TRAFFIC ANALYSIS ZONES

The primary issue with updating the citywide model was the zone structure of the various datasets. MVTAM was developed to be consistent with OCTAM 3.1 while the OCP 2010 dataset was developed for the OCTAM 3.3 zone structure. A comprehensive process was developed to convert the OCP 2010 data into the MVTAM zonal structure. This required compressing entire OCTAM zonal structure trip tables into the MVTAM structure as well as allocating citywide demographic data to the appropriate TAZs. TAZ boundaries within Mission Viejo and external to Mission Viejo have been updated between OCTAM 3.1 and OCTAM 3.3. OCTAM 3.1 utilized a 2940 zone structure while OCTAM 3.3 utilizes a 2035 zone structure. As subarea models have not yet been created with the new zone structure, OCTA did not have correspondence tables between the old and new model zone structures. The correspondence tables were developed and appropriate data conversions were performed. Once the process was developed for the base year, the same process was applied for the horizon year 2035.

FRATAR PROCESS/TRAFFIC ASSIGNMENT

Once trips are generated within the city based on MVTAM demographic trip rates, they are distributed based on a FRATAR process. The FRATAR process from the original MVTAM was retained although the trips external to Mission Viejo were updated to be consistent with those obtain from a preliminary version of OCTAM 3.4 which incorporates the preliminary draft OCP 2010 dataset. The FRATAR process maintains citywide productions and attractions to evaluate full buildout and absorption of citywide land uses. The traffic assignment process is consistent with the previous version of MVTAM which is consistent with OCTAM. A four time period assignment is performed for the AM peak period, PM peak period, mid-day period and night period.

RESULTS

Table 2 presents existing 2008 arterial level of service (LOS) based on counts collected throughout the City. Under base year 2008 conditions, the following segments operate below acceptable LOS thresholds. Per the City's General Plan Circulation Element, the desired daily LOS threshold for arterial segments is D, except for Crown Valley Parkway which allows LOS E as a Congestion Management Plan facility. The following segments operate in excess of the City's General Plan LOS threshold under existing conditions:

- Alicia Parkway between Muirlands Boulevard and Jeronimo Road
- La Paz Road between Muirlands Boulevard and Chrisanta Drive
- Crown Valley Parkway east of I-5
- Avery Parkway between I-5 and Marguerite Parkway
- Medical Center Road between Crown Valley Parkway and the Hospital Entrance

The deficient segments are primarily facilities providing access to I-5. These freeway access segments all are located immediately east of I-5 and as such, arterial performance can be managed through efficient intersection control. While three of the four deficient segments operate at LOS F, the highest volume to capacity ratio is 1.05, or five percent over the planning capacity of the facility. Overall, the citywide circulation system appears to operate efficiently with expected congestion on key corridors that access I-5.

Table 3 presents existing 2008 intersection capacity utilization (ICU) LOS based on intersection turning movement counts collected throughout the City for the critical intersections throughout the City. Under base year 2008 conditions, 3 intersections operate below acceptable LOS thresholds:

- I-5 northbound ramp/Avery Parkway (PM peak hour)
- Marguerite Parkway/Oso Parkway (AM peak hour)
- Marguerite Parkway/Crown Valley Parkway (PM peak hour)

Future planned improvements at this interchange are expected to improve operations at the Avery Parkway/I-5 freeway interchange. Improvements to the Marguerite Parkway/Oso Parkway intersection will serve future forecast volumes and enable the intersection to operate at LOS D or better. Improvements along Crown Valley Parkway after 2008 are expected to serve future forecast volumes at the Marguerite Parkway/Crown Valley Parkway intersection. Appendix A includes the peak hour intersection ICU worksheets.

TABLE 2: EXISTING ARTERIAL DAILY LEVEL OF SERVICE

Arterial	From	To	Class	Capacity	ADT	V/C	LOS
Los Alisos Blvd	I-5	Muirlands Blvd.	4D	37,500	27,300	0.73	C
	Muirlands Blvd.	Jeronimo Rd.	6D	56,300	27,600	0.49	A
	Jeronimo Rd.	Trabuco Rd.	6D	56,300	27,100	0.48	A
	east of Trabuco Rd.		4D	37,500	22,700	0.61	B
	west of Santa Margarita Pkwy.		4D	37,500	15,400	0.41	A
	Santa Margarita Pkwy.	Marguerite Pkwy.	4D	37,500	9,700	0.26	A
	Marguerite Pkwy.	SR-241	4U	25,000	11,200	0.45	A
Melinda Rd.	Olympiad Rd.	Santa Margarita Pkwy.	4D	37,500	7,800	0.21	A
Alicia Pkwy	I-5	Muirlands Blvd.	8D	75,000	57,900	0.77	C
	Muirlands Blvd.	Jeronimo Rd.	6D	56,300	58,600	1.04	F
	Jeronimo Rd.	Trabuco Rd.	6D	56,300	40,800	0.72	C
	Trabuco Rd.	Marguerite Pkwy.	6D	56,300	29,800	0.53	A
	Marguerite Pkwy.	Olympiad Rd.	6D	56,300	29,700	0.53	A
	east of Olympiad Rd.		6D	56,300	27,200	0.48	A
La Paz Rd.	Muirlands Blvd.	Christanta Dr.	4D	37,500	38,000	1.01	F
	Spadra Ln.	Marguerite Pkwy.	4D	37,500	25,000	0.67	B
	east of Marguerite Pkwy.		4D	37,500	16,800	0.45	A
	west of Olympiad Rd.		4D	37,500	11,400	0.30	A
Estanciero Dr.	Christanta Dr.	Montanoso Dr.	2U	12,000	3,400	0.28	A
	Montanoso Dr.	Marguerite Pkwy.	2U	12,000	7,500	0.63	B
Oso Pkwy.	Cabot Rd.	I-5	7D	65,700	53,700	0.82	D
	I-5	Marguerite Pkwy.	6D	56,300	49,300	0.88	D
	Marguerite Pkwy.	Pacific Hills Dr.	6D	56,300	41,100	0.73	C
	west of Felipe Rd/Olympiad Rd.		6D	56,300	39,900	0.71	C
	east of Felipe Rd/Olympiad Rd.		6D	56,300	41,200	0.73	C
Crown Valley Pkwy.	east of I-5		8D	75,000	78,400	1.05	F
	west of Marguerite Pkwy.		6D	56,300	32,800	0.58	A
	east of Marguerite Pkwy.		6D	56,300	38,100	0.68	B
Avery Pkwy	I-5	Marguerite Pkwy.	4D	37,500	35,100	0.94	E
	east of Marguerite Pkwy.		4D	37,500	3,500	0.09	A
Muirlands Blvd.	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	18,300	0.49	A
	Alicia Pkwy.	La Paz Rd.	4D	37,500	14,400	0.38	A
Jeronimo Rd.	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	15,600	0.42	A
	Alicia Pkwy.	Marguerite Pkwy.	4D	37,500	14,500	0.39	A
	Marguerite Pkwy.	Olympiad Rd.	4D	37,500	10,600	0.28	A
	north of Los Alisos Blvd.		4D	37,500	19,600	0.52	A
Trabuco Rd.	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	16,100	0.43	A
	Alicia Pkwy.	Marguerite Pkwy.	4D	37,500	12,100	0.32	A
Olympiad Rd.	Marguerite Pkwy.	Melinda Rd.	4D	37,500	10,600	0.28	A
	Melinda Rd.	Alicia Pkwy.	4D	37,500	9,300	0.25	A
	Alicia Pkwy.	Jeronimo Rd.	4D	37,500	15,000	0.40	A
	Jeronimo Rd.	La Paz Rd.	4D	37,500	15,700	0.42	A

TABLE 2: EXISTING ARTERIAL DAILY LEVEL OF SERVICE, CONTINUED

Arterial	From	To	Class	Capacity	ADT	V/C	LOS
Felipe Rd.	La Paz Rd.	Oso Pkwy.	4D	37,500	15,200	0.41	A
	Oso Pkwy.	Marguerite Pkwy.	4D	37,500	15,500	0.41	A
Santa Margarita Pkwy.	north of Los Alisos Blvd.		6D	56,300	32,400	0.58	A
	Los Alisos Blvd.	Marguerite Pkwy.	6D	56,300	26,400	0.47	A
	Marguerite Pkwy.	Melinda Rd.	6D	56,300	25,800	0.46	A
El Toro Rd.	east of Marguerite Pkwy.		6D	56,300	13,400	0.24	A
Marguerite Pkwy.	El Toro Rd.	Los Alisos Blvd.	4D	37,500	12,900	0.34	A
	Los Alisos Blvd.	Santa Margarita Pkwy.	4D	37,500	12,000	0.32	A
	Santa Margarita Pkwy.	Olympiad Rd.	4D	37,500	24,000	0.64	B
	Olympiad Rd.	Alicia Pkwy.	4D	37,500	22,400	0.60	A
	Alicia Pkwy.	Trabuco Rd.	4D	37,500	14,200	0.38	A
	Trabuco Rd.	Jeronimo Rd.	4D	37,500	25,000	0.67	B
	Jeronimo Rd.	La Paz Rd.	4D	37,500	28,900	0.77	C
	La Paz Rd.	Oso Pkwy.	4D	37,500	30,500	0.81	D
	Oso Pkwy.	Felipe Rd.	4D	37,500	29,800	0.79	C
	Felipe Rd.	Crown Valley Pkwy.	4D	37,500	32,700	0.87	D
Vista Del Lago	south of Crown Valley Pkwy.		4D	37,500	26,700	0.71	C
	north of Avery Pkwy.		4D	37,500	27,900	0.74	C
	south of Avery Pkwy.		4U	25,000	18,400	0.74	C
	Los Alisos Blvd.	Canaveras	2U	12,000	3,600	0.30	A
Puerta Real	Canaveras	Marguerite Pkwy.	2U	12,000	2,900	0.24	A
	Via Grande	Las Ramblas	4D	37,500	5,600	0.15	A
Medical Center Rd.	Las Ramblas	Crown Valley Pkwy.	4D	37,500	9,300	0.25	A
	Crown Valley Pkwy.	Hospital Entrance	2U	12,000	11,600	0.97	E
Cabot Rd.	Hospital Entrance	Marguerite Pkwy.	2U	12,000	9,500	0.79	C
	south of Oso Pkwy.		4D	37,500	12,800	0.34	A

Deficient segment

Source: City of Mission Viejo

TABLE 3: EXISTING INTERSECTION PEAK HOUR LEVEL OF SERVICE

	Intersection	AM Peak Hour		PM Peak Hour		Notes
		ICU	LOS	ICU	LOS	
1	I-5 SB Ramp / Alicia	0.71	C	0.80	C	
2	I-5 NB Ramp / Alicia	0.49	A	0.70	B	
3	I-5 SB Ramp-Cabot / La Paz	0.64	B	0.85	D	
4	I-5 NB Ramp - Muirlands / La Paz	0.56	A	0.65	B	
5	Cabot / Oso	0.56	A	0.61	B	
6	I-5 SB Ramp / Oso	0.85	D	0.77	C	
7	I-5 NB Ramp / Oso	0.69	B	0.89	D	
8	I-5 SB Ramp / Crown Valley	0.67	B	0.80	C	
9	I-5 NB Ramp / Crown Valley	0.60	A	0.66	B	
10	Puerta Real / Crown Valley	0.65	B	0.74	C	3 EB/WB Through on CV
11	Medical Center / Crown Valley	0.57	A	0.64	B	3 EB/WB Through on CV
12	Los Altos / Crown Valley	0.50	A	0.47	A	3 EB/WB Through on CV
13	Bellogente / Crown Valley	0.52	A	0.42	A	3 EB/WB Through on CV
14	I-5 SB Ramp / Avery	0.55	A	0.73	C	
15	I-5 NB Ramp / Avery	0.70	B	0.94	E	Existing geometry (2EBT)
16	Muirlands / Los Alisos	0.70	B	0.82	D	
17	Muirlands / Alicia	0.74	C	0.80	C	
18	Jeronimo / Los Alisos	0.75	C	0.83	D	
19	Via Fabricanet / Alicia	0.79	C	0.75	C	
20	Jeronimo / Alicia	0.67	B	0.64	B	
21	Chrisanta / La Paz	0.78	C	0.70	B	
22	Trabuco / Los Alisos	0.90	D	0.78	C	
23	Trabuco / Alicia	0.62	B	0.61	B	
24	Los Alisos / Santa Margarita	0.80	C	0.79	C	
25	Marguerite / El Toro	0.31	A	0.49	A	
26	Marguerite / Los Alisos	0.39	A	0.49	A	
27	Marguerite / Santa Margarita	0.77	C	0.72	C	
28	Marguerite / Olympiad	0.47	A	0.70	B	
29	Marguerite / Alicia	0.73	C	0.78	C	
30	Marguerite / Trabuco	0.64	B	0.60	A	
31	Marguerite / Jeronimo	0.89	D	0.64	B	
32	Marguerite / La Paz	0.67	B	0.79	C	
33	Marguerite / Oso	0.95	E	0.83	D	2007 Geometrics, defacto RT
34	Marguerite / Felipe	0.77	C	0.76	C	
35	Marguerite / Crown Valley	0.83	D	1.21	F	2007 Geometrics
36	Marguerite / Medical Center	0.57	A	0.65	B	
37	Marguerite / Avery	0.71	C	0.87	D	
38	Glenn Ranch / El Toro	0.41	A	0.53	A	
39	SR-241 NB Ramps / Los Alisos	0.49	A	0.36	A	
40	SR-241 SB Ramps / Los Alisos	0.57	A	0.44	A	
41	Santa Margarita / Melinda	0.65	B	0.59	A	
42	Olympiad / Melinda	0.39	A	0.42	A	
43	Olympiad / Alicia	0.66	B	0.73	C	
44	Olympiad / Jeronimo	0.53	A	0.37	A	
45	Olympiad - Felipe / La Paz	0.44	A	0.44	A	
46	Felipe / Oso	0.87	D	0.78	C	
47	Jardines / Crown Valley	0.64	B	0.50	A	3 EB/WB Through on CV
48	Modesto / Trabuco	0.52	A	0.53	A	
50	Charlinda / Alicia	0.53	A	0.66	B	
51	Kaleidoscope / Crown Valley	0.44	A	0.58	A	
	Deficient peak hour operations					

Source: City of Mission Viejo

Table 4 presents vehicle miles travelled (VMT), vehicle hours travelled (VHT), vehicle trips and average trip length for trips that begin and/or end within the City. To develop VMT and VHT summaries, all citywide trips were compressed into the following trip types:

- Internal to Internal: trips that begin and end within Mission Viejo
- Internal to External: trips that begin in Mission Viejo and end outside of Mission Viejo
- External to Internal: trips that begin outside of Mission Viejo and end in Mission Viejo

Trips that begin and end outside of Mission Viejo are not included in the summaries. The summaries were generated by developing shortest path skims from the congested networks by MVTAM highway assignment time period and multiplying those congested travel time skims by the trip tables. Travel times, VMT and VHT summaries were then compressed into a matrix with the above noted trip types. Table 4 includes base year 2008, interim year 2020 and horizon year 2035 VMT, VHT, vehicle trip and average trip length summaries. Under base year 2008 conditions, there are approximately 330,800 daily trips within the City. This internal to internal value goes down from 2008 to 2020 and from 2020 to 2035. The rationale for the reduction in internal of trips is the significant increase in development immediately adjacent to the City, specifically Ladera and Rancho Mission Viejo, along with minimal growth within the City.

Since demographics within the City remain relatively stable as the City is generally built out, specifically on the residential side, there are more opportunities for trips that begin within the City to go outside of the City to reach their desired destination. Overall citywide trips increase slightly between 2008 and 2020, increasing by 1% and by an additional 1.2% between 2020 and 2035. Since trips within the City are reduced, VMT and VHT for internal to internal trips are reduced for the interim and horizon years. Due to the slight increase in internal to external trips and external to internal trips, VMT and VHT associated with these trips increase slightly.

Table 5 presents another summary of VMT and VHT for Mission Viejo. This summary also includes average speed by facility type and summarized these measures of effectiveness by assignment time period. The summary specifically includes summaries for each facility within City boundaries. Since the statistics sum all of the statistics on each arterial or freeway segment within the City that result from the ultimate forecast volume on each segment, the data cannot be broken down further into the trip type that the statistics are associated with. In other words, it cannot be determined what proportion of the VMT or VHT is attributed to the specific trip types provided in the summary of Table 4. This just summarizes statistics for the citywide circulation system.

TABLE 4: MISSION VIEJO TRIP STATISTICS

2008								
		Mission Viejo	External MV	Total				
VMT	Mission Viejo	330,762	2,094,995	2,425,757				
	External MV	2,077,355		2,077,355				
	Total	2,408,117	2,094,995	4,503,112				
VHT	Mission Viejo	649,677	3,364,013	4,013,690				
	External MV	3,436,907		3,436,907				
	Total	4,086,584	3,364,013	7,450,597				
Vehicle Trips	Mission Viejo	155,919	202,450	358,369				
	External MV	202,631		202,631				
	Total	358,550	202,450	561,000				
Average Trip Length (mi)	Mission Viejo	2.1	10.3	6.8				
	External MV	10.3		10.3				
	Total	6.7	10.3	8.0				
2020								
		Mission Viejo	External MV	Total	% Difference from 2008			
VMT	Mission Viejo	315,952	2,156,137	2,472,089	Mission Viejo	-4.5%	2.9%	1.9%
	External MV	2,151,528		2,151,528	External MV	3.6%		3.6%
	Total	2,467,480	2,156,137	4,623,617	Total	2.5%	2.9%	2.7%
VHT	Mission Viejo	617,402	3,308,904	3,926,306	Mission Viejo	-5.0%	-1.6%	-2.2%
	External MV	3,393,236		3,393,236	External MV	-1.3%		-1.3%
	Total	4,010,638	3,308,904	7,319,542	Total	-1.9%	-1.6%	-1.8%
Vehicle Trips	Mission Viejo	150,648	207,772	358,420	Mission Viejo	-3.4%	2.6%	0.0%
	External MV	207,985		207,985	External MV	2.6%		2.6%
	Total	358,633	207,772	566,405	Total	0.0%	2.6%	1.0%
Average Trip Length (mi)	Mission Viejo	2.1	10.4	6.9	Mission Viejo	-1.2%	0.3%	1.9%
	External MV	10.3		10.3	External MV	0.9%		0.9%
	Total	6.9	10.4	8.2	Total	2.4%	0.3%	1.7%
2035								
		Mission Viejo	External MV	Total	% Difference from 2020			
VMT	Mission Viejo	297,913	2,274,533	2,572,446	Mission Viejo	-5.7%	5.5%	4.1%
	External MV	2,265,735		2,265,735	External MV	5.3%		5.3%
	Total	2,563,648	2,274,533	4,838,181	Total	3.9%	5.5%	4.6%
VHT	Mission Viejo	590,453	3,714,975	4,305,428	Mission Viejo	-4.4%	12.3%	9.7%
	External MV	3,770,679		3,770,679	External MV	11.1%		11.1%
	Total	4,361,132	3,714,975	8,076,107	Total	8.7%	12.3%	10.3%
Vehicle Trips	Mission Viejo	144,045	214,528	358,573	Mission Viejo	-4.4%	3.3%	0.0%
	External MV	214,536		214,536	External MV	3.1%		3.1%
	Total	358,581	214,528	573,109	Total	0.0%	3.3%	1.2%
Average Trip Length (mi)	Mission Viejo	2.1	10.6	7.2	Mission Viejo	-1.4%	2.2%	4.0%
	External MV	10.6		10.6	External MV	2.1%		2.1%
	Total	7.1	10.6	8.4	Total	3.9%	2.2%	3.4%

