CITY OF
CHULA VISTA

Otay Ranch Village Two
Comprehensive SPA Plan Amendment

Draft Supplemental Environmental Impact Report

SEIR 12-01

SCH No. 200.30.91.012

May 2014

276 Fourth Ave. • Chula Vista • California • 91910

PUBLIC REVIEW DRAFT

SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT FOR OTAY RANCH VILLAGE TWO COMPREHENSIVE SPA PLAN AMENDMENT

Lead Agency

City of Chula Vista
276 Fourth Avenue
Chula Vista, California 91910

MAY 2014

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CHAPTER 1
EXECUTIVE SUMMARY

This document constitutes a Supplemental Environmental Impact Report (SEIR) pursuant to Section 15163 of the California Environmental Quality Act (CEQA) Guidelines. As detailed in Section 2.1, this SEIR provides a supplement to the 2006 Otay Ranch Villages Two, Three, and a Portion of Village Four Sectional Planning Area Plan Final Second Tier Environmental Impact Report. This SEIR examines potential alterations to the analysis and conclusions in the 2006 EIR attributed to the proposed project.

This SEIR is an informational document intended for use by the City of Chula Vista, other public agencies, and members of the general public in evaluating the potential environmental effects of the proposed Village Two Comprehensive Sectional Planning Area (SPA) Plan Amendment, hereafter referred to as the proposed project. The proposed amendment is to the SPA Plan, which is a document that refines and implements the land use plans, goals, and objectives of the Otay Ranch General Development Plan (GDP) for the development of Village Two, Three, and a portion of Four.

CEQA Statute Section 21002 requires that an EIR identify the significant effects of a project on the environment and provide measures or alternatives that can mitigate or avoid these effects. This Draft EIR evaluates the environmental effects associated with development of the project and discusses the manner in which the project's significant effects can be reduced or avoided through the implementation of mitigation measures or feasible alternatives to the proposed project. In accordance with Section 15130 of the CEQA Guidelines, this SEIR also includes an examination of the effects of cumulative development.

This summary provides a brief synopsis of: 1) the proposed project, 2) results of the environmental analysis contained within this environmental document, 3) alternatives to the proposed project that were considered, and 4) major areas of controversy and issues to be resolved by decision-makers. This summary does not contain the extensive background and analysis found throughout the individual chapters within the SEIR. Therefore, the reader should review the entire document to fully understand the project and its environmental consequences.

1.1 PROJECT LOCATION AND SETTING

Otay Ranch lies within the East Planning Area of the City, as identified in the City's General Plan. The proposed project is a component of the Otay Ranch GDP, which organizes the Otay Ranch into 20 villages or planning areas. The approximately 267-acre project area is located within the Otay Valley Parcel of the Otay Ranch. The project area is comprised of the portions of Village Two under the ownership of Baldwin & Sons.

Historically, the Otay Valley Parcel, including the project area, has been used for ranching, grazing, dry farming, and truck farming activities. Within Village Two, grading has generally begun on residential zones surrounding CPF-1 and construction has begun on sites that are not proposed to change under the project. In addition, several residential land use zones have been completed with residents currently inhabiting select homes. These neighborhoods of initial development include R-5a, R-5b, R-6, R-7A, R-8a, R-8b, R-9a, R-9b, R-10a, R-13, R-14, R-15b, R-30, and CPF-1. Primary internal roadways have been partially constructed and paved. These roadways include State Street, Santa Diana Road, and Santa Victoria Road. The remainder of the project area is currently vacant and is generally comprised of gently sloping terrain covered with primarily non-native grasslands crossed by dirt roads and old cattle trails.

The proposed project is located within the City of Chula Vista in southwestern San Diego County, approximately 3.5 miles east of downtown Chula Vista and 13 miles southeast of Downtown San Diego (Figure 4-1). Regional access to the project site is from State Route 125 (SR-125), which runs adjacent to a portion of the proposed project, and Interstate 805, which is approximately 1.75 miles to the west (Figure 4-2). The proposed project site, consisting of several neighborhoods collectively, occupies approximately 267 acres within Village Two in the Otay Valley Parcel of the Otay Ranch General Development Plan (GDP). Village Two consists of a total of 818.9 acres (also referred to as the project area). Village Two is generally bound by Olympic Parkway to the north, La Media Road to the east, Village Three and Four to the south, and the Otay Landfill to the west (Figure 4-3).

1.2 PROJECT BACKGROUND

The current SPA Plan for Village Two allows for a mix of single family and multi-family residential, mixed use development, commercial and industrial uses, and schools, parks, and community purpose facilities (CPF). The SPA Plan was originally adopted in 2006 and was previously analyzed in the Otay Ranch Villages Two, Three, and a Portion of Village Four Sectional Planning Area Plan Final Second Tier Environmental Impact Report (City of Chula Vista 2006) and associated addendum (herein referred to as the 2006 EIR). The SPA Plan was subsequently amended via two separate actions: 1) to allow for unit transfers between parcels owned by Baldwin and Sons, and 2) to increase the total number of dwelling units to 2,983 as analyzed in the Otay Ranch Village Two SPA Plan Amendment Mitigated Negative Declaration (MND). Figure 4-4 shows the current SPA Plan Land Use Plan as adopted in 2006 and Figure 4-5 shows the proposed land uses within the SPA Plan. Figures 4-6 shows areas of change within Village Two how units were transferred between parcels owned by Baldwin & Sons in a SPA Plan Amendment in 2012. Figure 4-7 provides a summary of uses and ownership within Village Two.

Baldwin & Sons and related entities currently control 1,873 dwelling units on 240 acres (63% of the total dwelling units allocated) within Village Two. Additionally, Baldwin & Sons controls approximately 8.5 acres of mixed use commercial, 12.5 acres of dedicated commercial, 60.7 acres of industrial uses, as well as various park and community purpose facility (CPF) acreage within Village Two. An additional 1,110 dwelling units under different ownership have been approved on the remaining 104 acres in Village Two.

1.3 PROJECT DESCRIPTION

Baldwin & Sons has planned the proposed project to create a complete village; one that is responsive to homebuyer preferences and is viable in light of current economic conditions, village ownership, infrastructure status, and government policy objectives/requirements. The plan features increased residential densities, diversity of residential product types, and resident amenities such as park and CPF uses and an additional neighborhood elementary school. The proposed project will provide opportunities for increased viability of commercial uses, transit ridership, village 'walkability', and decreased automobile dependence.

The proposed project would add 1,562 dwelling units in a variety of residential types for a total of 4,545 units in Village Two (3,435 du under Baldwin & Sons ownership). The proposed project would increase the allocated single family dwelling units by up to 311 and introduce 1,251 multi-family dwelling units. In addition, up to 130,000 square feet of commercial uses would be located on the MU-2, MU-3 and C-1 parcels combined. In order to account for the increase in residential uses, the proposed project will also include an additional 9.5 acres for a new elementary school, 10.8 acres of parkland (provided beyond the required parkland acreage), and 7.8 acres of CPF. Proposed land uses are shown in Figure 4-5 and areas that are proposed to change under the proposed project are shown in Figure 4-6.

Table 4-1 shows a comparison of the development of Village Two as proposed under the current SPA Plan and the proposed project, which was analyzed in the 2006 EIR, Addendum to the SPA Plan EIR, and the Village Two SPA Plan Amendment MND.

Table 1-1
Comparison of Proposed Village Two Development

Land Use	Current SPA Plan	Proposed Project	Net Change
Single-Family (B&S) (du)	451	762	311*
Multi-Family (B&S) (du)	1,422	2,673	1,251*
Other Residential** (du)	1,110	1,110	0
Total Residential (du)	**2,983**	**4,545**	**1,562**
Industrial (ac)	60.7	62.4	1.7
Mixed Use and Commercial (ac)	21.0	22.5	1.5
CPF (ac)	6.3	14.1	7.8
Park (ac)	58.7	69.5	10.8

Table 1-1
Comparison of Proposed Village Two Development

Land Use	Current SPA Plan	Proposed Project	Net Change
School (ac)	10.3	19.8	9.5
Open Space (ac)	200.2	200.2	0.0
Future Development (ac)	33.1	0.0	-33.1

* A net change of 311 single-family residential units and 1,251 multi-family residential units is analyzed in this EIR, consistent with the project's Traffic Impact Analysis (Chen Ryan 2013). These unit assumptions are considered conservative in terms of vehicle trip generation; therefore, these numbers are used for environmental impact analysis purposes. However, the proposed project would result in a net decrease of 70 single-family residential units, and a net increase of 1,632 multi-family units.
** Other Residential" is not a part of the proposed project, data is presented for information/analysis purposes.
B&S = Baldwin and Sons; du = dwelling units; ac = acres

The proposed project requires amendments to the City of Chula Vista General Plan, the Otay Ranch GDP, the Otay Ranch Village Two, Three, and a Portion of Village Four Sectional Planning Area Plan (SPA), and the Otay Ranch Core Master Precise Plan (CMPP). The proposed project also requires four new Tentative Maps (TMs) for subject neighborhoods within Village Two.

1.3.1 Project Objectives

The proposed project would provide additional benefits to Village Two, the Otay Ranch, and the City of Chula Vista as a whole. In particular, the proposed project would promote development of a complete community that furthers Village goals/objectives by enhancing living, working, learning, shopping, and transit options while increasing residents' opportunities for social interaction and recreation. Specific objectives are:

- **Increase density in and around the Core.** Density would be increased in and around Village Two to further the vision of the Otay Ranch GDP and the 2006 Village of Montecito SPA.
- **Increase housing choices and align with the housing market.** The proposed project would bring Village Two planning in-line with today's marketplace and homebuyer preference. This would provide Chula Vista residents with additional housing choices/opportunities. Aligning Village planning and today's housing market also facilitates construction and home sales.
- **Enhance the viability of transit.** Increasing the number of dwelling units (and population) in Village Two would provide additional ridership for the regional Bus Rapid Transit and local bus systems. This would increase ridership/viability of the transit system and reduce automobile dependence, emissions, and traffic.

- **Enhance the viability of commercial and industrial uses.** Increasing the number of dwelling units (and population) in Village Two would strengthen the market for the commercial uses in the village. This would enhance the mixed use character of the Village and support the walkable, main street character of the village core. Supporting the commercial and industrial uses also would help to promote a balance between jobs and housing.
- **Mixing uses to encourage walking and biking.** With viable commercial uses, Village Two residents would be able to meet daily needs such as groceries, dry cleaning and entertainment within the village. By providing these uses, as well as schools and parks, close to resident's homes, the opportunity for walking and biking would be provided rather than automobile use. This would promote a healthy lifestyle, encourage local businesses, and reduce automobile dependence, emissions, and traffic.
- **Walking to schools.** Providing two elementary schools within Village Two puts residents and students closer to those schools which would allow implementation of programs such as 'walking school buses' where students walk to school in groups as opposed to getting rides or busing. This would promote a healthy lifestyle for students while reducing automobile dependence, emissions, and traffic.
- **Water pipeline relocation.** As part of the proposed project, the water pipeline owned by the City of San Diego which currently bisects Village Two would be relocated to La Media Road. This would allow cohesive development and reduce some of the development constraints that exist today.
- **Additional housing within the same development footprint.** Increasing density in select locations would create additional housing within the same village footprint. This would allow for new home creation in today's marketplace, increase affordability for homebuyers, increase viability of commercial uses, and decrease per capita costs of infrastructure and municipal services.

1.3.2 Discretionary Actions

A discretionary action is an action taken by an agency that calls for the exercise of judgment in deciding whether to approve or how to carry out a project. The following discretionary actions are associated with the proposed project and would be considered by the Chula Vista Planning Commission and City Council:

- Certification of a Final EIR and adoption of a Mitigation Monitoring and Reporting Program pursuant to the California Environmental Quality Act (CEQA).
- Approval of the Chula Vista General Plan Amendments
- Approval of the Otay Ranch General Development Plan Amendments

- Approval of SPA Plan Amendments for Villages 2, 3 and a Portion of 4
- Approval of the Otay Ranch Core Master Precise Plan Amendments
- Approval of Tentative Maps for Village Two
- Approval to relocate the City of San Diego waterline through Village Two from existing alignment into future alignment of La Media Road and Olympic Parkway

1.4 AREAS OF CONTROVERSY

The Notice of Preparation (NOP) was distributed on March 4, 2013 to interested agencies, organizations, and parties for a 30-day public scoping period that ended on April 3, 2013. Additionally, a public scoping meeting was held on March 14, 2013, at the City of Chula Vista to gather additional public input. Comments received during the NOP public scoping period were considered during the preparation of this EIR. The NOP and comments are included in Appendix A to this EIR. Comments covered a variety of topics, including land use compatibility related to the Otay Landfill, traffic generation, flood control, and student generation resulting from residential development. These issues are analyzed in this EIR.

1.5 ISSUES TO BE RESOLVED BY THE CITY COUNCIL

The issues to be resolved by the decision-making body are whether to adopt the proposed project and how to mitigate significant effects created by its implementation. The City will decide if benefits of the project outweigh any significant unmitigable impacts associated with traffic (level of service standards and congestion management) and air quality (consistency with regional plans, air quality standards, operational emissions).

The City will also decide if the significant impacts associated with the environmental issues of transportation and traffic (level of service standards and congestion management), noise (excessive noise levels), noise (excess noise generation), biological resources (sensitive plant and wildlife species, riparian habitat and other sensitive natural communities, federally protected wetlands, and wildlife movement), geology and soils (soil stability and expansive soils), public services (parks and recreation), and public utilities (sewer) have been fully mitigated below a level of significance. Lastly, the City would determine whether any alternative might meet the key objectives of the project while reducing its environmental impact.

1.6 PROJECT ALTERNATIVES

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, Environmental Impact Reports (EIRs) are required to "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" (14 CCR 15126.6(a)). This EIR "must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (14 CCR 15126.6(a)). The alternatives discussion is required even if these alternatives "would impede to some degree the attainment of the project objectives, or would be more costly" (14 CCR 15126.6(b)).

1.6.1 No Project Alternative

CEQA Guidelines Section 15126.6 requires the inclusion of a No Project Alternative to be analyzed. Per CEQA, a No Project Alternative would entail analysis of no build and no development beyond the existing conditions of the project site. However, as stated above, due to the nature of this proposed project, the No Project Alternative would result in the continued development of the SPA Plan as it is currently amended without the proposed project. The change in land use pattern, additional school, parkland, and CPF, as well as the additional development of 1,562 residential units would not occur. Additionally, a "No Development" alternative was analyzed in the previous 2006 EIR.

Under the No Project Alternative, development of Village Two would proceed as under the current approved SPA Plan as amended. All significant, irreversible, and immitigable impacts identified in the environmental documents prepared for the current SPA Plan would occur. However, no further significant or potentially significant impacts would occur beyond what was analyzed, discussed, and mitigated for in the 2006 EIR.

1.6.2 Reduced Density Alternative

The Reduced Density Alternative would follow the same land use pattern existing SPA Plan, not the land use pattern of the proposed project. In addition to utilizing the existing approved land use pattern, the Reduced Density Alternative would propose an overall smaller increase in residential units. In summary, the Reduced Density Alternative would combine the current approved SPA Plan with SPA Lite, while still adding density to neighborhoods R-10, R-11, R-12, and C-1. The Reduced Density Alternative land use map is show in Figure 10-1.

The Reduced Density Alternative would alter 12 neighborhoods of the existing SPA Plan and increase total residential units by 484. When only considering these 12 neighborhoods, the proposed project would introduce 1,274 additional residential units when compared to the existing SPA Plan. Note that the proposed project would also alter neighborhoods other than the 12 in the Reduced Density Alternative, as the total additional units proposed under the project would be 1,562 units. Therefore, the total unit difference between the proposed project and the Reduced Density Alternative is 1,078 units.

1.6.3 Environmentally Superior Alternative

The No Project Alternative would result in the least environmental impacts and would be the environmentally superior alternative. However, Section 15126.6(e)(2) of the CEQA Guidelines states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. In this case, the environmentally superior alternative is the Reduced Density Alternative. The Reduced Density Alternative would achieve most of the proposed project objectives, but to a lesser degree than the proposed project.

1.7 SUMMARY TABLES

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
5.1 Land Use			
Would the project physically divide an established community of be incompatible with adjacent and surrounding uses?	The proposed project would not divide an established community or result in incompatible land uses. Impacts would be less than significant.	No mitigation required.	Less than significant.
Would the project conflict with any 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?	The project would conflict with the land use designations in the City's adopted General Plan and Otay Ranch GDP, upon adoption of the proposed amendments to the General Plan and Otay Ranch GDP, impacts would be considered less than significant. The project is also consistent with the Parks and Recreation Master Plan, Otay Valley Regional Park Concept Plan, Greenbelt Master Plan, and Airport Land Use Compatibility Plan.	No mitigation required.	Less than significant.
Would the project conflict with any applicable habitat conservation plan or natural community habitat conservation plan?	No significant impacts related to Habitat Conservation Plans or Natural Community Conservation Plans have been identified for implementation of the proposed project.	No mitigation required.	No Impact.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
5.2 Transportation, Circulation, and Access			
Would the project cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersection)?	The project would result in project-specific and cumulative impacts to intersections, roadway segments, freeway/state highways in Year 2020, Year 2025, and Year 2030 conditions. The project would result in significant and unmitigable cumulative impacts in Year 2020, Year 2025, and Year 2030 conditions. All project-specific and a portion of cumulative impacts would be mitigated to a level below significance, however, the remaining cumulative impacts would remain significant due to infeasible mitigation.	**MM-TCA-1 -** *I-805 SB Ramps / Olympic Parkway* (CV) – Prior to issuance of the final map that contains the 753rd equivalent dwelling unit (EDU) of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share toward the construction of an additional left-turn lane at the I-805 southbound off-ramp, as well as a 3rd through lane along the Olympic Parkway eastbound approach. **MM-TCA-2 -** *Orange Avenue, between Melrose Avenue and I-805 SB Ramps* (CV) – Prior to issuance of the final map that contains the 753rd equivalent dwelling unit (EDU) of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of widening Orange Avenue between Melrose Avenue and the I-805 SB Ramps from 4 lanes to 6 lanes (Major Road). **MM-TCA-3 -** *Heritage Road / Olympic Parkway* (CV) – Prior to occupancy of the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall cause, through the payment of Transportation Development Impact Fees (TDIF), the construction of Main Street, between Heritage Road and La Media Road, as a 6-lane Prime Arterial. **MM-TCA-4 -** *I-805 SB Ramps / Olympic Parkway* (CV) – Prior to the issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share toward the construction of an additional left-turn lane at the I-805 southbound off-ramp, as well as a 3rd through lane along the Olympic Parkway eastbound approach. **MM-TCA-5 -** *La Media Road / Olympic Parkway* (CV) – Prior to the issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall cause, through the payment of Transportation Development Impact Fees (TDIF), the construction of Main Street, between Heritage Road and La Media Road, as a 6-lane Prime Arterial. **MM-TCA-6 -** *La Media Road (SB) / Main Street*	Significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		(WB) (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (SB) / Main Street (WB). **MM-TCA-7 -** *La Media Road (NB) / Main Street (WB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (NB) / Main Street (WB). **MM-TCA-8 -** *La Media Road (SB) / Main Street (EB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (SB) / Main Street (EB). **MM-TCA-9 -** *La Media Road (NB) / Main Street (EB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (NB) / Main Street (EB). **MM-TCA-10 -** *Magdalena Avenue / Main Street* (one-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of Magdalena Avenue / Main Street. **MM-TCA-11 -** *Heritage Road, between East Palomar Street and Olympic Parkway* (CV) – Prior to the issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay Transportation Development Impact Fees (TDIF) for the construction of Main Street, between Heritage	

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		Road and La Media Road, as a 6-lane Prime Arterial, including the construction of Main Street bridge. **MM-TCA-12 -** *Orange Avenue, between Melrose Avenue and I-805 SB Ramps* (CV) – Prior to issuance of the final map that contains for the 1,311th EDU of the Village Two Comprehensive SPA, or issuance of an occupancy permit for the overall 2,463rd EDU, whichever comes first, the project applicant or its designee shall pay its fair share towards the cost of widening Orange Avenue between Melrose Avenue and the I-805 SB Ramps from 4 lanes to 6 lanes (Major Road). **MM-TCA-13 -** *Olympic Parkway, between Heritage Road and Santa Venetia Street* (CV) – Prior to the issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay Transportation Development Impact Fees (TDIF) for the construction of Main Street, between Heritage Road and La Media Road, as a 6-lane Prime Arterial, including the construction of Main Street Bridge. **MM-TCA-14 -** *I-805 SB Ramps / Olympic Parkway* (CV) – Prior to project buildout, the project applicant or its designee shall pay its fair-share toward the construction of an additional left-turn lane at the I-805 southbound off-ramp, as well as a 3rd through lane along the Olympic Parkway eastbound approach. **MM-TCA-15 -** *Orange Avenue, between Melrose Avenue and I-805 SB Ramps* (CV) – Prior to project buildout, the project applicant or its designee shall pay its fair share toward the costs of widening Orange Avenue between Melrose Avenue and the I-805 SB Ramps from 4 lanes to 6 lanes (Major Road).	
Would the project 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?	The project would not significantly impact air traffic patterns.	No mitigation required.	Less than significant.

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Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Would the project substantially increase hazards due to a design feature or incompatible uses?	The proposed circulation network would be consistent with the City's Street Design Standards, therefore the proposed project would not increase hazards due to a design feature or incompatible uses.	No mitigation required.	Less than significant.
Would the project result in inadequate emergency access?	The internal roadways, along with access points, would be designed per City standards, which would ensure design consideration for emergency vehicles. Compliance with street design standards, along with six Village access points and proximity of Fire Station No. 7 would result in less than significant impacts.	No mitigation required.	Less than significant.
Would the project be inconsistent with the General Plan, GDP, ordinances or policies 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?	The project would not conflict with any applicable General Plan or GDP policies.	No mitigation required.	Less than significant.
Would the project 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?	See response to first Traffic, Circulation, and Access threshold standard.	See response to first Traffic, Circulation, and Access threshold standard.	Significant.

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Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Would the project conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	The project would not conflict with adopted plans for public transit, bicycle, or pedestrian facilities. The project includes pedestrian and bicycle facilities, as well as designs to accommodate future public transit.	No mitigation required.	Less than significant.
5.3 Air Quality			
Would the project conflict with or obstruct implementation of the applicable air quality plan or General Plan policies?	The proposed project is not consistent with Chula Vista's General Plan as they relate to air quality and is not considered consistent with the growth assumptions in the RAQS and SIP. As such, impacts would be considered significant and unavoidable.	No feasible mitigation.	Significant.
Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Daily construction emissions for all criteria pollutants including VOC, NO_x, SO_x, PM10 and $PM_{2.5}$would not exceed the City's significance thresholds. VOC and NO_x emissions associated with operation of the project would exceed the City of Chula Vista's significance thresholds and is significant and unavoidable.	No feasible mitigation.	Significant.
Would the project 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)?	Operation of the proposed project would result in a cumulatively considerable contribution to regional VOC and NO_x emissions. Impacts would be significant and unavoidable.	No feasible mitigation.	Significant.
Would the project expose sensitive receptors to substantial pollutant concentrations?	The project would not generate significant pollutant hotspots.	No mitigation required.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Would the project create objectionable odors affecting a substantial number of people?	Odors during construction and operations, would be less than significant.	No mitigation required.	Less than significant.
5.4 Noise			
Would the project expose persons to or generation of noise levels in excess of standards established in the Chula Vista General Plan or noise ordinance, or applicable standards of other agencies?	The project would result in potentially significant impacts due to the exposure of sensitive receptors to noise levels in excess of established thresholds.	**MM-NOI-1** Prior to the approval of grading permits for residential development adjacent to Olympic Parkway at Neighborhood R-12A, the project applicant or its designee shall be responsible for the preparation of a subsequent acoustical study based on the final map design and implementation of any measures recommended as a result of the analysis to the satisfaction of the Development Services Director (or their designee). The study shall include, but not be limited to the following: Location, height, and building material of the noise barriers in accordance with Figure 11 (Approximate Sound Wall Locations), contained in the Noise Assessment Technical Report for the Otay Ranch Village Two Comprehensive SPA Plan Amendment (Dudek 2014). The sound wall noise barriers shall be a minimum of six feet in height, must have a surface density of at least four pounds per square foot, and be free of openings and cracks. The wall may be constructed of acrylic glass, masonry material, earthen berm, or a combination of these materials. Heights are provided relative to final pad elevation. Required heights may be achieved through construction of walls, berms or a wall/berm combination; A detailed analysis that demonstrates that barriers and/or setbacks have been incorporated into the project design, such that noise exposure to residential receivers placed in all useable outdoor areas, including multi-family residential patios and balconies, are at or below 65 dBA CNEL; and Should pad grade elevations, lot configuration/site design, and/or traffic assumptions change during the processing of any final maps, the barriers shall be refined to reflect those modifications. **MM-NOI-2** Site-Specific Acoustic Analysis – Single-Family Residences. Concurrent with design review and prior to the approval of	Less than significant.

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Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		building permits for single-family residential development in Neighborhoods R-8A and R-8C (only units fronting Olympic Parkway), where the exterior noise level exceeds 60 dBA CNEL, the applicant shall prepare an acoustical analysis ensuring that interior noise levels due to exterior noise sources will be at or below 45 dBA CNEL. Design-level architectural plans shall be used to the exterior-to-interior transmissions loss for habitable rooms. Contingent upon the results of the interior acoustical analysis, units may need to include an air conditioning system to provide a habitable interior environment with the windows closed while meeting the interior standard of 45 dBA CNEL. The acoustical analysis shall be prepared to the satisfaction of the Director of Development Services (or their designee), and all required noise control measures identified in the acoustical analysis shall be made conditions of building permit issuance. **MM-NOI-3** Site-Specific Acoustic Analysis – Multi-Family Residences. Concurrent with design review and prior to the approval of building permits for multi-family areas where first and/or second floor exterior noise levels exceed 60 dBA CNEL and/or where required outdoor area (patios or balconies) noise levels exceed 65 dBA CNEL (all units fronting Heritage Road, Olympic Parkway, or La Media Road in Neighborhoods R-5A, R-6, R-12A, R-12B, and MU-3), the applicant shall prepare an acoustical analysis demonstrating compliance with California's Title 24 Interior Noise Standards (i.e., 45 dBA CNEL) and the City's Exterior Land Use/Noise Compatibility Guidelines for outdoor use areas (i.e., 65 dBA CNEL). Design-level architectural plans will be available during design review and will permit the accurate calculation of transmissions loss for habitable rooms. For these areas, it may be necessary for the windows to be able to remain closed to ensure that interior noise levels meet the interior standard of 45 dBA CNEL. Consequently, the design for buildings in these areas may need to include a ventilation or air conditioning system to provide a habitable interior environment with the windows closed based on the result on the	

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		interior acoustical analysis. **MM-NOI-4** As part of the site plan/development plan review process conducted in connection with future commercial, mixed residential, and commercial land use development applications submitted to the City, the applicant or its designee shall prepare site-specific acoustical analyses to the satisfaction of the Director of Development Services (or their designee) to ensure noise levels generated by the proposed use will comply with the City's General Plan noise standards (maximum exterior noise levels of 65 CNEL). The applicant for each development proposal shall be responsible to fund the required acoustical analysis, which shall be prepared to the satisfaction of the Director of Development Services (or its designee). All required noise control measures identified in the acoustical analysis shall be made conditions of development approval. **MM-NOI-5** As part of the site plan/development plan review process conducted in connection with future industrial development applications submitted to the City, the applicant or its designee shall prepare a site-specific acoustical analysis to ensure noise levels generated by the proposed use will comply with the City's General Plan noise standards for residential property boundaries proximate to the industrial zone (maximum exterior noise levels of 65 CNEL). The applicant for each development proposal shall be responsible to fund the required acoustical analysis, which shall be prepared to the satisfaction of the Director of Development Services (or their designee). All required noise control measures identified in the acoustical analysis shall be made conditions of development approval. **MM-NOI-6** Site Specific Acoustic Analysis - Neighborhood Parks. Concurrent with the preparation of site-specific plan(s) and prior to the approval of a precise grading plan for the neighborhood parks within Village Two, the applicant shall prepare, or in the case the City being the lead on the preparation of the site-specific plan, the applicant shall fund the preparation of an acoustical analysis that shall be	

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		conducted to ensure that noise levels generated from any active uses at the neighborhood parks, such as sports fields and playgrounds, do not exceed the exterior noise limits of the receiving land use category as identified in the Chula Vista Noise Ordinance. The applicant shall be responsible for the implementation of any measures recommended as a result of the analysis. Measures to reduce noise levels may include, but would not be limited to or siting of structures or buildings to provide setbacks between active areas and adjacent noise sensitive uses. Final noise attenuation design shall be determined by a site-specific acoustic analysis conducted by a qualified acoustical engineer, to the satisfaction of the Development Services Director, or their designee. **MM-NOI-7** Concurrent with design review and prior to the approval of building permits for the elementary schools (S-1 and S-2), the applicant shall be responsible for the preparation of an acoustical analysis ensuring that noise levels at exterior use areas (i.e., playground, sports fields, athletic courts, etc.) will be below 65 dBA CNEL and implementation of any measures recommended as a result of the analysis. Measures to reduce noise levels may include, but would not be limited to, setback of structures from the roadway, installing acoustic barriers, or orienting outdoor activity areas away from roadways so that surrounding structures provide noise attenuation. The acoustical analysis shall also address control measures for outdoor school activity noise and its effect upon immediately adjacent land uses, to ensure school activity related noise levels do not exceed 65 dB CNEL at exterior use areas of adjacent residential properties. The analysis shall also demonstrate that barriers or setbacks have been incorporated into the project design, such that, when considered with proposed construction specifications, ground level and upper story interior noise levels shall not exceed 45 dBA CNEL. Roof-ceiling assemblies making up the building envelope shall have a sound transmission class value of at least 50, and exterior windows shall have a minimum sound	

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		transmission class of 30 in compliance with the California Green Building standards code. The acoustical analysis shall be prepared to the satisfaction of the school district, and all required noise control measures identified in the acoustical analysis shall be made conditions of development approval. **MM-NOI-8** Prior to the approval of grading permits for residential development adjacent to Otay Ranch High School at Neighborhood R-8C, the project applicant or its designee shall be responsible for the preparation of a subsequent acoustical study based on the final map design and implementation of any measures recommended as a result of the analysis to the satisfaction of the Development Services Director (or their designee). The study shall include, but not be limited to the following: Location, height, and building material of a noise barrier in accordance with Figure 11 (Approximate Sound Wall Locations, Neighborhood R-8C), contained in the Noise Assessment Technical Report for the Otay Ranch Village Two Comprehensive SPA Plan Amendment (Dudek 2014). The sound wall noise barriers shall be a minimum of six feet in height, must have a surface density of at least four pounds per square foot, and be free of openings and cracks. The wall may be constructed of acrylic glass, masonry material, earthen berm, or a combination of these materials. Heights are provided relative to final pad elevation. Required heights may be achieved through construction of walls, berms or a wall/berm combination; A detailed analysis that demonstrates that barriers and/or setbacks have been incorporated into the project design, such that noise exposure to residential receivers placed in all useable outdoor areas, including multi-family residential patios and balconies, are at or below 65 dBA CNEL; and Should pad grade elevations, lot configuration/site design, and/or traffic assumptions change during the processing of any final maps, the barriers shall be refined to reflect those modifications. **MM-NOI-9** All project-related site preparation	

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		and construction activities shall be limited to the hours between 7:00 am–6:00 pm, Monday – Friday, and between 8:00 am–6:00 pm Saturday. No construction activities shall occur on Federal holidays (e.g., Thanksgiving, July 4th, Labor Day, etc.). All maintenance of construction equipment shall be limited to the same hours. This language shall be added to the Project grading plans. Non-noise-generating construction activities such as interior painting are not subject to these restrictions.	
Would the project expose persons to or generation of excessive groundborne vibration or groundborne noise levels?	Construction activity would not affect any off-site vibration-sensitive land use and any vibration impacts would be temporary and would cease following construction, therefore impacts related to groundborne vibration during construction at on- and off-site land uses would be less than significant.	No mitigation required.	Less than significant.
Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	The project would not result in a significant increase in permanent ambient noise levels. Long-term on-site activities associated with the project would not have a regional effect upon community noise levels, and therefore need not be considered in combination with approved or proposed projects in the region. The project's contribution to off-site traffic noise would not be significant.	No mitigation required.	Less than significant.
Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	With implementation of the mitigation measure 5.3-8 required in the 2006 EIR and adherence to a restricted construction schedule dictating project-related site preparation and construction activities limited to the hours between 7:00 am–6:00 pm, Monday–Friday and between the hours of 8:00 am–6:00 pm Saturday,	No new mitigation required.	Less than significant.

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Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
	the proposed project would have less than significant temporary noise impacts from construction activities.		
Would the project be located within an airport land use plan (ALUP) or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels?	The 2010 ALUCP indicates that the project site (i.e., Village Two) is north and outside of the 60 and 65 dB CNEL noise contours for Brown Field.	No mitigation required.	Less than significant.
Would the project be inconsistent with the Chula Vista General Plan, Otay Ranch General Development Plan or other objectives and policies regarding noise thereby resulting in a significant physical impact?	The proposed project would not conflict with the General Plan and Otay Ranch GDP and impacts would be less than significant.	No mitigation required.	Less than significant.
5.5 Biological Resources			
Would the project 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. Wildlife Service?	The project would result in potentially significant impacts to several sensitive species including the least Bell's vireo and the burrowing owl.	**MM-BIO-4** Due to the moderate potential for least Bell's vireo to be present within the drainage, no construction will occur within 300 feet of the riparian habitat within the drainage during the vireo breeding season (March 15 to September 15). If construction, including clearing, grubbing, grading, must occur during the breeding season, protocol surveys will be conducted for least Bell's vireo. The survey shall be performed to the satisfaction of the Development Services Director (or their designee) by a qualified biologist familiar with the City's MSCP Subarea Plan. The results of the pre-construction survey must be submitted in a report to the Development Services Director (or their designee) for review and approval prior to the issuance of any land development permits and prior to initiating any construction activities. If the least Bell's vireo is detected, a minimum 300-foot buffer delineated by orange biological fencing shall be established around the habitat to ensure that no work shall occur within the occupied habitat	Less than significant.

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Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		from March 15 through September 15 and on-site noise reduction techniques shall be implemented to ensure that construction noise levels do not exceed 60 dB(A) L_{eq}-h at the location of any occupied sensitive habitat areas. The Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on-site-specific conditions. If the results of the pre-construction survey determine that the survey area is unoccupied, the work may commence at the discretion of the Development Services Director (or their designee) following the review and approval of the pre-construction report. **MM-BIO-5** Prior to issuance of any land development permits (including clearing and grubbing or grading permits), the project Applicant shall retain a City-approved biologist to conduct focused pre-construction surveys for burrowing owls. The surveys shall be performed no earlier than 30 days prior to the commencement of any clearing, grubbing, or grading activities. If occupied burrows are detected, the City-approved biologist shall prepare a passive relocation mitigation plan subject to the review and approval by the Wildlife agencies and City including any subsequent burrowing owl relocation plans to avoid impacts from construction-related activities.	
Would the project have a substantial 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. Fish and Wildlife Service?	The proposed project would directly impact wetlands vegetation communities and jurisdictional wetlands, including mulefat scrub, disturbed mulefat scrub, freshwater marsh, southern willow scrub, open water, and disturbed habitat swale.	**MM-BIO-1** A total of up to 0.91 acres of wetland and 0.06 acre of waters of the U.S./State within the Project may be impacted within the Development Area. Prior to issuance of land development permits, including clearing, grubbing, and grading permits for areas that impact jurisdictional waters, the Project Applicant shall provide evidence that all required regulatory permits, such as those required under Section 404 of the federal Clean Water Act, Section 1600 of the California Fish and Game Code, and the Porter Cologne Water Quality Act. **MM-BIO-2** Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the developer(s) shall	Less than significant.

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Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the City, ACOE, and CDFW. This plan shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures. Areas under the jurisdictional authority of ACOE and CDFW shall be delineated on all grading plans. Mitigation areas shall occur within the Otay River watershed or other suitable location in accordance with the Wetlands Mitigation and Monitoring Plan to the satisfaction of the City, ACOE, and CDFW. The Project Applicant shall also be required to implement the Wetlands Mitigation and Monitoring Plan subject to the oversight of the City, ACOE, and CDFW. **MM-BIO-6** Prior to recordation of each Final Map, the Applicant shall convey land within the Otay Ranch Preserve to the Otay Ranch Preserve Owner/Manager (POM) or its designee at a ratio of 1.188 acres for each acre of development area, as defined in the RMP. Access for maintenance purposes shall also be conveyed to the satisfaction of the POM, and each tentative map shall be subject to a condition that the Applicant shall execute a maintenance agreement with the POM stating that it is the responsibility of the Applicant to maintain the conveyed parcel until the Preserve CFD has generated sufficient revenues to enable the POM to assume maintenance responsibilities. The Applicant shall maintain and manage the offered conveyance property consistent with the RMP Phase 2 until the Preserve CFD has generated sufficient revenues to enable the POM to assume maintenance and management responsibilities. **MM-BIO-7** Prior to the POM's formal acceptance of the conveyed land in fee title, the project Applicant shall prepare, to the satisfaction of the POM, Area Specific Management Directives (ASMDs) for the associated conveyance areas. The ASMDs shall incorporate the guidelines and specific requirements of the Otay Ranch RMP plans and programs, management requirements of	

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		Table 3-5 of the MSCP Subregional Plan and information and recommendations from any relevant special studies. Guidelines and requirements from these documents shall be evaluated in relationship to the Preserve configuration and specific habitats and species found within the associated conveyance areas and incorporated into the ASMDs to the satisfaction of the POM.	
Would the project 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?	See response above.	See mitigation measures MM-BIO-1, MM-BIO-2, MM-BIO-6, and MM-BIO-7 above.	Less than significant.
Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	If construction occurs during migratory bird nesting season, impacts would be potentially significant.	**MM-BIO-3** To avoid any direct impacts to raptors and/or any migratory birds protected under the MBTA, removal of habitat that supports active nests on the proposed area of disturbance should occur outside of the breeding season for these species (January 15 to August 31). If removal of habitat on the proposed area of disturbance must occur during the breeding season, the Project Applicant shall retain a City-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, and the results must be submitted to the City for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the City, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's Mitigation Monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.	Less than significant.

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Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	The project would not conflict with any local policies related to biological resources.	No mitigation required.	Less than significant.
Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	The project would not alter the Wolf Canyon preserve boundary and which is subject to the Habitat Conservation Plan.	No mitigation required.	Less than significant.
Would the project be inconsistent with General Plan biological resource policies thereby resulting in a significant physical impact?	The proposed project would be consistent with General Plan and Otay Ranch GDP goals associated with biological resources and impacts would be less than significant.	No mitigation required.	Less than significant.
5.6 Water Quality and Hydrology			
Would the project violate any water quality standards or waste discharge requirements, including City of Chula Vista Engineering Standards for storm water flows and volumes?	Prior to discharge from the site, all developed site runoff would receive full water quality treatment in accordance with the most current City of Chula Vista Storm Water Manual standards, RWQCB Order No. R9-2007-0001, and SWRCB Order No. 99-08-DWQ applicable at the time of final engineering. The project would not violate any waste discharge requirements.	No mitigation required.	Less than significant.
Would the project substantially deplete 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	The project would not significantly impact groundwater recharge or supplies.	No mitigation required.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
or planned uses for which permits have been granted)?			
Would the project 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?	The project would not significantly alter the proposed drainage pattern under the current SPA Plan. The project would implement Best Management Practices, low impact development, and would mimic the existing drainage pattern on site.	No mitigation required.	Less than significant.
Would the project 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 amount of surface runoff in a manner which would result in flooding on- or off-site?	The project would not significantly alter the proposed drainage pattern under the current SPA Plan. The project would implement Best Management Practices, low impact development, and would mimic the existing drainage pattern on site.	No mitigation required.	Less than significant.
Would the project create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	The proposed project would not substantially create runoff which would exceed the capacity of planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	No mitigation required.	Less than significant.
Would the project otherwise, substantially degrade water quality?	The combination of the proposed construction and permanent BMPs, for the proposed project would reduce, to the maximum extent practicable, the expected pollutants and would not adversely impact the beneficial uses of the receiving waters.	No mitigation required.	Less than significant.
Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	The project would not place housing within a 100-year flood zone.	No mitigation required.	No impact.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Would the project place structures within a 100-year flood hazard area which would impede or redirect flood flows?	The project would not place any structures within a 100-year flood zone.	No mitigation required.	No impact.
Would the project be inconsistent with General Plan, GDP or other objectives and policies regarding water quality thereby resulting in a significant physical impact?	The project would be consistent with applicable General Plan and GDP policies related to water quality.	No mitigation required.	Less than significant.
Would the project 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?	The project is not within the applicable dam inundation zone.	No mitigation required.	Less than significant.
Would the project expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	The project would not be located in an area where inundation by seiche, tsunami, or mudflow would likely occur. Mitigation provided in Section 5.7 would reduce impacts from mudflows to less than significant.	See mitigation measure MM-GEO-1 below.	Less than significant.
Would the project 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?	The proposed project involves the construction of new stormwater drainage facilities as analyzed throughout this EIR.	No mitigation required.	Less than significant.
5.7 Geology and Soils			
Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: • 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	Impacts related to seismic related hazards and ground shaking, liquefaction, and landslides are considered less than significant.	No mitigation required.	Less than significant.

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Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42)? • Strong seismic ground shaking? • Seismic-related ground failure, including liquefaction? • Landslides?			
Would the project result in substantial soil erosion or the loss of topsoil?	Implementation of Best Management Practices and compliance with applicable RWQCB orders and City standard would result in less than significant impacts.	No mitigation required.	Less than significant.
Would the project 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?	The surficial soil within the project site consisting of topsoil, colluvium, alluvium, and the compressible portions of the landslide debris are not considered suitable for the support of the proposed project development and would be considered potentially significant.	**MM-GEO-1** Prior to the issuance of the grading permit, the applicant(s) shall verify that the applicable recommendations of the Update Geotechnical Report: Otay Ranch Village 2 SPA Plan Amendment prepared by Geocon, Inc on February 10, 2014 have been incorporated into the project design and construction documents to the satisfaction of the City Engineer. Recommendations include, but are not limited to: • Evaluation of soil expansion potential once final grade is achieved. • During grading, compressible soils shall be removed and replaced with compacted fill. • Site drainage and moisture protection measures such as provisions for underground utilities, landscaping, and maintaining adequate site drainage to prevent soil movement. • Additional geotechnical report updates as development of Village Two continues in order to assess proposed grading for each neighborhood.	Less than significant.
Would the project 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.	A majority of the on-site materials possess a “very low” to “medium” expansion potential. The expansion potential of the bentonite claystone and surficial soil ranges from “high” to “very high” expansion potential.	See mitigation measure MM-GEO-1 above.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Be inconsistent with General Plan geotechnical policies thereby resulting in a significant physical impact?	The project would be consistent with geotechnical policies found in the General Plan and GDP.	No mitigation required.	Less than significant.
5.8 Public Services			
Fire Protection			
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services?	No significant impacts related to fire and emergency medical facilities have been identified for the project.	No mitigation required.	Less than significant.
Would the project reduce the ability of properly equipped and staffed fire and medical units to respond to calls throughout the City within 7 minutes in 80% of the cases?	The project's payment of PFDIF fees (per MM-5.13.6-1 of the 2006 EIR), implementation of the Village Two FPP, and compliance with existing city codes, policies, and regulations would ensure that the GMOC threshold standard is achieved.	No new mitigation required.	Less than significant.
Would the project be inconsistent with General Plan, GDP, and other objectives and policies regarding fire protection and emergency medical services thereby resulting in a significant physical impact?	The proposed project would therefore be consistent with the applicable goals related to fire protection and emergency medical services in the General Plan and Otay Ranch GDP.	No mitigation required.	Less than significant.
Police Protection			
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered	No significant impacts related to police service facilities have been identified for implementation of the project.	No mitigation required.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services?			
Would the project: • Exceed the City's threshold standards to respond to Priority One emergency calls throughout the City (within 7 minutes in 81% of the cases and an average response time to all Priority One calls of 5.5 minutes or less)? • Exceed the City's threshold standards to respond to Priority Two urgent calls throughout the City (within 7 minutes in 57% of cases and an average response time to all Priority Two calls of 7.5 minutes or less)?	The project's payment of PFDIF fees (per MM-5.13.5-1 of the 2006 EIR), continued monitoring of CVPD responses times per GMOC thresholds (per MM-5.13.5-2 of the 2006 EIR), and compliance with existing city codes, policies, and regulations would ensure that the GMOC threshold standard is achieved. Therefore, impacts would be less than significant.	No new mitigation is required.	Less than significant.
Would the project be inconsistent with General Plan objectives and policies regarding police protection thereby resulting in a significant physical impact?	The proposed project would therefore be consistent with the applicable goals related to police protection in the General Plan and Otay Ranch GDP.	No mitigation required.	Less than significant.
Schools			
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant	The proposed project would result in an increase in student generation and the timing of future schools in the project area is not yet determined. The project would be required to pay all required school mitigation fees or enter into an agreement to help finance needed facilities per	No new mitigation required.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for educational facilities services?	MM-5.13.7-1 and 2 of the 2006 EIR.		
Would the project locate schools at inappropriate sites?	The project would not locate schools at inappropriate sites.	No mitigation required.	Less than significant.
Would the project be inconsistent with General Plan, GDP, and other objectives and policies regarding school services thereby resulting in a significant physical impact?	The project would be consistent with school services policies found in the General Plan and GDP.	No mitigation required.	Less than significant.
Parks, Recreation, and Open Space			
Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	The project would result in an increase in demand for parks and recreation facilities. The project would provide 69.5 acres of parkland, which would not satisfy the PLDO requirement. Therefore, impacts are potentially significant and mitigation is required. The project would also be required to pay the recreation portion of the PFDIF which provides for development of major recreational facilities, including community centers and aquatic facilities per MM-5.13.9-1 of the 2006 EIR.	**MM-PUB-1** Prior to the approval of the first final map(s), or prior to the approval of building permit(s), the applicant shall pay the City of Chula Vista in-lieu fee for land dedication and/or park development improvements, or dedicate additional parkland, pursuant to City of Chula Vista Municipal Code Section 17.10.070 and in accordance with the Public Facilities Financing Plan for the SPA Plan for the final 180 dwelling units to be constructed.	Less than significant.
Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	The project includes the construction of recreational facilities which is included as part of the analysis throughout this SERI.	No mitigation required.	Less than significant.
Would the project fail to meet the City's threshold standard of three acres of neighborhood and community parkland per 1,000 residents?	Village Two would meet the City parkland requirements.	No mitigation required.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Would the project be inconsistent with General Plan, GDP or other relevant objectives and policies regarding parks thereby resulting in a significant physical impact?	The project would not be inconsistent with park policies found in the General Plan, GDP, and other park planning documents.	No mitigation required.	Less than significant.
Library			
Would the project result in substantial adverse physical impact associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for library services?	The proposed project would result in increased demand for libraries and may have the potential to require the construction of new or expanded library facilities. Implementation of the proposed project would require payment of City's PFDIF per MM-5.13.8-1 of the 2006 EIR. Impacts would be reduced to less than significant.	No new mitigation required.	Less than significant.
Would the project fail to meet the City's threshold standard of 500 gross square feet of library space, adequately equipped and staffed, per 1,000 population?	Payment of the PFDIF per MM-5.13.8-1 of the 2006 EIR would represent the project's fair share contribution to meet the City threshold standard for library space, and impacts would be less than significant.	No new mitigation required.	Less than significant.
Would the project be inconsistent with General Plan, GDP or other objectives and policies regarding library services thereby resulting in a significant physical impact?	The project would be consistent with library policies found in the General Plan and GDP.	No mitigation required.	Less than significant.
5.9 Utilities			
Water			
Would the project require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	No changes to the existing Village Two water infrastructure system would be required as a result of the proposed project.	No mitigation required.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Would the project have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements?	Based on the water agency documentation, project impacts on water supplies — both short and long term — are considered less than significant.	No mitigation required.	Less than significant.
Would the project exceed City threshold standards which seeks to ensure availability of adequate supplies of quality water, appropriate for intended uses. The standards require the applicant to request and deliver to the City service availability letters from the appropriate water district for each project; to submit a Water Conservation Plan along with the SPA Plan application; and such project plans must ensure an adequate supply of water on a long-term basis prior to the development of each Otay Ranch SPA Plan?	The Water Supply Assessment & Verificaion prepared by the OWD describes current and long-range storage capacity and will ensure that the OWD will be able to absorb the forecasted growth of the proposed project.	No mitigation required.	Less than significant.
Would the project be inconsistent with General Plan, GDP or other relevant objectives and policies regarding water supply thereby resulting in a significant physical impact?	The project would be consistent with applicable General Plan and Otay Ranch GDP objectives and goals related to water supply.	No mitigation required.	Less than significant.
Recycled Water			
Would the project require or result in the construction of new recycled water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?	The existing on-site water infrastructure system, including recycled water facilities, has been determined to be adequate to support the proposed project. Additionally, mitigation measures 5.13.2-1 and 5.13.2-2 from the 2006 EIR would be implemented would reduce impacts to less than significant.	No new mitigation required.	Less than significant.
Would the project be inconsistent with General Plan, GDP or other relevant	The proposed project is consistent with the General Plan and Otay Ranch GDP	No mitigation required.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
objectives and policies regarding recycled water thereby resulting in a significant physical impact?	objectives and policies related to recycled water.		
Sewer			
Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	Pursuant to the City's municipal code, prior to issuance of each building permit, the applicant or designee shall pay the Salt Creek Development Impact Fee and Poggi Canyon Development Impact Fee at the rate in effect at the time of building permit issuance. This requirement is included as mitigation measures MM-UTIL-1 and MM-UTIL-2. Additionally, the proposed project would be required to provide evidence that sufficient sewer capacity is available prior to building permit issuance, as stated in mitigation measures MM-UTIL-3. With incorporation of mitigation measures 5.13.3-1 through 5.13.3-3 from the 2006 EIR, and proposed project mitigation measure MM-UTIL-1 and MM-UTIL-2, impacts would be reduced to a level that is less than significant.	**MM-UTIL-1** Salt Creek Development Impact Fee. Prior to issuance of each building permit, the applicant or designee shall pay the Salt Creek Development Impact Fee at the rate in effect at the time of building permit issuance and corresponding to the sewer basin that the building will permanently sewer to, unless stated otherwise in a development agreement that has been approved by the City Council. **MM-UTIL-2** Poggi Canyon Development Impact Fee. Prior to issuance of each building permit, the applicant or designee shall pay the Poggi Canyon Development Impact Fee at the rate in effect at the time of building permit issuance and corresponding to the sewer basin that the building will permanently sewer to, unless stated otherwise in a development agreement that has been approved by the City Council. **MM-UTIL-3** Density Transfer Technical Report. Prior to design review approval in accordance with the Intensity Transfer provision in the Village Two SPA Plan, the applicant or designee shall provide an update to the Overview of Sewer Service for Otay Ranch University Village Two (Dexter Wilson 2014b) with each proposed project requesting an intensity transfer. The technical study shall demonstrate to the satisfaction of the City Engineer that adequate on-site wastewater infrastructure will be available to support the transfer. The transfer of residential density shall be limited by the ability of the on-site sewerage facilities to accommodate flows. Building permits would be issued only if the City Engineer has determined that adequate sewer capacity exists.	Less than significant.
Would the project require the construction of new wastewater treatment facilities or expansion of existing facilities, the	Upon approval of the proposed project, the Poggi Canyon Basin Gravity Sewer Development Impact Fee would need to be updated to reflect	See mitigation measures MM-UTIL-1, MM-UTIL-2, and MM-UTIL-3 above.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
construction of which would cause significant environmental effects?	the additional units and additional improvements. With incorporation of mitigation measures 5.13.3-1 through 5.13.3-3 from the 2006 EIR, and proposed project mitigation measure MM-UTIL-2, impacts would be reduced to a level that is less than significant.		
Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	The proposed project would not exceed wastewater treatment requirements of the San Diego Regional Water Quality Control Board.	No mitigation required.	Less than significant.
Would the project generate sewage flows and volumes that exceed City Engineering Standards as set forth in the Subdivision Manual adopted by City Council Resolution Number 11175 on February 12, 1983, as amended in 2012?	The proposed project would be timed to proceed with the City's acquisition of additional treatment capacity, and building permits would only be issued if the City Engineer determines that adequate sewer capacity exists.	See mitigation measure MM-UTIL-3 above.	Less than significant.
Would the project be inconsistent with General Plan, GDP or other relevant objectives and policies regarding wastewater thereby resulting in a significant physical impact?	The proposed project would be consistent with General Plan and GDP wastewater policies.	No mitigation required.	Less than significant.
Solid Waste Disposal			
Would the project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?	Under the current franchise agreement between the City of Chula Vista and Republic Services, solid waste would be disposed of at the Sycamore Landfill once the Otay Landfill meets its permitted capacity and terminates solid waste services and permitted capacity would be available to accommodate the proposed project.	No mitigation required.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Would the project not comply with federal, state, and local statutes and regulations relating to solid waste?	The proposed project would comply with applicable federal, state, and local solid waste regulations.	No mitigation required.	Less than significant.
Energy			
Would the project increase the demand of energy resources to exceed the City's available supply or cause a need for new and expanded facilities the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times or other performance objectives?	No significant impacts would occur as a result of the proposed project related to energy demand. Impacts would be less than significant.	No mitigation required.	Less than significant.
5.10 Climate Change			
Would the project conflict with or obstruct goals or strategies of the California Global Warming Solutions Act of 2006 (AB32) or related Executive Orders?	The proposed project would therefore be consistent with the goals of AB 32 and the City's requirements, and would not result in a significant impact on Global Climate Change. The project includes project design features to reduce impacts to Global Climate Change.	No mitigation required.	Less than significant.
Would the project result in substantially increased exposure of the project from potential adverse effects of global warming identified in the California Global Warming Solutions Act of 2006 (AB32)?	The project would not have significant impacts related to increased exposure to the potential adverse effects of global warming.	No mitigation required.	Less than significant.
5.11 Housing and Population			
Would the project induce substantial population growth in an area, either directly (i.e., by proposing new homes and businesses) or indirectly (i.e., through extension of roads or other infrastructure)?	Although the proposed project would result in substantial population growth, the General Plan, Otay Ranch GDP, SPA Plan, and Otay Ranch CMPP amendments, compliance with the GMOC and related thresholds, preparation of a PFFP, payment of DIFs and TDIFs would ensure that the	No mitigation required.	Less than significant.

Table 1-2
Summary of Significant Environmental Analysis Results

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
	proposed project would have less than significant impacts associated with population growth.		
Would the project displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere?	The proposed project would have no impacts associated with displacement of households or people.	No mitigation required.	No impact.
Would the project be inconsistent with General Plan, GDP, and other objectives and policies regarding housing and population thereby resulting in a significant physical impact?	The proposed project would be consistent with the goals included in the General Plan and Otay Ranch GDP and impacts would be less than significant.	No mitigation required.	Less than significant.

Table 1-3
Summary of Cumulative Impacts

Environmental Issue	Result of Impact Analysis	Significant Cumulative Impact?	Project Contribution
5.1 Land Use			
Physical Division of an Established Community and Conflicts with Land Use Plans, Policies, and Regulations	Analysis of individual projects as they are submitted to the City will ensure compatibility with applicable plans and policies. Since all current and future projects would be analyzed for compatibility and compliance with land use regulations, the proposed project would not result in a cumulatively considerable impact.	No	No cumulative impact.
Conflicts with HCPs or NCCPs	The cumulative projects, including the proposed project, would be required to demonstrate compliance with the MSCP Subarea Plan and the RMP as part of project approval. Therefore, cumulative land use impacts associated with potential conflicts with HCPs or NCCPs would be less than significant.	No	No cumulative Impact.
5.2 Transportation, Circulation, and Access			
Traffic and Level of Service Standards and Congestion Management	The projected increase in trips would contribute to cumulatively considerable traffic impacts in Years 2015, 2020, 2025, and 2030.	Yes	Cumulatively considerable and unavoidable.

Table 1-3
Summary of Cumulative Impacts

Environmental Issue	Result of Impact Analysis	Significant Cumulative Impact?	Project Contribution
5.3 Air Quality			
Air Quality Violations	When the proposed project construction and operational emissions are combined with future project emissions analyzed under the cumulative condition, impacts would be cumulatively considerable	Yes	Cumulatively considerable and unavoidable.
Sensitive Receptors	The proposed project, in combination with the cumulative projects, would not result in a significant cumulative impact to sensitive receptors for carbon monoxide or TACs.	No	No cumulative impact.
Objectionable Odors	While the proposed project would place sensitive receptors closer to the Landfill, the project itself would not result in any objectionable odors that taken with the Landfill would be cumulatively considerable. Therefore, a cumulatively significant impact associated with objectionable odors would not occur.	No	No cumulative impact.
Air Quality Plans	The project as proposed is not accounted for in the current SIP emissions budget. Consequently, the proposed project is not consistent with Chula Vista's General Plan and is not considered consistent with the growth assumptions in the RAQS and SIP. As such, impacts would be considered cumulatively considerable and unavoidable	Yes	Cumulatively considerable and unavoidable.
5.4 Noise			
Excessive Noise Levels	With the build-out of Otay Ranch the noise levels in the currently undeveloped area would continue to increase exponentially.The proposed project would have mitigation measures that would ensure operational noise levels comply with City standards. Cumulative projects would also be required to demonstrate compliance with City noise standards. Therefore, a cumulative operational noise impact would not be significant.	No	No cumulative impact..
Excessive Groundborne Vibration	The highest vibration levels during construction typically occur during pile-driving, blasting or demolition activities. Neither pile driving or demolition activities are anticipated as part of this project. The proposed project as well as cumulative projects would be developed with new buildings constructed in accordance with all building codes and would not be susceptible to vibration damage. Therefore, groundborne vibration impacts would be less than significant and cumulatively considerable impacts would not result.	No	No cumulative impact.
Permanent Increase in Ambient Noise Levels	Long-term on-site activities associated with the project would not have a regional effect upon community noise levels, and therefore need not be considered in combination with approved or proposed projects in the region. Therefore, the project's contribution to increased noise levels would not be cumulatively considerable and cumulative impacts would be less than significant.	No	No cumulative impact.

Table 1-3
Summary of Cumulative Impacts

Environmental Issue	Result of Impact Analysis	Significant Cumulative Impact?	Project Contribution
Temporary Increase in Ambient Noise Levels	Compliance with the Chula Vista ordinance would reduce impacts to a less than significant level. The project would comply with the Chula Vista construction limits and would not result in a cumulatively considerable contribution to construction noise.	No	No cumulative impact..
Excessive Noise Exposure from a Public or Private Airport	Village Two lies outside the 60-65 dB CNEL noise contours. All cumulative projects would be required to comply to similar measures associated with Brown Field and would therefore not result in cumulatively considerable impacts.	No	No cumulative impact.
5.5 Biological Resources			
Sensitive Plant and Wildlife Species, Riparian Habitat and Other Sensitive Natural Communities, Federally Protected Wetlands, and Wildlife Movement Corridors and Nursery Sites	The proposed project, in addition to the cumulative project, would all be developed in compliance with the MSCP Subarea Plan and Otay Ranch RMP, which would reduce impacts associated with development of these villages. Therefore, the project in combination with development of these villages would not result in a cumulatively considerable contribution to biological impacts.	No	No cumulative impact.
Local Policies, Ordinances, HCP, and NCCP	The project would be consistent with the RMP and the City of Chula Vista MSCP Subarea Plan which provide consideration for and mitigation of cumulative impacts to biological resources.	No	No cumulative impact.
5.6 Water Quality and Hydrology			
Water Quality Standards and Degradation of Water Quality	All surrounding projects are regulated under the same City and Regional Water Quality Control Board standards, they too would be required to attenuate all drainage on site (to maintain pre development flow quantities) and incorporate water quality design features to prevent cumulative impacts to local drainage systems or water quality. Therefore, the proposed project would not contribute to a cumulatively considerable impact related to water quality.	No	No cumulative impact.
Erosion or Siltation, Surface Runoff, and Exceed Drainage Capacity	It is intended that the stormwater from the manufactured slopes would sheet flow and follow the existing drainage patterns. Cumulative projects would also be required to take into consideration similar grading modifications in order to reduce stormwater runoff and erosion; therefore, impacts would not be cumulatively considerable.	No	No cumulative impact.
5.7 Geology and Soils			
Exposure to Seismic Related Hazards, Soil Stability, and Expansive Soils	Since geologic hazards are site-specific and not cumulative in nature, the proposed project would not have a cumulatively considerable impact.	No	No cumulative impact.
Soil Erosion or Topsoil Loss	Earth-disturbing activities associated with construction would be temporary and compliance with the General Construction Permit and BMPs outlined in the SWPPP, cumulative impacts related to soil erosion and the loss of topsoil would be less than significant. Furthermore, implementation of BMPs and proposed drainage facilities would ensure cumulative impacts related to soil erosion and the loss of topsoil would be less than significant.	No	No cumulative impact.