TABLE 5: MISSION VIEJO CIRCULATION SYSTEM MEASURES OF EFFECTIVENESS

		Facility Type									
		Toll	Freeway	HOV	Ramp	Major	Primary	Secondary	Commuter	Centroid	Total
2008											
VMT	AM	20,275	252,557	53,165	16,560	128,831	167,385	8,865	11,154	28,011	686,803
	PM	21,024	346,271	66,513	21,898	177,685	240,924	13,978	16,696	45,346	950,335
	MD	12,976	228,464	46,227	24,791	150,567	198,288	11,761	10,780	46,356	730,208
	NT	10,897	314,601	30,248	16,476	100,151	108,996	6,229	5,489	23,482	616,569
	Daily	65,172	1,141,892	196,151	79,725	557,233	715,593	40,834	44,120	143,195	2,983,915
VHT	AM	321	5,790	952	1,896	4,662	5,620	288	2,232	934	22,694
	PM	340	7,530	1,126	4,397	6,111	8,216	453	2,143	1,512	31,827
	MD	200	3,575	666	1,609	4,420	5,592	350	520	1,545	18,478
	NT	168	4,884	434	668	2,899	2,930	184	234	783	13,184
	Daily	1,028	21,779	3,178	8,570	18,092	22,358	1,275	5,129	4,773	86,182
SPEED	AM	63.2	43.6	55.9	8.7	27.6	29.8	30.8	5.0	30.0	30.3
	PM	61.9	46.0	59.1	5.0	29.1	29.3	30.9	7.8	30.0	29.9
	MD	64.9	63.9	69.4	15.4	34.1	35.5	33.6	20.7	30.0	39.5
	NT	64.9	64.4	69.7	24.7	34.6	37.2	33.9	23.4	30.0	46.8
	Daily	63.4	52.4	61.7	9.3	30.8	32.0	32.0	8.6	30.0	34.6
2020											
VMT	AM	22,588	260,928	57,071	15,138	131,485	155,128	8,433	9,333	27,662	687,764
	PM	23,830	359,090	71,619	20,174	181,934	224,099	13,097	15,326	44,902	954,070
	MD	14,635	240,386	51,745	24,884	156,856	186,160	10,275	10,491	45,931	741,362
	NT	12,003	366,023	34,801	17,493	104,016	101,902	5,096	5,375	23,340	670,049
	Daily	73,055	1,226,426	215,235	77,688	574,291	667,290	36,901	40,525	141,836	3,053,246
VHT	AM	363	6,094	1,049	1,296	4,335	5,089	278	2,086	922	21,512
	PM	395	8,098	1,270	2,733	5,866	7,418	443	1,975	1,497	29,696
	MD	226	3,762	748	1,454	4,595	5,211	309	504	1,531	18,339
	NT	185	5,763	500	745	3,015	2,740	152	229	778	14,107
	Daily	1,168	23,716	3,566	6,229	17,810	20,458	1,182	4,795	4,728	83,653
SPEED	AM	62.3	42.8	54.4	11.7	30.3	30.5	30.4	4.5	30.0	32.0
	PM	60.3	44.3	56.4	7.4	31.0	30.2	29.6	7.8	30.0	32.1
	MD	64.9	63.9	69.2	17.1	34.1	35.7	33.3	20.8	30.0	40.4
	NT	64.9	63.5	69.7	23.5	34.5	37.2	33.6	23.4	30.0	47.5
	Daily	62.5	51.7	60.4	12.5	32.2	32.6	31.2	8.5	30.0	36.5
Difference (2020 vs. 2008)											
VMT	AM	11.4%	3.3%	7.3%	-8.6%	2.1%	-7.3%	-4.9%	-16.3%	-1.2%	0.1%
	PM	13.3%	3.7%	7.7%	-7.9%	2.4%	-7.0%	-6.3%	-8.2%	-1.0%	0.4%
	MD	12.8%	5.2%	11.9%	0.4%	4.2%	-6.1%	-12.6%	-2.7%	-0.9%	1.5%
	NT	10.2%	16.3%	15.1%	6.2%	3.9%	-6.5%	-18.2%	-2.1%	-0.6%	8.7%
	Daily	12.1%	7.4%	9.7%	-2.6%	3.1%	-6.8%	-9.6%	-8.1%	-0.9%	2.3%
VHT	AM	13.0%	5.3%	10.2%	-31.6%	-7.0%	-9.4%	-3.5%	-6.5%	-1.2%	-5.2%
	PM	16.4%	7.5%	12.8%	-37.8%	-4.0%	-9.7%	-2.2%	-7.8%	-1.0%	-6.7%
	MD	12.8%	5.2%	12.2%	-9.6%	3.9%	-6.8%	-11.7%	-2.9%	-0.9%	-0.8%
	NT	10.2%	18.0%	15.0%	11.5%	4.0%	-6.5%	-17.3%	-2.2%	-0.6%	7.0%
	Daily	13.6%	8.9%	12.2%	-27.3%	-1.6%	-8.5%	-7.3%	-6.5%	-0.9%	-2.9%
SPEED	AM	-1.4%	-1.8%	-2.6%	33.7%	9.7%	2.3%	-1.4%	-10.5%	0.0%	5.6%
	PM	-2.6%	-3.6%	-4.6%	48.2%	6.7%	3.0%	-4.2%	-0.4%	0.0%	7.6%
	MD	0.0%	0.0%	-0.2%	11.1%	0.2%	0.8%	-1.0%	0.3%	0.0%	2.3%
	NT	0.0%	-1.4%	0.0%	-4.8%	-0.1%	0.0%	-1.1%	0.1%	0.0%	1.6%
	Daily	-1.3%	-1.4%	-2.2%	34.1%	4.7%	1.9%	-2.5%	-1.7%	0.0%	5.4%

TABLE 5: MISSION VIEJO CIRCULATION SYSTEM MEASURES OF EFFECTIVENESS, CONTINUED

	Facility Type										
	Toll	Freeway	HOV	Ramp	Major	Primary	Secondary	Commuter	Centroid	Total	
2035											
VMT	AM	35,749	275,821	62,811	15,310	143,689	162,865	10,551	9,866	28,196	744,856
	PM	40,720	388,188	79,758	20,066	199,719	235,930	16,334	15,530	45,778	1,042,023
	MD	20,636	259,807	58,788	25,640	172,146	191,720	12,685	10,731	46,808	798,960
	NT	16,635	423,782	41,141	18,214	114,668	105,241	6,909	5,431	23,848	755,870
	Daily	113,741	1,347,598	242,498	79,230	630,222	695,755	46,479	41,557	144,629	3,341,709
VHT	AM	670	7,130	1,253	1,394	4,870	5,551	351	2,208	940	24,367
	PM	861	9,840	1,493	2,680	6,603	8,092	562	2,041	1,526	33,699
	MD	318	4,115	855	1,598	5,045	5,383	380	521	1,560	19,774
	NT	256	6,810	590	810	3,317	2,838	204	231	795	15,850
	Daily	2,105	27,896	4,191	6,481	19,834	21,864	1,498	5,001	4,821	93,690
SPEED	AM	53.4	38.7	50.1	11.0	29.5	29.3	30.1	4.5	30.0	30.6
	PM	47.3	39.4	53.4	7.5	30.2	29.2	29.0	7.6	30.0	30.9
	MD	64.9	63.1	68.8	16.0	34.1	35.6	33.4	20.6	30.0	40.4
	NT	64.9	62.2	69.7	22.5	34.6	37.1	33.9	23.6	30.0	47.7
	Daily	54.0	48.3	57.9	12.2	31.8	31.8	31.0	8.3	30.0	35.7
VMT	AM	35,749	275,821	62,811	15,310	143,689	162,865	10,551	9,866	28,196	744,856
	PM	40,720	388,188	79,758	20,066	199,719	235,930	16,334	15,530	45,778	1,042,023
	MD	20,636	259,807	58,788	25,640	172,146	191,720	12,685	10,731	46,808	798,960
	NT	16,635	423,782	41,141	18,214	114,668	105,241	6,909	5,431	23,848	755,870
	Daily	113,741	1,347,598	242,498	79,230	630,222	695,755	46,479	41,557	144,629	3,341,709
Difference (2035 vs. 2020)											
VMT	AM	58.3%	5.7%	10.1%	1.1%	9.3%	5.0%	25.1%	5.7%	1.9%	8.3%
	PM	70.9%	8.1%	11.4%	-0.5%	9.8%	5.3%	24.7%	1.3%	2.0%	9.2%
	MD	41.0%	8.1%	13.6%	3.0%	9.7%	3.0%	23.5%	2.3%	1.9%	7.8%
	NT	38.6%	15.8%	18.2%	4.1%	10.2%	3.3%	35.6%	1.0%	2.2%	12.8%
	Daily	55.7%	9.9%	12.7%	2.0%	9.7%	4.3%	26.0%	2.5%	2.0%	9.4%
VHT	AM	84.6%	17.0%	19.5%	7.5%	12.3%	9.1%	26.5%	5.8%	1.9%	13.3%
	PM	117.9%	21.5%	17.6%	-1.9%	12.6%	9.1%	26.9%	3.3%	2.0%	13.5%
	MD	41.0%	9.4%	14.3%	9.9%	9.8%	3.3%	23.1%	3.3%	1.9%	7.8%
	NT	38.5%	18.2%	18.1%	8.6%	10.0%	3.6%	34.2%	0.6%	2.2%	12.4%
	Daily	80.2%	17.6%	17.5%	4.1%	11.4%	6.9%	26.7%	4.3%	2.0%	12.0%
SPEED	AM	-14.3%	-9.7%	-7.9%	-5.9%	-2.7%	-3.7%	-1.1%	-0.1%	0.0%	-4.4%
	PM	-21.6%	-11.0%	-5.3%	1.4%	-2.5%	-3.5%	-1.7%	-1.9%	0.0%	-3.8%
	MD	0.0%	-1.2%	-0.6%	-6.2%	0.0%	-0.3%	0.3%	-1.0%	0.0%	-0.1%
	NT	0.0%	-2.0%	0.1%	-4.1%	0.2%	-0.3%	1.0%	0.4%	0.0%	0.4%
	Daily	-13.6%	-6.6%	-4.1%	-2.0%	-1.5%	-2.4%	-0.6%	-1.7%	0.0%	-2.3%

Table 6 presents VMT and VHT summaries for the citywide circulation system by speed bins for use in development of the Climate Action Plan. The key finding in Table 6 is that while total VMT increases between 2008 and 2020 by approximately 2%, total VHT decreases by approximately 3%. While VMT increases citywide, the amount of VMT in the lower speed bins is reduced while the VMT in the >60 mph speed bins increases which indicates how the system performance is improving.

TABLE 6: MISSION VIEJO CIRCULATION SYSTEM VMT AND VHT BY SPEED RANGE

		Speed Ranges (mph)							
		<10	10-20	20-30	30-40	40-50	50-60	>60	TOTAL
2008									
VMT	AM	8,079	28,957	145,336	241,235	41,871	95,652	125,673	686,803
	PM	10,472	31,572	204,891	301,670	126,409	109,280	166,039	950,333
	MD	1,879	8,563	101,617	330,481	0	7,314	280,352	730,206
	NT	0	3,761	57,171	199,892	0	0	355,745	616,569
	Daily	20,430	72,853	509,015	1,073,278	168,280	212,246	927,809	2,983,911
VHT	AM	3,172	1,925	6,283	6,971	1,131	2,415	797	22,694
	PM	5,398	1,835	8,759	8,099	4,230	2,768	739	31,828
	MD	614	878	3,354	9,191	0	267	4,175	18,479
	NT	0	325	1,885	5,488	0	0	5,486	13,184
	Daily	9,184	4,963	20,281	29,749	5,361	5,450	11,197	86,185
2020									
VMT	AM	5,626	15,836	144,840	250,261	41,343	110,317	119,541	687,764
	PM	8,185	19,628	199,076	329,482	140,047	99,932	157,719	954,069
	MD	1,604	10,481	101,832	320,369	0	9,636	297,440	741,362
	NT	0	3,452	60,208	193,306	0	2,763	410,321	670,050
	Daily	15,415	49,397	505,956	1,093,418	181,390	222,648	985,021	3,053,245
VHT	AM	2,432	1,183	5,612	7,840	966	2,773	705	21,511
	PM	3,471	978	8,257	9,454	4,570	2,237	728	29,695
	MD	165	1,190	3,280	8,964	0	296	4,444	18,339
	NT	0	381	1,962	5,312	0	186	6,266	14,107
	Daily	6,068	3,732	19,111	31,570	5,536	5,492	12,143	83,652
Difference (2020 vs. 2008)									
VMT	AM	-30.4%	-45.3%	-0.3%	3.7%	-1.3%	15.3%	-4.9%	0.1%
	PM	-21.8%	-37.8%	-2.8%	9.2%	10.8%	-8.6%	-5.0%	0.4%
	MD	-14.6%	22.4%	0.2%	-3.1%	0.0%	31.7%	6.1%	1.5%
	NT	0.0%	-8.2%	5.3%	-3.3%	0.0%	0.0%	15.3%	8.7%
	Daily	-24.5%	-32.2%	-0.6%	1.9%	7.8%	4.9%	6.2%	2.3%
VHT	AM	-23.3%	-38.5%	-10.7%	12.5%	-14.6%	14.8%	-11.5%	-5.2%
	PM	-35.7%	-46.7%	-5.7%	16.7%	8.0%	-19.2%	-1.5%	-6.7%
	MD	-73.1%	35.5%	-2.2%	-2.5%	0.0%	10.9%	6.4%	-0.8%
	NT	0.0%	17.2%	4.1%	-3.2%	0.0%	0.0%	14.2%	7.0%
	Daily	-33.9%	-24.8%	-5.8%	6.1%	3.3%	0.8%	8.4%	-2.9%

TABLE 6: MISSION VIEJO CIRCULATION SYSTEM VMT AND VHT BY SPEED RANGE, CONTINUED

		Speed Ranges (mph)							
		<10	10-20	20-30	30-40	40-50	50-60	>60	TOTAL
2035									
VMT	AM	9,817	24,638	190,681	245,642	67,646	104,572	101,860	744,856
	PM	13,372	27,318	240,591	399,250	145,013	61,980	154,498	1,042,022
	MD	2,602	10,492	104,841	341,480	0	13,898	325,647	798,960
	NT	0	4,696	61,368	207,988	0	27,698	454,120	755,870
	Daily	25,791	67,144	597,481	1,194,360	212,659	208,148	1,036,125	3,341,708
VHT	AM	2,676	1,528	8,269	7,244	1,708	2,461	482	24,368
	PM	3,542	1,639	10,203	11,814	3,981	1,757	764	33,700
	MD	563	895	3,436	9,587	0	398	4,895	19,774
	NT	0	498	1,966	5,726	0	1,084	6,577	15,851
	Daily	6,781	4,560	23,874	34,371	5,689	5,700	12,718	93,693
Difference (2035 vs. 2020)									
VMT	AM	21.5%	-14.9%	31.2%	1.8%	61.6%	9.3%	-18.9%	8.5%
	PM	27.7%	-13.5%	17.4%	32.3%	14.7%	-43.3%	-7.0%	9.6%
	MD	38.5%	22.5%	3.2%	3.3%	0.0%	90.0%	16.2%	9.4%
	NT	0.0%	24.9%	7.3%	4.1%	0.0%	0.0%	27.7%	22.6%
	Daily	26.2%	-7.8%	17.4%	11.3%	26.4%	-1.9%	11.7%	12.0%
VHT	AM	-15.6%	-20.6%	31.6%	3.9%	51.0%	1.9%	-39.5%	7.4%
	PM	-34.4%	-10.7%	16.5%	45.9%	-5.9%	-36.5%	3.4%	5.9%
	MD	-8.3%	1.9%	2.4%	4.3%	0.0%	49.1%	17.2%	7.0%
	NT	0.0%	53.2%	4.3%	4.3%	0.0%	0.0%	19.9%	20.2%
	Daily	-26.2%	-8.1%	17.7%	15.5%	6.1%	4.6%	13.6%	8.7%

Under 2035 conditions, VMT increases from 2020 conditions by approximately 12 percent while VHT increases from 2020 conditions by approximately 9 percent.

2035 LEVEL OF SERVICE SUMMARY

Table 7 presents the 2035 forecast arterial level of service summary while Table 8 presents the 2035 forecast intersection ICU level of service. In general, the future circulation system throughout the City operates well. Future arterial operations are generally consistent with existing condition levels of service. While five arterial segments were found to exceed the City’s LOS thresholds under existing conditions, four of those five remain deficient under 2035 conditions with two additional segments deteriorating to deficient conditions. The additional deficient segments are Oso Parkway east of Felipe Road/Olympiad Road which deteriorates to a V/C ratio of 0.92 and LOS E, and Marguerite Parkway between Felipe Road and Crown Valley Parkway which deteriorates to a V/C ratio of 0.91 and LOS E. Planned improvements to La Paz Road through the addition of one lane in each direction from I-5 to Chrisanta Drive improves the LOS to acceptable conditions along La Paz Road. The following segments operate in excess of the City’s LOS threshold under future conditions:

- Alicia Parkway between Muirlands Boulevard and Jeronimo Road

- Crown Valley Parkway east of I-5
- Avery Parkway between I-5 and Marguerite Parkway
- Medical Center Road between Crown Valley Parkway and the Hospital Entrance
- Oso Parkway east of Felipe Road/Olympiad Road

Under future conditions, the following citywide intersections are forecast to operate at or below the City's LOS D threshold:

- I-5 northbound ramp/Oso Parkway (PM peak hour LOS E)
- I-5 northbound ramp/Avery Parkway (PM peak hour LOS F)
- Trabuco Road/Los Alisos Boulevard (AM peak hour LOS E)
- Los Alisos Boulevard /Santa Margarita Parkway (AM and PM peak hour LOS E/E)
- Marguerite Parkway/Jeronimo Road (AM peak hour LOS E)
- Marguerite Parkway/Avery Parkway (AM and PM peak hour LOS E/E)
- Felipe Road/Oso Parkway (AM and PM peak hour LOS E/E)

Mitigation measures have been identified for the deficient intersections that result in acceptable levels of service under forecast future conditions. However, mitigation has not been identified for the arterial segments that operate at deficient levels under future conditions. The arterial conditions are general planning level standards, but operations are defined based on peak hour operating conditions. If the intersections associated with the deficient segments operate at acceptable conditions, then the arterial segment is expected to operate at an acceptable peak hour condition. For example, the segment of Medical Center Road south of Crown Valley experiences daily traffic volumes in excess of the standard planning daily capacity of a two-lane facility. However, the intersection of Medical Center Road/Crown Valley Parkway operates at level of service A during both the AM and PM peak hours. The peaking characteristics associated with a hospital do not conform to the typical morning and afternoon commute peak hours and therefore this intersection operates acceptably during the traditional commute peak hours. As a result, it is unnecessary to upgrade the segment of Medical Center Drive south of Crown Valley Parkway based on the planning level daily deficiency identified in Table 7.

While trips associated with City growth are limited since the City is basically at buildout, the increase in deficient intersections is generally the result of growth in adjacent jurisdictions to Mission Viejo. Most of the deficient intersections under 2035 conditions operate at LOS E with seven of the ten deficient peak hours operating at an ICU of less than 0.95. The majority of these locations operated at just under the 0.91 ICU LOS E threshold under existing conditions so any growth pushes these locations into the LOS E range. The I-5 northbound ramp/Avery Parkway intersection operates at LOS E under existing conditions and LOS F under future conditions. This intersection is currently being evaluated to develop an ultimate configuration to satisfy future traffic demands by OCTA and Caltrans. As a preferred alternative has not yet been selected, the future baseline geometrics maintain the existing geometrics. A minor improvement that results in acceptable operations has been identified. The improvement noted is not expected to be consistent with the ultimate preferred alternative developed by

OCTA and Caltrans for this ramp interchange and ultimate future operations are expected to be improved from the results presented in Table 8.

All of the mitigation measures include additional turn lane capacity provisions. These will require further evaluation to ensure the mitigation measures are appropriate and feasible. Prior to adoption of mitigation measures, the intersections should continue to be monitored to ensure the improvements are ultimately necessary as the surrounding developments mature.