Table 1-3
Summary of Cumulative Impacts

Environmental Issue	Result of Impact Analysis	Significant Cumulative Impact?	Project Contribution
5.8 Public Services			
Fire Protection and Emergency Services; Police Services	Cumulative projects, including the proposed project, would be required to prepare a PFFP and demonstrate that public services, such as police services, meet the GMOC quality of life threshold standards. A project that is consistent with the city GMOC quality of life threshold standards, and agrees to payment of a PFDIF would not result in a cumulative impact.	No	No cumulative impact.
Schools	The proposed project and cumulative projects include elementary, middle, and high schools that would be adequate to serve buildout of the cumulative projects. A cumulative impact would not occur.	No	No cumulative impact.
Parks, Recreation, and Open Space	All cumulative projects, including the proposed project is required to comply with the parkland requirements in the CVMC. Compliance would ensure that cumulatively considerable impacts would not occur.	No	No cumulative impact.
5.9 Utilities			
Water	Cumulative developments would be required to provide documentation of adequate long-term water supply similar to the proposed project. Therefore, cumulative impacts associated with adequate water supply would not result in a cumulatively considerable impact.	No	No cumulative impact.
Sewer	All developments are required to prepare a PFFP that articulates needed facilities and funding mechanisms. The proposed project would prepare a PFFP and includes new and expanded sewer facilities to serve the proposed development. Implementation of existing policies and expanded sewer facilities would therefore avoid significant cumulative impacts associated with inadequate treatment capacity. The project will be timed to proceed with the City's acquisition of additional treatment capacity, and building permits will only be issued if the City Engineer determines that adequate sewer capacity exists.	No	No cumulative impact.
Solid Waste Disposal	Solid waste service would continue at Sycarmore Landfill following closure of the Otay Landfill and permitted capacity would be available to accommodate the proposed project and cumulative projects. All planned and proposed projects would be required to be consistent with all applicable statutes and regulations, and would therefore not have cumulatively considerable impacts with respect to solid waste collection and management.	No	No cumulative impact.
Energy	While the proposed project would result in less than significant direct impacts to energy, when considered with other cumulative projects, a cumulative impact would occur.	Yes	Cumulatively considerable and unavoidable.

Table 1-3
Summary of Cumulative Impacts

Environmental Issue	Result of Impact Analysis	Significant Cumulative Impact?	Project Contribution
5.10 Climate Change			
Compliance with AB 32	Since the proposed project is not anticipated to result in a significant increase in greenhouse gas emissions, it would not be a significant cumulative impact.	No	No cumulative impact.
Potential Effects of Global Climate Change	Since the proposed project is not anticipated to result in a significant increase in greenhouse gas emissions, it would not result in cumulative impacts increasing the potential effects of global climate change.	No	No cumulative impact.
5.11 Housing and Population			
Population Growth	When combined with the list of cumulative projects, which are primarily residential developments, there would be an increase in population and housing, but this in itself is not a significant housing and population impact.	No	No cumulative impact.

Table 1-4
Alternatives Impact Summary

Environmental Issue	Proposed Project Impacts Prior to Mitigation	Proposed Project Impacts with Mitigation	Reduced Density Alternative	No Build Alternative
Land Use	LTS	LTS	—	▼
Landform and Aesthetics	LTS	LTS	—	—
Transportation and Circulation	S	S	▼	▼
Air Quality	S	S	▼	▼
Noise	S	LTS	—	▼
Cultural Resources	LTS	LTS	—	—
Biological Resources	S	LTS	▼	▼
Agricultural Resources	LTS	LTS	—	—
Water Quality and Hydrology	LTS	LTS	—	—
Geology and Soils	S	LTS	▼	▼
Public Services and Utilities	S	LTS	▼	▼
Climate Change	LTS	LTS	▼	▼
Hazards and Risk of Upset	LTS	LTS	▼	▼
Housing and Population	LTS	LTS	▼	▼
Mineral Resources	LTS	LTS	—	—
Meet Project Objectives	Yes	Yes	Yes	No

▲ Alternative is likely to result in greater impacts to issue when compared to proposed project.
— Alternative is likely to result in similar impacts to issue when compared to proposed project.
▼ Alternative is likely to result in reduced impacts to issue when compared to proposed project.
LTS = Less than significant impact.
S = Significant impact.

CHAPTER 2
INTRODUCTION

This chapter of the Environmental Impact Report (EIR) describes the purpose, scope and legislative authority of the EIR, the intent of the California Environmental Quality Act (CEQA) and other pertinent environmental rules and regulations, and the environmental review process. The section also includes the structure, required contents, and relationship of the EIR to other potential responsible or trustee agencies.

2.1 PROJECT PURPOSE AND BACKGROUND

This Supplemental EIR (SEIR) addresses the environmental effects associated with the proposed Village Two Comprehensive SPA Plan Amendment project (proposed project). Implementation of the proposed project requires a Chula Vista General Plan Amendment (GPA), an Otay Ranch General Development Plan Amendment (GDPA), and an amendment to the Sectional Planning Area (SPA) Plan for Otay Ranch Villages Two, Three, and a Portion of Village Four adopted by the Chula Vista City Council on June 4, 2006.

The current SPA Plan for Village Two allows for a mix of single-family and multi-family residential, mixed use development, commercial and industrial uses, and schools, parks, and community purpose facilities (CPF). The SPA Plan was originally adopted in 2006 and was previously analyzed in the Otay Ranch Villages Two, Three, and a Portion of Village Four Sectional Planning Area Plan Final Second Tier Environmental Impact Report (City of Chula Vista 2006). The SPA Plan was subsequently amended via two separate actions to allow for 1) unit transfers between parcels owned by Baldwin and Sons, and 2) to increase the total number of dwelling units to 2,983 as analyzed in the Otay Ranch Village Two SPA Plan Amendment Mitigated Negative Declaration (MND). These documents are collectively referred to as the 2006 EIR, throughout this SEIR.

This SEIR was prepared in accordance with CEQA (Public Resources Code, Section 21000 et seq.), the CEQA Guidelines (14 CCR 15000 et seq.), and the City's Environmental Review Procedures. The City is the lead agency for the SEIR and processing of the proposed project.

This SEIR provides decision makers, public agencies, and the public with detailed information about the potential for significant adverse environmental impacts to occur as a result of the proposed project. Similarly, responsible agencies will use this SEIR to fulfill their legal authority associated with permits issued for the proposed project. The analysis and findings in this document reflect the independent judgment of the City.

2.2 HIERARCHY OF OTAY RANCH PLANNING DOCUMENTS

2.2.1 City of Chula Vista General Plan

California law requires that each county and city adopt a General Plan "for the physical development of the County or City, and of any land outside its boundaries which…bears relation to its planning" (California Government Code, Section 65300). Each General Plan must be internally consistent and all discretionary land use plans and projects must also be consistent with the General Plan.

The City of Chula Vista City Council adopted an updated General Plan on December 13, 2005 (Resolution Nos. 2005-424, 2005-425, 2005-426). The City's General Plan outlines goals, objectives, and policies for land use in the City in response to the community's vision for the City. This General Plan also guides day-to-day decision making to ensure that there is a continuing progress toward the attainment of the General Plan goals.

The General Plan Update includes Area Plans for specific parts of the City, including the East Planning Area, where the proposed project is located. Otay Ranch is one of six subareas within the East Planning Area and is further broken down into four Planning Districts: Western District, Central District, Otay Valley District, and Eastern University District.

The vision for the Otay Ranch Subarea is "villages that integrate neighborhoods, shops and employment opportunities with parks, schools, and other civic facilities that create a community with a shared sense of pride and place" (City of Chula Vista 2005). A series of objectives and policies are intended to guide development within the Otay Ranch toward the overall vision. In addition, each district has its own vision, objectives, and policies to provide additional guidance for development in these areas.

2.2.2 Otay Ranch General Development Plan

Otay Ranch is an approximately 23,000-acre master planned community in southern San Diego County within the limits of the City. The Otay Ranch GDP includes plans for multiple urban villages and town centers, a resort village, a university site, a regional technology park, a regional open space preserve, freeway commercial area, the Eastern Urban Center, industrial areas, and two rural estate planning areas. Overall, there are approximately 11,375 acres of land identified as the Otay Ranch Preserve.

The Otay Ranch GDP groups residential areas into "Villages." The heart of the village is the "village core." Pursuant to the guidelines in the Otay Ranch GDP, village cores are strategically located within each village. These are mixed-use areas designed to contain

essential facilities and services such as elementary schools, shops, civic facilities, childcare centers, local parks, and higher-density housing.

The Otay Ranch GDP was amended in conjunction with the General Plan Update process in 2005 and was most recently updated in February 2013 to address provisions relating to Villages Eight, Nine, and Ten/University, which were deferred for an interim period by the City Council.

In addition to establishing community-wide land use policies, the Otay Ranch GDP includes an Overall Design Plan, which provides a design context for the entire Otay Ranch and serves as the basis for Village Design Plans prepared for each village.

2.2.3 Otay Ranch Resource Management Plan and Multiple Species Conservation Program

The project area is part of the Otay Ranch Resource Management Plan (RMP). The RMP was approved concurrently with the Otay Ranch GDP by the County of San Diego and the City in October 1993. The RMP comprises two separate documents, the Phase 1 RMP and Phase 2 RMP.

The Phase 1 RMP identifies Preserve areas within Otay Ranch and contains policies regarding species and habitat conservation and long-term management of the Preserve. The Phase 2 RMP includes ranch-wide studies that were conducted pursuant to the Phase 1 RMP and provides additional detail on conveyance, management, and funding (City of Chula Vista and County of San Diego 1993, 2002).

The municipalities of southern San Diego County collaborated in producing the Multiple Species Conservation Program (MSCP) Subregional Plan. The MSCP Subregional Plan is implemented through individual Subarea Plans adopted by each jurisdiction receiving “take” authorization for covered species. The Chula Vista MSCP Subarea Plan provides for conservation of upland habitats and species through preserve design, regulation of impacts and uses, and management of the Preserve (City of Chula Vista 2003).

2.2.4 Sectional Planning Area Plans

The Otay Ranch GDP is implemented through more detailed plans called “Sectional Planning Areas” (or SPA) plans. A SPA plan implements the plans, policies, and objectives of the Otay Ranch GDP by further defining land uses, development standards, and zoning for a particular portion of the Otay Ranch. SPA plans also establish design criteria and define the type and amount of development permitted. Section E.1.a of the Otay Ranch GDP specifies the contents of a SPA Plan. The proposed project includes an amendment to the existing Villages Two, Three, and a Portion of Village Four SPA Plan.

2.2.5 Subdivisions and Building Permits

Upon approval of SPA plans, property may be subdivided in accordance with the California Subdivision Map Act and the applicable Subdivision Ordinances. Thereafter, building permits may be issued. The proposed project includes TMs for development of Village Two.

2.3 SCOPE OF THE ENVIRONMENTAL IMPACT REPORT

Pursuant to Section 15163 of the CEQA Guidelines, this document has been prepared as a "Supplemental EIR" (SEIR). This SEIR constitutes a supplement to the first tier of documents prepared for the proposed project site including the Otay Ranch Villages Two, Three, and a Portion of Village Four Sectional Planning Area Plan Final Second Tier Environmental Impact Report (City of Chula Vista 2006) and associated addendum and MND as previously described in Section 2.1 (herein referred to as the 2006 EIR). The SEIR evaluates the proposed project as it relates to the analysis contained in the certified 2006 EIR. As such, the SEIR, in conjunction with the 2006 EIR can be used in the decision-making process for the proposed project. CEQA Guidelines Section 15163 states:

A. The Lead or Responsible Agency may choose to prepare a supplement to an EIR rather than a subsequent EIR if:
   i. Any of the conditions described in Section 15162 would require the preparation of a subsequent EIR, and
   ii. Only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation.
B. The supplement to the EIR need contain only the information necessary to make the previous EIR adequate for the project as revised.
C. A supplement to an EIR shall be given the same kind of notice and public review as is given to a draft EIR under Section 15087.
D. A supplement to an EIR may be circulated by itself without recirculating the previous draft or Final EIR.
E. When the agency decides whether to approve the project, the decision-making body shall consider the previous EIR as revised by the supplemental EIR. A finding under Section 15091 shall be made for each significant effect shown in the previous EIR as revised.

As a result of the proposed land use changes and density increases proposed under the proposed project within Village Two, the City determined that the proposed project has the potential to alter the analysis and conclusions in the 2006 EIR and has determined that an SEIR is required.

As part of preparation of the SEIR, each of the issue areas evaluated in the 2006 EIR were reviewed to determine if the information in the 2006 EIR was adequate to allow for an assessment of the changes proposed as part of the proposed project. Following review of each issue area, a determination was made as to whether there was new information that would affect the conclusions presented in the SEIR or that would change the adequacy of the mitigation identified in the 2006 EIR. An assessment was then made to determine if any new issues had arisen since the time of the certification of the 2006 EIR that could represent a significant adverse impact as a result of the proposed project. Those issue areas requiring supplemental analysis to make the 2006 analysis adequate are provided in individual sections in the SEIR. For those section that did not require supplemental analysis upon review of the 2006 EIR, these issue areas are provided in Chapter 9.0, Effects Found Not to be Significant.

2.3.1 Issues Requiring Supplemental Analysis

The following issue areas were identified as requiring additional analysis beyond what was provided in the 2006 EIR due to new information, data, regulations or project changes that would alter the analysis and/or conclusions of the 2006 EIR.

- Land Use and Planning
- Transportation, Circulation, and Access
- Air Quality
- Noise
- Biological Resources
- Water Quality and Hydrology
- Geology and Soils
- Public Services
- Utilities
- Climate Change
- Housing and Population

For these issues, the SEIR focuses on aspects which require further analysis to supplement the analysis contained in the 2006 EIR, so that together the documents are sufficient to address the proposed project. In the case of transportation, air quality, noise, biological resources, public services, public utilities, and housing and population, additional quantitative analysis was required to address the difference between the land use data analyzed in the 2006 EIR and the proposed land uses within the proposed project area. Specifically, for these issues, this SEIR

quantifies the additional increment related to proposed changes in land use and considers whether this would result in a change in the level of significance or mitigation.

With regard to global climate change, this was not an environmental issue required for evaluation under CEQA at the time the 2006 EIR was prepared; therefore, it is provided in the SEIR as a new environmental issue area.

Where environmental impacts have been determined to be potentially significant, this EIR presents mitigation measures directed at reducing those adverse environmental effects. The development of mitigation measures provides the lead agency with ways to substantially lessen or avoid the significant effects of the project on the environment, to the degree feasible. All mitigation measures identified in the 2006 EIR will apply to the proposed project. Alternatives to the proposed project are presented to evaluate whether there are alternative development scenarios that can further minimize or avoid significant impacts associated with the project.

2.3.2 Issues Not Requiring Supplemental Analysis

The following issue area analyses provided in the 2006 EIR were found to be adequate, and it was determined that changes in the proposed project from that analyzed under the 2006 EIR would not alter the analysis and/or conclusions of the 2006 EIR.

- Aesthetics
- Agriculture and Forestry Resources
- Cultural Resources
- Hazards and Hazardous Materials
- Mineral Resources

For these environmental issue areas, impacts are primarily related to the resources or conditions present on the proposed project site and are not necessarily dependent upon land use types or density changes. Thus, potential impacts would generally be the same regardless of the land uses approved in the 2006 EIR or the proposed project. Additionally, no new regulations, information, or data have become available related to these issue areas. Further details of the rationale for this determination are discussed in Chapter 9.0 of this SEIR.

2.4 ENVIRONMENTAL PROCEDURES

2.4.1 California Environmental Quality Act Compliance

The California Public Resources Code (Section 21000 et seq.) requires the preparation and certification of an EIR for any project that a lead agency determines may have a significant effect on the environment. This EIR has been prepared in compliance with all criteria, standards, and procedures of the CEQA Guidelines (14 CCR 15000 et seq.).

2.4.2 Notice of Preparation and Scoping

CEQA establishes mechanisms whereby the public and decision makers can be informed about the nature of the project being proposed and the extent and types of impacts that the project and its alternatives would have on the environment, should the project or alternatives be implemented. Pursuant to Section 15082 of the CEQA Guidelines, the City circulated a Notice of Preparation (NOP) dated March 4, 2013, to interested agencies, organizations, and parties. The NOP was also sent to the State Clearinghouse at the California Office of Planning and Research. The State Clearinghouse assigned a state identification number (SCH #2003091012) to this EIR.

The NOP is intended to encourage interagency communication regarding the proposed action so that agencies, organizations, and individuals are afforded an opportunity to respond with specific comments and/or questions regarding the scope and content of the EIR. A public scoping meeting was held on March 14, 2013, at the City of Chula Vista (276 Fourth Avenue, Chula Vista, CA 91910) to gather additional public input. The 30-day public scoping period ended on April 3, 2013.

Comments received during the NOP public scoping period were considered during the preparation of this EIR. The NOP and comments are included in Appendix A to this EIR. Three comment letters were received as a result of the NOP and public scoping meeting. Comments covered a variety of topics, including land use compatibility related to the Otay Landfill, traffic generation, flood control, and student generation resulting from residential development.

Based on the scope of the proposed action as described in the NOP, the following issues were determined to be potentially significant and are therefore addressed in Chapter 5, Environmental Impact Analysis, of this document:

- Land Use and Planning
- Transportation, Circulation, and Access
- Air Quality
- Noise

- Biological Resources
- Water Quality and Hydrology
- Geology and Soils
- Public Services
- Utilities
- Climate Change
- Housing and Population
- Cumulative Impacts
- Growth Inducement

2.4.3 Overview of the EIR Process

This EIR will be made available to members of the public, agencies, and interested parties for a 45-day public review period in accordance with Section 15105 of the CEQA Guidelines. Public review of the Draft EIR is intended to focus "on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated" (14 CCR 15204). The Notice of Completion of the Draft EIR will be filed with the State Clearinghouse as required by Section 15085 of the CEQA Guidelines. In addition, the Notice of Availability of the Draft EIR will be distributed pursuant to Section 15087 of the CEQA Guidelines. Interested parties may provide comments on the Draft EIR in written form. This EIR and all related technical appendices are available for review during the 45-day public review period at the following locations:

- The offices of the City of Chula Vista, Development Services Department, located at 276 Fourth Avenue, Chula Vista, California 91910
- The Chula Vista Public Library, 365 F Street, Chula Vista, California 91910.

Once the 45-day public review period has concluded, the City will review all public comments on the Draft EIR, provide a written response to comments, and authorize revisions to the Draft EIR text, if necessary. The final Mitigation Monitoring and Reporting Program (MMRP) will be incorporated into the Final EIR and will include monitoring team qualifications, specific monitoring activities, a reporting system, and criteria for evaluating the success of the mitigation measures. Mitigation measures contained in the EIR consider future monitoring requirements and are written in sufficient detail to address impacts of the proposed project, referencing the appropriate implementing permits and plans. The Final EIR includes all comment letters

received, the final response to comments, a Final EIR preface, and, if applicable, edits made to the EIR as a result of public review.

2.5 INTENDED USES OF THE EIR

According to Section 21002.1(a) of CEQA, "The purpose of an environmental impact report is to identify the significant effects of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided." This EIR provides relevant information concerning the potential environmental effects associated with construction and operation of the proposed project and identifies and evaluates potentially significant effects that may result from implementation of the project. It is intended for use by decision makers and the public.

As the designated lead agency, the City has assumed responsibility for preparing this document. When deciding whether to approve the proposed project, the City will use the information provided in this EIR to consider potential impacts to the physical environment associated with the project. The City will consider all written comments received on the Draft EIR during the 45-day public review period in making its decision to certify the EIR as complete and in compliance with CEQA and in making its determination whether to approve or deny the project. In the final review of the document, environmental considerations, and economic and social factors will be weighed to determine the most appropriate course of action.

Subsequent to certification of the Final EIR, agencies with permitting authority over all or portions of the project will use the Final EIR as the basis for their evaluation of environmental effects related to the project and approval or denial of applicable permits.

2.6 ORGANIZATION AND CONTENT OF THE EIR

This EIR is organized to provide a project-level analysis of the potentially significant environmental impacts, mitigation measures, and alternatives for the proposed project. In order to describe the direct, indirect, and cumulative impacts, mitigation measures, and alternatives for the proposed project, this EIR is organized as follows:

- Chapter 1, Executive Summary, outlines the conclusions of the environmental analysis and a summary of the project as compared to the alternatives analyzed in the EIR. This section also includes a table summarizing all environmental impacts identified in this EIR along with the associated mitigation measures proposed to reduce or avoid each impact.
- Chapter 2, Introduction, serves as a foreword to this EIR, introducing the project background, the applicable environmental review procedures, and format of the EIR.
- Chapter 3, Environmental Setting, describes the project location and physical environmental setting.

- Chapter 4, Project Description, provides a thorough description of the proposed project and required discretionary approvals.
- Chapter 5, Environmental Impact Analysis, provides an analysis of the potentially significant environmental impacts identified, as well as proposed mitigation measures to reduce or avoid any potentially significant impacts.
- Chapter 6, Cumulative Impacts, provides an analysis of the cumulative effects of the proposed project.
- Chapter 7, Growth Inducement, addressed the project's potential growth-inducing impact.
- Chapter 8, Significant and Irreversible Environmental Impacts, addresses impacts that have been identified as significant and unavoidable.
- Chapter 9, Effects Found Not To Be Significant, addresses issue areas that did not require supplemental analysis under this EIR.
- Chapter 10, Alternatives, analyzes a range or reasonable alternatives to the proposed project.
- Chapter 11, References, provides a compiled list of references cited in each section of the EIR.
- Chapter 12, List of Preparers/Organizations Consulted, provides a list of persons, organizations, and agencies consulted during the preparation of this EIR.
- Appendices include various technical studies and correspondence prepared for the project, as listed in the table of contents.

2.7 MITIGATION MONITORING AND REPORTING PROGRAM

As mandated by 14 CCR 15097 and 15091, the City will prepare an MMRP prior to project approval. The MMRP will include all mitigation measures outlined in the SEIR and 2006 EIR, the responsible entity for implementation, implementation timing (prior to construction, during construction, post-construction), and any follow-up reporting requirements (such as submittal of materials to regulatory agencies).

The City, as the designated lead agency, is responsible for enforcing and verifying that each mitigation measure is implemented and required; however, either the City or the appropriate developer shall be responsible for implementing the mitigation measures as required by the Final EIR.

CHAPTER 3
ENVIRONMENTAL SETTING

This section provides a description of the existing site conditions, surrounding land uses, and land use planning context relevant to the proposed project. This section also provides an overview of the environmental resources present on and around the project area. Finally, this section includes a description and map of related projects and growth factor assumptions within the project area. The related projects are referenced for the purpose of the cumulative impacts analysis provided in each of the environmental impact analyses in Chapter 5.

3.1 EXISTING SITE CONDITIONS

Otay Ranch lies within the East Planning Area of the City, as identified in the City's General Plan. The proposed project is a component of the Otay Ranch General Development Plan (GDP), which organizes the Otay Ranch into 20 villages or planning areas. The approximately 267-acre project area is located within the Otay Valley Parcel of the Otay Ranch. The project area is comprised of the portions of Village Two under the ownership of Baldwin & Sons.

Historically, the Otay Valley Parcel, including the project area, has been used for ranching, grazing, dry farming, and truck farming activities. Within Village Two, grading has generally begun on residential zones surrounding CPF-1 and construction has begun on sites that are not proposed to change under the project. In addition, several residential land use zones have been completed with residents currently inhabiting select homes. These neighborhoods of initial development include R-5a, R-5b, R-6, R-7A, R-8a, R-8b, R-9a, R-9b, R-10a, R-13, R-14, R-15b, R-30, and CPF-1. Primary internal roadways have been partially constructed and paved. These roadways include State Street, Santa Diana Road, and Santa Victoria Road. The remainder of the project area is currently vacant and is generally comprised of gently sloping terrain covered with primarily non-native grasslands crossed by dirt roads and old cattle trails. Additional information regarding biological resources on the site is provided in Subsection 3.1.2.

Village Two is bounded by Olympic Parkway to the north, La Media Road to the east, Village Three and Four to the south, and the Otay Landfill to the west.

3.1.1 Surrounding Land Uses

The project area is surrounded by other Otay Ranch villages and a variety of land uses and natural features. Surrounding uses include Otay Ranch Villages One and Five and the Otay Ranch High School to the north, Otay Ranch Village Six to the east, Otay Ranch Village Seven to the east and southeast which is currently being developed, Otay Ranch Villages Three and Four and the Vulcan Materials mining operations to the south, and the Otay Landfill to the west.

3.1.2 Natural Resources in Project Area

There is limited habitat value for wildlife in the project site due to the previous grading of slopes and the overall weedy nature of the vegetation. However, there is a small patch of southern willow scrub in conjunction with patches of mulefat scrub that are associated with a drainage within the site. There are a number of mid-sized willow trees within the southern willow scrub that potentially provide nesting opportunities for riparian bird species. With the addition of the adjacent mulefat scrub, there are also foraging opportunities. There is a moderate potential for the least Bell's vireo (*Vireo bellii pusillus*) to occur within the study area.

3.1.3 Existing Topography and Soils

Village Two topographically consists of gently rolling hills in the central portion, transitioning to steep walled canyons and ridges in the northern and southern portions. Drainage generally flows towards Poggi Creek drainage channel just south of Olympic Parkway or south towards the Otay River.

Soils on site consist of previously places fill, topsoil, alluvium, colluvium, and landslide debris. Previous fill deposits are a result of previous grading. Landslide debris exists in five areas of Village Two, primarily in the western portion, and are up to 70 feet thick at the toes of the landslide.

3.1.4 Climate

The climate in the project area is dominated by a semi-permanent high-pressure cell located over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. The nearest climatological monitoring station that records precipitation data is located at the lower Otay Reservoir, approximately 1.5 miles east of the project site. The normal precipitation in the lower Otay Reservoir area is 11 inches annually, occurring primarily from December through March (WRCC 2013a). Temperature is recorded at the monitoring station located in the community of Bonita, north of the Otay Ranch area. According to the Western Regional Climate Center, in summer (August) the normal daily maximum temperature in Bonita is 81 degrees Fahrenheit (°F), and in winter (January) the normal daily minimum temperature is 40°F (WRCC 2013b).

3.1.5 Access

Primary regional access to Village Two includes State Route 125 (SR-125) and Interstate 805 (I-805) via Olympic Parkway. Other access roads include Birch Road, Heritage Road, and La Media Road. La Media Road currently terminates at Santa Luna Street and is planned to extend to the proposed Main Street extension. Heritage Road and Santa Carolina are also partially completed.

3.2 EXISTING LAND USE

Land uses within the project area are designated in the City of Chula Vista General Plan, the Otay Ranch GDP, and Sectional Planning Area (SPA) Plan. Zoning within the project area is designated by the City of Chula Vista Zoning Map, which specifies the zoning for the entire Otay Ranch as Planned Community (PC) zoned, as defined in Chapter 19.48 of the Chula Vista Municipal Code (City of Chula Vista 2013). The Otay Ranch GDP currently designates land use densities and dwelling unit ranges for all of Village Two. The GDP also generally defines locations for mixed use, an elementary school, parks, industrial, and open space. The SPA Plan further defines the land uses within Village Two, dividing the zones outlined by the GDP into specific land use blocks. The SPA also includes more land use categories such as Community Purpose Facility (CPF) and commercial. Under the SPA Plan, Wolf Canyon, located in the southern portion of Village Two is designated as a preserved space.

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CHAPTER 4
PROJECT DESCRIPTION

This section provides a description of the proposed Village Two Comprehensive Sectional Planning Area (SPA) Plan Amendment project (proposed project). As required by Section 15124 of the California Environmental Quality Act (CEQA) Guidelines, this section includes the precise location of the project, a statement of the project objectives, a general description of project characteristics that accounts for public service facilities, and summary of the discretionary actions that would be required.

4.1 PROJECT LOCATION

The proposed project is located within the City of Chula Vista in southwestern San Diego County, approximately 3.5 miles east of downtown Chula Vista and 13 miles southeast of Downtown San Diego (Figure 4-1). Regional access to the project site is from State Route 125 (SR-125), which runs adjacent to a portion of the proposed project, and Interstate 805 (I-805), which is approximately 1.75 miles to the west (Figure 4-2). The proposed project site, consisting of several neighborhoods collectively, occupies approximately 267 acres within Village Two in the Otay Valley Parcel of the Otay Ranch General Development Plan (GDP). Village Two consists of a total of 818.9 acres (also referred to as the project area). Village Two is generally bound by Olympic Parkway to the north, La Media Road to the east, Village Three and Four to the south, and the Otay Landfill to the west (Figure 4-3).

4.2 PROJECT OBJECTIVES

Section 15124(b) of the CEQA Guidelines (14 Cal. Code Regs. 15000 et seq.) states that the Project Description shall contain "a statement of the objectives sought by the proposed project." Section 15124(b) of the CEQA Guidelines further states, "the statement of the objectives should include the underlying purpose of the project." The proposed project would provide additional benefits to Village Two, the Otay Ranch, and the City of Chula Vista as a whole. In particular, the proposed project would promote development of a complete community that furthers Village goals/objectives by enhancing living, working, learning, shopping, and transit options while increasing residents' opportunities for social interaction and recreation. Specific objectives are:

- **Increase density in and around the Core –** Density would be increased in and around Village Two to further the vision of the Otay Ranch GDP and the 2006 Village of Montecito SPA.
- **Increase housing choices and align with the housing market –** The proposed project would bring Village Two planning in-line with today's marketplace and homebuyer preference. This would provide Chula Vista residents with additional housing choices/opportunities. Aligning Village planning and today's housing market also facilitates construction and home sales.

- **Enhance the viability of transit –** Increasing the number of dwelling units (and population) in Village Two would provide additional ridership for the regional Bus Rapid Transit and local bus systems. This would increase ridership/viability of the transit system and reduce automobile dependence, emissions, and traffic.
- **Enhance the viability of commercial and industrial uses –** Increasing the number of dwelling units (and population) in Village Two would strengthen the market for the commercial uses in the village. This would enhance the mixed use character of the Village and support the walkable, main street character of the village core. Supporting the commercial and industrial uses also would help to promote a balance between jobs and housing.
- **Mixing uses to encourage walking and biking –** With viable commercial uses, Village Two residents would be able to meet daily needs such as groceries, dry cleaning and entertainment within the village. By providing these uses, as well as schools and parks, close to resident's homes, the opportunity for walking and biking would be provided rather than automobile use. This would promote a healthy lifestyle, encourage local businesses, and reduce automobile dependence, emissions, and traffic.
- **Walking to schools –** Providing two elementary schools within Village Two puts residents and students closer to those schools which would allow implementation of programs such as 'walking school buses' where students walk to school in groups as opposed to getting rides or busing. This would promote a healthy lifestyle for students while reducing automobile dependence, emissions, and traffic.
- **Water pipeline relocation –** As part of the proposed project, the water pipeline owned by the City of San Diego which currently bisects Village Two would be relocated to La Media Road. This would allow cohesive development and reduce some of the development constraints that exist today.
- **Additional housing within the same development footprint –** Increasing density in select locations would create additional housing within the same village footprint. This would allow for new home creation in today's marketplace, increase affordability for homebuyers, increase viability of commercial uses, and decrease per capita costs of infrastructure and municipal services.

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FIGURE 4-1

Regional Map

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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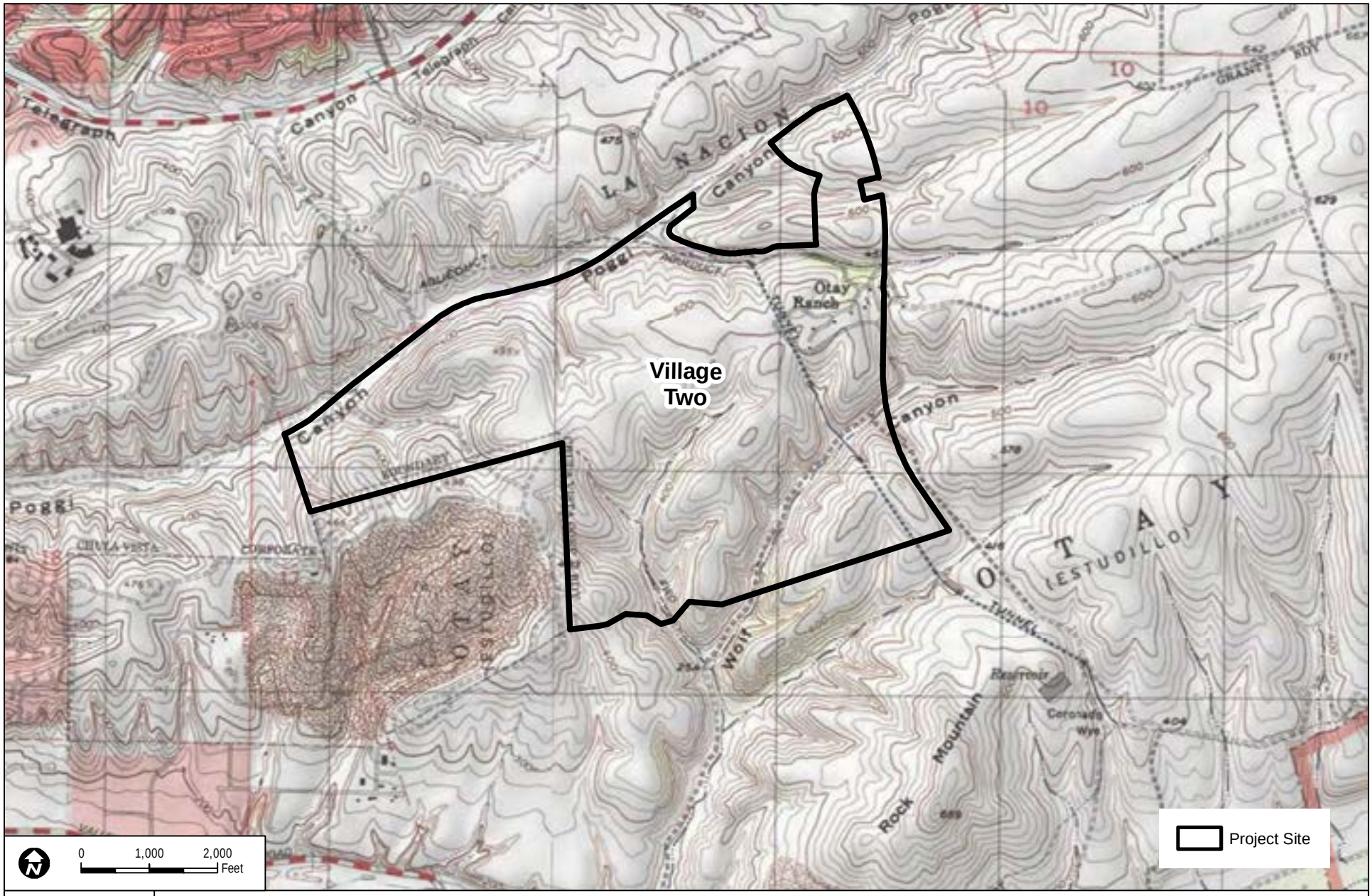

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AERIAL SOURCE: USGS 7.5 MINUTE SERIES QUADRANGLE

FIGURE 4-2

Vicinity Map

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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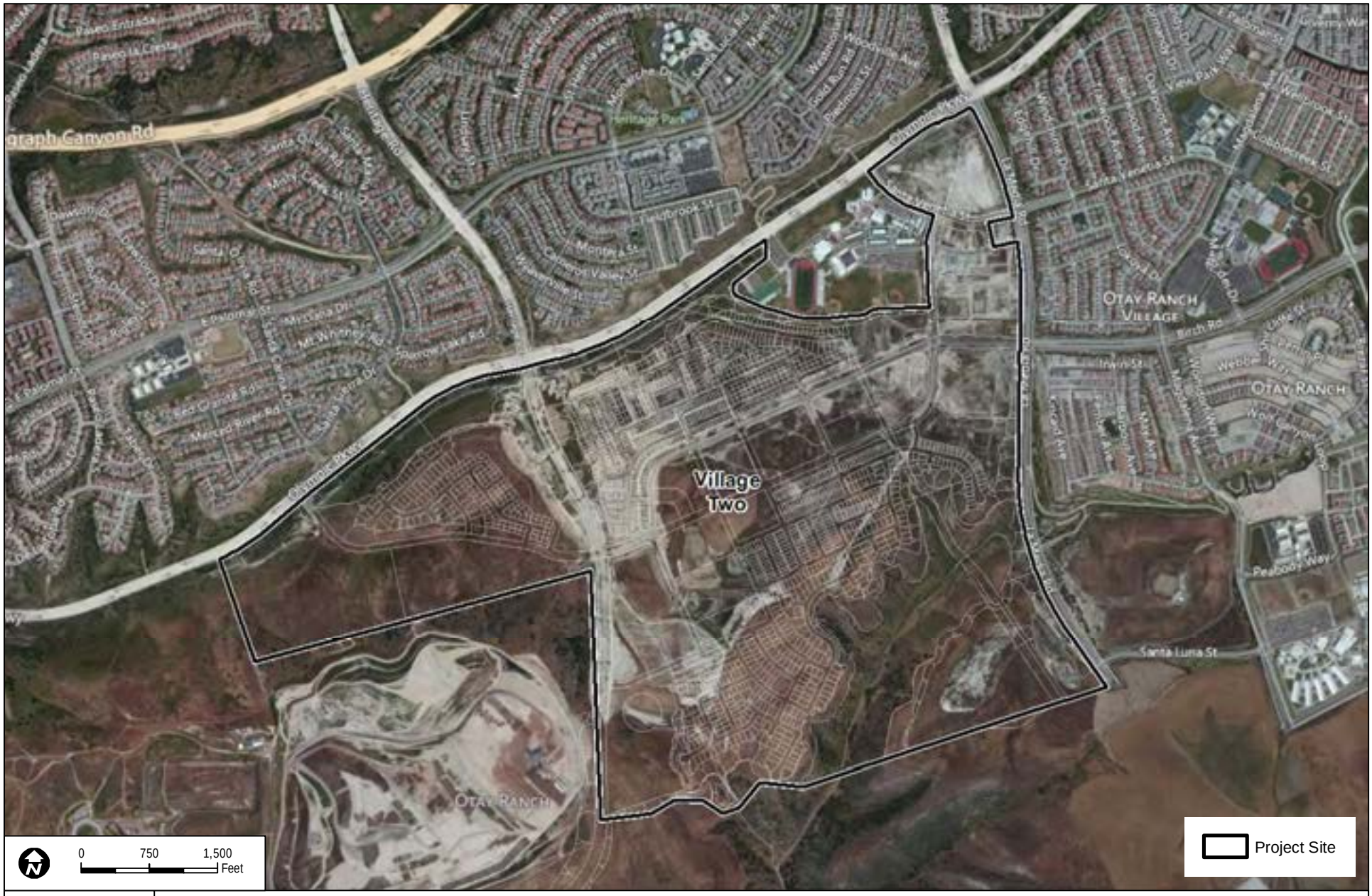

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AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 4-3

Project Area

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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4.3 PROJECT BACKGROUND

The current SPA Plan for Village Two allows for a mix of single family and multi-family residential, mixed use development, commercial and industrial uses, and schools, parks, and community purpose facilities (CPF). The SPA Plan was originally adopted in 2006 and was previously analyzed in the Otay Ranch Villages Two, Three, and a Portion of Village Four Sectional Planning Area Plan Final Second Tier Environmental Impact Report (City of Chula Vista 2006) and associated addendum (herein referred to as the 2006 EIR). The SPA Plan was subsequently amended via two separate actions: 1) to allow for unit transfers between parcels owned by Baldwin and Sons, and 2) to increase the total number of dwelling units to 2,983 as analyzed in the Otay Ranch Village Two SPA Plan Amendment Mitigated Negative Declaration (MND). Figure 4-4 shows the current SPA Plan Land Use Plan as adopted in 2006 and Figure 4-5 shows the proposed land uses within the SPA Plan. Figures 4-6 shows areas of change within Village Two how units were transferred between parcels owned by Baldwin & Sons in a SPA Plan Amendment in 2012. Figures 4-7 provides a summary of uses and ownership within Village Two.

Baldwin & Sons and related entities currently control 1,873 dwelling units on 240 acres (63% of the total dwelling units allocated) within Village Two. Additionally, Baldwin & Sons controls approximately 8.5 acres of mixed use commercial, 12.5 acres of dedicated commercial, 60.7 acres of industrial uses, as well as various park and CPF acreage within Village Two. An additional 1,110 dwelling units under different ownership have been approved on the remaining 104 acres in Village Two.

4.4 PROJECT DESCRIPTION

4.4.1 Land Uses

Baldwin & Sons has planned the proposed project to create a complete village; one that is responsive to homebuyer preferences and is viable in light of current economic conditions, village ownership, infrastructure status, and government policy objectives/requirements. The plan features increased residential densities, diversity of residential product types, and resident amenities such as park and CPF uses and an additional neighborhood elementary school. The proposed project will provide opportunities for increased viability of commercial uses, transit ridership, village ‘walkability,’ and decreased automobile dependence.

The proposed project would add 1,562 dwelling units in a variety of residential types for a total of 4,545 units in Village Two (3,435 du under Baldwin & Sons ownership). The proposed project would increase the allocated single family dwelling units by up to 311 and introduce 1,251 multi-family dwelling units. In addition, up to 130,000 square feet of commercial uses would be located on the MU-2, MU-3 and C-1 parcels combined. In order to account for the

increase in residential uses, the proposed project will also include an additional 9.5 acres for a new elementary school, 10.8 acres of parkland, and 7.8 acres of CPF. Proposed land uses are shown in Figure 4-5 and areas that are proposed to change under the proposed project are shown in Figure 4-6.

Table 4-1 shows a comparison of the development of Village Two as proposed under the current SPA Plan and the proposed project, which was analyzed in the 2006 EIR, Addendum to the SPA Plan EIR, and the Village Two SPA Plan Amendment MND.

Table 4-1
Comparison of Proposed Village Two Development

Land Use	Current SPA Plan	Proposed Project	Net Change
Single-Family (B&S) (du)	451	762	311**
Multi-Family (B&S) (du)	1,422	2,673	1,251**
Other Residential*** (du)	1,110	1,110	0
Total Residential (du)	**2,983**	**4,545**	**1,562**
Industrial (ac)	60.7	62.4	1.7
Mixed Use and Commercial (ac)	21.0	22.5	1.5
CPF (ac)	6.3	14.1	7.8
Park (ac)	58.7*	69.5	10.8
School (ac)	10.3	19.8	9.5
Open Space (ac)	200.2	200.2	0.0
Future Development (ac)	33.1	0.0	-33.1

* The parkland obligation for Village Two accounts for the following obligations: Original Village Two Approval (24.2 acres), Original Village Two deficit (1.1 acres), Obligation from SPA One (31.6 acres), and the JPB 197-Unit Amendment (1.8 acres).

** A net change of 311 single-family residential units and 1,251 multi-family residential units is analyzed in this EIR, consistent with the project's Traffic Impact Analysis (Chen Ryan 2013). These unit assumptions are considered conservative in terms of vehicle trip generation; therefore, these numbers are used for environmental impact analysis purposes. However, the proposed project would result in a net decrease of 70 single-family residential units, and a net increase of 1,632 multi-family units.

*** "Other Residential" is not a part of the proposed project, data is presented for information/analysis purposes.

B&S = Baldwin and Sons; du = dwelling units; ac = acres

The proposed project requires amendments to the City of Chula Vista General Plan, the Otay Ranch GDP, the Otay Ranch Village Two, Three, and a Portion of Village Four SPA, and the Otay Ranch Core Master Precise Plan (CMPP). The proposed project also requires four new Tentative Maps (TMs) for subject neighborhoods within Village Two.

4.4.1.1 Parks, Recreation, and Open Space

Parks and Open Space

Parks and open space amenities include six neighborhood parks (P-1 through P-6), pedestrian and bicycle facilities, and private recreation sites (CPF). As discussed in the 2006 EIR, all parks would include nighttime lighting for sports courts and other similar facilities. This lighting would comply with applicable regulations (such as City of Chula Vista Municipal Code 17.28) and will be shielded to prevent any light trespass beyond the courts. Low level nighttime security lighting

would also be included along areas of neighborhood parks such as the main walkways. Parks within Village Two would also be required to comply with appropriate planning and zoning performance standards set forth in the City of Chula Vista Municipal Code 19.66 and 19.68 as they relate to lighting, glare, and noise limits. Further discussion relating to noise can be found in Section 5.4 of this EIR. Additionally, Village Two would accommodate Preserve land and open space totaling approximately 200 acres.

A 7.1-acre neighborhood park (P-2) is located in the village core within walking distance of the centrally located residential areas where increased density is proposed and the proposed elementary school, and adjacent to the previously approved school site. This park would provide opportunities for shared facilities and programs with the two school sites. Amenities may include multipurpose open lawn areas, ball fields, lighted sports courts, picnic shelters, and tot lots as well as restroom, and maintenance buildings. Similarly, the 7.6-acre P-3 park space is located adjacent to Otay Ranch High School to provide additional shared passive and active recreational opportunities with the school. Park spaces P-1, P-5 and P-6 would primarily serve the residential areas. Park space P-4 includes 44.6 acres, which is not included as part of the proposed project (there are no proposed changes to this park; therefore, it is still consistent with the 2006 EIR), but is located in the southeast corner of Village Two, adjacent to the Preserve land, as shown on Figure 4-5.

Community-Purpose Facilities

Six CPF sites totaling 14.1 acres are located throughout Village Two and range in size from 0.9 to 9.0 acres, as shown on Figure 4-5. CPF-1 is located in the village core and would be 1.2 acres. The other CPF facilities would operate as private recreation facilities that extend recreational opportunities into neighborhoods. A 7.2 acre CPF site located in Village Three and a 3.9 acre CPF site in Village Seven would contribute to the CPF requirement for Village Two. These two CPF sites would be designed during Site Plan Development and Review of each specific development area. Amenities at these sites may include tot lots, sport courts, picnic areas, swimming pools, and meeting rooms.

4.4.2 Access, Internal Circulation, and Trip Generation

Regional access to Village Two is currently provided by SR-125, which is located adjacent to the eastern boundary of Village Seven, approximately 0.5 miles east of the project site. Additional north–south access is provided from I-805 and I-5, located approximately 1.3 miles west and 4.5 miles west, respectively, of the project site. SR-54 and SR-905 provide regional east–west circulation, approximately 4.5 miles north and 3 miles south, respectively, of the project site.

East–west access is provided by Olympic Parkway along the northern boundary of Village Two, connecting to I-805 to the west and SR-125 to the east. Santa Victoria Road would also provide

east–west access through the central portion of Village Two. North–south access would be provided by an extension of Heritage Road along the western portion of Village Two, as well as an extension of La Media Road along the eastern edge of the project site.

No modifications to the circulation system would occur from what was originally proposed in the 2006 EIR as a result of the proposed project. The primary entry points into Village Two are from Heritage Road and La Media Road. Traffic calming features such as curb extensions, raised and narrowed intersections, and landscaped pop-outs may also be located in the internal circulation network at appropriate locations. The circulation plan encourages pedestrian activity and the use of bicycles through the provision of off-street paved paths, bike lanes, a Regional Trail and Village Pathways. The design of all village streets includes sidewalks and landscaping to promote pedestrian circulation throughout the Village Two area.

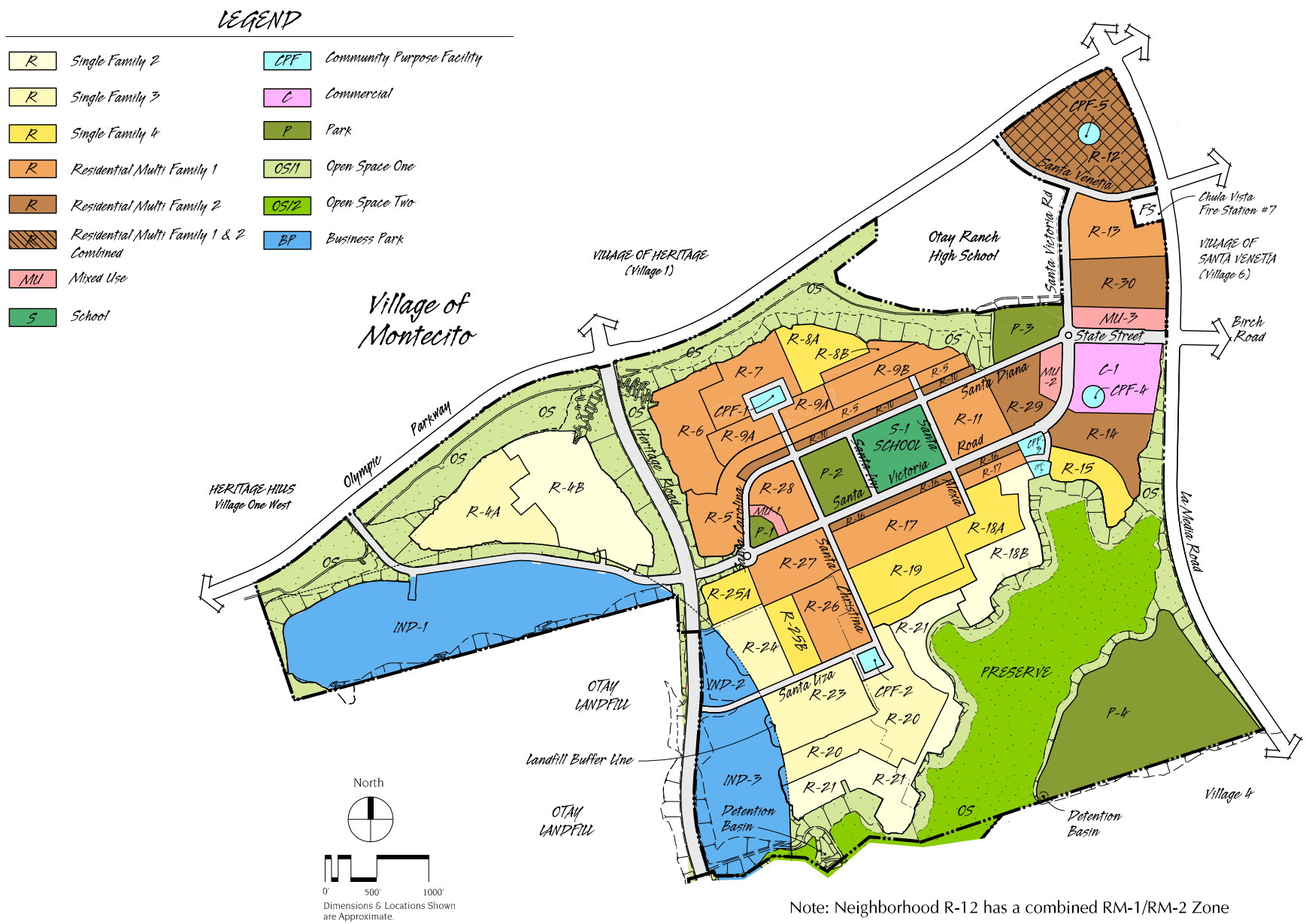
The proposed project would generate a total of 17,800 daily trips (net increase beyond the 2006 EIR) by the year 2030, including 1,457 a.m. peak hour trips, and 1,734 p.m. peak hour trips beyond what was analyzed in the 2006 EIR. A detailed discussion of traffic and circulation is provided in Section 5.2, Transportation, Circulation, and Access, of the EIR.

The village streets are designed to promote pedestrian and bicycle travel. The preferred design for all village streets provides for minimum 5-foot-wide sidewalks separated from the roadway by landscaped parkways. In the village core commercial areas, wider sidewalks are provided to allow for window shopping and pedestrian amenities such as seating and outdoor dining.

4.4.3 Public Services and Utilities

Water Service

Water service to the proposed project would be served by the Otay Water District. The Village Two Comprehensive SPA Amendment Water System Evaluation prepared by Dexter Wilson Engineering, Inc. (Appendix H) concludes that water infrastructure for the proposed project site is currently installed and is adequate to support the proposed increase in development under the proposed project. No changes to the existing Village Two water system are necessary to accommodate the increase in water demand that would be generated as a result of project development. The projected water demands for Village Two were originally evaluated in the November 2010 Water Resources Master Plan (WRMP) Amendment prepared for the Otay Water District. Projected water demand would increase by 467,809 gallons per day (gpd) compared to projections estimated in the 2010 WRMP. As part of the approval for the 2006 EIR, a water conservation plan was prepared for Village Two, which would apply to the proposed project. Additionally, the Water Supply Assessment (WSA) was approved by the Otay Water District on November 6, 2013 and has indicated that there is sufficient water supply to serve the proposed project (see January 28, 2014 letter from Otay Water District and Otay Ranch Village 2 WSA - Notes and Clarifications prepared by Atkins on May 9, 2014, Appendix H).



Note: Neighborhood R-12 has a combined RM-1/RM-2 Zone

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SOURCE: HUNSAKER & ASSOCIATES, INC. 2013

FIGURE 4-4

Village Two Existing Land Use Plan

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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SOURCE: HUNSAKER 7 ASSOCIATES, INC. 2013

FIGURE 4-5

Village Two Proposed SPA Land Use Plan

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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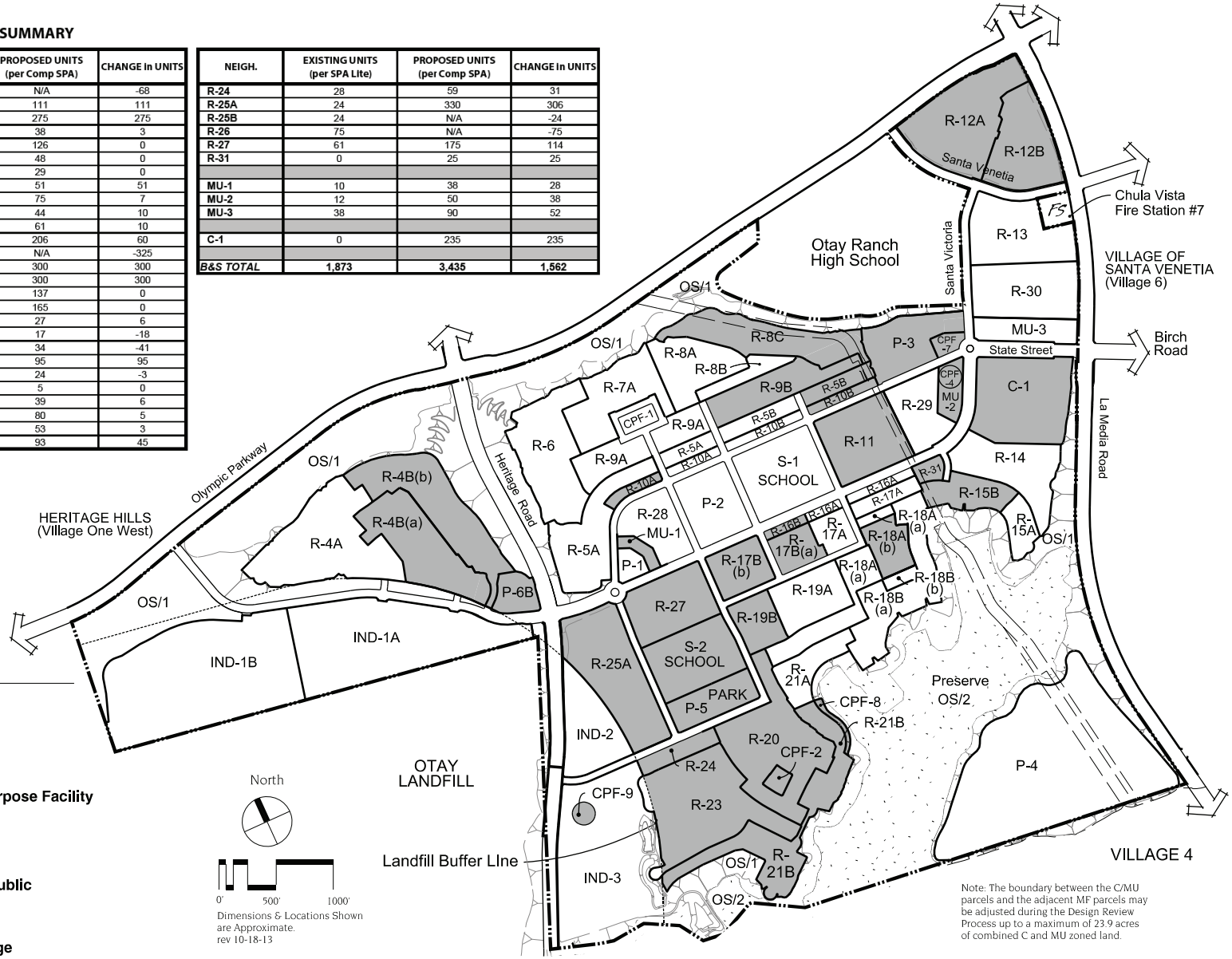
VILLAGE 2 - AREA OF CHANGE SUMMARY

NEIGH.	EXISTING UNITS (per SPA Lite)	PROPOSED UNITS (per Comp SPA)	CHANGE In UNITS
R-4B	68	N/A	-68
R-4B (a)	N/A	111	111
R-4B (b)	N/A	275	275
R-5B	35	38	3
R-6	126	126	0
R-8A	48	48	0
R-8B	29	29	0
R-8C	N/A	51	51
R-9B	68	75	7
R-10A	34	44	10
R-10B	51	61	10
R-11	146	206	60
R-12	325	N/A	-325
R-12A	N/A	300	300
R-12B	N/A	300	300
R-13	137	137	0
R-14	165	165	0
R-15B	21	27	6
R-16B	35	17	-18
R-17B (a)	75	34	-41
R-17B (b)	N/A	95	95
R-18A (b)	27	24	-3
R-18B (b)	5	5	0
R-19B	33	39	6
R-20	75	80	5
R-21B	50	53	3
R-23	48	93	45

NEIGH.	EXISTING UNITS (per SPA Lite)	PROPOSED UNITS (per Comp SPA)	CHANGE In UNITS
R-24	28	59	31
R-25A	24	330	306
R-25B	24	N/A	-24
R-26	75	N/A	-75
R-27	61	175	114
R-31	0	25	25
MU-1	10	38	28
MU-2	12	50	38
MU-3	38	90	52
C-1	0	235	235
B&S TOTAL	**1,873**	**3,435**	**1,562**



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SOURCE: HUNSAKER &ASSOCIATES, INC. 2013

FIGURE 4-6

Village Two Project Area Changes

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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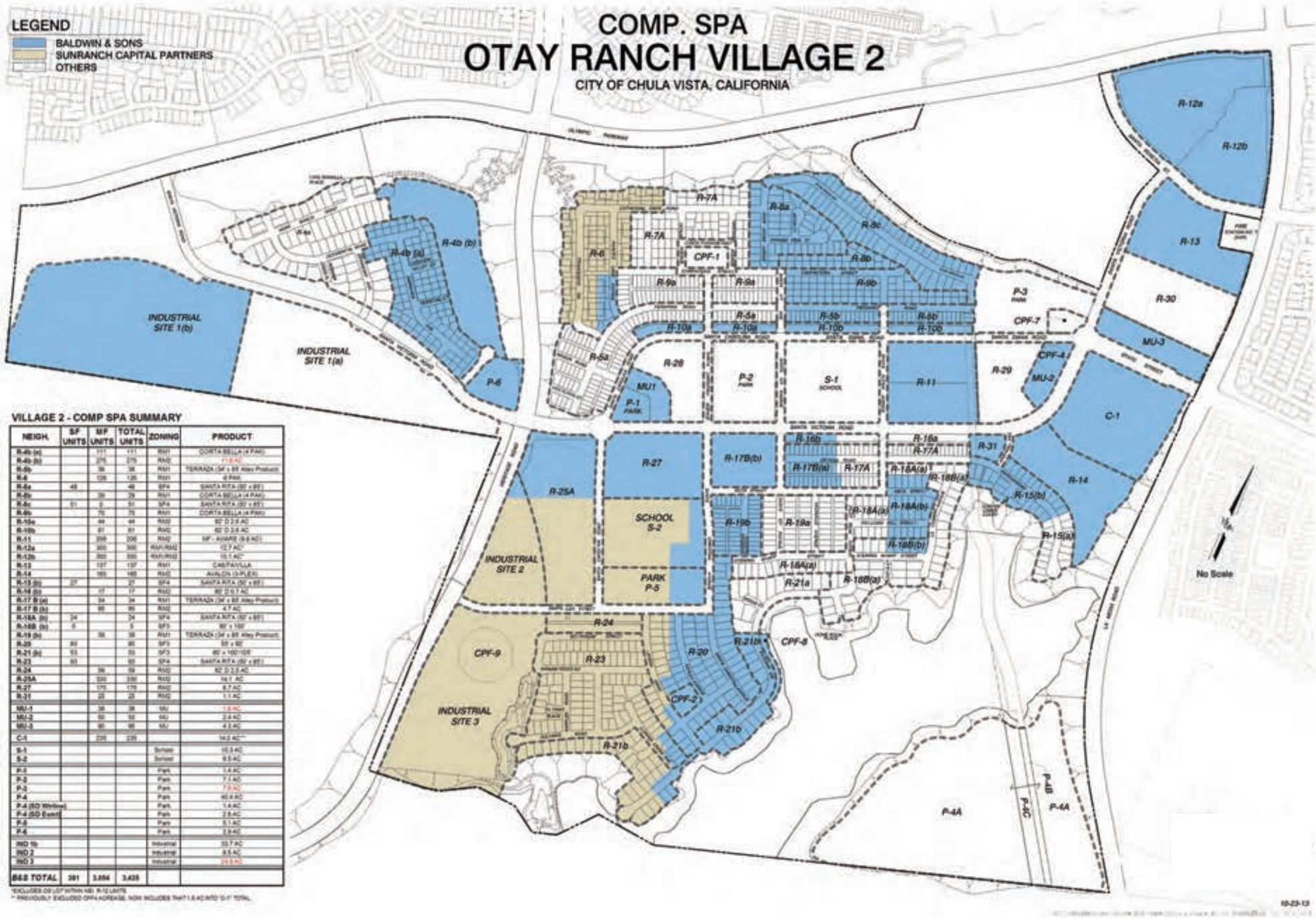

VILLAGE 2 - COMP SPA SUMMARY

NEIGH.	SF UNITS	MF UNITS	TOTAL UNITS	ZONING	PRODUCT
R-4b (a)		111	111	RM1	CORTA BELLA (4 PAK)
R-4b (b)		276	276	RM2	FLEAC
R-5b		38	38	RM1	TERRAZA (34' x 85' Alley Product)
R-6		126	126	RM1	4 PAK
R-8a	48		48	SP4	SANTA RITA (50' x 85')
R-8b		29	29	RM1	CORTA BELLA (4 PAK)
R-8c	51	0	51	SP4	SANTA RITA (50' x 85')
R-8b		75	75	RM1	CORTA BELLA (4 PAK)
R-10a		44	44	RM2	62' D 2.5 AC
R-10b		61	61	RM2	62' D 2.6 AC
R-11		206	206	RM2	MF - AVARE (9.6 AC)
R-12a		300	300	RM1/RM2	12.7 AC
R-12b		300	300	RM1/RM2	10.1 AC
R-13		137	137	RM1	CAMPANILLA
R-14		165	165	RM2	AVALON (3-P) (EX)
R-15 (b)	22		22	SP4	SANTA RITA (50' x 85')
R-16 (b)		17	17	RM2	62' D 0.7 AC
R-17 B (a)		34	34	RM1	TERRAZA (34' x 85' Alley Product)
R-17 B (b)		95	95	RM2	4.7 AC
R-18A (b)	24		24	SP4	SANTA RITA (50' x 85')
R-18B (b)	5		5	SP3	90' x 100'
R-19 (b)		38	38	RM1	TERRAZA (34' x 85' Alley Product)
R-20	80		80	SP3	50' x 90'
R-21 (b)	53		53	SP3	60' x 100'/105'
R-23	93		93	SP4	SANTA RITA (50' x 85')
R-24		59	59	RM2	62' D 2.3 AC
R-25A		330	330	RM2	14.1 AC
R-27		175	175	RM2	8.7 AC
R-31		25	25	RM2	1.1 AC
MU-1		38	38	MU	1.9 AC
MU-2		92	92	MU	2.9 AC
MU-3		90	90	MU	4.3 AC
C-1		235	235		14.2 AC**
S-1				School	10.3 AC
S-2				School	9.9 AC
P-1				Park	1.4 AC
P-2				Park	7.1 AC
P-3				Park	7.9 AC
P-4				Park	16.4 AC
P-4 (SD Winlow)				Park	1.4 AC
P-4 (SD Ewoff)				Park	2.9 AC
P-5				Park	5.1 AC
P-6				Park	2.9 AC
IND 1b				Industrial	33.7 AC
IND 2				Industrial	9.5 AC
IND 3				Industrial	24.9 AC
B&S TOTAL	381	3,094	3,475		

*EXCLUDES DR LOT WITHIN NEI R-12 UNITS
** PREVIOUSLY EXCLUDED OPA HORSE, NOW INCLUDES THAT 1.5 AC INTO "C-1" TOTAL

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SOURCE: HUNSAKER & ASSOCIATE0S, INC. 2013

FIGURE 4-7
Village Two SPA Plan Summary and Ownership Map

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Sewer Service

Sewer service for the northern portion of the proposed project site would be provided by gravity sewer lines to connect with the Poggi Canyon Interceptor. Sewer service for the southern portion of Village Two would be served by gravity sewer lines to connect with the Salt Creek Interceptor.