TABLE 7: FUTURE ARTERIAL DAILY LEVEL OF SERVICE

Arterial	From	To	Existing (Base Year 2008)					Future				
			Class	Capacity	ADT	V/C	LOS	Class	Capacity	ADT	V/C	LOS
Los Alisos Blvd	I-5	Muirlands Blvd.	4D	37,500	27,300	0.73	C	6D	56,300	28,700	0.51	A
	Muirlands Blvd.	Jeronimo Rd.	6D	56,300	27,600	0.49	A	6D	56,300	32,700	0.58	A
	Jeronimo Rd.	Trabuco Rd.	6D	56,300	27,100	0.48	A	6D	56,300	27,700	0.49	A
	east of Trabuco Rd.		4D	37,500	22,700	0.61	B	4D	37,500	23,800	0.63	B
	west of Santa Margarita Pkwy.		4D	37,500	15,400	0.41	A	4D	37,500	16,400	0.44	A
	Santa Margarita Pkwy.	Marguerite Pkwy.	4D	37,500	9,700	0.26	A	4D	37,500	10,700	0.29	A
	Marguerite Pkwy.	SR-241	4U	25,000	11,200	0.45	A	4U	25,000	14,500	0.58	A
Melinda Rd.	Olympiad Rd.	Santa Margarita Pkwy.	4D	37,500	7,800	0.21	A	4D	37,500	8,200	0.22	A
Alicia Pkwy	I-5	Muirlands Blvd.	8D	75,000	57,900	0.77	C	8D	75,000	60,700	0.81	D
	Muirlands Blvd.	Jeronimo Rd.	6D	56,300	58,600	1.04	F	6D	56,300	60,900	1.08	F
	Jeronimo Rd.	Trabuco Rd.	6D	56,300	40,800	0.72	C	6D	56,300	42,900	0.76	C
	Trabuco Rd.	Marguerite Pkwy.	6D	56,300	29,800	0.53	A	6D	56,300	30,800	0.55	A
	Marguerite Pkwy.	Olympiad Rd.	6D	56,300	29,700	0.53	A	6D	56,300	31,500	0.56	A
	east of Olympiad Rd.		6D	56,300	27,200	0.48	A	6D	56,300	27,600	0.49	A
La Paz Rd.	Muirlands Blvd.	Christanta Dr.	4D	37,500	38,000	1.01	F	6D	56,300	38,800	0.69	B
	Spadra Ln.	Marguerite Pkwy.	4D	37,500	25,000	0.67	B	4D	37,500	26,100	0.70	B
	east of Marguerite Pkwy.		4D	37,500	16,800	0.45	A	4D	37,500	17,600	0.47	A
	west of Olympiad Rd.		4D	37,500	11,400	0.30	A	4D	37,500	11,600	0.31	A
Estanciero Dr.	Christanta Dr.	Montanoso Dr.	2U	12,000	3,400	0.28	A	2U	12,000	3,500	0.29	A
	Montanoso Dr.	Marguerite Pkwy.	2U	12,000	7,500	0.63	B	2U	12,000	7,600	0.63	B
Oso Pkwy.	Cabot Rd.	I-5	7D	65,700	53,700	0.82	D	7D	65,700	56,200	0.86	D
	I-5	Marguerite Pkwy.	6D	56,300	49,300	0.88	D	8D	75,000	51,400	0.69	B
	Marguerite Pkwy.	Pacific Hills Dr.	6D	56,300	41,100	0.73	C	8D	75,000	47,100	0.63	B
	west of Felipe Rd/Olympiad Rd.		6D	56,300	39,900	0.71	C	6D	56,300	47,400	0.84	D
	east of Felipe Rd/Olympiad Rd.		6D	56,300	41,200	0.73	C	6D	56,300	52,300	0.93	E
Crown Valley Pkwy.	east of I-5		8D	75,000	78,400	1.05	F	8D	75,000	82,300	1.10	F
	west of Marguerite Pkwy.		6D	56,300	32,800	0.58	A	8D	75,000	33,500	0.45	A
	east of Marguerite Pkwy.		6D	56,300	38,100	0.68	B	8D	75,000	39,900	0.53	A
Avery Pkwy	I-5	Marguerite Pkwy.	4D	37,500	35,100	0.94	E	4D	37,500	38,400	1.02	F
	east of Marguerite Pkwy.		4D	37,500	3,500	0.09	A	4D	37,500	5,300	0.14	A

TABLE 7: FUTURE ARTERIAL DAILY LEVEL OF SERVICE, CONTINUED

Arterial	From	To	Existing (Base Year 2008)					Future				
			Class	Capacity	ADT	V/C	LOS	Class	Capacity	ADT	V/C	LOS
Muirlands Blvd.	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	18,300	0.49	A	4D	37,500	18,500	0.49	A
	Alicia Pkwy.	La Paz Rd.	4D	37,500	14,400	0.38	A	4D	37,500	15,900	0.42	A
	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	15,600	0.42	A	4D	37,500	26,300	0.70	B
Jeronimo Rd.	Alicia Pkwy.	Marguerite Pkwy.	4D	37,500	14,500	0.39	A	4D	37,500	15,400	0.41	A
	Marguerite Pkwy.	Olympiad Rd.	4D	37,500	10,600	0.28	A	4D	37,500	10,600	0.28	A
Trabuco Rd.	north of Los Alisos Blvd.		4D	37,500	19,600	0.52	A	4D	37,500	21,200	0.57	A
	Los Alisos Blvd.	Alicia Pkwy.	4D	37,500	16,100	0.43	A	4D	37,500	17,300	0.46	A
	Alicia Pkwy.	Marguerite Pkwy.	4D	37,500	12,100	0.32	A	4D	37,500	13,700	0.37	A
Olympiad Rd.	Marguerite Pkwy.	Melinda Rd.	4D	37,500	10,600	0.28	A	4D	37,500	11,500	0.31	A
	Melinda Rd.	Alicia Pkwy.	4D	37,500	9,300	0.25	A	4D	37,500	10,000	0.27	A
	Alicia Pkwy.	Jeronimo Rd.	4D	37,500	15,000	0.40	A	4D	37,500	15,800	0.42	A
	Jeronimo Rd.	La Paz Rd.	4D	37,500	15,700	0.42	A	4D	37,500	16,500	0.44	A
Felipe Rd.	La Paz Rd.	Oso Pkwy.	4D	37,500	15,200	0.41	A	4D	37,500	16,000	0.43	A
	Oso Pkwy.	Marguerite Pkwy.	4D	37,500	15,500	0.41	A	4D	37,500	16,300	0.43	A
Santa Margarita Pkwy.	north of Los Alisos Blvd.		6D	56,300	32,400	0.58	A	6D	56,300	40,400	0.72	C
	Los Alisos Blvd.	Marguerite Pkwy.	6D	56,300	26,400	0.47	A	6D	56,300	32,100	0.57	A
	Marguerite Pkwy.	Melinda Rd.	6D	56,300	25,800	0.46	A	6D	56,300	30,300	0.54	A
El Toro Rd.	east of Marguerite Pkwy.		6D	56,300	13,400	0.24	A	6D	56,300	15,000	0.27	A
	El Toro Rd.	Los Alisos Blvd.	4D	37,500	12,900	0.34	A	4D	37,500	17,600	0.47	A
	Los Alisos Blvd.	Santa Margarita Pkwy.	4D	37,500	12,000	0.32	A	4D	37,500	12,600	0.34	A
	Santa Margarita Pkwy.	Olympiad Rd.	4D	37,500	24,000	0.64	B	4D	37,500	25,800	0.69	B
	Olympiad Rd.	Alicia Pkwy.	4D	37,500	22,400	0.60	A	4D	37,500	23,500	0.63	B
	Alicia Pkwy.	Trabuco Rd.	4D	37,500	14,200	0.38	A	4D	37,500	14,900	0.40	A
	Trabuco Rd.	Jeronimo Rd.	4D	37,500	25,000	0.67	B	4D	37,500	26,300	0.70	B
	Jeronimo Rd.	La Paz Rd.	4D	37,500	28,900	0.77	C	4D	37,500	30,300	0.81	D
	La Paz Rd.	Oso Pkwy.	4D	37,500	30,500	0.81	D	4D	37,500	31,900	0.85	D
	Oso Pkwy.	Felipe Rd.	4D	37,500	29,800	0.79	C	4D	37,500	31,300	0.83	D
Marguerite Pkwy.	Felipe Rd.	Crown Valley Pkwy.	4D	37,500	32,700	0.87	D	4D	37,500	34,300	0.91	E
	south of Crown Valley Pkwy.		4D	37,500	26,700	0.71	C	4D	37,500	28,000	0.75	C
	north of Avery Pkwy.		4D	37,500	27,900	0.74	C	4D	37,500	30,000	0.80	C
	south of Avery Pkwy.		4U	25,000	18,400	0.74	C	4U	25,000	22,000	0.88	D

TABLE 7: FUTURE ARTERIAL DAILY LEVEL OF SERVICE, CONTINUED

Arterial	From	To	Existing (Base Year 2008)					Future				
			Class	Capacity	ADT	V/C	LOS	Class	Capacity	ADT	V/C	LOS
Vista Del Lago	Los Alisos Blvd.	Canaveras	2U	12,000	3,600	0.30	A	2U	12,000	3,700	0.31	A
	Canaveras	Marguerite Pkwy.	2U	12,000	2,900	0.24	A	2U	12,000	2,900	0.24	A
Puerta Real	Via Grande	Las Ramblas	4D	37,500	5,600	0.15	A	4D	37,500	5,900	0.16	A
	Las Ramblas	Crown Valley Pkwy.	4D	37,500	9,300	0.25	A	4D	37,500	9,800	0.26	A
Medical Center Rd.	Crown Valley Pkwy.	Hospital Entrance	2U	12,000	11,600	0.97	E	2U	12,000	11,700	0.98	E
	Hospital Entrance	Marguerite Pkwy.	2U	12,000	9,500	0.79	C	2U	12,000	9,800	0.82	D
Cabot Rd.	south of Oso Pkwy.		4D	37,500	12,800	0.34	A	4D	37,500	13,400	0.36	A
	Deficient segment											

Source: City of Mission Viejo

TABLE 8: FUTURE INTERSECTION PEAK HOUR LEVEL OF SERVICE

Intersection	Existing					2035					2035 Mitigated			
	AM Peak Hour		PM Peak Hour		Notes	AM Peak Hour		PM Peak Hour		Notes	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS		ICU	LOS	ICU	LOS		ICU	LOS	ICU	LOS
1 I-5 SB Ramp / Alicia	0.71	C	0.80	C		0.75	C	0.84	D					
2 I-5 NB Ramp / Alicia	0.49	A	0.70	B		0.51	A	0.74	C					
3 I-5 SB Ramp-Cabot / La Paz	0.64	B	0.85	D		0.69	B	0.89	D					
4 I-5 NB Ramp - Muirlands / La Paz	0.56	A	0.65	B		0.61	B	0.68	B					
5 Cabot / Oso	0.56	A	0.61	B		0.63	B	0.66	B					
6 I-5 SB Ramp / Oso	0.85	D	0.77	C		0.89	D	0.81	D					
7 I-5 NB Ramp / Oso	0.69	B	0.89	D		0.73	C	0.93	E	Add NBR (Existing PM ICU just under threshold)	0.65	B	0.86	D
8 I-5 SB Ramp / Crown Valley	0.67	B	0.80	C		0.70	B	0.84	D					
9 I-5 NB Ramp / Crown Valley	0.60	A	0.66	B		0.63	B	0.70	B					
10 Puerta Real / Crown Valley	0.65	B	0.74	C	3 EB/WB Through on CV	0.67	B	0.87	D	4 EB/WB Through on CV				
11 Medical Center / Crown Valley	0.57	A	0.64	B	3 EB/WB Through on CV	0.50	A	0.55	A	4 EB/WB Through on CV				
12 Los Altos / Crown Valley	0.50	A	0.47	A	3 EB/WB Through on CV	0.44	A	0.42	A	4 EB/WB Through on CV				
13 Bellogente / Crown Valley	0.52	A	0.42	A	3 EB/WB Through on CV	0.45	A	0.37	A	4 EB/WB Through on CV				
14 I-5 SB Ramp / Avery	0.55	A	0.73	C		0.58	A	0.78	C					
15 I-5 NB Ramp / Avery	0.70	B	0.94	E	Existing geometry (2EBT)	0.86	D	1.02	F	Add NBR	0.75	C	0.85	D
16 Muirlands / Los Alisos	0.70	B	0.82	D		0.75	C	0.87	D					
17 Muirlands / Alicia	0.74	C	0.80	C		0.81	D	0.83	D					
18 Jeronimo / Los Alisos	0.75	C	0.83	D		0.83	D	0.87	D					
19 Via Fabricanet / Alicia	0.79	C	0.75	C		0.83	D	0.77	C					
20 Jeronimo / Alicia	0.67	B	0.64	B		0.71	C	0.68	B					
21 Chrisanta / La Paz	0.78	C	0.70	B		0.81	D	0.73	C					
22 Trabuco / Los Alisos	0.90	D	0.78	C		0.94	E	0.82	D	Add NBL (Exist AM ICU just under threshold)	0.85	D	0.82	D
23 Trabuco / Alicia	0.62	B	0.61	B		0.66	B	0.61	B					
24 Los Alisos / Santa Margarita	0.80	C	0.79	C		0.92	E	0.92	E	Add 2 nd NBL	0.76	C	0.86	D
25 Marguerite / El Toro	0.31	A	0.49	A		0.51	A	0.71	C					
26 Marguerite / Los Alisos	0.39	A	0.49	A		0.63	B	0.69	B					
27 Marguerite / Santa Margarita	0.77	C	0.72	C		0.84	D	0.85	D					
28 Marguerite / Olympiad	0.47	A	0.70	B		0.50	A	0.73	C					
29 Marguerite / Alicia	0.73	C	0.78	C		0.60	A	0.73	C					
30 Marguerite / Trabuco	0.64	B	0.60	A		0.79	C	0.65	B					
31 Marguerite / Jeronimo	0.89	D	0.64	B		0.93	E	0.67	B	Add NBL (Existing AM ICU just under threshold)	0.82	D	0.69	B
32 Marguerite / La Paz	0.67	B	0.79	C		0.71	C	0.84	D					
33 Marguerite / Oso	0.95	E	0.83	D	2007 Geometrics, defacto RT	0.73	C	0.68	B	Recent improvements assumed for future base				
34 Marguerite / Felipe	0.77	C	0.76	C		0.85	D	0.80	C					
35 Marguerite / Crown Valley	0.83	D	1.21	F	2007 Geometrics	0.72	C	0.70	B	Current geometrics (4 EB/WB Through on CV)				
36 Marguerite / Medical Center	0.57	A	0.65	B		0.59	A	0.71	C					
37 Marguerite / Avery	0.71	C	0.87	D		0.91	E	0.96	E	Current geometrics, Add NBL	0.74	C	0.86	D
38 Glenn Ranch / El Toro	0.41	A	0.53	A		0.57	A	0.67	B					
39 SR-241 NB Ramps / Los Alisos	0.49	A	0.36	A		0.57	A	0.44	A					
40 SR-241 SB Ramps / Los Alisos	0.57	A	0.44	A		0.59	A	0.58	A					
41 Santa Margarita / Melinda	0.65	B	0.59	A		0.74	C	0.69	B					
42 Olympiad / Melinda	0.39	A	0.42	A		0.41	A	0.44	A					
43 Olympiad / Alicia	0.66	B	0.73	C		0.70	B	0.75	C					
44 Olympiad / Jeronimo	0.53	A	0.37	A		0.55	A	0.39	A					
45 Olympiad - Felipe / La Paz	0.44	A	0.44	A		0.65	B	0.62	B					
46 Felipe / Oso	0.87	D	0.78	C		0.93	E	0.93	E	Add NBL & SBL	0.88	D	0.77	C
47 Jardines / Crown Valley	0.64	B	0.50	A	3 EB/WB Through on CV	0.57	A	0.46	A	4 EB/WB Through on CV				
48 Modesto / Trabuco	0.52	A	0.53	A		0.57	A	0.56	A					
50 Charlinda / Alicia	0.53	A	0.66	B		0.56	A	0.69	B					
51 Kaleidoscope / Crown Valley	0.44	A	0.58	A		0.45	A	0.61	B					

APPENDIX A
EXISTING PEAK HOUR
INTERSECTION CAPACITY ANALYSIS WORKSHEETS

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		Existing - 2009					
INTERSECTION:		1 I-5 SB Ramp / Alicia					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	0		0			0	
NBT	0		0	0.00 *		0	0.00 *
NBR	0		0			0	
SBL	1.5	2,891	1,055	0.36 *	2,996	1,394	0.47 *
SBT	0		0	0.00		0	0.00
SBR	1.5	2,209	806	0.36 *	2,104	979	0.47 *
EBL	0		0			0	
EBT	4	6,800	2,035	0.30 *	6,800	1,933	0.28 *
EBR	f		242			265	
WBL	0		0	*		1,074	*
WBT	3	5,100	1,022	0.20	5,100	286	0.27
WBR	f		382			0	
		N/S Movements		0.36			0.47
		E/W Movements		0.30			0.28
		Rt. Turn Component		0			0.00
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.71			0.80
LEVEL OF SERVICE (LOS)				C			C

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		Existing - 2009					
INTERSECTION:		2 I-5 NB Ramp / Alicia					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1.5	1,700	139	0.08 *	1,700	289	0.17 *
NBT	0		0	0.00		0	0.00
NBR	1.5	3,400	333	0.10 *	3,400	653	0.19 *
SBL	0		0			0	
SBT	0		0	0.00 *		0	0.00 *
SBR	0		0			0	
EBL	0		0			0	
EBT	3	5,100	1,808	0.35 *	5,100	2,433	0.48 *
EBR	f		1,283			892	
WBL	0		0	*		0	*
WBT	3	5,100	1,238	0.24	5,100	1,092	0.21
WBR	f		1,372			960	
		N/S Movements		0.08			0.17
		E/W Movements		0.35			0.48
		Rt. Turn Component		0			0.00
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.49			0.70
LEVEL OF SERVICE (LOS)				A			B

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		Existing - 2011					
INTERSECTION:		3 I-5 SB Ramp-Cabot / La Paz					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	87	0.05 *	1,700	97	0.06 *
NBT	0		0	0.00		0	0.00
NBR	2	3,400	417	0.12 *	3,400	448	0.13
SBL	1.5	2,425	353	0.15	2,798	836	0.30
SBT	0.5	975	142	0.15 *	602	180	0.30 *
SBR	1	1,700	239	0.14	1,700	384	0.23
EBL	0		6			11	
EBT	2	3,400	752	0.22 *	3,400	783	0.23 *
EBR	1	1,700	50	0.03	1,700	102	0.06
WBL	1	1,700	162	0.10 *	1,700	224	0.13 *
WBT	2	3,400	463	0.22	3,400	546	0.26
WBR	0		272			348	
sp		N/S Movements		0.27			0.43
		E/W Movements		0.32			0.37
		Rt. Turn Component		0			0.00
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.64			0.85
LEVEL OF SERVICE (LOS)				B			D

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		Existing - 2003					
INTERSECTION:		4 I-5 NB Ramp - Muirlands / La Paz					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1.5	2,127	83	0.04	2,550	200	0.08
NBT	1	1,700	104	0.06 *	1,700	192	0.11 *
NBR	1.5	2,973	116	0.04	2,550	307	0.12 *
SBL	2	3,400	315	0.09 *	3,400	364	0.11 *
SBT	0		0			0	
SBR	2	3,400	310	0.09 *	3,400	306	0.09 *
EBL	2	3,400	258	0.08 *	3,400	288	0.08 *
EBT	2	3,400	1,003	0.30	3,400	1,218	0.36
EBR	f		576			346	
WBL	0		0			0	
WBT	2.5	3,903	1,050	0.27 *	4,347	1,213	0.28 *
WBR	0.5	1,197	322	0.27	753	210	0.28
		N/S Movements		0.15			0.22
		E/W Movements		0.34			0.36
		Rt. Turn Component		0.02			0.01
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.56			0.65
LEVEL OF SERVICE (LOS)				A			B