The Sewer System Evaluation for the Baldwin and Sons Village 2 SPA Amendment report prepared by Dexter Wilson Engineering, Inc. (Appendix H) calculates the expected demand for sewage transportation and treatment. The projected average sewer flow which would be accommodated by the Poggi Canyon Interceptor would be 248,730 gpd. Increased flows to the Salt Creek Interceptor would be approximately 128,315 gpd. No additional upsizing of the Poggi Canyon Interceptor or the Village 2 on-site sewer system would be required to accommodate the proposed project flows. While the sewer lines within the Wolf Canyon Basin that would accommodate flows generated from the southern portion of the proposed project site have not yet been designed, their size and location are known. The design and sizing of these sewer lines would take into account increased unit counts as a result of the proposed project SPA Amendment.

Drainage and Stormwater Facilities

The proposed storm drain system and layout would be designed to address peak flows as well as to integrate water quality features needed to comply with the City of Chula Vista Standard Urban Stormwater Mitigation Plan (SUSMP) requirements for water quality. The proposed storm drain system would be designed to prevent the co-mingling of treated flows with untreated runoff. The northern portion of Village Two would drain into existing storm drain facilities located within Poggi Canyon. Runoff from the newly proposed R-8C zone would flow into a bioretention basin located in Poggi Canyon. The main storm drain outlet for the western portion of Village Two would flow into a Poggi Canyon detention basin that includes a water quality treatment for runoff. The southern portion of Village Two would either flow into a detention basin before draining into Wolf Canyon or flow directly into the Otay River. The proposed project would utilize existing drainage facilities and include construction of new facilities to ensure that the increase in runoff upon development of the proposed project is met with adequate capacity. Such facilities would include storm drains, detention basins, cleanouts, inlets, headwalls, energy dissipating measures, treatment filters, and bioretention basins.

Schools

The proposed project includes one elementary school site within Village Two consisting of 9.5 acres. A previously approved elementary school site, which is not part of the proposed project, is located adjacent to the P-2 park site and would consist of approximately 10.3 acres. The proposed elementary school site would be reserved for acquisition by the Chula Vista

Elementary School District. The construction schedule for the school would be determined by the school district. Students in the project site would be accommodated in neighboring Chula Vista Elementary School District elementary schools at the discretion of the school district until the new schools are constructed.

Middle school and high school requirements would be met by the existing schools within the Sweetwater Union High School District. In addition to nearby public schools (EastLake Middle School, Rancho del Rey Middle School, Otay Ranch High School, EastLake High School, and Olympian High School), two private schools are located near the project site: High Tech High School and Mater Dei High School. Further, a joint high/middle school is planned in the nearby Village Eleven and a middle school is planned in Village Eight West.

Demand for adult school facilities would be satisfied through existing facilities in the Sweetwater Union School District until a new facility can be constructed in the Otay Ranch Eastern Urban Center (EUC) on a site reserved according to the Otay Ranch GDP. Student generation and school capacity information is provided in Section 5.8 of the EIR.

Police and Fire Services

The Chula Vista Police Department currently provides police services within the City of Chula Vista. The development of project site would increase the demand for police services. In order to meet Growth Management Ordinance service thresholds, additional personnel and facilities may be required at buildout of the proposed project; however, no police substations would be required. The existing police facilities have the capacity to accommodate any potential additional law enforcement services generated by the proposed project. An already planned police station located in the EUC would be necessary to serve the Otay Ranch area at build-out, as determined in the Otay Ranch GDP.

The Chula Vista Fire Department would provide fire services for the project site. Fire Station Number 7 is located adjacent to the Village Two core, and an additional fire station is planned within the EUC. Chula Vista is also currently processing an update to the City's Fire Facility Master Plan that proposes an additional fire station in the Village Eight West Town Center.

American Medical Response provides emergency medical services on a contract basis within the City of Chula Vista. The proposed project would increase the demand on emergency medical services. Additional information regarding police, fire, and emergency medical services is provided in Section 5.8 of the EIR.

4.4.4 Tentative Map

The four TMs would address subdivision of the site, street standards, and infrastructure. They would also address provisions for underground encroachment (e.g., all underground utilities lines, etc.) into the right-of-way, off-site streets, and grading required to implement the subdivision. This includes the relocation of the City of San Diego waterline that currently travels through Village Two to a new alignment along La Media Road and Olympic Parkway, as shown in Figure 4-8. The relocation of the waterline is further explained in Section 5.1 of this EIR.

4.4.5 Conceptual Grading

Grading for the proposed project would utilize grading practices consistent with the requirements of the Chula Vista General Plan, the Otay Ranch GDP, the Otay Ranch Overall Design Plan, and the Otay Ranch Phase 2 RMP. Grading of the site would consist of approximately 6,682,788 cubic yards of cut and 7,012,433 cubic yards of fill. Daily earthmoving would consist of approximately 67,901 cubic yards per day. A maximum of 400,000 cubic yards could be imported to the site. The source of the imported soil is not yet known. However, Table 4-2 below outlines the schedule of truck trips for importing soil to the project site. As shown, import truck trips would be capped at 125 trips per day beginning in 2021.

Table 4-2
Import Truck Trips by Year

Year	Truck Trips per day
2017	62
2018	75
2019	88
2020	111
2021	125
2022	125
2023	125
2024	125
2025	125

Source: Baldwin and Sons 2014.

4.4.6 Construction and Phasing

Construction of the proposed project is anticipated to begin in September 2014. The proposed project involves the construction of additional residential dwelling units, along with an additional school, park uses, CPF, commercial, and light industrial uses. Construction activities associated with the construction of the project will therefore involve the following phases:

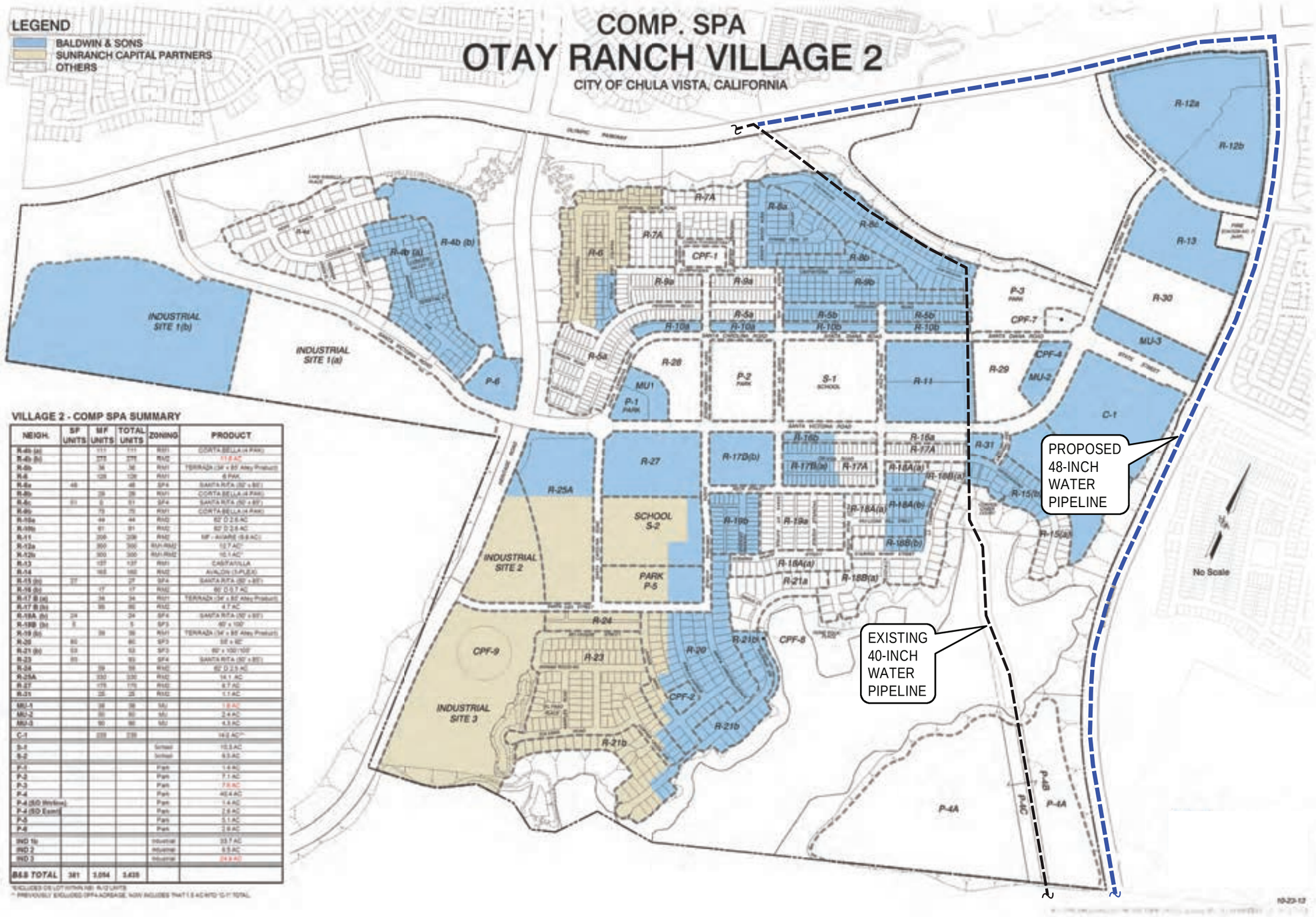
- Building construction activities
- Paving activities
- Architectural coating application

The initial phase of construction would include the following:

- 138 single-family dwelling units
- 556 multi-family dwelling units
- 13,300 square feet of mixed-use commercial
- 5 acres of CPF
- 0.8 acres of light industrial uses
- 6 acres of park uses (P-3 Phase 1)

Approximately 250 residential dwelling units would be constructed per year following the initial development phase. The additional uses (school, CPF, mixed-use commercial, light industrial uses, and park uses) would be complete by 2025, as would construction of the additional residential units.

A public facilities finance plan (PFFP) is being prepared for the proposed project. The PFFP will define different phases of development within the project site, identify the infrastructure improvements and services required for each phase of development, and establish triggers for when those improvements and services must be performed to meet the City's Growth Management thresholds. Additionally, other projects in the area, including University Villages, Village Eight West, Village Nine, and Planning Area 12 are subject to PFFP requirements. As a result, all financing of public facilities that would be utilized by projects in the Otay Ranch area, including the proposed project, are conditioned as a matter of approval.



VILLAGE 2 - COMP SPA SUMMARY

NEIGH.	SF UNITS	MF UNITS	TOTAL UNITS	ZONING	PRODUCT
R-4b (a)		111	111	RM1	CORTA BELLA (4 PAK)
R-4b (b)		275	275	RM2	ITEAC
R-6b		34	34	RM1	TERRAZA (34' x 80' Alley Product)
R-6		126	126	RM1	6 PAK
R-5a	48		48	SP4	SANTA RITA (50' x 85')
R-5b		28	28	RM1	CORTA BELLA (4 PAK)
R-5c	51	0	51	SP4	SANTA RITA (50' x 85')
R-5b		73	73	RM1	CORTA BELLA (4 PAK)
R-10a		44	44	RM2	62' D 2.6 AC
R-10b		91	91	RM2	62' D 2.6 AC
R-11		208	208	RM2	MF - AVARE (9.8 AC)
R-12a		300	300	RUH-RM2	12.7 AC
R-12b		300	300	RUH-RM2	12.1 AC
R-13		137	137	RM1	CASITA VILLA
R-14		160	160	RM2	AVALON (3-PLEX)
R-15 (b)	27		27	SP4	SANTA RITA (50' x 85')
R-16 (b)		17	17	RM2	60' D 0.7 AC
R-17 B (a)		34	34	RM1	TERRAZA (34' x 80' Alley Product)
R-17 B (b)		80	80	RM2	4.7 AC
R-18A (b)	24		24	SP4	SANTA RITA (50' x 85')
R-18B (b)	5		5	SP3	60' x 100'
R-19 (b)		36	36	RM1	TERRAZA (34' x 80' Alley Product)
R-20	80		80	SP3	55' x 85'
R-21 (b)	53		53	SP3	60' x 100'/105'
R-23	93		93	SP4	SANTA RITA (50' x 85')
R-24		59	59	RM2	62' D 2.3 AC
R-25A		330	330	RM2	14.1 AC
R-27		175	175	RM2	8.7 AC
R-31		25	25	RM2	1.1 AC
MU-1		38	38	MU	1.8 AC
MU-2		50	50	MU	2.4 AC
MU-3		90	90	MU	4.3 AC
C-1		239	239		14.3 AC*
S-1				School	10.3 AC
S-2				School	9.3 AC
P-1				Park	1.4 AC
P-2				Park	7.1 AC
P-3				Park	7.9 AC
P-4				Park	40.4 AC
P-4 (SD Wetlands)				Park	1.4 AC
P-4 (SD Easm)				Park	2.9 AC
P-5				Park	5.1 AC
P-6				Park	2.9 AC
IND 1b				Industrial	33.7 AC
IND 2				Industrial	9.5 AC
IND 3				Industrial	24.9 AC
B&S TOTAL	381	3,094	3,475		

*EXCLUDES CS LOT WITHIN RM1 RUN LIMITS
* PREVIOUSLY EXCLUDED SP4 ACREAGE, NOW INCLUDES THAT 1.5 AC INTO 'C-1' TOTAL

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SOURCE: HUNSAKER & ASSOCIATE0S, INC. 2013

FIGURE 4-8
Village Two Waterline Relocation

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4.5 DISCRETIONARY ACTIONS/APPROVALS

A discretionary action is an action taken by an agency that calls for the exercise of judgment in deciding whether to approve or how to carry out a project. The following discretionary actions are associated with the proposed project and would be considered by the Chula Vista Planning Commission and City Council:

- Certification of a Final EIR and adoption of a Mitigation Monitoring and Reporting Program pursuant to the CEQA
- Approval of the Chula Vista General Plan Amendments
- Approval of the Otay Ranch General Development Plan Amendments
- Approval of SPA Plan Amendments for Villages 2, 3 and a Portion of 4
- Approval of the Otay Ranch CMPP Amendments
- Approval of Tentative Maps for Village Two
- Approval to relocate the City of San Diego waterline through Village Two from existing alignment into future alignment of La Media Road and Olympic Parkway.

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CHAPTER 5
ENVIRONMENTAL IMPACT ANALYSIS

5.1 LAND USE, PLANNING, AND ZONING

This section tiers from the 2006 Environmental Impact Report (EIR) (City of Chula Vista 2006). The 2006 EIR addressed the Village Two, Three, and portion of Four development's potential environmental effects. The analysis and discussion of land use, planning, and zoning issues contained in the 2006 EIR is incorporated by reference and available for public inspection upon request to the City.

Land use effects fall into two main categories: (1) conformance to, or conflict with, adopted plans, policies, and regulations; and (2) effects on established communities. This section of the EIR addresses potential impacts to land use resulting from the proposed project. Other environmental issues associated with land use decisions include aesthetics, noise, and resource conservation. These issues are addressed in their respective sections of this EIR.

5.1.1 Existing Conditions

5.1.1.1 Regulatory Framework

Regional Level

Regional Comprehensive Plan

The San Diego Association of Governments (SANDAG) is a council of governments that provides a forum and decision-making body for regional planning issues including population growth, transportation, and land use in San Diego County. SANDAG's Regional Comprehensive Plan (RCP) serves as a framework for decision-making with respect to anticipated regional growth, and its effect on housing, economics, transportation, environmental planning, and overall quality of life needs. The goals of the RCP are to establish a planning framework and implementation actions that increase the region's sustainability and encourage "smart growth" while preserving natural resources and limiting urban sprawl (SANDAG 2004).

In an effort to facilitate smart growth planning, SANDAG created a Smart Growth Concept Map that identifies areas of the region that are existing, planning, or potential smart growth areas. Within the project area, a portion of Village Two is identified as a planned Community Center (SANDAG 2012). Basic smart growth principles from the RCP that are applicable to the proposed project to strengthen land use and transportation integration are summarized as follows:

- **Land Use and Urban Design.** Reduce land consumption by focusing future growth in the cities and in the appropriate unincorporated suburban communities and village centers through new development, redevelopment, and infill, emphasizing pedestrian-friendly design and mixed-use development.
- **Travel Choices.** Provide people with additional travel choices (walking, biking, rail, bus, and automobile).

- **Jobs/Housing Mix.** Locate housing near or within major employment areas and provide employment opportunities near major housing areas.
- **Housing Choices.** Provide, in each community, a variety of housing types for residents of all incomes.
- **Infrastructure, Capacity, and Location.** Provide adequate infrastructure in designated smart growth opportunity areas.
- **Environment.** Protect open space and habitat areas. When constructing residential, commercial, or industrial areas, or building transportation systems, provide environmentally sensitive development that conserves water and energy, protects water quality, promotes the use of alternative energy sources, protects sensitive plants and habitats, and restores natural open spaces through the use of native plants.

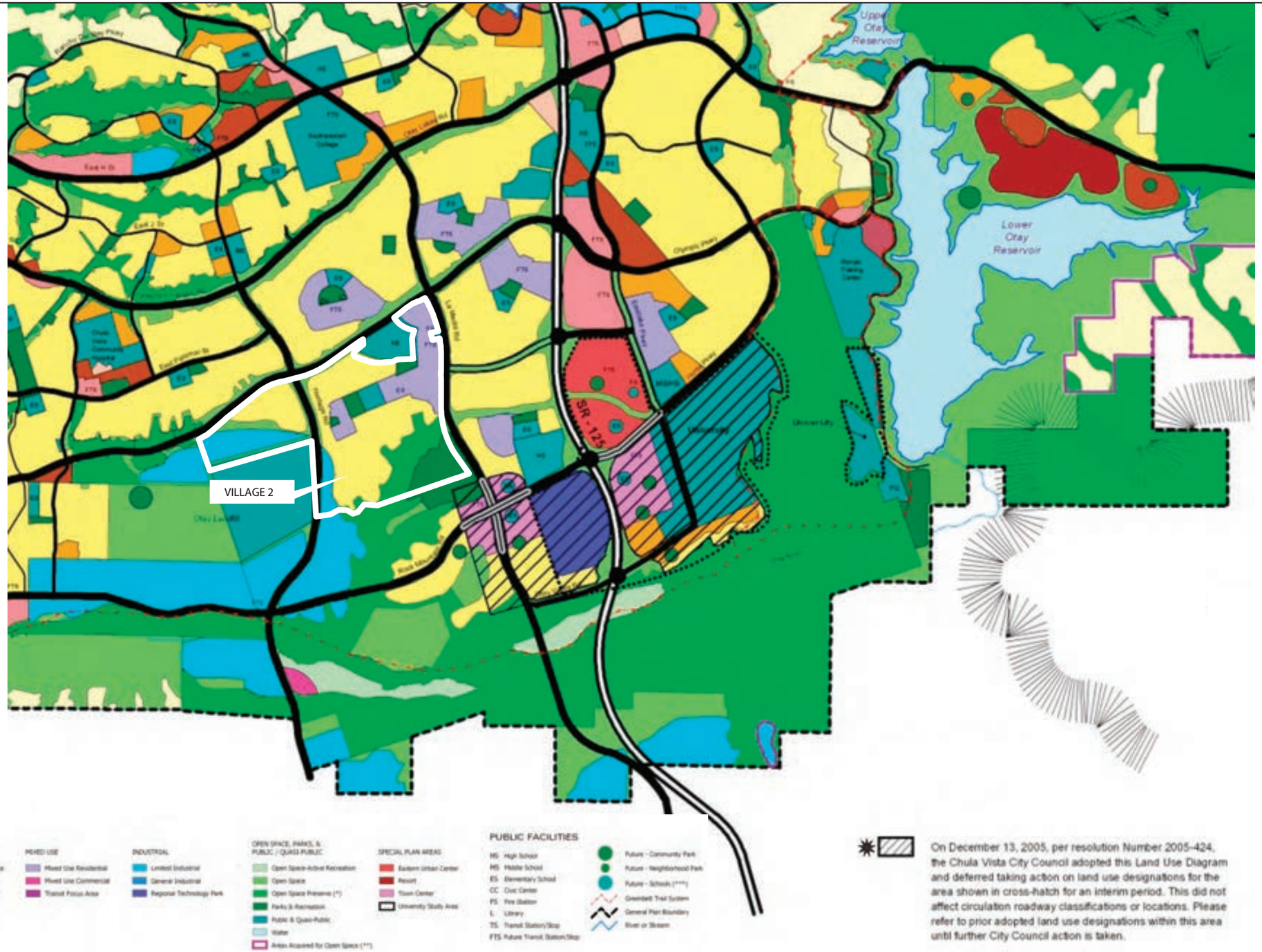
2050 Regional Transportation Plan/Sustainable Communities Strategy

SANDAG adopted the 2050 Regional Transportation Plan (RTP) in October 2011. The 2050 RTP provides a vision of the San Diego region's transportation system over the next 40 years. The document contains a robust transportation network, with a diversity of projects that will provide residents and visitors with a variety of travel choices (SANDAG 2011). Along with the 2050 RTP, SANDAG adopted the Sustainable Communities Strategy (SCS), which details how the region will reduce greenhouse gas (GHG) emissions to state-mandated levels as required by Senate Bill 375. The goal of the SCS is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. The GHG reduction targets to be achieved through the adoption of SANDAG's SCS are a 7% reduction in emissions per capita by 2020 and a 13% reduction by 2035. Both the 2050 RTP and its SCS seek to guide the San Diego region toward a more sustainable future by integrating land use, housing, and transportation planning to create communities that are more sustainable, walkable, transit-oriented, and compact (SANDAG 2011).

Local Level

City of Chula Vista General Plan

The City of Chula Vista General Plan was updated by the City on December 13, 2005, and most recently amended in 2013. The General Plan provides a long-term strategy to address planning issues for the growth and development of the city and is composed of the following six elements: land use and transportation, economic development, public facilities and services, growth management, environmental, and housing. The existing General Plan Land Use Plan is shown on Figure 5.1-1.



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SOURCE: CITY OF CHULA VISTA

FIGURE 5.1-1

General Plan Land Use Plan

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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The proposed project is located in the Otay Ranch subarea of the General Plan. Otay Ranch is identified as a master planned community in the Chula Vista General Plan.

Village Two

The General Plan designated Village Two as Residential Low-Medium, Mixed Use Residential, Limited Industrial, Open Space Preserve, Parks & Recreation, and Public & Quasi-Public in the Chula Vista General Plan Land Use Diagram.

Land Use and Transportation Element

The Land Use and Transportation Element establishes the land use categories, roadway classifications, and generalized land use patterns for city development, while focusing on themes that (1) support strong community character and image, (2) support strong and safe neighborhoods, and (3) improve mobility. This element establishes plans and policies to identify the general distribution of housing, businesses, industry, open space (including parks), education facilities, and public buildings. Standards for population density and building intensity in each land use classification are also provided.

Economic Development Element

The Economic Development Element establishes policies to ensure the long-term vitality of the local economy and to help develop, guide, and encourage appropriate employment and business ownership in Chula Vista. It promotes a sustainable local economy to benefit present and future generations without detrimentally affecting resources. Employment land, or land designated for commercial, industrial and other non-residential, or open space use, is concentrated in three principal areas: the tideland area, the Montgomery area, and the Otay Ranch area.

Public Facilities and Services Element

The Public Facilities and Services Element establishes the plan to provide and maintain infrastructure and public services for future growth, without diminishing services to existing development within the city. The overall goal of this element is to provide and maintain public facilities and services within Chula Vista through abundant public infrastructure and community services that support and enhance the well-being of the City and its residents.

Growth Management Element

The purpose of the Growth Management Element is to guide future development in the City based on the principles that (1) rapid population growth and development have the potential to cause a variety of problems and impact the well-being of a city and its residents, and (2) impacts can be mitigated by balancing competing demands for growth and development through the adoption of comprehensive objectives and policies. This element serves as the assurance that the vision

described within the General Plan is achieved without sacrificing the quality of life enjoyed in the community, and establishes a framework for directing new development, redevelopment, and community enhancement, and provides the guidance to realize the vision for the City.

Environmental Element

The Environmental Element establishes the policy framework for improving sustainability through the stewardship of the City's natural and cultural resources, promotion of environmental health, and protection of persons and property from environmental hazards and noise. Sustainable development is identified as a means of balancing current growth and economic progress with protection of future resources.

Housing Element

The Housing Element details a 5-year strategy for enhancement and preservation of the city character, identifies strategies for expanding housing opportunities for the various economic segments of the city, and provides policy guidance for local decision-making related to housing. The focus of this element is to (1) maintain and enhance the quality of housing and residential neighborhoods in the city, (2) support housing opportunities to meet the City's diverse needs, and (3) fund and implement services that provide vital community resources for lower-income residents. Inclusionary policies of this element require 10% affordable ("inclusionary") housing, including 5% low-income and 5% moderate-income units, for projects consisting of 50 or more dwelling units.

City of Chula Vista Multiple Species Conservation Program Subarea Plan

The Multiple Species Conservation Program (MSCP) is a subregional plan under the California Natural Community Conservation Planning Act of 1991 covering an area encompassing 12 jurisdictions and 582,243 acres. The MSCP addresses the potential impacts of urban growth, loss of natural habitat, and species endangerment, and creates a plan to mitigate for the potential loss of covered species and their habitat due to the direct, indirect, and cumulative impacts of future development of both public and private lands within the MSCP area. The MSCP Subregional Plan is a comprehensive, long-term habitat conservation plan that addresses the needs of multiple sensitive plant and animal species and the preservation of natural vegetation communities in southern San Diego County. The MSCP addresses the potential impacts of urban growth, loss of natural habitat, and species endangerment, and creates a plan to mitigate for the potential loss of covered species and their habitat due to the direct impacts of future development of both public and private lands within the MSCP area. The MSCP Subregional Plan is implemented through local subarea plans prepared by participating jurisdictions. The City of Chula Vista MSCP Subarea Plan was approved in February 2003 and provides for conservation of upland habitats and species through preserve design, regulation of impacts and uses, and management of the Preserve.

For development projects located within Otay Ranch, the City's MSCP Subarea Plan relies on the Preserve design and policies contained in the Otay Ranch Resource Management Plan (RMP) as the framework for conservation and management of biological resources within the Otay Ranch Preserve (City of Chula Vista 2003a; City of Chula Vista and County of San Diego 1993, 1996). Otay Ranch, including the proposed project, is considered a covered project under the MSCP Subarea Plan. This means that the areas proposed to be preserved (100% conservation areas) either are already in public ownership or will be dedicated to the Preserve as part of the development approval process for covered projects. As it pertains to development in Otay Ranch, lands will be conveyed to the Otay Ranch Preserve in accordance with the RMP.

In addition, the City's MSCP Subarea Plan allows for infrastructure within the Preserve to support planned development, subject to specific conditions. The conditions affecting the proposed project include facility siting criteria for the proposed storm drain and sewer facilities to be located in the Preserve.

Otay Ranch General Development Plan

The Otay Ranch General Development Plan (GDP) was approved jointly by the City of Chula Vista and County of San Diego in 1993 for the future development of Otay Ranch. The Otay Ranch GDP was amended in December 2005 as part of the City's General Plan Update and most recently was amended in February 2013. The GDP establishes land use plans, design guidelines, objectives, policies, and implementation measures that apply to all portions of Otay Ranch while supporting a balance of housing, shops, workplaces, schools, parks, civic facilities, and open spaces. The majority of development is intended to be clustered in villages, with conveniently located "core" features and well-defined edges such as the Chula Vista greenbelt, open spaces, and wildlife corridors. The goals of the Otay Ranch GDP are to (1) create a well-integrated, balanced land use; (2) reduce reliance on the automobile and promotion of alternative modes of transportation; and (3) diversify the economic base within Otay Ranch.

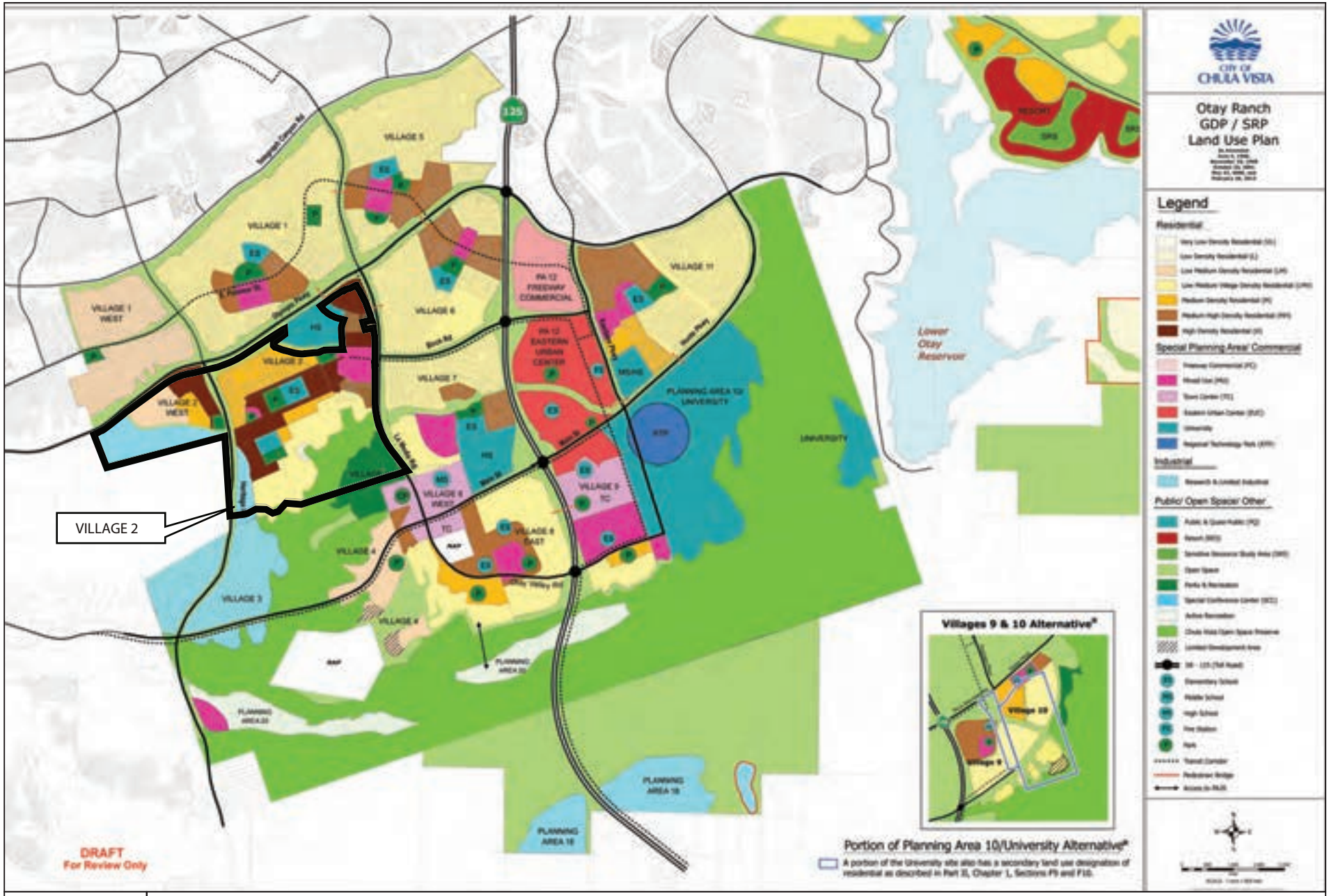
The Otay Ranch RMP was adopted in 1993 with the approval of the Otay Ranch GDP to establish a permanent preserve within Otay Ranch. The RMP is composed of two separate documents, the Phase 1 RMP and Phase 2 RMP (adopted in 1996 and revised in 2002). The Phase 1 RMP identifies Preserve areas within Otay Ranch, and contains policies regarding species and habitat conservation and long-term management of the Preserve. The Phase 2 RMP includes Ranch-wide studies that were conducted pursuant to the Phase 1 RMP and provides additional detail on conveyance, management, and funding (City of Chula Vista and County of San Diego 1993 and 2002). The purpose of the Otay Ranch Preserve is to protect and enhance biological, paleontological, cultural, and scenic resources. Plan objectives include biological diversity and promotion of the survival and recovery of native species and habitats. The RMP identifies an open space system of 11,375 acres to be dedicated within the Otay Ranch, targeting

lands that include important resources such as vernal pools, coastal sage scrub habitat, coastal California gnatcatcher (*Polioptila californica californica*) populations, and potential wetlands restoration areas. The Otay Ranch Preserve would also connect large areas of open space through a series of wildlife corridors and cover portions of Salt Creek Canyon to Otay Valley. The preserve boundaries from the RMP have been incorporated into the adopted Otay Ranch GDP. The preserve/development boundary of the GDP is consistent with the objectives, policies, and criteria established in the RMP (City of Chula Vista and County of San Diego 1993 and 2002).

The Phase 2 RMP adopted in 1996 and revised in 2002, identified implementation measures that included procedures for dedicating parcels of land to the resource preserve and for determining the proportionate share for each village.

Land identified by the RMP as part of the 11,375-acre Otay Ranch Preserve is required to be conveyed to the Preserve prior to the approval of final maps. The conveyance ratio (ratio of land to be dedicated per acre of development) is 1.188 acres dedicated for each developable acre that is final mapped. This ratio was established by the Phase 2 RMP. The Phase 2 RMP identified 9,574 developable acres in Otay Ranch, which are defined as the total amount of developable acreage minus common uses (local parks, schools, arterials, SR-125, and lands designated as public use areas) and limited development areas. In order for the conveyance of the entire 11,375-acre Otay Ranch Preserve, the Phase 2 RMP calculated that 1.188 acres of preserve land must be dedicated for each developable acre (11,375 acres of preserve divided by 9,574 developable acres). The conveyance obligation is required to be met on a village-by-village basis.

The Otay Ranch GDP designates Village Two as Residential Low-Medium, Mixed Use Residential, Limited Industrial, Open Space Preserve, Parks & Recreation, and Public & Quasi-Public. The Otay Ranch GDP Land Use Plan is shown on Figure 5.1-2.



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SOURCE: CITY OF CHULA VISTA

FIGURE 5.1-2

Otay Ranch GDP Land Use Plan

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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City of Chula Vista Municipal Code

Zoning Ordinance

Title 19 of the City of Chula Vista Municipal Code (CVMC) is the City's zoning code, which is intended to implement the City of Chula Vista General Plan. The Eastern Planning Area, which includes most of the project area, is zoned Planned Community (P-C), as defined in Chapter 19.48 of the CVMC. The purposes of the P-C zone are as follows:

- Provide for the orderly preplanning and long-term development of large tracts of land. These tracts may contain a variety of land uses, but are under unified ownership or development control, so that the entire tract will provide an environment of stable and desirable character;
- Give the developer reasonable assurance that sectional development plans in accordance with the approved general development plan will be acceptable to the City. Sectional development plans may include subdivision plans and/or planned unit development plans as provided in this title; and
- Enable the City to adopt measures for the development of the surrounding area compatible with the planned community zone (City of Chula Vista 2013).

According to Section 19.48.020 of the zoning code, P-C zoning may be established on lands that are suitable and of sufficient size for planning and development in a manner consistent with the purpose of the zone. P-C zoning does not include any area of less than 50 acres of contiguous land (City of Chula Vista 2013). Section 19.48.025 establishes a requirement for Community Purpose Facility (CPF) sites to be provided within the P-C zone at the rate of 1.39 acres per 1,000 persons (City of Chula Vista 2013).

Growth Management Ordinance

The purpose and intent of the City of Chula Vista Growth Management Ordinance (GMO) (CVMC Sec. 19.09) is to provide quality housing opportunities for all economic sections of the community; to balance the community with adequate commercial, industrial, recreational, and open space areas to support the residential areas of the City; to provide that public facilities, services, and improvements meeting City standards exist or become available concurrent with the need created by new development; to control the timing and location of development by tying the pace of development to the provision of public facilities and improvements to conform to the City's Threshold Standards; and to meet the goals and objectives of the Growth Management Program and other programs associated with quality of life. The GMO prohibits new development unless adequate public facilities are provided in advance of or concurrently with the demands created by new development.

The GMO created the Growth Management Oversight Commission (GMOC) and established "quality of life" threshold standards. These include police, fire, and emergency response times; anticipated demand for schools and evaluation of school funding; establishment of a library service ratio; a service ratio for neighborhood and community parkland; water service availability; compliance with City engineering sewage flow and related standards (subdivision manual); compliance with City engineering stormwater drainage standards (subdivision manual); maintenance of acceptable City-wide traffic flows; and air quality and pollution overview and evaluation to foster air quality improvement pursuant to relevant regional and local air quality improvement strategies. The GMO also requires public facilities finance plans (PFFPs), air quality improvement plans, and water conservation plans for every SPA plan, or, if a SPA plan is not required, for every tentative map (TM) application. The PFFP provides a complete description of all public facilities included within the boundaries of the plan as defined by the development services director, including phasing and financing of infrastructure. The plan must contain an analysis of the individual and cumulative impacts of the proposed development on the community as it relates to the Growth Management Program, the specific facility master plans, and the threshold standards. Proposed development must also prepare a fiscal impact report and provide funding for periods when City expenditures for the development would exceed projected revenues.

Parkland Dedication Ordinance

Chapter 17.10 of the CVMC establishes requirements for parklands and public facilities, including regulations for the dedication of land and development of improvements for park and recreational purposes (Section 17.10.010); determination of park and recreational requirements (Section 17.10.020); calculation of area to be dedicated (Section 17.10.040); specifications for park improvements (Section 17.10.050); criteria for area to be dedicated (Section 17.10.060); procedures for in-lieu fees for land dedication and/or park development improvements (Section 17.10.070); and other regulations regarding park development and collection and distribution of fees (City of Chula Vista 2013).

Tentative Map

Title 18 of the CVMC requires the adoption of a TM for division and development of land into five or more parcels. A TM is made for the purpose of showing the design of a project, including the locations and layouts of streets and parcels. Under CVMC Section 18.04.050, provisions shall be made in a TM to assure adequate access, light, air, and privacy on all parcels of property, regardless of the land use. CVMC Section 18.05.060 provides for necessary land for community facilities, including schools, parks, open space, playgrounds, and other required public facilities. The TM must be reviewed by the director of public works to ensure compliance with regulations applicable to public and private utilities, streets, and respective rights-of-way and easements. The TM also must be reviewed by the development services director to ensure compliance with

regard to the number, size, and configuration of lots to be created and the alignment and width of streets and easements. TMs may be adopted at the time of project approval and shall expire in 36 months in accordance with the Subdivision Map Act, although extensions may be requested.

Parks and Recreation Master Plan

The City of Chula Vista Parks and Recreation Master Plan (PRMP) was adopted in 2002 and a Draft Update was completed in 2010. The PRMP is the blueprint for the City's park system through the year 2030. The PRMP identifies existing park and recreation facilities and provides guidance for future park sites, including locations for specific types of additional recreational facilities. The PRMP envisions a comprehensive and interrelated package of community and neighborhood parks and presents each park within the context of the whole park system to ensure that it provides a balance of recreational opportunities. The PRMP states that the year 2030 citywide park system will contain community, neighborhood, mini, urban, and special-purpose parks and recreation facility and community center sites (City of Chula Vista 2010). The PRMP requires a total of 70 acres of community parks to be developed in Otay Ranch, but does not specify precise locations.

The PRMP includes a set of goals and policies for the City's parks and recreation aspirations. Each goal is accompanied by a set of specific policies, rationales, and action plans, as appropriate. The goals are as follows:

- Create a comprehensive parks and recreation system that meets the needs of the general public of Chula Vista by effectively distributing park types and their associated recreation facilities and programs.
- Establish allocation of existing and future public parkland resources that balance public priorities and needs with quality of parks and facilities.
- Provide a program for implementation.

Greenbelt Master Plan

The City of Chula Vista Greenbelt Master Plan provides guidance and continuity for the planning of open space and construction and maintenance of Greenbelt Trails (City of Chula Vista 2003b). There are two general types of trails: multi-use and rural. Multi-use trails are designed for a variety of users, such as bicyclists, equestrians, pedestrians, joggers, and other non-motorized activities. According to the Greenbelt Master Plan, even a single-track pedestrian-only trail would be considered multi-use since it could accommodate hikers, backpackers, runners, bird-watchers, and others. Minimum standards for trails are set forth in the City Landscape Manual and the Greenbelt Master Plan (City of Chula Vista 1994). A multi-use trail may also be improved with a variety of trail surfaces, with concrete and asphalt surfacing to

accommodate the broadest range of users in an urban setting. A paved multi-use trail would be 10 feet wide with 2-foot natural shoulders. However, variation in the minimum standards may be allowed, based on consideration of the number and types of trail users and environmental constraints. Other minimum standards include Greenbelt Trail signs. Standards including fencing and signage shall be determined based upon environmental and other constraints and are subject to review and approval of the development services director. The proposed project would include connections to a regional trail system which would ultimately connect into the Greenbelt Trail, as described in the 2006 EIR.

Airport Land Use Compatibility Plan–Brown Field

The San Diego County Regional Airport Authority, designated as the Airport Land Use Commission for all public airports in the County of San Diego, adopted the Brown Field Airport Land Use Compatibility Plan (ALUCP) in September 1981 and it was last updated in December 2010. The ALUCP assists in achieving compatible land use development in the area surrounding Brown Field airport located in Otay Mesa on Heritage Road, east of I-805. The airport is a general aviation airport accommodating both propeller- and jet-powered aircraft and serves as a port of entry for private aircraft coming into the United States from Mexico. Brown Field is also heavily used by military and law enforcement agencies and is classified as a "reliever airport" by the Federal Aviation Administration (SDCRAA 2010). The ALUCP designates the airport influence area and contains projected noise contours, flight activity zones, a land use compatibility matrix, and plan recommendations for areas surrounding Brown Field. The airport influence area is delineated by using the projected 60-decibel (dB) community noise equivalency level (CNEL) contour and is generally the area in which current and future airport-related noise, overflight, safety, and/or airspace protection factors may affect land uses or necessitate restrictions on uses as shown on Figure 5.1-3. The airport influence area is divided into Review Area 1 and Review Area 2. The composition of each area is determined as follows:

- Review Area 1 consists of locations where noise or safety concerns may necessitate limitations on the types of land use actions. Specifically, Review Area 1 encompasses locations exposed to aircraft noise levels of 60 dB CNEL or greater together with all of the safety zones identified in the ALUCP.
- Review Area 2 consists of locations beyond Review Area 1 but within the airspace protection and/or overflight notification areas. Limits on the heights of structures, particularly in areas of high terrain, are the only restrictions on land uses within Review Area 2.

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SOURCE: Aerial-Bing Maps

FIGURE 5.1-3

Brown Field Airport Influence Area

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

Document Path: Z:\Projects\j678201\MAPDOC\MAPS\Supp EIR Figs\Section 5\Section 5.1 Land Use\Figure 5-1-3_Brown Airport Influence.mxd

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As discussed in Section 5.4, Noise, the 2010 ALUCP indicates that the project site (i.e., Village Two) is north and outside of the 60 and 65 dB CNEL noise contours for Brown Field. According to existing data for Brown Field, the project site would not be exposed to noise levels from aircraft operations that exceed 60–65 dB CNEL, or within the airport's area of influence.

Otay Valley Regional Park Concept Plan

The Otay Valley Regional Park (OVRP) Concept Plan was adopted in July 1997 as the result of a multi-jurisdictional planning effort including the Cities of San Diego and Chula Vista and the County of San Diego (County of San Diego et al. 1997). The OVRP planning area is located in the southern portion of the County of San Diego, 4 miles north of the United States/Mexico International Border. The planning area spans approximately 11 miles from the southeastern edge of the salt ponds in the Otay River Valley to the land surrounding the Lower and Upper Otay Lakes. A majority of the land within the OVRP is privately owned. The OVRP Concept Plan does not change existing zoning, land use plans or add new development regulations, nor does it preclude private development. Rather, the Concept Plan provides the multiple jurisdictions with policies and direction regarding land acquisition and development of the OVRP. The intent of the Concept Plan is to continue to provide south bay residents and visitors with a variety of active and passive recreation opportunities, protect environmentally sensitive areas, protect cultural and scenic resources and encourage compatible agricultural uses in the park. Chula Vista has designated a number of areas along the northern edge of the river as redevelopment areas. The project area is located within the Heritage Road (Paseo Ranchero) to Otay Lakes Vicinity Segment, and borders areas identified as Recreation and OS/P, consistent with the MSCP and RMP described above.

5.1.1.2 On-Site Conditions

The approximately 267-acre project area is located within the Otay Valley Parcel of Otay Ranch. As described above, the proposed project is a component of the Otay Ranch GDP, which organizes the Otay Ranch into 20 villages or planning areas. The proposed project is comprised of the portions of Village Two under the ownership of Baldwin & Sons.

Historically, the Otay Valley Parcel, including the project area, has been used for ranching, grazing, dry farming, and truck farming activities. Within Village Two, grading has generally begun on residential neighborhoods surrounding CPF-1 and construction has begun on sites that are not proposed to change under the project. In addition, several residential neighborhoods have been completed with residents currently inhabiting select homes. These neighborhoods of initial development include R-5a, R-5b, R-6, R-7A, R-8a, R-8b, R-9a, R-9b, R-10a, R-13, R-14, R-15b, R-30, and CPF-1 Primary internal roadways have been partially constructed and paved. These roadways include State Street, Santa Diana Road, and Santa Victoria Road. The remainder of the

project area is currently vacant and is generally comprised of gently sloping terrain covered with primarily non-native grasslands crossed by dirt roads and old cattle trails.

Village Two is bounded by Olympic Parkway to the north, La Media Road to the east, Village Three and Four to the south, and the Otay Landfill to the west.

5.1.1.3 Surrounding Land Uses

Surrounding land uses are more fully described in Chapter 3, Environmental Setting. The project area is surrounded by other Otay Ranch villages and a variety of land uses and natural features. Surrounding uses include Otay Ranch Villages One and Five and the Otay Ranch High School to the north, Otay Ranch Village Six to the east, Otay Ranch Village Seven to the east and southeast which is currently being developed, Otay Ranch Villages Three and Four and the Hanson aggregates mining operations to the south, and the Otay Landfill to the west.

5.1.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), will determine the significance of land use impacts. Impacts to land use would be significant if the proposed project would:

A. Physically divide an established community or be incompatible with adjacent and surrounding uses.

B. Conflict with any 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 habitat conservation plan.

5.1.3 Impacts

5.1.3.1 2006 EIR Impacts Conclusions

The following conclusions related to land use as described in the 2006 EIR are applicable to the proposed project, specifically Village Two:

The SPA Plan area is planned for development in the City's General Plan and the Otay Ranch GDP. The proposed design and layout of land uses for Village Two would be compatible with surrounding communities. The area surrounding the Village Two area consists of recently developed or planned development, and therefore, development of the proposed SPA Plan and

Village Two would not physically divide an established community. However development of Village Two would result in a significant change in the character of the site from undeveloped to developed urban use. This impact would remain a significant unavoidable impact.

With adoption of the proposed General Plan and Otay Ranch GDP amendments, implementation of the SPA Plan would not conflict with an adopted plan, policy, or regulation established to avoid environmental effects. The proposed RMP amendments would not adversely affect the ability to meet all of the objectives, polices, standards and guidelines related to conservation of biological resources and design and configuration of the Otay Ranch Preserve. The modified preserve design provides for better contiguity of habitat and includes areas that are already being managed for recovery (maritime succulent scrub revegetation area), that were not included in the original Preserve design. As a result, the proposed Boundary Adjustment provides for higher biological value of the Preserve, and, therefore, no significant impacts would result.

5.1.3.2 Proposed Project Impact Analysis

As described in Chapter 4, Project Description, Baldwin & Sons and related entities currently control 1,873 dwelling units on 240 acres (63% of the total dwelling units allocated) within Village Two. Additionally, Baldwin & Sons controls approximately 8.5 acres of mixed use commercial, 12.5 acres of dedicated commercial, 60.7 acres of industrial uses, as well as various park and community purpose facilities (CPF) acreage within Village Two. An additional 1,110 dwelling units under different ownership have been approved on the remaining 104 acres in Village Two. The analysis below considers the area controlled under Baldwin & Sons only.

A. Physically divide an established community or be incompatible with adjacent and surrounding uses.

Compatibility of Proposed Land Uses with Surrounding Uses

As previously analyzed in the 2006 EIR, Village Two was deemed as compatible with surrounding uses and would not divide established communities. The peripheral land uses of Village Two have not changed as part of the proposed project, therefore the proposed project remains compatible with adjacent and surrounding uses.

Compatibility with Proposed Land Uses Internal to the Project

The proposed project site is currently partially developed, but is planned for additional development in the City's General Plan and the Otay Ranch GDP. The proposed project would establish 1,562 additional units across residential, commercial, and mixed use zones. The additions would establish more dense land use designations in comparison to the previously approved zones. In addition, up to 130,000 square feet of commercial and mixed-use commercial

would be located on MU-2, MU-3, and C-1 combined. To account for the increase in residential units, the proposed project would also include an additional 9.5 acre elementary school, 10.8 acres of parkland, and 7.8 acres of CPF.

The Otay Landfill could occasionally produce odors that can be detected outside of the landfill boundary. The Otay Landfill uses a flare to destroy excess landfill gas. In addition, odor control practices are in place at all landfills, and odor control is under the purview of the SDAPCD. Landfill odor control practices include application of odor absorbing materials or collecting and treating gases from the landfill before they are released into the surrounding community. It is possible that odors from the Otay Landfill may be detected occasionally (depending on wind direction or other meteorological factors) by the proposed residents of Village Two. The proposed project would place residences outside the landfill buffer zone.

The proposed second school site, S-2, would be placed adjacent to residential and parkland uses. It would not be placed adjacent to incompatible land uses such as industrial or within the landfill buffer zone.

On the eastern portion of the village, single- and multi-family homes are proposed adjacent to OS/2. These land uses will be compatible through the implementation of the Preserve Edge Plan, MSCP Preserve Edge requirements, 100-foot fuel modification zone buffer, Fire Protection Plan, P-C District Regulations, and Village Design Plan, all of which will control the design and orientation of development adjacent to the Preserve. Buildings will be setback from the Preserve and fenced where appropriate to prevent intrusion. No private development lots or buildings are permitted within the 100-foot Preserve buffer and fuel modification zone to further limit potential impacts to the existing wildlife and to prevent possible fire hazards being located adjacent to open space. Ring of open space will extend along portions of the northern, western, southern, and eastern borders of Village Two, serving as a buffer between the proposed residential uses and OS/2.

A water transmission line traverses the project site that is owned, operated, and maintained by the City of San Diego (refer to Figure 4-8). The pipeline would not provide water to the project, but the proposed project would construct development above ground where this pipeline is currently located. Construction of the proposed development would impede the availability of access to the pipeline easements (affected neighborhoods include R-8C, R-9B, R-5B, R-10B, R-11, R-15(b), CPF-3, and P-4). The project proposes to relocate the pipeline into the public rights of way within La Media Road and Olympic Parkway prior to grading of the affected neighborhoods. The majority of the pipeline would be constructed via trenching with depths less than 15 feet deep. However, a portion along La Media Road, adjacent to Village Two, would require construction via an alternative method such as microtunneling, due to the required depth of approximately 39 feet. Relocation of the City of San Diego waterline, which is a condition of

approval for the proposed project, would ensure land use compatibility within the project. Therefore, the proposed project would not divide an established community or result in incompatible land uses. Impacts would be less than significant.

B. Conflict with any 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.

Table 5.1-1 below outlines the differences in zoning designations between the existing land uses (per the 2006 EIR) and the proposed land uses of the project per neighborhood.

Table 5.1-1
Neighborhood Land Uses - Existing vs Proposed

Neighborhood	Existing Zoning	Existing Units (du)	Proposed Zoning	Proposed Units (du)	Change in units (du)
R-4b	SF2	68	--	--	(68)
R-4b (a)	--	--	RM1	111	111
R-4b (b)	--	--	RM2	275	275
R-5b	RM1	35	RM1	38	3
R-6	RM1	126	RM1	126	0
R-8a	SF4	48	SF4	48	0
R-8b	RM1	29	RM1	29	0
R-8c	--	--	SF4	51	51
R-9b	RM1	68	RM1	75	7
R-10a	RM2	34	RM2	44	10
R-10b	RM2	51	RM2	61	10
R-11	RM1	146	RM2	206	60
R-12	RM1/2	325	RM2	600	275
R-13	RM1	137	RM1	137	0
R-14	RM2	165	RM2	165	0
R-15(b)	SF4	21	SF4	27	6
R-16(b)	RM2	35	RM2	17	(18)
R-17B (a)	RM1	75	RM1	34	(41)
R-17B (b)	--	--	RM2	95	95
R-18A (b)	SF4	27	SF4	24	(3)
R-18B (b)	SF3	5	SF3	5	0
R-19 (b)	SF4	33	RM1	39	6
R-20	SF3	75	SF3	80	5
R-21(b)	SF2	50	SF3	53	3
R-23	SF3	48	SF4	93	45
R-24	SF3	28	RM2	59	31
R-25A	SF4	24	RM2	330	306
R-25B	SF4	24	--	--	(24)

Table 5.1-1
Neighborhood Land Uses - Existing vs Proposed

Neighborhood	Existing Zoning	Existing Units (du)	Proposed Zoning	Proposed Units (du)	Change in units (du)
R-26	RM1	75	--	--	(75)
R-27	RM1	61	RM2	175	114
R-31	--	--	RM2	25	25
MU-1	MU	10	MU	38	28
MU-2	MU	12	MU	50	38
MU-3	MU	38	MU	90	52
C-1	C	--	MU	235	235
Subtotal					
Detached	--	920	--	894	(26)
Attached	--	953	--	2,541	1,588
Total	**--**	**1,873**	**--**	**3,435**	**1,562**

Note: du = dwelling units; Source: Baldwin & Sons, 2013

City of Chula Vista General Plan

The Land Use and Transportation Element establishes the land use categories, roadway classifications, and generalized land use patterns for city development, while focusing on themes that (1) support strong community character and image, (2) support strong and safe neighborhoods, and (3) improve mobility. This element establishes plans and policies to identify the general distribution of housing, businesses, industry, open space (including parks), education facilities, and public buildings. Standards for population density and building intensity in each land use classification are also provided. Land use objectives outlined in the City of Chula Vista General Plan include, but are not limited to, the following:

- **Objective LUT 1:** Provide a balance of residential and non-residential development throughout the City that achieves a vibrant development pattern, enhances the character of the City, and meets the present and future needs of all residents and businesses.
- **Objective LUT 2:** Limit locations for the highest development intensities and densities, and the tallest building forms, to key urban activity centers that are also well-served by transit.
- **Objective LUT 3:** Direct the urban design and form of new development and redevelopment in a manner that blends with and enhances Chula Vista's character and qualities, both physical and social.
- **Objective LUT 4:** Establish policies, standards, and procedures to minimize blighting influences and maintain the integrity of stable residential neighborhoods.
- **Objective LUT 5:** Designate opportunities for mixed use areas with higher density housing that is near shopping, jobs, and transit in appropriate locations throughout the city.

- **Objective LUT 6:** Ensure adjacent land uses are compatible with one another.
- **Objective LUT 7:** Appropriate transitions should be provided between land uses.
- **Objective LUT 13:** Preserve scenic resources in Chula Vista, maintain the City's open space network, and promote beautification of the City.
- **Objective LUT 77:** Develop a pedestrian-oriented transit village within Village Two, providing a range of housing types, community facilities, and open space.
- **Objective LUT 78:** Provide a higher density, mixed use Village Core within the Village Two area to serve Village Two, as well as nearby communities, and a lower density neighborhood -serving mixed use area to serve adjacent village residents.
- **Objective LUT 79:** Establish appropriate land uses adjacent to the Otay Landfill and Wolf Canyon that reflect the unique land use and landform characteristics of these areas.
- **Objective LUT 80:** Protect the natural features of the Otay Ranch Preserve located in Wolf Canyon.

The 2006 EIR provided land use consistency analysis for the SPA Plan, including Village Two. However, since the time of the completion and certification of the 2006 EIR, the Chula Vista General Plan has been comprehensively updated from the previous 1989 version to the current 2005 version, or Chula Vista Vision 2020. The General Plan has since been amended in 2012 along with the adoption of the Housing Element in April 2013. The project proposes an increase in density, and to support that increase, would also include an additional elementary school, parkland, and CPFs. While specific land use patterns would be altered from the currently approved SPA Plan, the change in density would not interfere with the primary policies and goals of Village Two. The proposed project will provide opportunities for increased viability of commercial uses, transit ridership, village 'walkability,' and decreased automobile dependence. Overall, the goals for providing a mixed use, balanced village within Village Two that reflect the objectives of the General Plan would still be fulfilled under the proposed project. Additionally, the concurrently proposed amendments to the General Plan to allow for greater density would ensure no conflict would occur.

Otay Ranch GDP

Table 5.1-2 below outlines the Otay Ranch GDP land use designation differences between existing uses (per 2006 EIR) and proposed uses.

Table 5.1-2
Otay Ranch GDP Land Use Designations - Existing vs Proposed

Otay Ranch GDP Land Use Designation	Existing Units (du)			Proposed Units (du)*			Change in Units (du)*		
	SF	*MF*	*Total*	*SF*	*MF*	*Total*	*SF*	*MF*	*Total*
Low Residential (L)	64	-	64	14	-	14	(50)	-	(50)
Low Medium Residential (LM)	130	-	130	62	-	62	(68)	-	(68)
Low Medium Village (LMV)	480	223	703	451	-	451	((29)	(223)	(252)
Medium Residential (M)	-	473	473	77	711	788	77	238	315
Medium High (MH)	-	1,553	1,553	-	930	930	-	(623)	(623)
High (H)	-	-	-	-	1,887	1,887	-	1,887	1,887
Mixed Use (MU)	-	60	60	-	413	413	-	353	353
Total	**674**	**2,309**	**2,983**	**604**	**3,941**	**4,545**	**(70)**	**1,632**	**1,562**

* A net change of 311 single-family residential units and 1,251 multi-family residential units is analyzed in this EIR, consistent with the project's Traffic Impact Analysis (Chen Ryan 2013). These unit assumptions are considered conservative in terms of vehicle trip generation; therefore, these numbers are used for environmental impact analysis purposes. However, the proposed project would result in a net decrease of 70 single-family residential units, and a net increase of 1,632 multi-family units.

du=dwelling unit

Source: Baldwin & Sons, 2014

The Otay Ranch GDP was approved jointly by the City of Chula Vista and County of San Diego in 1993 for the future development of Otay Ranch. The Otay Ranch GDP was amended in December 2005 as part of the City's General Plan Update and most recently was amended in February 2013. The Otay Ranch GDP establishes land use plans, design guidelines, objectives, policies, and implementation measures that apply to all portions of Otay Ranch while supporting a balance of housing, shops, workplaces, schools, parks, civic facilities, and open spaces. The majority of development is intended to be clustered in villages, with conveniently located "core" features and well-defined edges such as the Chula Vista greenbelt, open spaces, and wildlife corridors. The goals of the Otay Ranch GDP are to (1) create a well-integrated, balanced land use; (2) reduce reliance on the automobile and promotion of alternative modes of transportation; and (3) diversify the economic base within Otay Ranch. Land use goals outlined in the Otay Ranch GDP include, but are not limited to, the following:

- **Goal:** Develop comprehensive, well-integrated and balanced land uses which are compatible with the surroundings.
- **Goal:** Environmentally sensitive development should preserve and protect significant resources and large open space areas.
- **Goal:** Promote village and town center land uses which offer a sense of place to residents and promotes social interaction.
- **Goal:** Organize land uses based upon the village/town center concept to produce a cohesive, pedestrian-friendly community, encourage non-vehicular trips, and foster interaction amongst residents.