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2005						
INTERSECTION:		5 Cabot / Oso						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	2	3,400	107	0.03	3,400	95	0.03	
NBT	2	3,400	591	0.17 *	3,400	337	0.10 *	
NBR	2	3,400	341	0.10	3,400	373	0.11	
SBL	2	3,400	207	0.06 *	3,400	492	0.14 *	
SBT	2	3,400	220	0.06	3,400	402	0.12	
SBR	1	1,700	59	0.03	1,700	156	0.09	
EBL	2	3,400	109	0.03 *	3,400	148	0.04	
EBT	3	5,100	879	0.17	5,100	1,162	0.23 *	
EBR	1	1,700	96	0.06	1,700	113	0.07	
WBL	2	3,400	325	0.10	3,400	317	0.09 *	
WBT	3	5,100	1,218	0.24 *	5,100	1,014	0.20	
WBR	1	1,700	447	0.26	1,700	556	0.33	
N/S Movements				0.23			0.24	
E/W Movements				0.27			0.32	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.56			0.61	
LEVEL OF SERVICE (LOS)				A			B	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2010						
INTERSECTION:		6 I-5 SB Ramp / Oso						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0		0			0		
NBT	0		0	0.00 *		0	0.00 *	
NBR	0		0			0		
SBL	2	3,400	517	0.15 *	3,400	1,181	0.35 *	
SBT	0		0	0.00		0	0.00	
SBR	1	1,700	656	0.39 *	1,700	375	0.22 *	
EBL	0		0	*		0	*	
EBT	2.5	4,962	1,031	0.21	5,026	1,586	0.32	
EBR	1.5	1,838	382	0.21	1,774	560	0.32	
WBL	0		0			0		
WBT	3	5,100	1,405	0.41 *	5,100	1,350	0.38 *	
WBR	f		703			573		
N/S Movements				0.15			0.35	
E/W Movements				0.41			0.38	
Rt. Turn Component				0.23			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.85			0.77	
LEVEL OF SERVICE (LOS)				D			C	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2010						
INTERSECTION:		7 I-5 NB Ramp / Oso						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	324	0.19 *	1,700	506	0.30 *	
NBT	0		0	0.00		0	0.00	
NBR	1	1,700	453	0.27 *	1,700	619	0.36 *	
SBL	0		0			0		
SBT	0		0	0.00 *		0	0.00 *	
SBR	0		0			0		
EBL	0		0	*		0		
EBT	3	5,100	1,100	0.22	5,100	2,407	0.47 *	
EBR	f		456			377		
WBL	0		0			0	*	
WBT	3	5,100	1,920	0.38 *	5,100	1,411	0.28	
WBR	f		1,245			609		
N/S Movements				0.19			0.30	
E/W Movements				0.38			0.47	
Rt. Turn Component				0.08			0.07	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.69			0.89	
LEVEL OF SERVICE (LOS)				B			D	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2010						
INTERSECTION:		8 I-5 SB Ramp / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0		0			0		
NBT	0		0	0.00 *		0	0.00 *	
NBR	0		0			0		
SBL	2.33	4,230	1,203	0.28 *	3,981	1,425	0.36 *	
SBT	0.33	0	0	0.00	0	0	0.00	
SBR	1.33	2,570	731	0.28 *	2,819	1,009	0.36 *	
EBL	0		0			0		
EBT	4	6,800	1,577	0.23 *	6,800	1,718	0.25 *	
EBR	1	1,700	235	0.14	1,700	315	0.19	
WBL	2	3,400	349	0.10 *	3,400	463	0.14 *	
WBT	3	5,100	1,156	0.23	5,100	1,309	0.26	
WBR	0		0			0		
N/S Movements				0.28			0.36	
E/W Movements				0.33			0.39	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.67			0.80	
LEVEL OF SERVICE (LOS)				B			C	

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2010						
INTERSECTION:		9 I-5 NB Ramp / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1.5	1,879	308	0.16 *	1,700	213	0.13 *	
NBT	0		0	0.00		0	0.00	
NBR	1.5	3,221	528	0.16 *	1,700	437	0.26 *	
SBL	0		0			0		
SBT	0		0	*		0	*	
SBR	0		0			0		
EBL	0		0			0		
EBT	3	5,100	1,992	0.39 *	5,100	2,489	0.49 *	
EBR	2	3,400	719	0.21	3,400	551	0.16	
WBL	0		0	*		0	*	
WBT	2.5	3,463	1,269	0.37	3,561	1,584	0.44	
WBR	1.5	3,337	1,223	0.37	3,239	1,441	0.44	
N/S Movements				0.16			0.13	
E/W Movements				0.39			0.49	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.60			0.66	
LEVEL OF SERVICE (LOS)				A			B	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2008						
INTERSECTION:		10 Puerta Real / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	2	3,400	42	0.01 *	3,400	523	0.15 *	
NBT	1	1,700	82	0.05	1,700	63	0.04	
NBR	1	1,700	10	0.01	1,700	66	0.04	
SBL	1	1,700	20	0.01	1,700	77	0.05	
SBT	1	1,700	95	0.06 *	1,700	61	0.04 *	
SBR	2	3,400	411	0.12	3,400	738	0.22 *	
EBL	2	3,400	392	0.12 *	3,400	412	0.12 *	
EBT	3	5,100	1,204	0.24	5,100	1,462	0.29	
EBR	1	1,700	293	0.17	1,700	622	0.37	
WBL	1	1,700	12	0.01	1,700	83	0.05	
WBT	3	5,100	1,911	0.38 *	5,100	1,508	0.30 *	
WBR	0		22			47		
sp	N/S Movements			0.10			0.20	
E/W Movements				0.49			0.43	
Rt. Turn Component				0.00			0.06	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.65			0.74	
LEVEL OF SERVICE (LOS)				B			C	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2008						
INTERSECTION:		11 Medical Center / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1.5	2,550	282	0.11 *	2,550	498	0.20 *	
NBT	1	1,700	43	0.03	1,700	37	0.02	
NBR	0.5	850	52	0.06	850	73	0.09	
SBL	0.5	850	12	0.01	850	41	0.05	
SBT	1	1,700	43	0.03 *	1,700	60	0.04 *	
SBR	0.5	850	95	0.11 *	850	118	0.14 *	
EBL	1	1,700	83	0.05 *	1,700	102	0.06	
EBT	3	5,100	1,026	0.20	5,100	1,184	0.23 *	
EBR	1	1,700	372	0.22	1,700	343	0.20	
WBL	1	1,700	157	0.09	1,700	116	0.07 *	
WBT	3	5,100	1,502	0.30 *	5,100	971	0.20	
WBR	0		18			28		
sp	N/S Movements			0.14			0.24	
E/W Movements				0.35			0.30	
Rt. Turn Component				0.04			0.04	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.57			0.64	
LEVEL OF SERVICE (LOS)				A			B	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2008						
INTERSECTION:		12 Los Altos / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1.5	2,550	34	0.01	2,550	162	0.06	
NBT	0.5	850	3	0.00 *	850	8	0.01 *	
NBR	1	1,700	11	0.01	1,700	57	0.03 *	
SBL	0.5	850	43	0.05 *	850	80	0.09 *	
SBT	0.5	850	2	0.00	850	2	0.00	
SBR	1	1,700	11	0.01	1,700	51	0.03 *	
EBL	1	1,700	81	0.05 *	1,700	39	0.02	
EBT	3	5,100	887	0.19	5,100	1,442	0.29 *	
EBR	0		81			33		
WBL	1	1,700	133	0.08	1,700	16	0.01 *	
WBT	3	5,100	1,638	0.35 *	5,100	786	0.16	
WBR	0		140			47		
N/S Movements				0.05			0.10	
E/W Movements				0.40			0.30	
Rt. Turn Component				0.00			0.02	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.50			0.47	
LEVEL OF SERVICE (LOS)				A			A	

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2008						
INTERSECTION:		13 Bellogente / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	15	0.01	1,700	10	0.01	
NBT	0.5	523	4	0.01 *	189	1	0.01 *	
NBR	0.5	1,177	9	0.01	1,511	8	0.01	
SBL	1	1,700	22	0.01 *	1,700	119	0.07 *	
SBT	0.5	638	3	0.00	65	3	0.05	
SBR	0.5	1,063	5	0.00	1,635	76	0.05	
EBL	1	1,700	88	0.05 *	1,700	55	0.03	
EBT	3	5,100	675	0.13	5,100	1,455	0.29 *	
EBR	0		5			18		
WBL	1	1,700	16	0.01	1,700	8	0.00 *	
WBT	3	5,100	1,858	0.39 *	5,100	937	0.19	
WBR	0		153			55		
N/S Movements				0.02			0.08	
E/W Movements				0.45			0.29	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.52			0.42	
LEVEL OF SERVICE (LOS)				A			A	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2010						
INTERSECTION:		14 I-5 SB Ramp / Avery						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0						0	
NBT	0			0.00			0 0.00	
NBR	0						0	
SBL	1.33	2,341	590	0.25	1,859	573	0.31	
SBT	0.33	12	3	0.25	3	1	0.31	
SBR	0.34	1,064	268	0.25	1,554	479	0.31	
EBL	0						0	
EBT	2	3,400	489	0.14 *	3,400	633	0.19 *	
EBR	1	1,700	160	0.09	1,700	176	0.10	
WBL	1	1,700	177	0.10 *	1,700	320	0.19 *	
WBT	1	1,700	304	0.18	1,700	504	0.30	
WBR	0						0	
N/S Movements				0.25			0.31	
E/W Movements				0.25			0.37	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.55			0.73	
LEVEL OF SERVICE (LOS)				A			C	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2010						
INTERSECTION:		15 I-5 NB Ramp / Avery						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0.5	1,700	145	0.09 *	1,700	187	0.11 *	
NBT	0.5	0	0	0.00	0	0	0.00	
NBR	1	1,700	330	0.19 *	1,700	549	0.32 *	
SBL	0		0			0		
SBT	0		0	0.00 *		0	0.00 *	
SBR	0		0			0		
EBL	1	1,700	253	0.15 *	1,700	314	0.18 *	
EBT	2	3,400	864	0.25	3,400	919	0.27	
EBR	0		0			0		
WBL	0		0			0		
WBT	1	1,700	323	0.19 *	1,700	653	0.38 *	
WBR	1	1,700	523	0.31 *	1,700	651	0.38	
N/S Movements				0.09			0.11	
E/W Movements				0.34			0.57	
Rt. Turn Component				0.23			0.21	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.70			0.94	
LEVEL OF SERVICE (LOS)				B			E	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2005						
INTERSECTION:		16 Muirlands / Los Alisos						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	230	0.14 *	1,700	208	0.12	
NBT	3	5,100	703	0.14	5,100	1,232	0.24 *	
NBR	1	1,700	116	0.07	1,700	217	0.13	
SBL	1	1,700	276	0.16	1,700	260	0.15 *	
SBT	3	5,100	1,060	0.24 *	5,100	750	0.18	
SBR	0		186			145		
EBL	1	1,700	120	0.07	1,700	339	0.20	
EBT	2	3,400	450	0.17 *	3,400	847	0.31 *	
EBR	0		137			217		
WBL	1	1,700	170	0.10 *	1,700	111	0.07 *	
WBT	2	3,400	519	0.15	3,400	421	0.12	
WBR	1	1,700	139	0.08	1,700	172	0.10	
N/S Movements				0.38			0.39	
E/W Movements				0.27			0.38	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.70			0.82	
LEVEL OF SERVICE (LOS)				B			D	

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2009						
INTERSECTION:		17 Muirlands / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			V/C
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	157	0.09 *	1,700	125	0.07 *	
NBT	2	3,400	434	0.13	3,400	355	0.10	
NBR	1	1,700	146	0.09	1,700	121	0.07	
SBL	1	1,700	83	0.05	1,700	144	0.08	
SBT	2	3,400	517	0.15 *	3,400	517	0.15 *	
SBR	1	1,700	361	0.21	1,700	327	0.19	
EBL	2	3,400	213	0.06	3,400	259	0.08	
EBT	3	5,100	1,543	0.30 *	5,100	2,254	0.44 *	
EBR	1	1,700	91	0.05	1,700	108	0.06	
WBL	1	1,700	240	0.14 *	1,700	132	0.08 *	
WBT	3.5	6,443	2,204	0.34	6,442	1,764	0.27	
WBR	0.5	357	122	0.34	358	98	0.27	
N/S Movements				0.24				0.23
E/W Movements				0.44				0.52
Rt. Turn Component				0.00				0.00
Yellow Clearance				0.05				0.05
TOTAL CAPACITY UTILIZATION				0.74				0.80
LEVEL OF SERVICE (LOS)				C				C

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2005						
INTERSECTION:		18 Jeronimo / Los Alisos						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			V/C
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	199	0.12 *	1,700	225	0.13	
NBT	3	5,100	608	0.12	5,100	1,398	0.27 *	
NBR	1	1,700	182	0.11	1,700	199	0.12	
SBL	1	1,700	246	0.14	1,700	167	0.10 *	
SBT	3	5,100	1,391	0.27 *	5,100	812	0.16	
SBR	1	1,700	295	0.17	1,700	109	0.06	
EBL	2	3,400	183	0.05 *	3,400	324	0.10	
EBT	2	3,400	668	0.20	3,400	1,000	0.29 *	
EBR	1	1,700	182	0.11	1,700	352	0.21	
WBL	2	3,400	211	0.06	3,400	171	0.05 *	
WBT	2	3,400	876	0.26 *	3,400	495	0.15	
WBR	1	1,700	58	0.03	1,700	177	0.10	
N/S Movements				0.39				0.43
E/W Movements				0.31				0.34
Rt. Turn Component				0.00				0.00
Yellow Clearance				0.05				0.05
TOTAL CAPACITY UTILIZATION				0.75				0.83
LEVEL OF SERVICE (LOS)				C				D

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2009						
INTERSECTION:		19 Via Fabricanet / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			V/C
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0.34	1,143	115	0.10	971	100	0.10	
NBT	0.33	179	18	0.10 *	146	15	0.10 *	
NBR	0.33	378	38	0.10	583	60	0.10	
SBL	1	1,700	16	0.01 *	1,700	97	0.06 *	
SBT	1	1,700	6	0.00	1,700	30	0.02	
SBR	1	1,700	133	0.08	1,700	223	0.13 *	
EBL	2	3,400	272	0.08 *	3,400	255	0.08	
EBT	3	5,100	1,446	0.28	5,100	2,153	0.42 *	
EBR	d		49			94		
WBL	1	1,700	39	0.02	1,700	35	0.02 *	
WBT	2.5	4,949	2,366	0.48 *	4,893	1,681	0.34	
WBR	0.5	151	72	0.48	207	71	0.34	
sp N/S Movements				0.18				0.23
E/W Movements				0.56				0.44
Rt. Turn Component				0.00				0.00
Yellow Clearance				0.05				0.05
TOTAL CAPACITY UTILIZATION				0.79				0.73
LEVEL OF SERVICE (LOS)				C				C

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2009						
INTERSECTION:		20 Jeronimo / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			V/C
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	2	3,400	479	0.14 *	3,400	297	0.09 *	
NBT	2	3,400	386	0.11	3,400	347	0.10	
NBR	1	1,700	60	0.04	1,700	106	0.06	
SBL	2	3,400	58	0.02	3,400	138	0.04	
SBT	2	3,400	193	0.06 *	3,400	513	0.15 *	
SBR	1	1,700	161	0.09	1,700	355	0.21	
EBL	2	3,400	222	0.07 *	3,400	284	0.08	
EBT	3	5,100	1,010	0.20	5,100	1,621	0.32 *	
EBR	1	1,700	120	0.07	1,700	391	0.23	
WBL	2	3,400	101	0.03	3,400	118	0.03 *	
WBT	3	5,100	1,830	0.36 *	5,100	1,170	0.23	
WBR	1	1,700	114	0.07	1,700	106	0.06	
N/S Movements				0.20				0.24
E/W Movements				0.42				0.35
Rt. Turn Component				0				0.00
Yellow Clearance				0.05				0.05
TOTAL CAPACITY UTILIZATION				0.67				0.64
LEVEL OF SERVICE (LOS)				B				B

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2008						
INTERSECTION:		21 Chrisanta / La Paz						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			V/C
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1.5	3,055	674	0.22 *	2,657	161	0.06	
NBT	0.5	345	76	0.22 *	743	45	0.06 *	
NBR	1	1,700	143	0.08	1,700	35	0.02	
SBL	1	1,700	92	0.05	1,700	96	0.06 *	
SBT	1	1,700	132	0.08 *	1,700	52	0.03	
SBR	1	1,700	153	0.09	1,700	130	0.08	
EBL	1	1,700	220	0.13 *	1,700	193	0.11	
EBT	2	3,400	820	0.24	3,400	1,675	0.49 *	
EBR	1	1,700	462	0.27	1,700	291	0.17	
WBL	1	1,700	159	0.09	1,700	61	0.04 *	
WBT	2	4,708	1,406	0.30 *	4,677	873	0.19	
WBR	1	392	117	0.30	423	79	0.19	
N/S Movements				0.30				0.12
E/W Movements				0.43				0.53
Rt. Turn Component				0.00				0.00
Yellow Clearance				0.05				0.05
TOTAL CAPACITY UTILIZATION				0.78				0.70
LEVEL OF SERVICE (LOS)				C				B

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2005						
INTERSECTION:		22 Trabuco / Los Alisos						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			V/C
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	295	0.17 *	1,700	249	0.15	
NBT	3	5,100	489	0.12	5,100	943	0.23 *	
NBR	0		105			243		
SBL	1	1,700	151	0.09	1,700	125	0.07 *	
SBT	3	5,100	1,265	0.29 *	5,100	583	0.14	
SBR	0		239			153		
EBL	1	1,700	137	0.08	1,700	392	0.23	
EBT	2	3,400	534	0.20 *	3,400	906	0.34 *	
EBR	0		135			248		
WBL	1	1,700	313	0.18 *	1,700	140	0.08 *	
WBT	2	3,400	882	0.29 *	3,400	452	0.16	
WBR	0		88			97		
N/S Movements				0.47				0.31
E/W Movements				0.38				0.42
Rt. Turn Component				0.00				0.00
Yellow Clearance				0.05				0.05
TOTAL CAPACITY UTILIZATION				0.90				0.78
LEVEL OF SERVICE (LOS)				D				C

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2009						
INTERSECTION:		23 Trabuco / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			V/C
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	2	3,400	203	0.06	3,400	207	0.06	
NBT	2	3,400	406	0.12 *	3,400	401	0.12 *	
NBR	d		54			40		
SBL	2	3,400	215	0.06 *	3,400	404	0.12 *	
SBT	2	3,400	282	0.08	3,400	369	0.11	
SBR	1	1,700	193	0.11	1,700	131	0.08	
EBL	1	1,700	139	0.08 *	1,700	151	0.09	
EBT	3	5,100	818	0.16	5,100	1,311	0.26 *	
EBR	d		65			129		
WBL	1	1,700	58	0.03	1,700	44	0.03 *	
WBT	3	5,100	1,499	0.29 *	5,100	958	0.19	
WBR	1	1,700	382	0.22	1,700	142	0.08	
N/S Movements				0.18				0.24
E/W Movements				0.38				0.28
Rt. Turn Component				0.00				0.00
Yellow Clearance				0.05				0.05
TOTAL CAPACITY UTILIZATION				0.61				0.57
LEVEL OF SERVICE (LOS)				B				A