- **Goal:** Create a balanced community exemplified by the provision of a diverse range of housing styles, tenancy types and prices.
- **Goal:** The provision of sufficient housing opportunities for persons of all economic, ethnic, religious and age groups, as well as those with special needs such as the handicapped, elderly, single parent families and the homeless.
- **Goal:** Provide diverse park and recreational opportunities within Otay Ranch which meet the recreational, conservation, preservation, cultural and aesthetic needs of project residents of all ages and physical abilities.

The proposed project would implement the policies and goals of the Otay Ranch GDP including: balancing residential and non-residential development; balance jobs and housing; provision of public facilities within proximity of residents; provision of diverse and higher-density housing; designate opportunities for mixed use areas; encourage pedestrian oriented development; and reducing reliance on the automobile and promote alternative modes of transportation. The proposed land use pattern would place higher density housing in and around the village core. The design of the proposed project would be subject to the design guidelines as stated in the SPA Plan. These design guidelines promote a walkable community with pedestrian oriented streetscapes and pathways. Additionally, higher density land use would provide for greater viability for alternative modes of transportation to serve the area, such as rapid bus routes, by providing a larger consumer base. The proposed elementary school siting, S-2, would allow for more educational services within walking distance of residents in Village Two. Overall, the goals for providing a mixed use, balanced village within Village Two that reflect the goals of the Otay Ranch GDP would still be fulfilled under the proposed project. Additionally, the concurrently proposed amendments to the Otay Ranch GDP to allow for greater density would ensure no conflict would occur.

Growth Management Ordinance

The purpose and intent of the City of Chula Vista GMO (CVMC Sec. 19.09) is to provide quality housing opportunities for all economic sections of the community; to balance the community with adequate commercial, industrial, recreational, and open space areas to support the residential areas of the City; to provide that public facilities, services, and improvements meeting City standards exist or become available concurrent with the need created by new development; to control the timing and location of development by tying the pace of development to the provision of public facilities and improvements to conform to the City's Threshold Standards; and to meet the goals and objectives of the Growth Management Program and other programs associated with quality of life. The GMO prohibits new development unless adequate public facilities are provided in advance of or concurrently with the demands created by new development. The City's GMO requires the provision of a PFFP, air quality implementation

plan, and water conservation plan for every SPA plan to ensure that existing public services or financing for new public facilities would be provided for new development, that adequate water supply would be available to serve the development, and that the project would meet air quality standards. As discussed in Section 5.8, Public Services, the payment of Public Facilities Development Impact Fees (PFDIFs) would ensure the proposed project would not significantly impact public service facilities.

Parkland Dedication Ordinance

Chapter 17.10 of the CVMC establishes requirements for parklands and public facilities, including regulations for the dedication of land and development of improvements for park and recreational purposes (Section 17.10.010); determination of park and recreational requirements (Section 17.10.020); calculation of area to be dedicated (Section 17.10.040); specifications for park improvements (Section 17.10.050); criteria for area to be dedicated (Section 17.10.060); procedures for in-lieu fees for land dedication and/or park development improvements (Section 17.10.070); and other regulations regarding park development and collection and distribution of fees (City of Chula Vista 2012). The Parkland Dedication Ordinance requires the dedication of three acres of parkland per 1,000 residents. As discussed in Section 5.8, Public Services, the proposed 69.5 acres of parkland included in the proposed project would not meet the PLDO requirement. However, mitigation measures provided in Section 5.8 would ensure that the proposed project would be consistent with the Parkland Dedication Ordinance and land use impacts would be less than significant.

Tentative Map

Title 18 of the CVMC requires the adoption of a TM for division and development of land into five or more parcels. The proposed project would include four new tentative maps. A TM is made for the purpose of showing the design of a project, including the locations and layouts of streets and parcels. Under CVMC Section 18.04.050, provisions shall be made in a TM to assure adequate access, light, air, and privacy on all parcels of property, regardless of the land use. CVMC Section 18.05.060 provides for necessary land for community facilities, including schools, parks, open space, playgrounds, and other required public facilities. The TM must be reviewed by the director of public works to ensure compliance with regulations applicable to public and private utilities, streets, and respective rights-of-way and easements. The TM also must be reviewed by the Development Services Director with regard to the number, size, and configuration of lots to be created. The alignment and width of streets and easements outlined in the TM must also be reviewed by the Development Services Director. TMs may be adopted at the time of project approval and shall expire in 36 months in accordance with the Subdivision Map Act, although extensions may be requested.

Parks and Recreation Master Plan

The City of Chula Vista PRMP was adopted in 2002 and a Draft Update was completed in 2010. The PRMP is the blueprint for the City's park system through the year 2030. The PRMP identifies existing park and recreation facilities and provides guidance for future park sites, including locations for specific types of additional recreational facilities. The PRMP envisions a comprehensive and interrelated package of community and neighborhood parks and presents each park within the context of the whole park system to ensure that it provides a balance of recreational opportunities. The PRMP states that the year 2030 citywide park system will contain community, neighborhood, mini, urban, and special-purpose parks and recreation facility and community center sites. The City of Chula Vista PRMP includes a set of goals and policies for the City's parks and recreation aspirations (City of Chula Vista 2010). These goals and policies include, but are not limited to:

- **Goal #1:** Fulfilling the Comprehensive Park System Need
    - **Policy 1.1:** The City will continue to require new development to comply with Parklands and Public Facilities Ordinances, established pursuant to the Quimby Act, requiring a level of service standard of a minimum ratio of three acres of public parkland per 1,000 population so that new development will meet the demands created by these projects.
- **Goal #2:** Priorities for Allocation of Resources
    - **Policy 2.2:** Proposed public parks with major development projects will include a plan and/or proposal for the park site during the earliest residential development phase practical and in accordance with applicable public facilities financing plan for the development project.
- **Goal #3:** Implementation Program
    - **Policy 3.3:** The City will require that all public parks be developed in accordance with applicable legal requirements and the City's Public Park Facilities Guidelines Manual.

The proposed project is consistent with the goals and policies because it will implement a comprehensive system of parks and recreation facilities distributed throughout the villages that meet the City's requirements for parkland and CPF.

Otay Valley Regional Park Concept Plan

The OVRP Concept Plan was adopted in July 1997 as the result of a multi-jurisdictional planning effort including the Cities of San Diego and Chula Vista and the County of San

Diego (County of San Diego et al. 1997). The OVRP planning area is located in the southern portion of the County of San Diego, 4 miles north of the United States/Mexico International Border. The planning area spans approximately 11 miles from the southeastern edge of the salt ponds in the Otay River Valley to the land surrounding the Lower and Upper Otay Lakes. A majority of the land within the OVRP is privately owned. The OVRP Concept Plan does not change existing zoning, land use plans or add new development regulations, nor does it preclude private development. The OVRP Concept Plan provides multiple jurisdictions with policies and direction regarding land acquisition and development of the OVRP. These policies include, but are not limited to:

- **Policy:** Site and develop Park features and facilities, consistent with the requirements and guidelines of the MSCP and all federal, state, and local policies.
- **Policy:** In the OVRP portion of Otay Ranch Preserve, site and develop Park features and facilities within the Open Space/Core Preserve Area consistent with the requirements and guidelines of the MSCP and RMP.
- **Policy:** Encourage recreational uses as buffers between the Open Space/Core Preserve Area and new private development.

The proposed project will be consistent with the policies regarding the creation of the Otay Ranch Preserve. The approved boundaries of the preserve in Wolf Canyon as discussed in the 2006 EIR remain unchanged. In the 2006 EIR, a Preserve Boundary Adjustment was proposed and approved. It was found that the approved Boundary Adjustment would result in a net benefit to conservation of species and habitats, consistent with the guidelines of the MSCP and RMP.

Greenbelt Master Plan

The City of Chula Vista Greenbelt Master Plan provides guidance and continuity for the planning of open space and construction and maintenance of Greenbelt Trails (City of Chula Vista 2003b). There are two general types of trails: multi-use and rural. Multi-use trails are designed for a variety of users, such as bicyclists, equestrians, pedestrians, joggers, and other non-motorized activities. According to the Greenbelt Master Plan, even a single-track pedestrian-only trail would be considered multi-use since it could accommodate hikers, backpackers, runners, bird-watchers, and others. Minimum standards for trails are set forth in the City Landscape Manual and the Greenbelt Master Plan (City of Chula Vista 1994). A multi-use trail may also be improved with a variety of trail surfaces, with concrete and asphalt surfacing to accommodate the broadest range of users in an urban setting. A paved multi-use trail would be 10 feet wide with 2-foot natural shoulders. However, variation in the minimum standards may be allowed, based on consideration of the number and types of trail users and environmental constraints. Other minimum standards include Greenbelt Trail signs. Standards including fencing

and signage shall be determined based upon environmental and other constraints and are subject to review and approval of the Development Services Director. The City of Chula Vista Greenbelt Master Plan provides goals and policies, trail design standards, and implementation tools. These goals include, but are not limited to:

- **Goal 1.0:** To establish a comprehensive and coordinated greenbelt system that visually reinforces the natural character of the community and integrates unique historic and cultural resources, open space areas, creeks, and trails.
- **Goal 2.0:** To provide connected open space areas surrounding Chula Vista to enhance the natural beauty and to preserve native biological and cultural resources as well as sensitive habitats.
- **Goal 3.0:** To establish a greenbelt that ensures public access within the greenbelt through an active and passive recreation park system with trails connecting each segment.

The proposed project will contribute to the Otay Ranch Village Greenway as identified in the Greenbelt Master Plan to connect the open spaces within the Otay Ranch. As discussed in the 2006 EIR, Village Two, including the proposed project, would include a trails system, such as regional and village trails, village greenway, pathways adjacent to streets, which would ultimately connect into the Greenbelt Trail. Connection to the Greenbelt Trail would be achieved via a regional/community trail along Heritage Road, traveling through Village Two and Three. Further evaluation of the proposed project's compatibility with the Greenbelt Master Plan is provided in Section 5.8, Public Services.

Airport Land Use Compatibility Plan–Brown Field

The San Diego County Regional Airport Authority, designated as the Airport Land Use Commission for all public airports in the County of San Diego, adopted the Brown Field ALUCP in September 1981 and it was last updated in December 2010. The ALUCP assists in achieving compatible land use development in the area surrounding Brown Field airport located in Otay Mesa on Heritage Road, east of I-805. The airport is a general aviation airport accommodating both propeller- and jet-powered aircraft and serves as a port of entry for private aircraft coming into the United States from Mexico. Brown Field is also heavily used by military and law enforcement agencies and is classified as a "reliever airport" by the Federal Aviation Administration (SDCRAA 2010). The ALUCP designates the airport influence area and contains projected noise contours, flight activity zones, a land use compatibility matrix and plan recommendations for areas surrounding the Brown Field airport. As discussed in Section 5.4, Noise, Village Two would lie outside the significant noise contours and would not be within the influence area.

As demonstrated above, the proposed project is consistent with the applicable plans, policies, and regulations related to land use. Although the project would conflict with the land use designations in the City's adopted General Plan and Otay Ranch GDP, upon adoption of the proposed amendments to the General Plan and Otay Ranch GDP, impacts would be considered less than significant.

C. Conflict with any applicable habitat conservation plan or natural community habitat conservation plan.

As discussed in Section 5.5, Biological Resources, the proposed project would have the same land development footprint as Village Two analyzed under the 2006 EIR except for the R-8C area. Neighborhood R-8C does not exist under the current SPA Plan; the proposed R-8C land area was analyzed as open space in the 2006 EIR, as shown in Figure 4-4, and is now proposed as residential development. Because the proposed project would not alter the boundaries of the planned preserve within Wolf Canyon, which is subject to the local Habitat Conservation Plan analyzed as part of the 2006 EIR, in Village Two, no impacts to applicable conservation plans would occur.

5.1.4 Level of Significance Prior to Mitigation

The proposed project would result in less than significant impacts to land use and planning.

5.1.5 Mitigation Measures

The 2006 EIR identified that no mitigation measures would reduce the significant impacts of converting undeveloped land into urban uses. Since the proposed project would not result in any new significant land use impacts, no mitigation measures are required.

5.1.6 Level of Significance After Mitigation

As described above, the proposed project would not result in any significant land use impacts; therefore, no mitigation measures are required.

5.1.7 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would not increase the severity of impacts nor change the conclusions reached by the analysis contained in the 2006 EIR with respect to land use issues. No new impacts are identified and no new mitigation is required.

5.2 TRANSPORATION, CIRCULATION, AND ACCESS

This section of the Environmental Impact Report (EIR) addresses the potential impacts to transportation, circulation, and access resulting from the proposed project. The discussion found in this section is based on the Traffic Impact Analysis V2 Comprehensive SPA, Revised Report (Traffic Impact Report) prepared by Chen Ryan in March 2014. The complete report is contained in Appendix B of this EIR.

This section tiers from the Otay Ranch Villages Two, Three, and a Portion of Village Four Sectional Planning Area (SPA) Plan Final Environmental Impact Report as amended (2006 EIR) (City of Chula Vista 2006). The 2006 EIR addressed the Village Two, Three, and portion of Four development's potential environmental effects. The analysis and discussion of transportation, circulation, and access issues contained in the 2006 EIR is incorporated by reference and available for public inspection upon request to the City.

5.2.1 Existing Conditions

5.2.1.1 Regulatory Framework and Analysis Methodology

Local Level

City of Chula Vista General Plan

The City of Chula Vista General Plan contains objectives and policies that support transit, encourage alternative transportation measures and the development of transit-friendly roads, support parking management policies, and ensure pedestrian-oriented environments. Relevant General Plan objectives and policies related to transportation include the following:

Objective LUT 17 – Plan and coordinate development to be compatible and supportive of planned transit.

<u>Policies</u>

- **LUT 17.1** – Designate sufficient land at appropriate densities to support planned transit and require that development be transit-oriented, as appropriate to its proximity to transit facilities.
- **LUT 17.3** – Establish new Town Centers in the East Planning Area to be transit-oriented and include a transit station.
- **LUT 17.4** – Require developers to consult and coordinate with SANDAG and the City to ensure that development is compatible with and supports the planned implementation of public transit.

Objective LUT 18 – Reduce traffic demand through Transportation Demand Management (TDM) strategies, increased use of transit, bicycles, walking, and other trip reduction measures.

Policies

- **LUT 18.3** – Provide and enhance all feasible alternatives to the automobile, such as bicycling and walking, and encourage public transit ridership on existing and future transit routes.
- **LUT 18.5** – Implement TDM strategies, such as carpooling, vanpooling, and flexible work hours that encourage alternatives to driving alone during peak hours.
- **LUT 18.6** – Encourage employer-based TDM strategies, such as employee transportation allowances; preferential parking for rideshare vehicles; workplace-based carpool programs; and shuttle services.

Objective LUT 19 – Coordinate with the regional transportation planning agency, SANDAG, and transit service providers such as the Metropolitan Transit System, to develop a state-of-the-art transit system that provides excellent service to residents; workers; students; and the disabled, both within the City, and with inter-regional destinations.

Policy

- **LUT 19.1** – Designate transportation corridors as potential express transit facilities, such as Bus Rapid Transit (BRT).

Objective LUT 20 – Make transit-friendly roads a top consideration in land use and development design.

Policy

- **LUT 20.1** – Incorporate transit-friendly and pedestrian-friendly elements into roadway design standards, such as signal priority for transit and adequate sidewalk widths for pedestrians.

Objective LUT 23 – Promote the use of non-polluting and renewable alternatives for mobility through a system of bicycle and pedestrian paths and trails that are safe, attractive and convenient forms of transportation.

Policies

- **LUT 23.1** – Encourage the use of bicycles and walking as alternatives to driving.
- **LUT 23.2 –** Foster the development of a system of inter-connecting bicycle routes throughout the City and region.

- **LUT 23.3** – Preserve, restore, or provide the opportunity for a cyclist to ride a bicycle to virtually any chosen destination, in order to make the bicycle a viable transportation alternative.
- **LUT 23.4** – Link major residential areas with principal trip destinations, such as schools; parks; community centers; and shopping centers.
- **LUT 23.5** – Provide linkages between bicycle facilities that utilize circulation element alignments and open space corridors.
- **LUT 23.7** – Provide bicycle support facilities at all major bicycle usage locations.
- **LUT 23.10** – Promote the system of trails envisioned within the Chula Vista Greenbelt.
- **LUT 23.13** – New overpasses and interchanges should be designed to accommodate bicycles and pedestrians.

Objective LUT 30 – Use parking management to better utilize parking facilities and implement policies to reduce parking demand before considering public expenditures for additional parking facilities.

Policy

- **LUT 30.1** – Consider limiting parking in appropriate areas to discourage single occupant vehicle commuting and to reinforce non-auto travel modes, but not so limiting as to adversely affect the viability and vitality of the area.

Objective LUT 31 – Provide parking facilities that are appropriately integrated with land uses, maximize efficiency, accommodate alternative vehicles, and reduce parking impacts.

Policy

- **LUT 31.3** – Provide parking and recharging facilities for alternative vehicles such, as bicycles and electric and low-emission vehicles.

Objective LUT 32 – Evaluate the use and applicability of various strategies to provide parking.

Policy

- **LUT 32.2** – Consider the establishment of parking districts that may include a variety of public parking facilities, including surface lots and parking structures, to provide parking for a bounded geographical area.

Objective LUT 33 – Ensure that parking facilities are appropriately sited and well-designed in order to minimize adverse effects on the pedestrian-oriented environment, and to enhance aesthetic qualities.

Policies

- **LUT 33.1** – Strategically locate parking structures to serve commercial and employment centers, and to provide park and ride opportunities for use of express shuttle, trolley service, and other transit.
- **LUT 33.2** – Encourage consolidation of surface parking lots into structured parking facilities where appropriately located and well-designed.

Objective LUT 63 – Provide efficient multi-modal access and connections to and between activity centers.

Policy

- **LUT 63.1** – Provide roads, transit service, bike routes, and pedestrian pathways that connect activity centers to their surrounding neighborhoods, adjacent villages, and each other, such that access is safe and convenient for residents and visitors.

Analysis Methodology

The traffic analyses prepared for this EIR were performed in accordance with City of Chula Vista and City of San Diego traffic impact analysis guidelines, the enhanced California Environmental Quality Act (CEQA) project review process, and the San Diego Regional Congestion Management Program (CMP) requirements.

Congestion Management Program

The CMP was first adopted on November 22, 1991 and was intended to assist in the monitoring of regional transportation system level of service performance. CMP analysis requirements for the San Diego region are delineated in a San Diego Association of Government (SANDAG) document entitled the 2008 Congestion Management Program Update (SANDAG 2008).

The City of Chula Vista has developed its own "Guidelines for Traffic Impact Studies" based upon review and evaluation of guidelines from the City of San Diego and CMP (recommended by SANTEC/ITE). The City's guidelines require that a project study area be established as follows:

- All freeway mainline segments to which the proposed project will add 2,400 total trips (Average Daily Traffic - ADT) or 150 or more peak hour trips in either direction must be analyzed.
- All arterial segments and intersections (including freeway on/off ramp intersections), to which the proposed project will add 800 or more total trips (ADT) or 50 or more peak-hour trips in either direction must be analyzed.

Level of Service Definition

The concept of level of service (LOS) is defined as a quantitative stratification of a performance measure or measures that represent quality of service. Quality of service describes how well a transportation facility of service operates from a traveler's perspective. A level of service definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents the best operating conditions from a traveler's perspective, while LOS F the worst. Table 5.2-1 describes generalized definitions of urban transportation systems at LOS A through F.

Table 5.2-1
Level of Service Definitions

LOS	Characteristics
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Chen Ryan 2014

Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in Chapter 18 of the Highway Capacity Manual (HCM) 2010. The HCM 2010 methodology defines intersection level of service as a function of intersection control delay in terms of seconds per vehicle (sec/veh). The HCM 2010 methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition

(or percentage of heavy vehicles), and shared lane movements (e.g., through and right-turn movements sharing the same lane). The level of service criteria used for this technique are described in Table 5.2-2. The computerized analysis of intersection operations was performed utilizing the Synchro 9.0 Build 802 traffic analysis software.

Table 5.2-2
Signalized Intersection Level of Service HCM Operational Analysis Method

Average Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	*LOS A* occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1–20.0	*LOS B* occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1–35.0	*LOS C* occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1–55.0	*LOS D* occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1–80.0	*LOS E* occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	*LOS F* occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Chen Ryan 2014

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the Chapters 19 and 20 methodology of the HCM 2010. The level of service for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay at each minor-street movement. LOS F would occur when the volume-to-capacity ratio exceeds 1.0, regardless of the control delay. Both City of Chula Vista and City of San Diego consider LOS D during the AM and PM peak hours to be the minimum standard for intersection level of service. The level of service criteria for unsignalized intersections is provided in Table 5.2-3.

Table 5.2-3
Level of Service Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	Level of Service (LOS)
≤10.0	A
10.1–15.0	B
15.1–25.0	C
25.1–35.0	D
35.1–50.0	E
>50.0	F

Source: Chen Ryan 2014

Roadway Segment Level of Service Standards and Thresholds

Roadway segment level of service standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast ADT volumes. The roadway segment capacity and level of service standards utilized to analyze roadway segments within the City of Chula Vista and City of San Diego are provided in Tables 5.2-4 and 5.2-5, respectively.

Table 5.2-4
City of Chula Vista Roadway Segment Daily Capacity and Level of Service Standards

Circulation Element Roadway Classification	Level of Service (LOS)				
	A	*B*	*C*	*D*	*E*
Expressway (7 or 8-lane)	52,500	61,300	**70,000**	78,800	87,500
Gateway Street (6-lane)	40,800	47,600	54,400	**61,200**	68,000
Prime Arterial (6-lane)	37,500	43,800	**50,000**	56,300	62,500
Major Street (6-lane)	30,000	35,000	**40,000**	45,000	50,000
Major Street (4-lane)	22,500	26,300	**30,000**	33,800	37,500
Town Center Arterial (6-lane)	37,500	43,800	**50,000**	56,300	62,500
Town Center Arterial (4-lane)	22,500	26,300	**30,000**	33,800	37,500
Class I Collector (4-lane)	16,500	19,300	**22,000**	24,800	27,500
Class II Collector (3-lane)	9,000	10,500	**12,000**	13,500	15,000
Class III Collector (2-lane)	5,600	6,600	**7,500**	8,400	9,400

Source: Chen Ryan 2014
Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

Table 5.2-5
City of San Diego Roadway Segment Daily Capacity and Level of Service Standards

Roadway Functional Classification	Level of Service				
	A	*B*	*C*	*D*	*E*
Expressway (6-lane)	< 30,000	< 42,000	< 60,000	**< 70,000**	< 80,000
Prime Arterial (6-lane)	< 25,000	< 35,000	< 50,000	**< 55,000**	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	**< 45,000**	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	**< 35,000**	< 40,000
Secondary Arterial/Collector (4-lane w/center lane)	< 10,000	< 14,000	< 20,000	**< 25,000**	< 30,000
Collector (4-lane w/o center lane)	< 5,000	< 7,000	< 10,000	**< 13,000**	< 15,000
Collector (2-lane w/continuous left-turn lane)					
Collector (2-lane no fronting property)	< 4,000	< 5,500	< 7,500	**< 9,000**	< 10,000
Collector (2-lane w/commercial fronting)	< 2,500	< 3,500	< 5,000	**< 6,500**	< 8,000
Collector (2-lane multi-family)					
Sub-Collector (2-lane single-family)	—	—	< 2,200	—	—

Source: Chen Ryan 2014
Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical attributes. Typically, the performance and level of service of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak hour volumes.

For the purposes of this traffic analysis, LOS C is considered acceptable for Circulation Element roadway segments within the City of Chula Vista. Per the Otay Ranch General Development Plan (GDP) (Page 104), LOS D is permitted within the Otay Ranch Villages. LOS D is considered acceptable for Circulation Element roadway segments within the City of San Diego.

Growth Management Oversight Committee

The City of Chula Vista's Growth Management Oversight Committee (GMOC) requires an additional analysis of roadway segment performance under near-term conditions (Years 0-4) utilizing the methodology described in Chapter 17 (Urban Street Segment) of the HCM 2010. This methodology determines roadway segment level of service based upon functional classification, roadway segment length and travel speeds. Current information relating to roadway functional classifications, segment lengths, and travel speeds are maintained by the City's Growth Management Traffic Monitoring Program.

The GMOC level of service standard requires the maintenance of LOS C or better, or LOS D for no more than any two (2) hours of the day. If LOS D occurs for any period greater than two (2) hours, additional analyses may be required along the respective high volume segments based upon direction provided by the City Engineer. For planned arterial facilities that are not currently

included in the current Traffic Monitoring Program, the definition of segment length and facility classification will be based on direction provided by the City Engineer.

Freeway/State Highway Level of Service Standards and Thresholds

Freeway level of service and performance was based upon procedures developed by Caltrans District 11. The procedure for calculating freeway level of service involves estimating a peak hour volume to capacity (V/C) ratio. Peak hour volumes are estimated from the application of design hour ("K"), directional ("D") and truck ("T") factors to ADT volumes. The base capacity was assumed to be 2,400 pc/h/ln. The resulting V/C is then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in Table 5.2-6. LOS D or better is used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements. For the purposes of this study, all of the traffic adjustment factors utilized in the analysis of existing and future conditions were obtained from Caltrans.

Table 5.2.6
Caltrans District 11 Freeway and State Highway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
Free Flow Speed = 65 mph			
A	<0.41	None	Free flow.
B	0.42–0.62	None	Free to stable flow, light to moderate volumes.
C	0.63–0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
D	0.80–0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
E	0.93–1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
F	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.

Source: Chen Ryan 2014

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, all signalized intersections at freeway ramps were analyzed using Intersecting Lane Volume (ILV) procedures as described in Topic 406 of the Caltrans Highway Design Manual (HDM). This methodology is based upon an assessment of each intersection as an isolated unit, without consideration of the effects from adjacent intersections. For this reason, the ILV analysis is presented for information purposes only since the analysis does not reflect actual operation conditions. Values of ILV/hr associated with various traffic flow thresholds are shown in Table 5.2-7.

Table 5.2-7
Traffic Flow Conditions at Ramp Intersections at Various Levels of Operation

ILV/hr Description
<1200: (Under Capacity) Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free midblock operations.
1200–1500: (At Capacity) Unstable flow with considerable delays possible. Some vehicles occasionally wait two or more cycles to pass through the intersection. Continuous backup occurs on some approaches.
>1500: (Over Capacity) Stop-and-go operation with severe delay and heavy congestion.[1] Traffic volume is limited by maximum discharges rates of each phase. Continuous backup in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Source: Chen Ryan 2014

[1] The amount of congestion depends on how much the ILV/hr value exceeds 1500. Observed flow rates will normally not exceed 1500ILV/hr, and the excess will be delayed in a queue.

Ramp Metering Analysis

Ramp metering analysis was conducted based upon the SANDAG CMP and the SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego region to calculate delays and queues at the study area freeway on-ramps. Within the project study area, the I-805 northbound on-ramp at Olympic Parkway and the I-805 northbound on-ramp at Main Street have activated ramp meters. Based upon data provided by Caltrans District 11, the ramp meter at these locations are only activated between 5:30 am and 9:30 am, and thus ramp metering analysis was conducted during the AM peak hour under the various study scenarios.

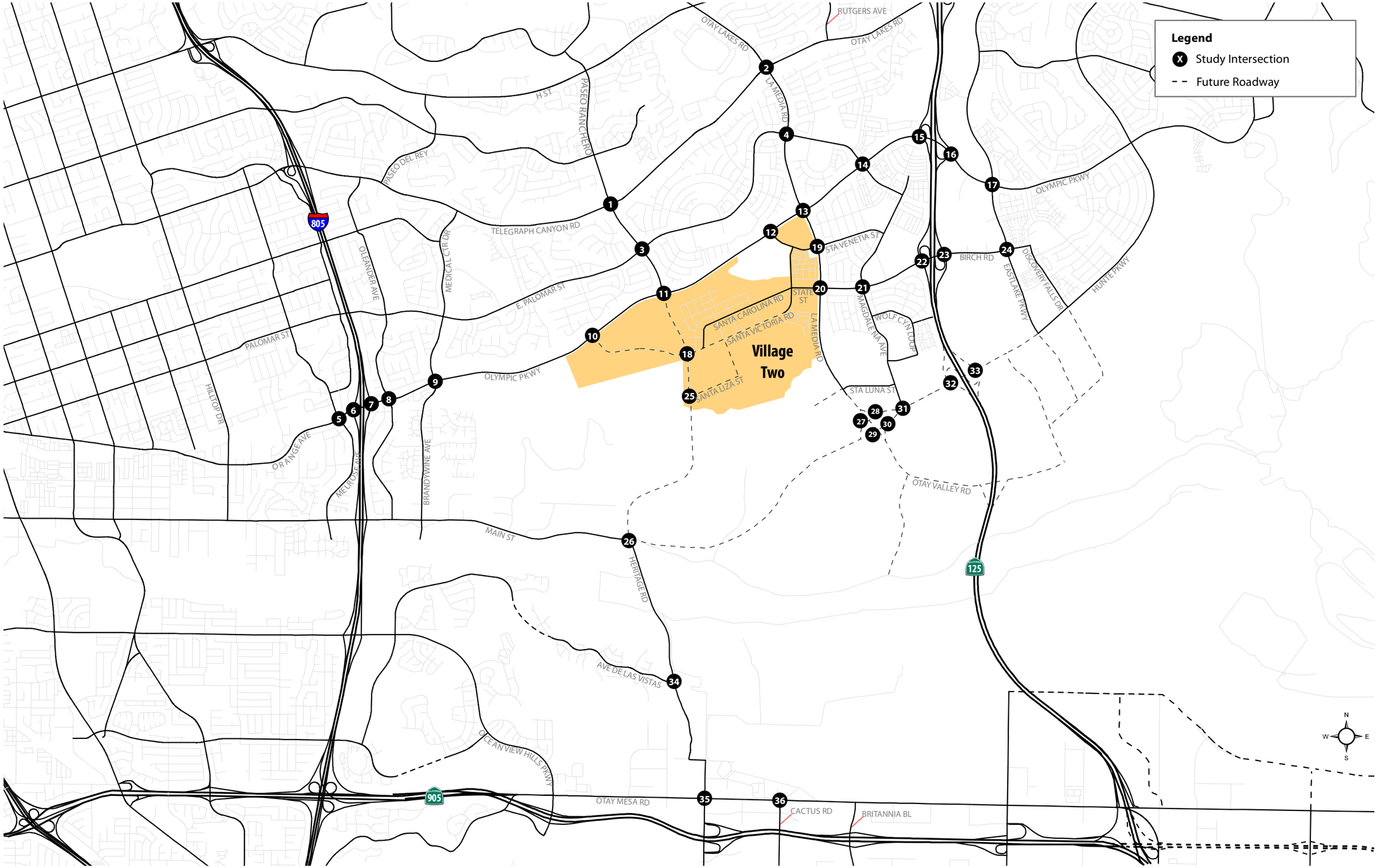
5.2.1.2 Existing Setting

Several regionally and locally significant roadways and freeways traverse the study area. Each of the key transportation facilities, as well as associated study intersections within the study area (Figure 5.2-1), is discussed below. The roadway network as defined in the adopted Circulation Element is shown on Figure 5.2-2.