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2005						
INTERSECTION:		24 Los Alisos / Santa Margarita						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			V/C
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	354	0.21 *	1,700	306	0.18 *	
NBT	2	3,400	203	0.10	3,400	363	0.19	
NBR	0		133			291		
SBL	1	1,700	77	0.05	1,700	59	0.03	
SBT	2	3,400	475	0.20 *	3,400	232	0.08 *	
SBR	0		192			48		
EBL	1	1,700	131	0.08 *	1,700	173	0.10	
EBT	3	5,100	570	0.15	5,100	1,480	0.36 *	
EBR	0		206			339		
WBL	1	1,700	273	0.16	1,700	206	0.12 *	
WBT	3	5,100	1,347	0.27 *	5,100	748	0.16	
WBR	0		27			85		
N/S Movements				0.40				0.26
E/W Movements				0.35				0.48
Rt. Turn Component				0.00				0.00
Yellow Clearance				0.05				0.05
TOTAL CAPACITY UTILIZATION				0.80				0.79
LEVEL OF SERVICE (LOS)				C				C

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		Existing - 2007					
INTERSECTION:		25 Marguerite / El Toro					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1.5	4,852	254	0.05 *	3,538	111	0.03 *
NBT	1.5	248	13	0.05	1,562	49	0.03
NBR	1	1,700	261	0.15	1,700	459	0.27 *
SBL	1	1,700	2	0.00	1,700	11	0.01
SBT	1.5	3,643	5	0.00 *	4,713	73	0.02 *
SBR	1.5	1,457	2	0.00	387	6	0.02
EBL	2	3,400	1	0.00	3,400	11	0.00
EBT	2	3,400	145	0.04 *	3,400	278	0.08 *
EBR	1	1,700	104	0.06	1,700	299	0.18 *
WBL	2	3,400	400	0.12 *	3,400	276	0.08 *
WBT	2	3,400	345	0.10	3,400	168	0.05
WBR	0		3			8	
N/S Movements				0.05			0.05
E/W Movements				0.16			0.16
Rt. Turn Component				0.00			0.22
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.26			0.48
LEVEL OF SERVICE (LOS)				A			A

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		Existing - 2009					
INTERSECTION:		26 Marguerite / Los Alisos					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	25	0.01	1,700	29	0.02
NBT	2	3,400	306	0.12 *	3,400	336	0.14 *
NBR	d		112			142	
SBL	1	1,700	94	0.06 *	1,700	271	0.16 *
SBT	2	3,400	327	0.13	3,400	355	0.13
SBR	d		123			73	
EBL	1	1,700	88	0.05 *	1,700	122	0.07
EBT	2	3,400	154	0.06	3,400	212	0.07 *
EBR	d		58			36	
WBL	1	1,700	141	0.08	1,700	122	0.07 *
WBT	2	3,400	379	0.11 *	3,400	149	0.04
WBR	1	1,700	252	0.15	1,700	148	0.09
N/S Movements				0.18			0.30
E/W Movements				0.16			0.14
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.39			0.49
LEVEL OF SERVICE (LOS)				A			A

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		Existing - 2007					
INTERSECTION:		27 Marguerite / Santa Margarita					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	643	0.38 *	1,700	345	0.20 *
NBT	2	3,400	455	0.17	3,400	338	0.17
NBR	0		129			234	
SBL	1	1,700	131	0.08	1,700	182	0.11
SBT	2	3,400	403	0.12 *	3,400	476	0.16 *
SBR	0		20			74	
EBL	1	1,700	21	0.01	1,700	146	0.09
EBT	3	5,100	545	0.11 *	5,100	932	0.18 *
EBR	1	1,700	169	0.10	1,700	396	0.23
WBL	1	1,700	185	0.11 *	1,700	213	0.13 *
WBT	3	5,100	834	0.18	5,100	687	0.16
WBR	0		86			142	
N/S Movements				0.50			0.36
E/W Movements				0.22			0.31
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.77			0.72
LEVEL OF SERVICE (LOS)				C			C

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		Existing - 2006					
INTERSECTION:		28 Marguerite / Olympiad					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	0		0			0	
NBT	2	3,400	490	0.18 *	3,400	725	0.30 *
NBR	0		132			305	
SBL	1	1,700	126	0.07 *	1,700	323	0.19 *
SBT	2	3,400	508	0.15	3,400	654	0.19
SBR	0		0			0	
EBL	0		0			0	
EBT	0		0	0.00 *		0	0.00 *
EBR	0		0			0	
WBL	1	1,700	282	0.17 *	1,700	261	0.15 *
WBT	0		0	0.00		0	0.00
WBR	1	1,700	185	0.11	1,700	304	0.18
N/S Movements				0.26			0.49
E/W Movements				0.17			0.15
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.47			0.70
LEVEL OF SERVICE (LOS)				A			B

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2009						
INTERSECTION:		29 Marguerite / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	56	0.03 *	1,700	46	0.03	
NBT	2	3,400	369	0.11	3,400	608	0.18	
NBR	d		87			137		
SBL	1	1,700	42	0.02	1,700	40	0.02	
SBT	2	3,400	649	0.19 *	3,400	596	0.18	
SBR	d		489			260		
EBL	2	3,400	216	0.06	3,400	455	0.13	
EBT	2	3,400	723	0.21 *	3,400	1,259	0.37 *	
EBR	d		34			49		
WBL	1	1,700	147	0.09 *	1,700	114	0.07 *	
WBT	3	5,100	1,077	0.21	5,100	725	0.14	
WBR	d		55			63		
			N/S Movements	0.22			0.20	
			E/W Movements	0.30			0.44	
			Rt. Turn Component	0.00			0.00	
			Yellow Clearance	0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.57	0.69			
LEVEL OF SERVICE (LOS)				A	B			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		30 Marguerite / Trabuco						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	449	0.26 *	1,700	346	0.20 *	
NBT	2	3,400	554	0.17	3,400	899	0.27	
NBR	0		11			29		
SBL	1	1,700	15	0.01	1,700	32	0.02	
SBT	2	3,400	842	0.27 *	3,400	791	0.24 *	
SBR	0		62			40		
EBL	1	1,700	86	0.05 *	1,700	72	0.04 *	
EBT	1	1,700	21	0.01	1,700	25	0.01	
EBR	1	1,700	380	0.22	1,700	456	0.27 *	
WBL	1	1,700	6	0.00	1,700	74	0.04	
WBT	2	3,400	23	0.01 *	3,400	50	0.04 *	
WBR	0		19			82		
			N/S Movements	0.53			0.45	
			E/W Movements	0.06			0.08	
			Rt. Turn Component	0.00			0.02	
			Yellow Clearance	0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.64	0.60			
LEVEL OF SERVICE (LOS)				B	A			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		31 Marguerite / Jeronimo						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	382	0.22 *	1,700	220	0.13 *	
NBT	2	3,400	767	0.25	3,400	947	0.32	
NBR	0		70			139		
SBL	1	1,700	105	0.06	1,700	99	0.06	
SBT	2	3,400	1,131	0.36 *	3,400	921	0.29 *	
SBR	0		79			62		
EBL	1	1,700	141	0.08 *	1,700	119	0.07	
EBT	2	3,400	146	0.04	3,400	338	0.10 *	
EBR	1	1,700	241	0.14	1,700	352	0.21	
WBL	1	1,700	218	0.13	1,700	111	0.07 *	
WBT	2	3,400	429	0.17 *	3,400	133	0.06	
WBR	0		156			59		
			N/S Movements	0.58			0.42	
			E/W Movements	0.26			0.16	
			Rt. Turn Component	0.00			0.01	
			Yellow Clearance	0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.89	0.64			
LEVEL OF SERVICE (LOS)				D	B			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2006						
INTERSECTION:		32 Marguerite / La Paz						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	2	3,400	197	0.06 *	3,400	263	0.08	
NBT	2	3,400	763	0.26	3,400	917	0.31 *	
NBR	0		119			126		
SBL	2	3,400	131	0.04	3,400	434	0.13 *	
SBT	2	3,400	959	0.28 *	3,400	734	0.22	
SBR	1	1,700	348	0.20	1,700	374	0.22	
EBL	2	3,400	269	0.08 *	3,400	253	0.07	
EBT	2	3,400	277	0.08	3,400	847	0.25 *	
EBR	1	1,700	153	0.09	1,700	212	0.12	
WBL	2	3,400	266	0.08	3,400	186	0.05 *	
WBT	2	3,400	552	0.20 *	3,400	346	0.14	
WBR	0		122			118		
			N/S Movements	0.34			0.43	
			E/W Movements	0.28			0.30	
			Rt. Turn Component	0.00			0.00	
			Yellow Clearance	0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.67	0.79			
LEVEL OF SERVICE (LOS)				B	C			

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		33 Marguerite / Oso						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	388	0.23 *	1,700	217	0.13	
NBT	2	3,400	771	0.23	3,400	729	0.21 *	
NBR	d		49			73		
SBL	1	1,700	98	0.06	1,700	248	0.15 *	
SBT	2	3,400	521	0.15 *	3,400	737	0.22	
SBR	d		269			234		
EBL	1	1,700	251	0.15 *	1,700	284	0.17	
EBT	3	5,100	1,055	0.21	5,100	1,788	0.35 *	
EBR	d		180			555		
WBL	1	1,700	86	0.05	1,700	119	0.07 *	
WBT	3	5,100	1,876	0.37 *	5,100	1,216	0.24	
WBR	d		55			148		
N/S Movements				0.38			0.36	
E/W Movements				0.52			0.42	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.95			0.83	
LEVEL OF SERVICE (LOS)				E			D	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		34 Marguerite / Felipe						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	37	0.02	1,700	25	0.01	
NBT	2	3,400	689	0.32 *	3,400	765	0.36 *	
NBR	0		414			460		
SBL	1	1,700	103	0.06 *	1,700	345	0.20 *	
SBT	2	3,400	629	0.19	3,400	895	0.27	
SBR	0		20			25		
EBL	1	1,700	58	0.03	1,700	49	0.03	
EBT	0.5	1,056	41	0.04 *	1,484	55	0.04 *	
EBR	0.5	644	25	0.04	216	8	0.04	
WBL	1.5	3,248	960	0.30 *	3,162	346	0.11 *	
WBT	0.5	152	45	0.30	238	26	0.11	
WBR	1	1,700	338	0.20	1,700	115	0.07	
N/S Movements				0.39			0.56	
E/W Movements				0.33			0.15	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.77			0.76	
LEVEL OF SERVICE (LOS)				C			C	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007 (AM) 2009 (PM)						
INTERSECTION:		35 Marguerite / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	97	0.06 *	1,700	138	0.08	
NBT	2	3,400	447	0.19	3,400	580	0.30 *	
NBR	0		214			432		
SBL	1	1,700	160	0.09	1,700	464	0.27 *	
SBT	2	3,400	883	0.26 *	3,400	561	0.17	
SBR	1	1,700	394	0.23	1,700	191	0.11	
EBL	2	3,400	303	0.09 *	3,400	472	0.14	
EBT	2	3,400	663	0.20	3,400	1,267	0.37 *	
EBR	1	1,700	69	0.04	1,700	145	0.09	
WBL	1	1,700	364	0.21	1,700	363	0.21 *	
WBT	3	5,100	1,651	0.37 *	5,100	678	0.18	
WBR	0		237			240		
N/S Movements				0.32			0.57	
E/W Movements				0.46			0.59	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.83			1.21	
LEVEL OF SERVICE (LOS)				D			F	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		36 Marguerite / Medical Center						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	17	0.01 *	1,700	47	0.03	
NBT	1	1,700	27	0.02	1,700	100	0.06 *	
NBR	1	1,700	15	0.01	1,700	202	0.12	
SBL	1	1,700	36	0.02	1,700	311	0.18 *	
SBT	2	3,400	214	0.08 *	3,400	197	0.09	
SBR	0		56			120		
EBL	1	1,700	114	0.07	1,700	104	0.06	
EBT	2	3,400	686	0.21 *	3,400	846	0.25 *	
EBR	0		37			37		
WBL	1	1,700	362	0.21 *	1,700	186	0.11 *	
WBT	2	3,400	976	0.35	3,400	767	0.23	
WBR	0		207			100		
N/S Movements				0.09			0.24	
E/W Movements				0.43			0.36	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.57			0.65	
LEVEL OF SERVICE (LOS)				A			B	

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		37 Marguerite / Avery						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	385	0.23 *	1,700	298	0.18 *	
NBT	2	3,400	500	0.17	3,400	296	0.10	
NBR	0		61			38		
SBL	1	1,700	176	0.10	1,700	128	0.08	
SBT	2	3,400	593	0.17 *	3,400	477	0.14 *	
SBR	1	1,700	293	0.17	1,700	876	0.52 *	
EBL	2	3,400	509	0.15 *	3,400	1,162	0.34 *	
EBT	2	3,400	419	0.22	3,400	355	0.18	
EBR	0		334			255		
WBL	1	1,700	23	0.01	1,700	57	0.03	
WBT	2	3,400	242	0.10 *	3,400	367	0.13 *	
WBR	0		114			85		
N/S Movements				0.40	0.32			
E/W Movements				0.25	0.47			
Rt. Turn Component				0.00	0.03			
Yellow Clearance				0.05	0.05			
TOTAL CAPACITY UTILIZATION				0.71	0.87			
LEVEL OF SERVICE (LOS)				C	D			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		38 Glenn Ranch / El Toro						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	189	0.11 *	1,700	133	0.08	
NBT	1	1,700	299	0.18	1,700	505	0.30 *	
NBR	0		0			0		
SBL	0		0			0	*	
SBT	2	3,400	535	0.22 *	3,400	403	0.14	
SBR	0		216			62		
EBL	1	1,700	45	0.03 *	1,700	312	0.18 *	
EBT	0		0	0.00		0	0.00	
EBR	1	1,700	189	0.11	1,700	205	0.12 *	
WBL	0		0			0		
WBT	0		0	0.00 *		0	0.00 *	
WBR	0		0			0		
N/S Movements				0.33	0.30			
E/W Movements				0.03	0.18			
Rt. Turn Component				0.00	0.00			
Yellow Clearance				0.05	0.05			
TOTAL CAPACITY UTILIZATION				0.41	0.53			
LEVEL OF SERVICE (LOS)				A	A			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		39 SR-241 NB Ramps / Los Alisos						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	119	0.07 *	1,700	45	0.03	
NBT	2	3,400	188	0.06	3,400	860	0.25 *	
NBR	0		0			0		
SBL	0		0			0	*	
SBT	2	3,400	504	0.15 *	3,400	264	0.08	
SBR	1	1,700	484	0.28 *	1,700	105	0.06	
EBL	0		0			0		
EBT	0		0	0.00 *		0	0.00 *	
EBR	0		0			0		
WBL	1	1,700	137	0.08 *	1,700	104	0.06 *	
WBT	0		0	0.00		0	0.00	
WBR	1	1,700	63	0.04	1,700	66	0.04	
N/S Movements				0.22	0.25			
E/W Movements				0.08	0.06			
Rt. Turn Component				0.14	0.00			
Yellow Clearance				0.05	0.05			
TOTAL CAPACITY UTILIZATION				0.49	0.36			
LEVEL OF SERVICE (LOS)				A	A			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		40 SR-241 SB Ramps / Los Alisos						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0		0	*		0		
NBT	2	3,400	262	0.08	3,400	501	0.15 *	
NBR	1	1,700	74	0.04	1,700	90	0.05	
SBL	1	1,700	79	0.05	1,700	48	0.03 *	
SBT	2	3,400	555	0.16 *	3,400	321	0.09	
SBR	0		0			0		
EBL	2	3,400	43	0.01 *	3,400	383	0.11 *	
EBT	0		0	0.00		1	0.00	
EBR	1	1,700	27	0.02 *	1,700	179	0.11 *	
WBL	0		0			0		
WBT	0		0	0.00 *		0	0.00 *	
WBR	0		0			0		
N/S Movements				0.16	0.18			
E/W Movements				0.01	0.11			
Rt. Turn Component				0.02	0.11			
Yellow Clearance				0.05	0.05			
TOTAL CAPACITY UTILIZATION				0.24	0.44			
LEVEL OF SERVICE (LOS)				A	A			

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		41 Santa Margarita / Melinda						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	55	0.03	1,700	139	0.08	
NBT	3	5,100	707	0.17 *	5,100	745	0.20 *	
NBR	0		163			267		
SBL	1	1,700	105	0.06 *	1,700	188	0.11 *	
SBT	3	5,100	754	0.16	5,100	791	0.17	
SBR	0		46			61		
EBL	1	1,700	438	0.26 *	1,700	69	0.04	
EBT	2	3,400	177	0.13	3,400	182	0.08 *	
EBR	0		260			100		
WBL	1	1,700	367	0.22	1,700	255	0.15 *	
WBT	2	3,400	158	0.11 *	3,400	173	0.08	
WBR	0		200			109		
N/S Movements				0.23			0.31	
E/W Movements				0.36			0.23	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.65			0.59	
LEVEL OF SERVICE (LOS)				B			A	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		42 Olympiad / Melinda						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0						0	
NBT	0			0.00 *			0 0.00 *	
NBR	0						0	
SBL	1	1,700	196	0.12 *	1,700	137	0.08 *	
SBT	0		0	0.00		0	0.00	
SBR	1	1,700	301	0.18 *	1,700	164	0.10	
EBL	1	1,700	101	0.06 *	1,700	223	0.13 *	
EBT	2	3,400	147	0.04	3,400	297	0.09	
EBR	0		0			0		
WBL	0		0			0		
WBT	2	3,400	259	0.10 *	3,400	261	0.14 *	
WBR	0		85			207		
N/S Movements				0.12			0.08	
E/W Movements				0.16			0.27	
Rt. Turn Component				0.12			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.44			0.40	
LEVEL OF SERVICE (LOS)				A			A	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2009						
INTERSECTION:		43 Olympiad / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	129	0.08	1,700	119	0.07	
NBT	1.5	1,515	279	0.18 *	1,768	365	0.21 *	
NBR	0.5	1,885	347	0.18	1,632	337	0.21	
SBL	1	1,700	28	0.02 *	1,700	38	0.02 *	
SBT	1.5	2,929	361	0.12	3,081	387	0.13	
SBR	0.5	471	58	0.12	319	40	0.13	
EBL	1	1,700	69	0.04	1,700	141	0.08	
EBT	2.5	4,508	777	0.17 *	4,621	898	0.19 *	
EBR	0.5	592	102	0.17	479	93	0.19	
WBL	1	1,700	302	0.18 *	1,700	349	0.21 *	
WBT	2.5	5,016	896	0.18	4,742	755	0.16	
WBR	0.5	84	15	0.18	358	57	0.16	
N/S Movements				0.20			0.23	
E/W Movements				0.35			0.40	
Rt. Turn Component				0.06			0.04	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.66			0.72	
LEVEL OF SERVICE (LOS)				B			C	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		44 Olympiad / Jeronimo						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	232	0.14 *	1,700	97	0.06 *	
NBT	2	3,400	510	0.15	3,400	511	0.15	
NBR	0		0			0		
SBL	0		0			0		
SBT	2	3,400	623	0.25 *	3,400	461	0.17 *	
SBR	0		226			130		
EBL	1	1,700	151	0.09 *	1,700	153	0.09 *	
EBT	0		0	0.00		0	0.00	
EBR	1	1,700	74	0.04	1,700	126	0.07 *	
WBL	0		0			0		
WBT	0		0	0.00 *		0	0.00 *	
WBR	0		0			0		
N/S Movements				0.39			0.23	
E/W Movements				0.09			0.09	
Rt. Turn Component				0.00			0.02	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.53			0.39	
LEVEL OF SERVICE (LOS)				A			A	

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2007						
INTERSECTION:		45 Olympiad - Felipe / La Paz						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	118	0.07 *	1,700	131	0.08 *	
NBT	2	3,400	649	0.19	3,400	482	0.14	
NBR	0		0			0		
SBL	0		0			0		
SBT	2	3,400	572	0.24 *	3,400	431	0.17 *	
SBR	0		247			157		
EBL	1	1,700	133	0.08 *	1,700	230	0.14 *	
EBT	0		0	0.00		0	0.00	
EBR	1	1,700	79	0.05	1,700	178	0.10 *	
WBL	0		0			0		
WBT	0		0	0.00 *		0	0.00 *	
WBR	0		0			0		
N/S Movements				0.31			0.25	
E/W Movements				0.08			0.14	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.44			0.44	
LEVEL OF SERVICE (LOS)				A			A	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2005						
INTERSECTION:		46 Felipe / Oso						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	149	0.09 *	1,700	65	0.04	
NBT	2	3,400	191	0.06	3,400	336	0.10 *	
NBR	1	1,700	108	0.06	1,700	98	0.06	
SBL	1	1,700	391	0.23	1,700	396	0.23 *	
SBT	2	3,400	577	0.24 *	3,400	233	0.10	
SBR	0		233			106		
EBL	1	1,700	173	0.10 *	1,700	231	0.14 *	
EBT	3	5,100	1,102	0.23	5,100	1,506	0.31	
EBR	0		88			66		
WBL	1	1,700	150	0.09	1,700	69	0.04	
WBT	3	5,100	1,633	0.40 *	5,100	1,098	0.26 *	
WBR	0		390			224		
N/S Movements				0.33			0.33	
E/W Movements				0.50			0.40	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.87			0.78	
LEVEL OF SERVICE (LOS)				D			C	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2008						
INTERSECTION:		47 Jardines / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	19	0.01 *	1,700	19	0.01 *	
NBT	1	1,700	8	0.01	1,700	1	0.01	
NBR	0		6			8		
SBL	0		52			107		
SBT	1	1,700	2	0.10 *	1,700	5	0.10 *	
SBR	0		113			53		
EBL	1	1,700	42	0.02 *	1,700	18	0.01 *	
EBT	3	5,100	772	0.15	5,100	1,301	0.26	
EBR	0		14			10		
WBL	1	1,700	4	0.00	1,700	53	0.03	
WBT	3	5,100	2,271	0.45 *	5,100	1,662	0.33 *	
WBR	0		29			14		
N/S Movements				0.11			0.11	
E/W Movements				0.48			0.34	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.64			0.50	
LEVEL OF SERVICE (LOS)				B			A	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2005						
INTERSECTION:		48 Modesto / Trabuco						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0		0			0		
NBT	0		0	0.00		0	0.00 *	
NBR	0		0			0		
SBL	0.5	1,519	126	0.08	1,700	71	0.04 *	
SBT	0.5	181	15	0.08	0	0	0.00	
SBR	1	1,700	45	0.03	1,700	22	0.01	
EBL	1	1,700	33	0.02 *	1,700	81	0.05	
EBT	2	3,400	513	0.17	3,400	1,425	0.43 *	
EBR	0		73			22		
WBL	1	1,700	88	0.05	1,700	21	0.01 *	
WBT	2	3,400	1,215	0.37 *	3,400	752	0.25	
WBR	0		49			89		
sp				N/S Movements	0.08			0.04
				E/W Movements	0.39			0.44
				Rt. Turn Component	0.00			0.00
				Yellow Clearance	0.05			0.05
TOTAL CAPACITY UTILIZATION				0.52			0.53	
LEVEL OF SERVICE (LOS)				A			A	

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2009						
INTERSECTION:		50 Charlinda / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			V/C
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	73	0.04	1,700	165	0.10	*
NBT	1	1,700	4	0.00	1,700	12	0.01	
NBR	1	1,700	30	0.02	1,700	73	0.04	
SBL	1	1,700	81	0.05	1,700	149	0.09	
SBT	1	1,700	3	0.00	1,700	23	0.01	*
SBR	1	1,700	61	0.04	1,700	65	0.04	
EBL	1	1,700	28	0.02	1,700	77	0.05	
EBT	3	5,100	1,811	0.36	5,100	2,336	0.46	*
EBR	1	1,700	20	0.01	1,700	49	0.03	
WBL	1	1,700	38	0.02	1,700	70	0.04	*
WBT	3.5	6,695	2,677	0.40	6,469	2,012	0.31	
WBR	0.5	105	42	0.40	331	103	0.31	
N/S Movements				0.05				0.11
E/W Movements				0.42				0.50
Rt. Turn Component				0.02				0.00
Yellow Clearance				0.05				0.05
TOTAL CAPACITY UTILIZATION				0.53				0.66
LEVEL OF SERVICE (LOS)				A				B

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		Existing - 2008						
INTERSECTION:		51 Kaleidoscope / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			V/C
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0.5	1,461	49	0.03	1,673	62	0.04	
NBT	0.5	239	8	0.03	27	1	0.04	
NBR	1	1,700	13	0.01	1,700	32	0.02	
SBL	1.5	3,122	45	0.01	3,091	40	0.01	
SBT	0.5	278	4	0.01	309	4	0.01	
SBR	1	1,700	19	0.01	1,700	87	0.05	*
EBL	2	3,400	42	0.01	3,400	125	0.04	*
EBT	3.5	6,763	2,208	0.33	6,754	2,048	0.30	
EBR	0.5	37	12	0.33	46	14	0.30	
WBL	1	1,700	12	0.01	1,700	55	0.03	
WBT	3.5	6,791	2,206	0.32	6,725	2,703	0.40	*
WBR	0.5	9	3	0.32	75	30	0.40	
sp	N/S Movements		0.05				0.09	
E/W Movements			0.34				0.44	
Rt. Turn Component			0.00				0.00	
Yellow Clearance			0.05				0.05	
TOTAL CAPACITY UTILIZATION				0.44				0.58
LEVEL OF SERVICE (LOS)				A				A

APPENDIX B
FUTURE PEAK HOUR
INTERSECTION CAPACITY ANALYSIS WORKSHEETS

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		1 I-5 SB Ramp / Alicia					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	0		0			0	
NBT	0		0			0	
NBR	0		0			0	
SBL	1.5	2,888	1,106	0.38 *	2,996	1,465	0.49 *
SBT	0		0	0.00		0	0.00
SBR	1.5	2,212	847	0.38 *	2,104	1,029	0.49 *
EBL	0		0			0	
EBT	4	6,800	2,134	0.31 *	6,800	2,035	0.30 *
EBR	f		260			279	
WBL	0		0			1,131	
WBT	3	5,100	1,073	0.21	5,100	301	0.28
WBR	f		400			0	
		N/S Movements		0.38		0.49	
		E/W Movements		0.31		0.30	
		Rt. Turn Component		0.00		0.00	
		Yellow Clearance		0.05		0.05	
TOTAL CAPACITY UTILIZATION				0.75	0.84		
LEVEL OF SERVICE (LOS)				C	D		

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		2 I-5 NB Ramp / Alicia					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1.5	1,700	145	0.09 *	1,700	310	0.18 *
NBT	0		0	0.00		0	0.00
NBR	1.5	3,400	346	0.10 *	3,400	680	0.20 *
SBL	0		0			0	
SBT	0		0			0	
SBR	0		0			0	
EBL	0		0			0	
EBT	3	5,100	1,904	0.37 *	5,100	2,565	0.50 *
EBR	f		1,340			931	
WBL	0		0			0	
WBT	3	5,100	1,305	0.26	5,100	1,143	0.22
WBR	f		1,440			1,012	
		N/S Movements		0.09		0.18	
		E/W Movements		0.37		0.50	
		Rt. Turn Component		0.00		0.00	
		Yellow Clearance		0.05		0.05	
TOTAL CAPACITY UTILIZATION				0.51	0.74		
LEVEL OF SERVICE (LOS)				A	C		

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		3 I-5 SB Ramp-Cabot / La Paz					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	117	0.07 *	1,700	104	0.06 *
NBT	0		0	0.00		0	0.00
NBR	2	3,400	513	0.15 *	3,400	476	0.14
SBL	1.5	2,376	371	0.16	2,788	874	0.31
SBT	0.5	1,024	160	0.16 *	612	192	0.31 *
SBR	1	1,700	260	0.15	1,700	403	0.24
EBL	0		7			12	
EBT	2	3,400	783	0.23 *	3,400	819	0.24 *
EBR	1	1,700	59	0.03	1,700	109	0.06
WBL	1	1,700	173	0.10 *	1,700	239	0.14 *
WBT	2	3,400	477	0.23	3,400	573	0.28
WBR	0		291			368	
	sp	N/S Movements		0.31		0.45	
		E/W Movements		0.33		0.39	
		Rt. Turn Component		0.00		0.00	
		Yellow Clearance		0.05		0.05	
TOTAL CAPACITY UTILIZATION				0.69	0.89		
LEVEL OF SERVICE (LOS)				B	D		

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		4 I-5 NB Ramp - Muirlands / La Paz					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1.5	2,150	86	0.04	2,550	211	0.08
NBT	1	1,700	123	0.07 *	1,700	200	0.12 *
NBR	1.5	2,950	118	0.04	2,550	322	0.13 *
SBL	2	3,400	337	0.10 *	3,400	381	0.11 *
SBT	0		0			0	
SBR	2	3,400	337	0.10 *	3,400	322	0.09 *
EBL	2	3,400	314	0.09 *	3,400	301	0.09 *
EBT	2	3,400	1,046	0.31	3,400	1,277	0.38
EBR	f		610			370	
WBL	0		0			0	
WBT	2.5	3,771	1,087	0.29 *	4,353	1,277	0.29 *
WBR	0.5	1,329	383	0.29	747	219	0.29
		N/S Movements		0.17		0.23	
		E/W Movements		0.38		0.38	
		Rt. Turn Component		0.01		0.01	
		Yellow Clearance		0.05		0.05	
TOTAL CAPACITY UTILIZATION				0.61	0.68		
LEVEL OF SERVICE (LOS)				B	B		

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		5 Cabot / Oso					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	2	3,400	123	0.04	3,400	104	0.03
NBT	2	3,400	694	0.20 *	3,400	358	0.11 *
NBR	2	3,400	358	0.11	3,400	388	0.11
SBL	2	3,400	226	0.07 *	3,400	507	0.15 *
SBT	2	3,400	246	0.07	3,400	424	0.12
SBR	1	1,700	76	0.04	1,700	169	0.10
EBL	2	3,400	141	0.04 *	3,400	175	0.05
EBT	3	5,100	943	0.18	5,100	1,341	0.26 *
EBR	1	1,700	106	0.06	1,700	133	0.08
WBL	2	3,400	341	0.10	3,400	327	0.10 *
WBT	3	5,100	1,371	0.27 *	5,100	1,078	0.21
WBR	1	1,700	515	0.30	1,700	575	0.34
N/S Movements				0.27			0.25
E/W Movements				0.31			0.36
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.63			0.66
LEVEL OF SERVICE (LOS)				B			B

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		6 I-5 SB Ramp / Oso					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	0		0			0	
NBT	0		0			0	
NBR	0		0			0	
SBL	2	3,400	549	0.16 *	3,400	1,217	0.36 *
SBT	0		0	0.00		0	0.00
SBR	1	1,700	681	0.40 *	1,700	421	0.25 *
EBL	0		0			0	
EBT	2.5	4,963	1,081	0.22	5,053	1,727	0.34
EBR	1.5	1,837	400	0.22	1,747	597	0.34
WBL	0		0			0	
WBT	3	5,100	1,479	0.44 *	5,100	1,420	0.40 *
WBR	f		740			607	
N/S Movements				0.16			0.36
E/W Movements				0.44			0.40
Rt. Turn Component				0.24			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.89			0.81
LEVEL OF SERVICE (LOS)				D			D

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		7 I-5 NB Ramp / Oso					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	342	0.20 *	1,700	541	0.32 *
NBT	0		0	0.00		0	0.00
NBR	1	1,700	478	0.28 *	1,700	652	0.38 *
SBL	0		0			0	
SBT	0		0			0	
SBR	0		0			0	
EBL	0		0			0	
EBT	3	5,100	1,158	0.23	5,100	2,528	0.50 *
EBR	f		482			400	
WBL	0		0			0	
WBT	3	5,100	2,016	0.40 *	5,100	1,479	0.29
WBR	f		1,315			650	
N/S Movements				0.20			0.32
E/W Movements				0.40			0.50
Rt. Turn Component				0.08			0.07
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.73			0.93
LEVEL OF SERVICE (LOS)				C			E

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		8 I-5 SB Ramp / Crown Valley					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	0		0			0	
NBT	0		0			0	
NBR	0		0			0	
SBL	2.33	4,247	1,268	0.30 *	3,977	1,496	0.38 *
SBT	0.33	0	0	0.00	0	0	0.00
SBR	1.33	2,553	762	0.30 *	2,823	1,062	0.38 *
EBL	0		0			0	
EBT	4	6,800	1,657	0.24 *	6,800	1,804	0.27 *
EBR	1	1,700	243	0.14	1,700	332	0.20
WBL	2	3,400	368	0.11 *	3,400	488	0.14 *
WBT	3	5,100	1,222	0.24	5,100	1,378	0.27
WBR	0		0			0	
N/S Movements				0.30			0.38
E/W Movements				0.35			0.41
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.70			0.84
LEVEL OF SERVICE (LOS)				B			D

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		9 I-5 NB Ramp / Crown Valley					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1.5	1,918	332	0.17 *	1,755	235	0.13 *
NBT	0		0	0.00		0	0.00
NBR	1.5	3,182	551	0.17 *	3,345	448	0.13 *
SBL	0		0			0	
SBT	0		0			0	
SBR	0		0			0	
EBL	0		0			0	
EBT	3	5,100	2,099	0.41 *	5,100	2,632	0.52 *
EBR	2	3,400	760	0.22	3,400	580	0.17
WBL	0		0			0	
WBT	2.5	3,436	1,328	0.39	3,500	1,655	0.47
WBR	1.5	3,364	1,300	0.39	3,300	1,560	0.47
		N/S Movements		0.17			0.13
		E/W Movements		0.41			0.52
		Rt. Turn Component		0.00			0.00
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.63	0.70		
LEVEL OF SERVICE (LOS)				B	B		

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		10 Puerta Real / Crown Valley					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	2	3,400	44	0.01 *	3,400	525	0.15 *
NBT	1	1,700	99	0.06	1,700	81	0.05
NBR	1	1,700	12	0.01	1,700	90	0.05
SBL	1	1,700	32	0.02	1,700	113	0.07
SBT	1	1,700	130	0.08 *	1,700	80	0.05 *
SBR	2	3,400	413	0.12	3,400	798	0.23 *
EBL	2	3,400	438	0.13 *	3,400	436	0.13 *
EBT	4	6,800	1,308	0.19	6,800	1,647	0.24
EBR	1	1,700	308	0.18	1,700	624	0.37
WBL	1	1,700	18	0.01	1,700	106	0.06
WBT	4	6,800	2,057	0.31 *	6,800	1,587	0.24 *
WBR	0		38			63	
	sp	N/S Movements		0.18			0.39
		E/W Movements		0.44			0.37
		Rt. Turn Component		0.00			0.06
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.67	0.87		
LEVEL OF SERVICE (LOS)				B	D		

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		11 Medical Center / Crown Valley					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1.5	3,400	295	0.09 *	3,400	520	0.15 *
NBT	1	745	46	0.06	553	39	0.07
NBR	0.5	955	59	0.06	1,148	81	0.07
SBL	0.5	397	14	0.04	715	45	0.06
SBT	1	1,303	46	0.04 *	985	62	0.06 *
SBR	0.5	1,700	100	0.06	1,700	123	0.07
EBL	1	1,700	85	0.05 *	1,700	114	0.07
EBT	4	6,800	1,129	0.17	6,800	1,382	0.20 *
EBR	1	1,700	388	0.23	1,700	375	0.22
WBL	1	1,700	182	0.11	1,700	127	0.07 *
WBT	4	6,800	1,695	0.25 *	6,800	1,071	0.16
WBR	d		21			31	
	sp	N/S Movements		0.15			0.23
		E/W Movements		0.30			0.28
		Rt. Turn Component		0.00			0.00
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.50	0.55		
LEVEL OF SERVICE (LOS)				A	A		

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		12 Los Altos / Crown Valley					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1.5	3,151	38	0.01	3,257	205	0.06
NBT	0.5	249	3	0.01	143	9	0.06
NBR	1	1,700	12	0.01	1,700	67	0.04
SBL	0.5	1,591	44	0.03	1,659	81	0.05
SBT	0.5	109	3	0.03	41	2	0.05
SBR	1	1,700	14	0.01	1,700	56	0.03
EBL	1	1,700	92	0.05 *	1,700	41	0.02
EBT	4	6,800	956	0.16	6,800	1,634	0.25 *
EBR	0		112			42	
WBL	1	1,700	155	0.09	1,700	18	0.01 *
WBT	4	6,800	1,858	0.29 *	6,800	861	0.13
WBR	0		147			49	
		N/S Movements		0.04			0.11
		E/W Movements		0.35			0.26
		Rt. Turn Component		0.00			0.00
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.44	0.42		
LEVEL OF SERVICE (LOS)				A	A		

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		13 Bellogente / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	16	0.01	1,700	10	0.01	
NBT	0.5	486	4	0.01 *	170	1	0.01 *	
NBR	0.5	1,214	10	0.01	1,530	9	0.01	
SBL	1	1,700	23	0.01 *	1,700	128	0.08 *	
SBT	0.5	638	3	0.00	62	3	0.05	
SBR	0.5	1,063	5	0.00	1,638	79	0.05	
EBL	1	1,700	89	0.05 *	1,700	59	0.03	
EBT	4	6,800	730	0.11	6,800	1,604	0.24 *	
EBR	0		5			19		
WBL	1	1,700	17	0.01	1,700	8	0.00 *	
WBT	4	6,800	2,046	0.33 *	6,800	1,010	0.16	
WBR	0		167			60		
		N/S Movements		0.02			0.08	
		E/W Movements		0.38			0.24	
		Rt. Turn Component		0.00			0.00	
		Yellow Clearance		0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.45	0.37			
LEVEL OF SERVICE (LOS)				A	A			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		14 I-5 SB Ramp / Avery						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL		0					0	
NBT		0					0	
NBR		0					0	
SBL	1.33	2,341	622	0.27	1,914	616	0.32	
SBT	0.33	11	3	0.27	3	1	0.32	
SBR	0.34	1,065	283	0.27	1,500	483	0.32	
EBL	0		0				0	
EBT	2	3,400	508	0.15 *	3,400	676	0.20 *	
EBR	1	1,700	179	0.11	1,700	185	0.11	
WBL	1	1,700	198	0.12 *	1,700	354	0.21 *	
WBT	1	1,700	317	0.19	1,700	566	0.33	
WBR	0		0				0	
		N/S Movements		0.27			0.32	
		E/W Movements		0.27			0.41	
		Rt. Turn Component		0.00			0.00	
		Yellow Clearance		0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.58	0.78			
LEVEL OF SERVICE (LOS)				A	C			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		15 I-5 NB Ramp / Avery						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0.5	1,700	152	0.09 *	1,700	201	0.12 *	
NBT	0.5	0	0	0.00	0	0	0.00	
NBR	1	1,700	386	0.23 *	1,700	583	0.34 *	
SBL	0		0			0		
SBT	0		0			0		
SBR	0		0			0		
EBL	1	1,700	266	0.16 *	1,700	321	0.19 *	
EBT	2	3,400	980	0.29	3,400	977	0.29	
EBR	0		0			0		
WBL	0		0			0		
WBT	1	1,700	431	0.25 *	1,700	739	0.43 *	
WBR	1	1,700	725	0.43 *	1,700	699	0.41	
		N/S Movements		0.09			0.12	
		E/W Movements		0.41			0.62	
		Rt. Turn Component		0.31			0.22	
		Yellow Clearance		0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.86	1.02			
LEVEL OF SERVICE (LOS)				D	F			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		16 Muirlands / Los Alisos						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	242	0.14 *	1,700	209	0.12	
NBT	3	5,100	788	0.15	5,100	1,299	0.25 *	
NBR	1	1,700	135	0.08	1,700	232	0.14	
SBL	1	1,700	342	0.20	1,700	281	0.17 *	
SBT	3	5,100	1,121	0.26 *	5,100	792	0.18	
SBR	0		196			147		
EBL	1	1,700	131	0.08	1,700	353	0.21	
EBT	2	3,400	513	0.19 *	3,400	893	0.33 *	
EBR	0		144			224		
WBL	1	1,700	186	0.11 *	1,700	127	0.07 *	
WBT	2	3,400	566	0.17	3,400	464	0.14	
WBR	1	1,700	171	0.10	1,700	199	0.12	
		N/S Movements		0.40			0.42	
		E/W Movements		0.30			0.40	
		Rt. Turn Component		0.00			0.00	
		Yellow Clearance		0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.75	0.87			
LEVEL OF SERVICE (LOS)				C	D			

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		17 Muirlands / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	215	0.13 *	1,700	131	0.08 *	
NBT	2	3,400	514	0.15	3,400	374	0.11	
NBR	1	1,700	191	0.11	1,700	127	0.07	
SBL	1	1,700	87	0.05	1,700	152	0.09	
SBT	2	3,400	550	0.16 *	3,400	547	0.16 *	
SBR	1	1,700	378	0.22	1,700	345	0.20	
EBL	2	3,400	224	0.07	3,400	273	0.08	
EBT	3	5,100	1,630	0.32 *	5,100	2,371	0.46 *	
EBR	1	1,700	102	0.06	1,700	114	0.07	
WBL	1	1,700	258	0.15 *	1,700	139	0.08 *	
WBT	3.5	6,446	2,334	0.36	6,442	1,854	0.29	
WBR	0.5	354	128	0.36	358	103	0.29	
N/S Movements				0.29	0.24			
E/W Movements				0.47	0.55			
Rt. Turn Component				0.00	0.00			
Yellow Clearance				0.05	0.05			
TOTAL CAPACITY UTILIZATION				0.81	0.83			
LEVEL OF SERVICE (LOS)				D	D			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		18 Jeronimo / Los Alisos						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	263	0.15 *	1,700	254	0.15	
NBT	3	5,100	665	0.13	5,100	1,464	0.29 *	
NBR	1	1,700	201	0.12	1,700	205	0.12	
SBL	1	1,700	258	0.15	1,700	180	0.11 *	
SBT	3	5,100	1,481	0.29 *	5,100	870	0.17	
SBR	1	1,700	324	0.19	1,700	128	0.08	
EBL	2	3,400	208	0.06 *	3,400	347	0.10	
EBT	2	3,400	768	0.23	3,400	1,055	0.31 *	
EBR	1	1,700	243	0.14	1,700	370	0.22	
WBL	2	3,400	219	0.06	3,400	180	0.05 *	
WBT	2	3,400	940	0.28 *	3,400	538	0.16	
WBR	1	1,700	61	0.04	1,700	179	0.11	
N/S Movements				0.45	0.46			
E/W Movements				0.34	0.36			
Rt. Turn Component				0.00	0.00			
Yellow Clearance				0.05	0.05			
TOTAL CAPACITY UTILIZATION				0.83	0.87			
LEVEL OF SERVICE (LOS)				D	D			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		19 Via Fabricanet / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0.34	1,143	121	0.11	957	107	0.11	
NBT	0.33	179	19	0.11 *	152	17	0.11 *	
NBR	0.33	378	40	0.11	591	66	0.11	
SBL	1	1,700	18	0.01 *	1,700	104	0.06 *	
SBT	1	1,700	6	0.00	1,700	33	0.02	
SBR	1	1,700	146	0.09	1,700	233	0.14 *	
EBL	2	3,400	286	0.08 *	3,400	268	0.08	
EBT	3	5,100	1,528	0.30	5,100	2,265	0.44 *	
EBR	d		51			100		
WBL	1	1,700	41	0.02	1,700	38	0.02 *	
WBT	2.5	4,949	2,485	0.50 *	4,889	1,764	0.36	
WBR	0.5	151	76	0.50	211	76	0.36	
sp N/S Movements				0.19	0.25			
E/W Movements				0.59	0.47			
Rt. Turn Component				0.00	0.00			
Yellow Clearance				0.05	0.05			
TOTAL CAPACITY UTILIZATION				0.83	0.77			
LEVEL OF SERVICE (LOS)				D	C			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		20 Jeronimo / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	2	3,400	504	0.15 *	3,400	335	0.10 *	
NBT	2	3,400	430	0.13	3,400	390	0.11	
NBR	1	1,700	68	0.04	1,700	125	0.07	
SBL	2	3,400	61	0.02	3,400	149	0.04	
SBT	2	3,400	215	0.06 *	3,400	544	0.16 *	
SBR	1	1,700	169	0.10	1,700	366	0.22	
EBL	2	3,400	233	0.07 *	3,400	286	0.08	
EBT	3	5,100	1,071	0.21	5,100	1,719	0.34 *	
EBR	1	1,700	135	0.08	1,700	406	0.24	
WBL	2	3,400	120	0.04	3,400	127	0.04 *	
WBT	3	5,100	1,927	0.38 *	5,100	1,222	0.24	
WBR	1	1,700	127	0.07	1,700	110	0.06	
N/S Movements				0.21	0.26			
E/W Movements				0.45	0.37			
Rt. Turn Component				0.00	0.00			
Yellow Clearance				0.05	0.05			
TOTAL CAPACITY UTILIZATION				0.71	0.68			
LEVEL OF SERVICE (LOS)				C	B			

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		21 Chrisanta / La Paz					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1.5	3,060	703	0.23 *	2,653	167	0.06
NBT	0.5	340	78	0.23	747	47	0.06 *
NBR	1	1,700	148	0.09	1,700	36	0.02
SBL	1	1,700	97	0.06	1,700	100	0.06 *
SBT	1	1,700	139	0.08 *	1,700	54	0.03
SBR	1	1,700	163	0.10	1,700	137	0.08
EBL	1	1,700	230	0.14 *	1,700	208	0.12
EBT	2	3,400	864	0.25	3,400	1,764	0.52 *
EBR	1	1,700	485	0.29	1,700	303	0.18
WBL	1	1,700	165	0.10	1,700	63	0.04 *
WBT	2	4,713	1,474	0.31 *	4,672	916	0.20
WBR	1	387	121	0.31	428	84	0.20
N/S Movements				0.31			0.12
E/W Movements				0.45			0.56
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.81			0.73
LEVEL OF SERVICE (LOS)				D			C

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		22 Trabuco / Los Alisos					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	313	0.18 *	1,700	261	0.15
NBT	3	5,100	550	0.13	5,100	1,015	0.25 *
NBR	0		111			254	
SBL	1	1,700	159	0.09	1,700	130	0.08 *
SBT	3	5,100	1,334	0.31 *	5,100	611	0.15
SBR	0		254			159	
EBL	1	1,700	153	0.09	1,700	422	0.25
EBT	2	3,400	560	0.21 *	3,400	946	0.36 *
EBR	0		141			262	
WBL	1	1,700	325	0.19 *	1,700	147	0.09 *
WBT	2	3,400	923	0.30	3,400	470	0.17
WBR	0		97			103	
N/S Movements				0.50			0.33
E/W Movements				0.40			0.44
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.94			0.82
LEVEL OF SERVICE (LOS)				E			D

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		23 Trabuco / Alicia					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	2	3,400	266	0.08	3,400	237	0.07
NBT	2	3,400	508	0.15 *	3,400	454	0.13 *
NBR	d		75			48	
SBL	2	3,400	226	0.07 *	3,400	410	0.12 *
SBT	2	3,400	304	0.09	3,400	415	0.12
SBR	1	1,700	203	0.12	1,700	138	0.08
EBL	1	1,700	146	0.09 *	1,700	159	0.09
EBT	3	5,100	868	0.17	5,100	1,391	0.27 *
EBR	d		71			151	
WBL	1	1,700	67	0.04	1,700	54	0.03 *
WBT	3	5,100	1,586	0.31 *	5,100	998	0.20
WBR	1	1,700	386	0.23	1,700	146	0.09
N/S Movements				0.22			0.25
E/W Movements				0.40			0.30
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.66			0.61
LEVEL OF SERVICE (LOS)				B			B

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		24 Los Alisos / Santa Margarita					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	406	0.24 *	1,700	364	0.21 *
NBT	2	3,400	220	0.11	3,400	381	0.20
NBR	0		147			304	
SBL	1	1,700	86	0.05	1,700	70	0.04
SBT	2	3,400	476	0.21 *	3,400	240	0.09 *
SBR	0		222			65	
EBL	1	1,700	159	0.09 *	1,700	205	0.12
EBT	3	5,100	707	0.18	5,100	1,877	0.44 *
EBR	0		229			375	
WBL	1	1,700	295	0.17	1,700	216	0.13 *
WBT	3	5,100	1,682	0.34 *	5,100	971	0.21
WBR	0		32			90	
N/S Movements				0.44			0.30
E/W Movements				0.43			0.57
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.92			0.92
LEVEL OF SERVICE (LOS)				E			E

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		25 Marguerite / El Toro					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1.5	3,400	470	0.14 *	3,400	153	0.05 *
NBT	1.5	1,700	17	0.01	1,700	53	0.03
NBR	1	1,700	480	0.28 *	1,700	522	0.31 *
SBL	1	1,700	2	0.00	1,700	12	0.01
SBT	1.5	3,400	6	0.00 *	3,400	80	0.02 *
SBR	1.5	1,700	2	0.00	1,700	6	0.00
EBL	2	3,400	1	0.00	3,400	12	0.00
EBT	2	3,400	158	0.05 *	3,400	292	0.09 *
EBR	1	1,700	130	0.08	1,700	605	0.36 *
WBL	2	3,400	484	0.14 *	3,400	480	0.14 *
WBT	2	3,400	368	0.11	3,400	174	0.05
WBR	0		3			8	
N/S Movements				0.14			0.07
E/W Movements				0.19			0.23
Rt. Turn Component				0.13			0.36
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.51			0.71
LEVEL OF SERVICE (LOS)				A			C

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		26 Marguerite / Los Alisos					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	26	0.02	1,700	30	0.02
NBT	2	3,400	483	0.18 *	3,400	373	0.15 *
NBR	d		138			145	
SBL	1	1,700	160	0.09 *	1,700	580	0.34 *
SBT	2	3,400	364	0.15	3,400	548	0.20
SBR	d		136			121	
EBL	1	1,700	133	0.08 *	1,700	140	0.08
EBT	2	3,400	182	0.07	3,400	223	0.08 *
EBR	d		61			38	
WBL	1	1,700	152	0.09	1,700	125	0.07 *
WBT	2	3,400	404	0.12 *	3,400	165	0.05
WBR	1	1,700	534	0.31 *	1,700	230	0.14
N/S Movements				0.28			0.49
E/W Movements				0.20			0.15
Rt. Turn Component				0.10			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.63			0.69
LEVEL OF SERVICE (LOS)				B			B

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		27 Marguerite / Santa Margarita					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	651	0.38 *	1,700	386	0.23 *
NBT	2	3,400	562	0.21	3,400	339	0.18
NBR	0		135			283	
SBL	1	1,700	145	0.09	1,700	260	0.15
SBT	2	3,400	409	0.13 *	3,400	546	0.19 *
SBR	0		24			98	
EBL	1	1,700	34	0.02 *	1,700	167	0.10
EBT	3	5,100	664	0.13	5,100	1,286	0.25 *
EBR	1	1,700	188	0.11	1,700	439	0.26
WBL	1	1,700	220	0.13	1,700	225	0.13 *
WBT	3	5,100	1,184	0.26 *	5,100	836	0.19
WBR	0		149			155	
N/S Movements				0.51			0.42
E/W Movements				0.28			0.38
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.84			0.85
LEVEL OF SERVICE (LOS)				D			D

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		28 Marguerite / Olympiad					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	0		0			0	
NBT	2	3,400	511	0.19 *	3,400	759	0.32 *
NBR	0		139			321	
SBL	1	1,700	133	0.08 *	1,700	339	0.20 *
SBT	2	3,400	527	0.16	3,400	691	0.20
SBR	0		0			0	
EBL	0		0			0	
EBT	0		0			0	
EBR	0		0			0	
WBL	1	1,700	307	0.18 *	1,700	279	0.16 *
WBT	0		0	0.00		0	0.00
WBR	1	1,700	203	0.12	1,700	321	0.19
N/S Movements				0.27			0.52
E/W Movements				0.18			0.16
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.50			0.73
LEVEL OF SERVICE (LOS)				A			C

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		29 Marguerite / Alicia					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	60	0.04 *	1,700	46	0.03
NBT	2	3,400	388	0.11	3,400	641	0.19 *
NBR	d		92			144	
SBL	1	1,700	44	0.03	1,700	43	0.03 *
SBT	2	3,400	682	0.20 *	3,400	627	0.18
SBR	d		515			268	
EBL	2	3,400	226	0.07	3,400	479	0.14
EBT	2	3,400	757	0.22 *	3,400	1,323	0.39 *
EBR	d		36			50	
WBL	1	1,700	154	0.09 *	1,700	123	0.07 *
WBT	3	5,100	1,130	0.22	5,100	766	0.15
WBR	d		57			70	
N/S Movements				0.24			0.21
E/W Movements				0.31			0.46
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.60			0.73
LEVEL OF SERVICE (LOS)				A			C

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		30 Marguerite / Trabuco					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	598	0.35 *	1,700	395	0.23 *
NBT	2	3,400	582	0.17	3,400	915	0.28
NBR	0		12			30	
SBL	1	1,700	17	0.01	1,700	34	0.02
SBT	2	3,400	890	0.30 *	3,400	807	0.25 *
SBR	0		121			55	
EBL	1	1,700	123	0.07 *	1,700	98	0.06 *
EBT	1	1,700	24	0.01	1,700	30	0.02
EBR	1	1,700	395	0.23	1,700	520	0.31 *
WBL	1	1,700	6	0.00	1,700	78	0.05
WBT	2	3,400	31	0.02 *	3,400	62	0.04 *
WBR	0		20			90	
N/S Movements				0.65			0.49
E/W Movements				0.09			0.10
Rt. Turn Component				0.00			0.02
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.79			0.65
LEVEL OF SERVICE (LOS)				C			B

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		31 Marguerite / Jeronimo					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	401	0.24 *	1,700	250	0.15 *
NBT	2	3,400	806	0.26	3,400	1,000	0.34
NBR	0		73			145	
SBL	1	1,700	112	0.07	1,700	105	0.06
SBT	2	3,400	1,193	0.38 *	3,400	966	0.31 *
SBR	0		85			71	
EBL	1	1,700	151	0.09 *	1,700	128	0.08
EBT	2	3,400	156	0.05	3,400	360	0.11 *
EBR	1	1,700	253	0.15	1,700	371	0.22
WBL	1	1,700	228	0.13	1,700	113	0.07 *
WBT	2	3,400	456	0.18 *	3,400	149	0.06
WBR	0		166			61	
N/S Movements				0.61			0.45
E/W Movements				0.27			0.17
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.93			0.67
LEVEL OF SERVICE (LOS)				E			B

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		32 Marguerite / La Paz					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	2	3,400	237	0.07 *	3,400	294	0.09
NBT	2	3,400	850	0.29	3,400	992	0.33 *
NBR	0		143			143	
SBL	2	3,400	134	0.04	3,400	456	0.13 *
SBT	2	3,400	1,020	0.30 *	3,400	778	0.23
SBR	1	1,700	356	0.21	1,700	386	0.23
EBL	2	3,400	282	0.08 *	3,400	255	0.08
EBT	2	3,400	295	0.09	3,400	898	0.26 *
EBR	1	1,700	169	0.10	1,700	227	0.13
WBL	2	3,400	291	0.09	3,400	199	0.06 *
WBT	2	3,400	581	0.21 *	3,400	361	0.14
WBR	0		128			119	
N/S Movements				0.37			0.47
E/W Movements				0.29			0.32
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.71			0.84
LEVEL OF SERVICE (LOS)				C			D

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		33 Marguerite / Oso						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	2	3,400	407	0.12	3,400	228	0.07	
NBT	2	3,400	891	0.26 *	3,400	786	0.23 *	
NBR	1	1,700	67	0.04	1,700	79	0.05	
SBL	2	3,400	140	0.04 *	3,400	275	0.08 *	
SBT	2	3,400	567	0.17	3,400	779	0.23	
SBR	1	1,700	282	0.17	1,700	246	0.14	
EBL	2	3,400	264	0.08 *	3,400	301	0.09	
EBT	4	6,800	1,232	0.18	6,800	1,899	0.28 *	
EBR	d		189			562		
WBL	2	3,400	103	0.03	3,400	141	0.04 *	
WBT	4	6,800	2,028	0.30 *	6,800	1,322	0.19	
WBR	d		73			184		
N/S Movements				0.30	849.00	0.31		
E/W Movements				0.38	0.25	0.32		
Rt. Turn Component				0.00		0.00		
Yellow Clearance				0.05		0.05		
TOTAL CAPACITY UTILIZATION				0.73		0.68		
LEVEL OF SERVICE (LOS)				C		B		

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		34 Marguerite / Felipe						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	46	0.03	1,700	30	0.02	
NBT	2	3,400	786	0.37 *	3,400	806	0.38 *	
NBR	0		467			479		
SBL	1	1,700	108	0.06 *	1,700	363	0.21 *	
SBT	2	3,400	673	0.20	3,400	942	0.29	
SBR	0		21			30		
EBL	1	1,700	64	0.04	1,700	53	0.03	
EBT	0.5	1,007	45	0.04 *	1,475	59	0.04 *	
EBR	0.5	693	31	0.04	225	9	0.04	
WBL	1.5	3,253	1,039	0.32 *	3,130	360	0.12 *	
WBT	0.5	147	47	0.32	270	31	0.12	
WBR	1	1,700	355	0.21	1,700	121	0.07	
N/S Movements				0.43		0.59		
E/W Movements				0.36		0.16		
Rt. Turn Component				0.00		0.00		
Yellow Clearance				0.05		0.05		
TOTAL CAPACITY UTILIZATION				0.85		0.80		
LEVEL OF SERVICE (LOS)				D		C		

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		35 Marguerite / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	2	3,400	102	0.03 *	3,400	142	0.04	
NBT	2	3,400	478	0.14	3,400	599	0.18 *	
NBR	1	1,700	219	0.13	1,700	469	0.28	
SBL	2	3,400	166	0.05	3,400	505	0.15 *	
SBT	2	3,400	924	0.27 *	3,400	577	0.17	
SBR	1	1,700	420	0.25	1,700	198	0.12	
EBL	2	3,400	338	0.10 *	3,400	502	0.15	
EBT	4	6,800	708	0.10	6,800	1,416	0.21 *	
EBR	1	1,700	74	0.04	1,700	153	0.09	
WBL	2	3,400	397	0.12	3,400	409	0.12 *	
WBT	4	6,800	1,836	0.27 *	6,800	769	0.11	
WBR	1	1,700	268	0.16	1,700	272	0.16	
N/S Movements				0.30		0.32		
E/W Movements				0.37		0.33		
Rt. Turn Component				0.00		0.00		
Yellow Clearance				0.05		0.05		
TOTAL CAPACITY UTILIZATION				0.72		0.70		
LEVEL OF SERVICE (LOS)				C		B		

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		36 Marguerite (E/W) / Medical Center (N/S)						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	18	0.01 *	1,700	59	0.03	
NBT	1	1,700	28	0.02	1,700	108	0.06 *	
NBR	1	1,700	16	0.01	1,700	203	0.12	
SBL	1	1,700	41	0.02	1,700	327	0.19 *	
SBT	2	3,400	229	0.09 *	3,400	228	0.11	
SBR	0		60			140		
EBL	1	1,700	118	0.07	1,700	131	0.08	
EBT	2	3,400	726	0.23 *	3,400	984	0.29 *	
EBR	0		39			53		
WBL	1	1,700	377	0.22 *	1,700	195	0.11 *	
WBT	2	3,400	1,027	0.37	3,400	815	0.24	
WBR	0		225			105		
N/S Movements				0.10		0.26		
E/W Movements				0.45		0.40		
Rt. Turn Component				0.00		0.00		
Yellow Clearance				0.05		0.05		
TOTAL CAPACITY UTILIZATION				0.59		0.71		
LEVEL OF SERVICE (LOS)				A		C		

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		37 Marguerite / Avery					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	556	0.33 *	1,700	345	0.20 *
NBT	2	3,400	646	0.22	3,400	374	0.13
NBR	0		98			67	
SBL	1	1,700	186	0.11	1,700	206	0.12
SBT	2	3,400	644	0.19 *	3,400	634	0.19 *
SBR	1	1,700	308	0.18	1,700	918	0.54
EBL	2	3,400	534	0.16 *	3,400	1,220	0.36 *
EBT	2	3,400	472	0.25	3,400	487	0.23
EBR	0		386			290	
WBL	1	1,700	47	0.03	1,700	86	0.05
WBT	2	3,400	438	0.18 *	3,400	437	0.16 *
WBR	0		185			110	
		N/S Movements		0.52			0.39
		E/W Movements		0.34			0.52
		Rt. Turn Component		0.00			0.00
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.91			0.96
LEVEL OF SERVICE (LOS)				E			E

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		38 Glenn Ranch / El Toro					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	198	0.12 *	1,700	140	0.08 *
NBT	1	1,700	429	0.25	1,700	547	0.32
NBR	0		0			0	
SBL	0		0			0	
SBT	2	3,400	562	0.27 *	3,400	609	0.25 *
SBR	0		368			242	
EBL	1	1,700	221	0.13 *	1,700	485	0.29 *
EBT	0		0	0.00		0	0.00
EBR	1	1,700	252	0.15 *	1,700	215	0.13 *
WBL	0		0			0	
WBT	0		0			0	
WBR	0		0			0	
		N/S Movements		0.39			0.33
		E/W Movements		0.13			0.29
		Rt. Turn Component		0.00			0.00
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.57			0.67
LEVEL OF SERVICE (LOS)				A			B

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		39 SR-241 NB Ramps / Los Alisos					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	1	1,700	221	0.13 *	1,700	87	0.05
NBT	2	3,265	241	0.08	3,092	854	0.30 *
NBR	0		10			85	
SBL	0		19			44	
SBT	2	3,400	604	0.18 *	3,400	285	0.10
SBR	1	1,700	437	0.26 *	1,700	44	0.03
EBL	0		4			59	
EBT	0		1			53	
EBR	0		5			38	
WBL	1	1,700	31	0.02 *	1,700	51	0.03 *
WBT	0		202	0.00		71	0.00
WBR	1	181	24	0.13 *	890	78	0.09 *
		N/S Movements		0.31			0.30
		E/W Movements		0.02			0.03
		Rt. Turn Component		0.19			0.06
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.57			0.44
LEVEL OF SERVICE (LOS)				A			A

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT					
INTERSECTION:		40 SR-241 SB Ramps / Los Alisos					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	0		0			0	
NBT	2	3,400	282	0.08	3,400	526	0.15 *
NBR	1	1,700	100	0.06	1,700	123	0.07
SBL	1	1,700	83	0.05	1,700	50	0.03 *
SBT	2	3,400	661	0.19 *	3,400	344	0.10
SBR	0		0			0	
EBL	2	3,400	48	0.01 *	3,400	481	0.14 *
EBT	0		0	0.00		2	0.00
EBR	1	1,700	59	0.03 *	1,700	347	0.20 *
WBL	0		0			0	
WBT	0		0			0	
WBR	0		0			0	
		N/S Movements		0.19			0.18
		E/W Movements		0.01			0.14
		Rt. Turn Component		0.03			0.20
		Yellow Clearance		0.05			0.05
TOTAL CAPACITY UTILIZATION				0.29			0.58
LEVEL OF SERVICE (LOS)				A			A

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		41 Santa Margarita / Melinda						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	68	0.04	1,700	161	0.09	
NBT	3	5,100	741	0.18 *	5,100	761	0.22 *	
NBR	0		181			338		
SBL	1	1,700	123	0.07 *	1,700	248	0.15 *	
SBT	3	5,100	778	0.16	5,100	814	0.17	
SBR	0		59			74		
EBL	1	1,700	474	0.28 *	1,700	90	0.05	
EBT	2	3,400	203	0.14	3,400	294	0.12 *	
EBR	0		263			126		
WBL	1	1,700	491	0.29	1,700	270	0.16 *	
WBT	2	3,400	264	0.16 *	3,400	215	0.10	
WBR	0		285			119		
		N/S Movements		0.25			0.36	
		E/W Movements		0.44			0.28	
		Rt. Turn Component		0.00			0.00	
		Yellow Clearance		0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.74	0.69			
LEVEL OF SERVICE (LOS)				C	B			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		42 Olympiad / Melinda						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0		0			0		
NBT	0		0			0		
NBR	0		0			0		
SBL	1	1,700	226	0.13 *	1,700	142	0.08 *	
SBT	0		0	0.00		0	0.00	
SBR	1	1,700	312	0.18 *	1,700	178	0.10	
EBL	1	1,700	105	0.06 *	1,700	239	0.14 *	
EBT	2	3,400	164	0.05	3,400	311	0.09	
EBR	0		0			0		
WBL	0		0			0		
WBT	2	3,400	278	0.11 *	3,400	276	0.14 *	
WBR	0		95			214		
		N/S Movements		0.13			0.08	
		E/W Movements		0.17			0.28	
		Rt. Turn Component		0.05			0.02	
		Yellow Clearance		0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.41	0.44			
LEVEL OF SERVICE (LOS)				A	A			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		43 Olympiad / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	135	0.08	1,700	131	0.08	
NBT	1.5	1,700	354	0.21 *	1,700	382	0.22 *	
NBR	0.5	1,700	347	0.20	1,700	349	0.21	
SBL	1	1,700	32	0.02 *	1,700	39	0.02 *	
SBT	1.5	2,936	386	0.13	3,070	409	0.13	
SBR	0.5	464	61	0.13	330	44	0.13	
EBL	1	1,700	94	0.06	1,700	150	0.09	
EBT	2.5	4,518	831	0.18 *	4,611	942	0.20 *	
EBR	0.5	582	107	0.18	489	100	0.20	
WBL	1	1,700	323	0.19 *	1,700	361	0.21 *	
WBT	2.5	4,985	950	0.19	4,758	806	0.17	
WBR	0.5	115	22	0.19	342	58	0.17	
		N/S Movements		0.23			0.25	
		E/W Movements		0.37			0.42	
		Rt. Turn Component		0.05			0.04	
		Yellow Clearance		0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.70	0.75			
LEVEL OF SERVICE (LOS)				B	C			

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		44 Olympiad / Jeronimo						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	252	0.15 *	1,700	105	0.06 *	
NBT	2	3,400	548	0.16	3,400	535	0.16	
NBR	0		0			0		
SBL	0		0			0		
SBT	2	3,400	657	0.26 *	3,400	485	0.18 *	
SBR	0		233			135		
EBL	1	1,700	159	0.09 *	1,700	155	0.09 *	
EBT	0		0	0.00		0	0.00	
EBR	1	1,700	81	0.05	1,700	135	0.08 *	
WBL	0		0			0		
WBT	0		0			0		
WBR	0		0			0		
		N/S Movements		0.41			0.24	
		E/W Movements		0.09			0.09	
		Rt. Turn Component		0.00			0.00	
		Yellow Clearance		0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.55	0.39			
LEVEL OF SERVICE (LOS)				A	A			

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		45 Olympiad - Felipe / La Paz						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	307	0.18 *	1,700	242	0.14 *	
NBT	2	3,400	681	0.20	3,400	506	0.15	
NBR	0		0			0		
SBL	0		0			0		
SBT	2	3,400	601	0.30 *	3,400	453	0.21 *	
SBR	0		433			269		
EBL	1	1,700	196	0.12 *	1,700	368	0.22 *	
EBT	0		0	0.00		0	0.00	
EBR	1	1,700	159	0.09	1,700	302	0.18 *	
WBL	0		0			0		
WBT	0		0			0		
WBR	0		0			0		
N/S Movements				0.48			0.35	
E/W Movements				0.12			0.22	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.65			0.62	
LEVEL OF SERVICE (LOS)				B			B	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		46 Felipe / Oso						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	156	0.09 *	1,700	68	0.04	
NBT	2	3,400	200	0.06	3,400	353	0.10 *	
NBR	1	1,700	137	0.08	1,700	158	0.09	
SBL	1	1,700	468	0.28	1,700	523	0.31 *	
SBT	2	3,400	585	0.24 *	3,400	245	0.10	
SBR	0		245			111		
EBL	1	1,700	179	0.11 *	1,700	243	0.14 *	
EBT	3	5,100	1,385	0.29	5,100	1,790	0.36	
EBR	0		94			69		
WBL	1	1,700	182	0.11	1,700	123	0.07	
WBT	3	5,100	1,766	0.44 *	5,100	1,297	0.32 *	
WBR	0		460			343		
N/S Movements				0.34			0.41	
E/W Movements				0.54			0.46	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.93			0.93	
LEVEL OF SERVICE (LOS)				E			E	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		47 Jardines / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	19	0.01 *	1,700	24	0.01 *	
NBT	1	1,700	8	0.01	1,700	1	0.01	
NBR	0		6			8		
SBL	0		55			112		
SBT	1	1,700	2	0.11 *	1,700	6	0.11 *	
SBR	0		133			77		
EBL	1	1,700	46	0.03 *	1,700	19	0.01 *	
EBT	4	6,800	816	0.12	6,800	1,387	0.21	
EBR	0		15			15		
WBL	1	1,700	4	0.00	1,700	56	0.03	
WBT	4	6,800	2,517	0.37 *	6,800	1,829	0.27 *	
WBR	0		30			15		
N/S Movements				0.12			0.13	
E/W Movements				0.40			0.28	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.57			0.46	
LEVEL OF SERVICE (LOS)				A			A	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		48 Modesto / Trabuco						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0		0			0		
NBT	0		0			0		
NBR	0		0			0		
SBL	0.5	1,522	137	0.09 *	1,700	75	0.04 *	
SBT	0.5	178	16	0.09	0	0	0.00	
SBR	1	1,700	47	0.03	1,700	22	0.01	
EBL	1	1,700	35	0.02 *	1,700	85	0.05	
EBT	2	3,400	544	0.18	3,400	1,502	0.45 *	
EBR	0		76			23		
WBL	1	1,700	101	0.06	1,700	22	0.01 *	
WBT	2	3,400	1,357	0.41 *	3,400	858	0.28	
WBR	0		51			95		
sp				N/S Movements	0.09			0.04
				E/W Movements	0.43			0.46
				Rt. Turn Component	0.00			0.00
				Yellow Clearance	0.05			0.05
TOTAL CAPACITY UTILIZATION				0.57			0.56	
LEVEL OF SERVICE (LOS)				A			A	

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		50 Charlinda / Alicia						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	82	0.05	1,700	170	0.10 *	
NBT	1	1,700	4	0.00 *	1,700	12	0.01	
NBR	1	1,700	34	0.02	1,700	78	0.05	
SBL	1	1,700	90	0.05 *	1,700	159	0.09	
SBT	1	1,700	3	0.00	1,700	24	0.01 *	
SBR	1	1,700	67	0.04 *	1,700	67	0.04	
EBL	1	1,700	29	0.02 *	1,700	79	0.05	
EBT	3	5,100	1,907	0.37	5,100	2,454	0.48 *	
EBR	1	1,700	21	0.01	1,700	51	0.03	
WBL	1	1,700	40	0.02	1,700	75	0.04 *	
WBT	3.5	6,695	2,819	0.42 *	6,466	2,113	0.33	
WBR	0.5	105	44	0.42	334	109	0.33	
N/S Movements				0.06			0.11	
E/W Movements				0.44			0.53	
Rt. Turn Component				0.02			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.56			0.69	
LEVEL OF SERVICE (LOS)				A			B	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT						
INTERSECTION:		51 Kaleidoscope / Crown Valley						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0.5	1,461	49	0.03	1,674	65	0.04	
NBT	0.5	239	8	0.03	26	1	0.04	
NBR	1	1,700	13	0.01	1,700	34	0.02	
SBL	1.5	3,133	47	0.02	3,117	44	0.01	
SBT	0.5	267	4	0.02	283	4	0.01	
SBR	1	1,700	19	0.01	1,700	92	0.05	
EBL	2	3,400	44	0.01 *	3,400	136	0.04 *	
EBT	3.5	6,762	2,320	0.34	6,753	2,156	0.32	
EBR	0.5	38	13	0.34	47	15	0.32	
WBL	1	1,700	13	0.01	1,700	58	0.03	
WBT	3.5	6,791	2,311	0.34 *	6,722	2,839	0.42 *	
WBR	0.5	9	3	0.34	78	33	0.42	
sp		N/S Movements		0.05			0.09	
		E/W Movements		0.35			0.46	
		Rt. Turn Component		0.00			0.00	
		Yellow Clearance		0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.45			0.61	
LEVEL OF SERVICE (LOS)				A			B	

APPENDIX C
FUTURE PEAK HOUR MITIGATED
INTERSECTION CAPACITY ANALYSIS WORKSHEETS

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT - MITIGATED						
INTERSECTION:		7 I-5 NB Ramp / Oso						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	1	1,700	342	0.20 *	1,700	541	0.32 *	
NBT	0		0	0.00		0	0.00	
NBR	2	3,400	478	0.14 *	3,400	652	0.19 *	
SBL	0		0			0		
SBT	0		0			0		
SBR	0		0			0		
EBL	0		0			0		
EBT	3	5,100	1,158	0.23	5,100	2,528	0.50 *	
EBR	f		482			400		
WBL	0		0			0	*	
WBT	3	5,100	2,016	0.40 *	5,100	1,479	0.29	
WBR	f		1,315			650		
N/S Movements				0.20			0.32	
E/W Movements				0.40			0.50	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.65			0.86	
LEVEL OF SERVICE (LOS)				B			D	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT - MITIGATED						
INTERSECTION:		15 I-5 NB Ramp / Avery						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	0.5	1,700	152	0.09 *	1,700	201	0.12 *	
NBT	0.5		0	0.00		0	0.00	
NBR	2	3,400	386	0.11 *	3,400	583	0.17 *	
SBL	0		0			0		
SBT	0		0			0		
SBR	0		0			0		
EBL	1	1,700	266	0.16 *	1,700	321	0.19 *	
EBT	2	3,400	980	0.29	3,400	977	0.29	
EBR	0		0			0		
WBL	0		0			0		
WBT	1	1,700	431	0.25 *	1,700	739	0.43 *	
WBR	1	1,700	725	0.43 *	1,700	699	0.41	
N/S Movements				0.09			0.12	
E/W Movements				0.41			0.62	
Rt. Turn Component				0.20			0.05	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.75			0.85	
LEVEL OF SERVICE (LOS)				C			D	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT - MITIGATED						
INTERSECTION:		22 Trabuco / Los Alisos						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	2	3,400	313	0.09 *	3,400	261	0.08	
NBT	3	5,100	550	0.13	5,100	1,015	0.25 *	
NBR	0		111			254		
SBL	1	1,700	159	0.09	1,700	130	0.08 *	
SBT	3	5,100	1,334	0.31 *	5,100	611	0.15	
SBR	0		254			159		
EBL	1	1,700	153	0.09	1,700	422	0.25	
EBT	2	3,400	560	0.21 *	3,400	946	0.36 *	
EBR	0		141			262		
WBL	1	1,700	325	0.19 *	1,700	147	0.09 *	
WBT	2	3,400	923	0.30	3,400	470	0.17	
WBR	0		97			103		
N/S Movements				0.40			0.33	
E/W Movements				0.40			0.44	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.85			0.82	
LEVEL OF SERVICE (LOS)				D			D	

PROJECT:		Mission Viejo						
ANALYSIS CONDITION:		GP BUILDOUT - MITIGATED						
INTERSECTION:		24 Los Alisos / Santa Margarita						
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR			
		CAP	VOLUME	V/C	CAP	VOLUME	V/C	
NBL	2	3,400	406	0.12 *	3,400	364	0.11	
NBT	2	3,400	220	0.11	3,400	381	0.20 *	
NBR	0		147			304		
SBL	1	1,700	86	0.05	1,700	70	0.04 *	
SBT	2	3,400	476	0.21 *	3,400	240	0.09	
SBR	0		222			65		
EBL	2	3,400	159	0.05 *	3,400	205	0.06	
EBT	3	5,100	707	0.18	5,100	1,877	0.44 *	
EBR	0		229			375		
WBL	1	1,700	295	0.17	1,700	216	0.13 *	
WBT	3	5,100	1,682	0.34 *	5,100	971	0.21	
WBR	0		32			90		
N/S Movements				0.32			0.24	
E/W Movements				0.38			0.57	
Rt. Turn Component				0.00			0.00	
Yellow Clearance				0.05			0.05	
TOTAL CAPACITY UTILIZATION				0.76			0.86	
LEVEL OF SERVICE (LOS)				C			D	

MISSION VIEJO INTERSECTION CAPACITY UTILIZATION WORKSHEETS

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT - MITIGATED					
INTERSECTION:		31 Marguerite / Jeronimo					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	2	3,400	401	0.12 *	3,400	250	0.07
NBT	2	3,400	806	0.26	3,400	1,000	0.34 *
NBR	0		73			145	
SBL	1	1,700	112	0.07	1,700	105	0.06 *
SBT	2	3,400	1,193	0.38 *	3,400	966	0.31
SBR	0		85			71	
EBL	1	1,700	151	0.09 *	1,700	128	0.08
EBT	2	3,400	156	0.05	3,400	360	0.11 *
EBR	1	1,700	253	0.15	1,700	371	0.22 *
WBL	1	1,700	228	0.13	1,700	113	0.07 *
WBT	2	3,400	456	0.18 *	3,400	149	0.06
WBR	0		166			61	
N/S Movements				0.49			0.40
E/W Movements				0.27			0.17
Rt. Turn Component				0.00			0.07
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.82			0.69
LEVEL OF SERVICE (LOS)				D			B

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT - MITIGATED					
INTERSECTION:		37 Marguerite / Avery					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	2	3,400	556	0.16 *	3,400	345	0.10 *
NBT	2	3,400	646	0.22	3,400	374	0.13
NBR	0		98			67	
SBL	1	1,700	186	0.11	1,700	206	0.12
SBT	2	3,400	644	0.19 *	3,400	634	0.19 *
SBR	1	1,700	308	0.18	1,700	918	0.54
EBL	2	3,400	534	0.16 *	3,400	1,220	0.36 *
EBT	2	3,400	472	0.25	3,400	487	0.23
EBR	0		386			290	
WBL	1	1,700	47	0.03	1,700	86	0.05
WBT	2	3,400	438	0.18 *	3,400	437	0.16 *
WBR	0		185			110	
N/S Movements				0.35			0.29
E/W Movements				0.34			0.52
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.74			0.86
LEVEL OF SERVICE (LOS)				C			D

PROJECT:		Mission Viejo					
ANALYSIS CONDITION:		GP BUILDOUT - MITIGATED					
INTERSECTION:		46 Felipe / Oso					
MOVEMENT	LANES	AM PEAK HOUR			PM PEAK HOUR		
		CAP	VOLUME	V/C	CAP	VOLUME	V/C
NBL	2	3,400	156	0.05 *	3,400	68	0.02
NBT	2	3,400	200	0.06	3,400	353	0.10 *
NBR	1	1,700	137	0.08	1,700	158	0.09
SBL	2	3,400	468	0.14	3,400	523	0.15 *
SBT	2	3,400	585	0.24 *	3,400	245	0.10
SBR	0		245			111	
EBL	1	1,700	179	0.11 *	1,700	243	0.14 *
EBT	3	5,100	1,385	0.29	5,100	1,790	0.36
EBR	0		94			69	
WBL	1	1,700	182	0.11	1,700	123	0.07
WBT	3	5,100	1,766	0.44 *	5,100	1,297	0.32 *
WBR	0		460			343	
N/S Movements				0.29			0.26
E/W Movements				0.54			0.46
Rt. Turn Component				0.00			0.00
Yellow Clearance				0.05			0.05
TOTAL CAPACITY UTILIZATION				0.88			0.77
LEVEL OF SERVICE (LOS)				D			C