Existing Roadway Network

SANDAG Modeling

The Traffic Impact Report uses the SANDAG Series 11 “Southbay 2” traffic forecast model with specific land use and network modification based upon the nature of the proposed project and the most current relevant information available from the City. The City of Chula Vista, SANDAG, and Chen Ryan Associates have worked through extensive coordination and review of the model to ensure accurate model outcomes. A list of four modeling scenarios (2015, 2020, 2025, and 2030) for the proposed project and the detailed land use information for each scenario can be found in Appendix B.



DUDEK

SOURCE: CHEN RYAN ASSOCIATES 2014

FIGURE 5.2-1
Project Study Area

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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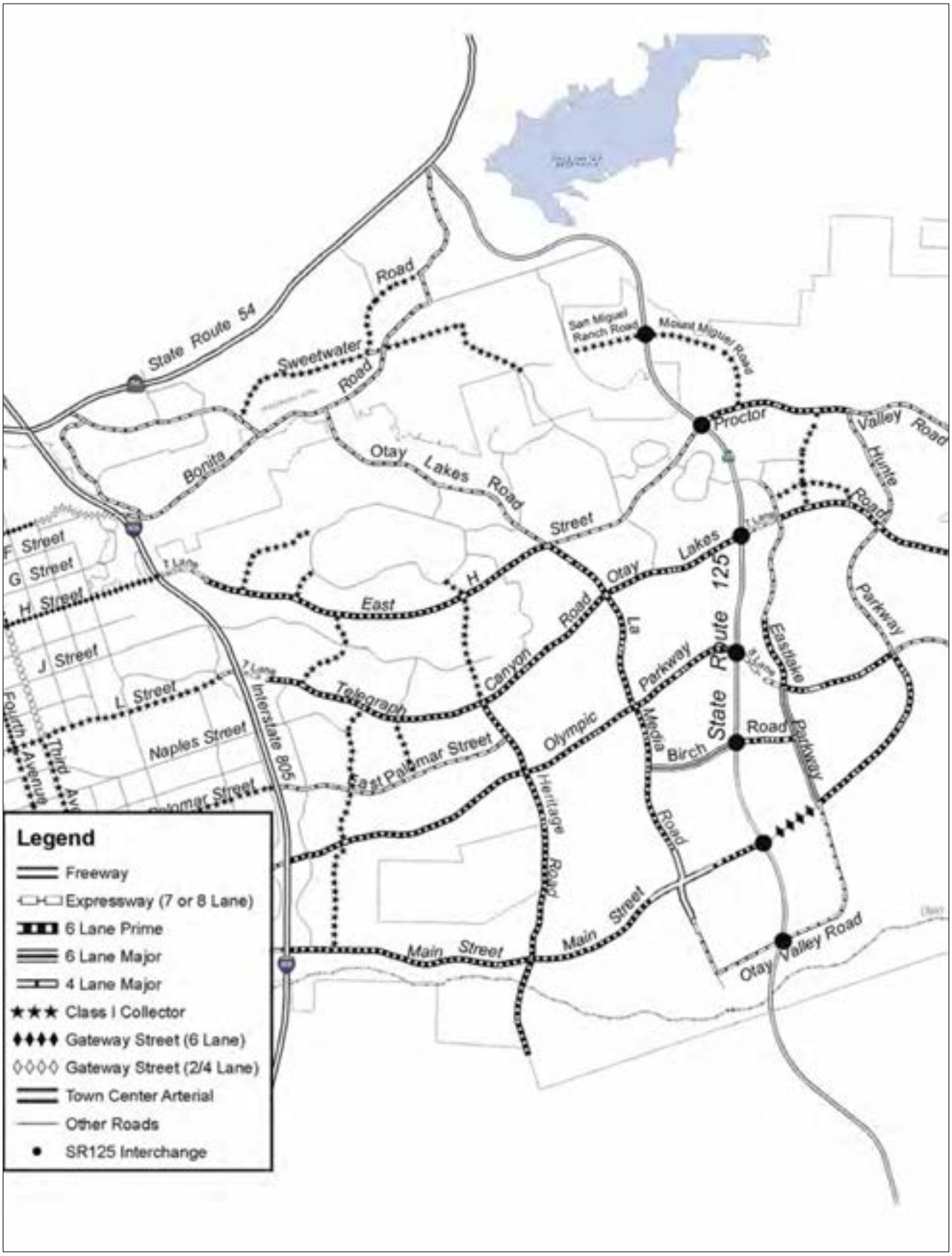

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SOURCE: CHEN RYAN ASSOCIATES 2014

FIGURE 5.2-2

Adopted Circulation Element Network

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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The SANDAG model volumes for each scenario were used as indicated on the model output plots with the following two (2) manual adjustments:

1. For the purpose of balancing the utilization of similar parallel facilities within proximity, 10,000 average daily traffic (ADT) (in year 2030) was shifted from Main Street between Interstate 805 (I-805) and Heritage Road to Olympic Parkway. This manual adjustment was approved by the City and is consistent with all recent studies in the area.
2. La Media Road, between Santa Luna Street and Main Street, as well as a portion of Main Street that provides access to Village 8 West, Village 8 East, and Village 9 were assumed to be constructed by others in Year 2020. As a result, 60% (approximately 17,400 ADT) of the traffic on Magdalena Avenue between Birch Road and Main Street was manually shifted to La Media Road. This shift also included a reduction of 17,400 ADT along Birch Road between La Media Road and Magdalena Avenue.

Study Intersections

The SANDAG Series 11 Transportation Model ("Southbay 2, Village 2" with updated Project land use and network) was utilized to perform a Select Zone Analysis which identified the number of project-related peak hour trips distributed across the transportation network. All intersections and roadways where the proposed project added 800 or more daily trips or 50 or more peak hour trips in either direction to the existing traffic were included as study intersections for analysis, as well as all freeway segments where the proposed project added 2,400 or more daily trips or 150 or more peak hour trips in either direction.

A total of 36 key study area intersections, including 33 in the City of Chula Vista and 3 in the City of San Diego, were analyzed in this study, as shown below:

1. Paseo Ranchero/Heritage Road/Telegraph Canyon Road
2. La Media Road/Telegraph Canyon Road/Otay Lakes Road
3. Heritage Road/East Palomar Street
4. La Media Road/East Palomar Street
5. Melrose Avenue/Orange Avenue
6. I-805 SB Ramps/Olympic Parkway
7. I-805 NB Ramps/Olympic Parkway
8. Oleander Avenue/Olympic Parkway
9. Brandywine Avenue/Olympic Parkway
10. Santa Victoria Road/Olympic Parkway*

11. Heritage Road/Olympic Parkway*
12. Santa Venetia Street/Olympic Parkway
13. La Media Road/Olympic Parkway
14. East Palomar Street/Olympic Parkway
15. SR-125 SB Ramps/Olympic Parkway
16. SR-125 NB Ramps/Olympic Parkway
17. Eastlake Parkway/Olympic Parkway
18. Heritage Road/Santa Victoria Road*
19. La Media Road/Santa Venetia Street
20. La Media Road/Birch Road
21. Magdalena Avenue/Birch Road
22. SR-125 SB Ramps/Birch Road
23. SR-125 NB Ramps/Birch Road
24. Eastlake Parkway/Birch Road
25. Heritage Road/Santa Liza Street*
26. Heritage Road/Main Street
27. La Media Road (SB)/Main Street (WB)*
28. La Media Road (NB)/Main Street (WB)*
29. La Media Road (SB)/Main Street (EB)*
30. La Media Road (NB)/Main Street (EB)*
31. Magdalena Avenue/Main Street*
32. SR-125 SB Ramps/Main Street*
33. SR-125 NB Ramps/Main Street*
34. Heritage Road/Otay Valley Road/Avenida De Las Vistas (City of SD)
35. Heritage Road/Otay Mesa Road (City of SD)
36. Cactus Road/Otay Mesa Road (City of SD)

Eleven of the above study area intersections are not currently constructed, but were included in the future year assessments. These intersection are denoted with an asterisk (*) in the above list. Four of the intersections will be constructed by the project applicant as part of the project,

including the conversion of Heritage Road/Olympic Parkway from a signalized T-intersection to a signalized 4-way intersection. The remaining seven intersections are identified in the Circulation Element of the respective jurisdiction's General Plan and are to be developed over the project buildout period, with some of the improvements constructed of partially constructed by the project applicant as mitigation. Intersection and roadway improvements which will be constructed over the project buildout period (partially constructed by the project applicant as mitigation) are also identified in the City of San Diego Facilities Benefit Assessment (FBA)[1]. Additionally, the proposed project and other projects in the area, including University Villages, Village Eight West, Village Nine, and Planning Area 12, are subject to Public Facility Financing Plan (PFFP) requirements. As a result, all financing of public facilities, including traffic improvements, that would be utilized by projects in the Otay Ranch area are conditioned as a matter of approval. Study area intersection lane geometrics under Existing conditions within the study area are displayed in Figure 3-1A of Appendix B.

East-West Roadway Facilities

City of Chula Vista

L Street/Telegraph Canyon Road – L Street is a 4-lane roadway west of I-805. L Street becomes Telegraph Canyon Road at I-805, where it is a 7-lane roadway between I-805 and Oleander Avenue, and a 6-lane roadway with a raised median and Class II bike lanes between Oleander Avenue and Otay Lakes Road. The posted speed limit is 50 mph. This facility is classified in the City of Chula Vista General Plan Circulation Element as a 4-lane Class I Collector west of I-805, a Gateway Street between I-805 and Oleander Avenue, and a 6-lane Prime Arterial between Oleander Avenue and Otay Lakes Road.

Otay Lakes Road – The east/west portion of Otay Lakes Road runs from Telegraph Canyon Road/La Media Road to SR-94 in the unincorporated County. Within the study area, this facility is a 6-lane roadway with a raised median and is classified as a 6-lane Prime Arterial in the City of Chula Vista General Plan Circulation Element.

East Palomar Street – East Palomar Street is currently a 4-lane roadway with a raised median and on-street parking on both sides. The posted speed limit along this facility is 35 mph. East Palomar Street is classified as a 4-lane Major Road in the City of Chula Vista General Plan Circulation Element. The future BRT is proposed to travel along the median of East Palomar Street and access I-805 via Direct Access Ramps (DAR).

[1] The FBA provides funding for public facilities projects that serve a designated area, known as the Area of Benefit. The dollar amount of the assessment is based upon the collective cost of each public facility and is equitably distributed over the Area of Benefit in the Otay Mesa community planning area (City of Chula Vista 2007).

Orange Avenue/Olympic Parkway – Orange Avenue between Melrose Avenue and I-805 is a 4-lane roadway with a raised median. Orange Avenue becomes Olympic Parkway at I-805 and widens to a 6-lane roadway with a raised median until Hunte Parkway, with the exception of the segment between SR-125 and Eastlake Parkway which carries 8 lanes. Between Hunte Parkway and Wueste Road, Olympic Parkway narrows to a 4-lane roadway with a raised median. Orange Avenue is classified as a 4-lane Major Road in the Chula Vista General Plan Circulation Element. Olympic Avenue is classified as an 8 lane Expressway between SR-125 and Eastlake Parkway, a 6-lane Prime Arterial between I-805 and SR-125 as well as between Eastlake Parkway and Hunte Parkway, and a 4-lane Major Road between Hunte Parkway and Wueste Road.

Birch Road – Birch Road is a 6-lane roadway with a raised median, Class II bike lanes, and a posted speed of 45 mph between La Media Road and Eastlake Parkway. This facility is classified as a 6-lane Major Road between La Media Road and SR-125, and a 6-lane Prime Arterial between SR-125 and Eastlake Parkway in the City of Chula Vista General Plan Circulation Element.

Main Street – Main Street is a 4-lane roadway with a continuous left-turn lane and a 40 mph posted speed limit between 4th Avenue and I-805. East of I-805, Main Street becomes a 6-lane roadway with a raised median and Class II bikes. The posted speed limits along this section of the roadway vary between 45 mph and 50 mph. Main Street currently terminates at Heritage Road. This facility is classified as primarily a 6-lane Prime Arterial with a couple of exceptions: just west of I-805 and SR-125 being a Gateway Street; and at the couplets (2-lane each direction) at La Media Road.

Otay Valley Road – This road is not currently constructed, but is classified as a 4-lane Major Road in the City of Chula Vista General Plan Circulation Element.

City of San Diego

Lone Star Road – Lone Star Road is currently an unpaved road, and is classified as a 4-lane Major Arterial in the City of San Diego's currently adopted Community Plan Circulation Element.

Otay Mesa Road – Otay Mesa Road is a 6-lane roadway with a raised median and a 50 mph posted speed limit. It is classified as a 6-lane Prime Arterial in the City of San Diego's currently adopted Community Plan Circulation Element.

North-South Roadway Facilities

City of Chula Vista

Paseo Ranchero/Heritage Road – Paseo Ranchero runs from East H Street to Telegraph Canyon Road where it becomes Heritage Road and continues to its current southern terminus south of Olympic Parkway. Paseo Ranchero is a 4-lane roadway with a continuous left-turn lane/striped median and Class II bike lanes, and Heritage Road is a 6-lane roadway with a raised median and Class II bike lanes. The posted speed limit along this facility is 40 mph. South of Main Street (to Chula Vista city limit), Heritage Road is a 2-lane roadway with a continuous left-turn lane, Class II bike lanes, and a posted speed limit of 45 mph. Paseo Ranchero is classified as a Class I Collector, while Heritage Road is classified as a 6-lane Prime Arterial.

Otay Lakes Road/La Media Road – The north/south portion of Otay Lakes Road runs from Bonita Road to Telegraph Canyon Road where it becomes La Media Road. Within the study area, Otay Lakes Road between East H Street and Telegraph Canyon Road is a 4-lane roadway with a striped/raised median and discontinuous Class II bike lanes. The posted speed limit is 40 mph. Otay Lakes Road is classified as a 6-lane Prime Arterial. La Media Road is a 6-lane roadway with a raised median and Class II bike lanes between Telegraph Canyon Road and its current southern terminus at Santa Luna Street. The posted speed limit is 45 mph. La Media Road is classified as a 6-lane Prime Arterial in the City of Chula Vista General Plan Circulation Element, with the exception of the couplets (2-lane each direction) at Main Street.

Magdalena Avenue – Magdalena Avenue is generally a 4-lane roadway with a raised median between Santa Venetia Street and Main Street, with the exception of the segment between Wolf Canyon Loop and Santa Luna Street which is a 2-lane roadway with a raised median. The posted speed limit is 25 mph. This facility is not classified as a circulation element in the City of Chula Vista General Plan.

City of San Diego

Heritage Road – Heritage Road, from the Chula Vista city limit to Otay Mesa Road, is currently a 2-lane roadway with a partial continuous left-turn lane. Heritage Road south of Avenida De Las Vistas is planned for widening in the City of San Diego FBA. Therefore, this facility is classified as a 6-lane Prime Arterial in the City of San Diego's currently adopted Community Plan Circulation Element.

Otay Mesa Road – Otay Mesa Road is currently a 6-lane roadway with raised median and a posted speed limit of 65 mph. This facility is classified as a 6-lane Prime Arterial in the City of San Diego's currently adopted Community Plan Circulation Element.

Figure 3-1B in Appendix B displays existing roadway geometrics for roadway facilities within the project study area.

Freeway and State Highway Facilities

Two Caltrans freeway and state highway facilities traverse the study area, as follows:

I-805 – I-805 ranges from 8-lanes to 10-lanes between Home Street and SR-905 within the study area. Caltrans currently has plans to widen I-805 within the study area by adding four managed HOV lanes.

SR-125 – SR-125 is a 4-lane state highway between East H Street and SR-905. It will operate as a toll road through the Year 2035. However, SANDAG has recently purchased this facility and could potentially convert this facility to a freeway sooner than the Year 2035.

Existing Intersection and Roadway Volumes

Existing AM/PM peak hour traffic volumes for the key study area intersections are shown in Appendix B. Average Daily Traffic (ADT) volumes for study area roadway and freeway segments are also shown in Appendix B. A majority of the roadway segment and study area intersection counts were collected in May 2011 and are provided in Appendix B. The most current freeway segment counts were obtained from Caltrans.

Existing Level of Service Analysis

Level of service analyses under Existing conditions were conducted using the methodologies described in subsection 5.2.1.1, above. Intersection, roadway segment, freeway segment, and freeway ramp intersection level of service results are discussed separately below.

Intersection Analysis

Table 5.2-8 displays intersection level of service and average vehicle delay results for the key study area intersections under Existing conditions. Level of service calculation worksheets for Existing conditions are provided in Appendix B.

As shown in Table 5.2-8, all of the study area intersections are currently operating at acceptable LOS D or better, with the exception of Heritage Road/Avenida De Las Vistas intersection which operates at substandard LOS E during the AM peak hour. This intersection is an all-way stop intersection located in the City of San Diego.

Roadway Segment Analysis

Table 5.2-9 displays the level of service analysis results for the key study area roadway segments located within the City of Chula Vista under Existing conditions.

Table 5.2-8
Peak Hour Intersection Level of Service Results Existing Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*
Paseo Ranchero/Heritage Road/Telegraph Canyon Road	36.9	D	22.5	C
La Media Road/Telegraph Canyon Road/Otay Lakes Road	31.5	C	28.4	C
Heritage Road/East Palomar Street	25.6	C	22.8	C
La Media Road/East Palomar Street	35.1	D	26.5	C
Melrose Avenue/Orange Avenue	20.3	C	26.9	C
I-805 SB Ramps/Olympic Parkway	29.4	C	52.3	D
I-805 NB Ramps/Olympic Parkway	45.7	D	33.2	C
Oleander Avenue/Olympic Parkway	49.4	D	35.5	D
Brandywine Avenue/Olympic Parkway	47.9	D	38.6	D
Santa Victoria Road/Olympic Parkway	Does Not Exist			
Heritage Road/Olympic Parkway	15.9	B	11.8	B
Santa Venetia Street/Olympic Parkway	3.0	A	1.8	A
La Media Road/Olympic Parkway	28.6	C	18.8	B
East Palomar Street/Olympic Parkway	27.5	C	23.7	C
SR-125 SB Ramps/Olympic Parkway	4.0	A	4.7	A
SR-125 NB Ramps/Olympic Parkway	1.0	A	3.8	A
Eastlake Parkway/Olympic Parkway	16.9	B	19.7	B
Heritage Road/Santa Victoria Road	Does Not Exist			
La Media Road/Santa Venetia Street	43.2	D	14.9	B
La Media Road/Birch Road	27.1	C	26.4	C
Magdalena Avenue/Birch Road	23.3	C	16.3	B
SR-125 SB Ramps/Birch Road	3.4	A	3.7	A
SR-125 NB Ramps/Birch Road	0.8	A	2.0	A
Eastlake Parkway/Birch Road	21.9	C	24.7	C
Heritage Road/Santa Liza Avenue	Does Not Exist			
Heritage Road/Main Street* (one-way stop controlled)	10.6	B	12.7	B
La Media Road (SB)/Main Street (WB)	Does Not Exist			
La Media Road (NB)/Main Street (WB)	Does Not Exist			
La Media Road (SB)/Main Street (EB)	Does Not Exist			
La Media Road (NB)/Main Street (EB)	Does Not Exist			
Magdalena Avenue/Main Street	Does Not Exist			
SR-125 SB Ramps/Main Street	Does Not Exist			
SR-125 NB Ramps/Main Street	Does Not Exist			

Table 5.2-8
Peak Hour Intersection Level of Service Results Existing Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*
Heritage Road/Otay Valley Road/Avenida De Las Vistas (SD) (All-way stop controlled)	38.0	**E**	20.1	C
Heritage Road/Otay Mesa Road (SD)	21.6	C	22.2	C
Cactus Road/Otay Mesa Road (SD)	10.5	B	11.5	B

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS E or F.
* For one or two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

Table 5.2-9
Roadway Segment Level of Service Results Existing Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
Telegraph Canyon Road	Medical Center Drive	Heritage Road/Paseo Ranchero	6-Ln w/RM	45,077	50,000	C
Telegraph Canyon Road	Heritage Road/Paseo Ranchero	La Media Road/Otay Lakes Road	6-Ln w/RM	36,074	50,000	A
Otay Lakes Road	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	26,321	30,000	C
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	41,612	50,000	B
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	13,420	30,000	A
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	20,122	30,000	A
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	12,371	30,000	A
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	23,117	30,000	B
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	29,025	30,000	C
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	39,453	50,000	B
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	48,508	50,000	C
Olympic Parkway	**Oleander Avenue**	**Brandywine Avenue**	**6-Ln w/RM**	**52,262**	**50,000**	**D**
Olympic Parkway	**Brandywine Avenue**	**Santa Victoria Road**	**6-Ln w/RM**	**52,690**	**50,000**	**D**
Olympic Parkway	**Santa Victoria Road**	**Heritage Road**	**6-Ln w/RM**	**52,690**	**50,000**	**D**
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln w/RM	48,232	50,000	C
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln w/RM	45,805	50,000	C
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	31,038	50,000	A
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	35,555	50,000	A
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	33,827	70,000	A
Olympic Parkway	SR-125 NB Ramps	Eastlake Parkway	8-Ln w/RM	35,608	70,000	A

Table 5.2-9
Roadway Segment Level of Service Results Existing Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	Level of Service (LOS)
Olympic Parkway	Eastlake Parkway	Hunte Parkway	6-Ln w/RM	14,694	50,000	A
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	9,160	40,000	A
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	10,740	40,000	A
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	11,997	50,000	A
Birch Road	SR-125 NB Ramps	Eastlake Parkway	6-Ln w/RM	10,734	50,000	A
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	10,865	50,000	A
Main Street	Heritage Road	La Media Road	Does Not Exist			
Main Street	La Media Road	SR-125 SB Ramps	Does Not Exist			
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist			
Main Street	SR-125 NB Ramps	Eastlake Parkway	Does Not Exist			
Otay Valley Road	Main Street	SR-125 SB Ramps	Does Not Exist			
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	13,257	22,000	A
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	19,010	50,000	A
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	12,877	50,000	A
Heritage Road	Olympic Parkway	Santa Victoria Road	Does Not Exist			
Heritage Road	Santa Victoria Road	Santa Liza Avenue	Does Not Exist			
Heritage Road	Santa Liza Avenue	Main Street	Does Not Exist			
Heritage Road	Main Street	Avenida De Las Vistas	2-Ln w/TWLTL	8,787	12,000	A
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	22,569	50,000	A
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	14,666	50,000	A
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	16,408	50,000	A
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	11,515	50,000	A
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	2,072	50,000	A
La Media Road	Santa Luna Street	Main Street	Does Not Exist			
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	8,283	22,000	A
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	3,300[1]	12,000	A
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	3,300[1]	22,000	A
Eastlake Parkway	Corte Vista	Olympic Parkway	6-Ln w/RM	12,092[2]	50,000	A
Eastlake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	11,843	40,000	A
Eastlake Parkway	Birch Road	Main Street/Hunte Parkway	6-Ln w/RM	1,890	40,000	A

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS D, E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.
1 ADT was obtained from SANDAG (2008).
2 ADT was collected on 9/11/2008.

As shown in Table 5.2-9, the following three study area roadway segments within the City of Chula Vista are currently operating at substandard LOS D under Existing conditions:

- Olympic Parkway, between Oleander Avenue and Brandywine Avenue (LOS D);
- Olympic Parkway, between Brandywine Avenue and Santa Victoria Road (LOS D); and
- Olympic Parkway, between Santa Victoria Road and Heritage Road (LOS D).

Table 5.2-10 displays the level of service analysis results for the key study area roadway segments located within the City of San Diego under Existing conditions.

Table 5.2-10
Roadway Segment Level of Service Results Existing Conditions (City of San Diego)

Roadway	From	To	Cross-Section	Average Daily Traffic (ADT)	LOS Threshold (LOS D)	Level of Service (LOS)
Otay Mesa Road	Ocean View Hills Parkway	Heritage Road	6-Ln w/RM	35,212	55,000	C
Otay Mesa Road	Heritage Road	Cactus Road	6-Ln w/RM	31,682	55,000	B
Otay Mesa Road	Cactus Road	Britannia Boulevard	6-Ln w/RM	50,978	55,000	D
Heritage Road	Avenida De Las Vistas	Otay Mesa Road	2-Ln	7,984	9,000	D

Source: Chen Ryan 2014
Note: RM = Raised Median.

As shown in Table 5.2-10, all study roadways in the City of San Diego are operating at acceptable LOS D or better under Existing conditions.

Freeway/State Highway Segment Analysis

Table 5.2-11 displays freeway level of service analysis results for I-805 and SR-125 under Existing conditions. The freeway/state highway segment level of service analysis was performed utilizing the methodology presented in Section 5.2.1.1, above.

Table 5.2-11
Freeway/State Highway Segment Level of Service Results – Existing Conditions

Freeway/ State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-805	Home Street to SR-94	167,100	6.9%	11,530	0.51	4	0.97	4.2%	1,547	0.645	C
I-805	SR-94 to Market Street	162,200	8.0%	12,976	0.50	4	0.97	4.2%	1,705	0.710	C
I-805	Market Street to Imperial Avenue	162,200	8.0%	12,976	0.50	5	0.97	4.2%	1,368	0.570	B
I-805	Imperial Avenue to E Division Street	181,300	8.0%	14,504	0.50	5	0.97	4.2%	1,526	0.636	C
I-805	E Division Street to Plaza Boulevard	188,800	7.2%	13,594	0.51	5	0.95	3.8%	1,491	0.621	B
I-805	Plaza Boulevard to SR-54	191,500	8.1%	15,512	0.52	5	0.96	2.2%	1,696	0.707	C
I-805	SR-54 to Bonita Road	181,300	7.2%	13,054	0.52	4+1Aux	0.96	1.7%	1,586	0.661	C
I-805	Bonita Road to East H Street	181,300	7.8%	14,141	0.50	5	0.95	1.7%	1,497	0.624	B
I-805	East H Street to Telegraph Canyon Road	174,100	7.8%	13,580	0.50	5	0.95	1.9%	1,445	0.602	B
I-805	Telegraph Canyon Road to East Palomar Street	153,200	7.1%	10,877	0.51	4+1Aux	0.92	1.7%	1,348	0.562	B
I-805	East Palomar Street to Olympic Parkway	153,200	7.1%	10,877	0.51	4+1Aux	0.92	1.7%	1,348	0.562	B
I-805	Olympic Parkway to Main Street	121,500	6.9%	8,384	0.51	4+1Aux	0.93	5.4%	1,049	0.437	B
I-805	Main Street to Palm Avenue	116,300	7.1%	8,257	0.58	4+1Aux	0.95	10.3%	1,173	0.489	B
I-805	Palm Avenue to SR-905	111,200	7.1%	7,895	0.58	4+1Aux	0.95	10.3%	1,129	0.470	B
SR-125	Telegraph Canyon Road to Olympic Parkway	6,200	7.0%	434	0.58	2	0.95	10.3%	144	0.060	A
SR-125	Olympic Parkway to Birch Road	4,300	7.0%	301	0.58	2	0.95	10.3%	100	0.042	A
SR-125	Birch Road to Main Street	4,800	7.0%	336	0.58	2	0.95	10.3%	111	0.046	A
SR-125	Main Street to Otay Valley Road	4,800	7.0%	336	0.58	2	0.95	10.3%	111	0.046	A
SR-125	Otay Valley Road to Lone Star Road	4,800	7.0%	336	0.58	2	0.95	10.3%	111	0.046	A
SR-125	Lone Star Road to Otay Mesa Road	4,800	7.0%	336	0.58	2	0.95	10.3%	111	0.046	A
SR-125	Otay Mesa Road to SR-905	4,800	7.0%	336	0.58	2	0.95	10.3%	111	0.046	A

Source: Chen Ryan 2014
Notes: * ADT was obtained from SANDAG base year (2008) Regional Transportation Model.
Aux = Auxiliary Lane.

As shown in Table 5.2-11, all study area I-805 and SR-125 segments currently operate at acceptable LOS C or better under Existing conditions.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized freeway ramp intersections along I-805 and SR-125 within the study area were analyzed under Existing conditions using the ILV procedures as described in Section 5.2.1.1, above. ILV analysis results are displayed in Table 5.2-12 and analysis worksheets for the Existing conditions are provided in Appendix B.

Table 5.2-12
Ramp Intersection Capacity Analysis – Existing Conditions

Ramp Intersection	Peak Hour	ILV/Hour	Description
I-805 SB Ramps/Olympic Parkway	AM	1,124	*<1200: (Under Capacity)*
	PM	1,633	*>1500: (Over Capacity)*
I-805 NB Ramps/Olympic Parkway	AM	2,019	*>1500: (Over Capacity)*
	PM	1,213	*1200-1500: (At Capacity)*
SR-125 SB Ramps/Olympic Parkway	AM	372	*<1200: (Under Capacity)*
	PM	576	*<1200: (Under Capacity)*
SR-125 NB Ramps/Olympic Parkway	AM	350	*<1200: (Under Capacity)*
	PM	481	*<1200: (Under Capacity)*
SR-125 SB Ramps/Birch Road	AM	297	*<1200: (Under Capacity)*
	PM	262	*<1200: (Under Capacity)*
SR-125 NB Ramps/Birch Road	AM	147	*<1200: (Under Capacity)*
	PM	208	*<1200: (Under Capacity)*
SR-125 SB Ramps/Main Street	AM	Does Not Exist	
	PM		
SR-125 NB Ramps/Main Street	AM	Does Not Exist	
	PM		

Source: Chen Ryan 2014

As shown in Table 5.2-12, all of the ramp intersections along I-805 operate at "Under Capacity" and/or "At Capacity," with the following two exceptions:

- I-805 SB Ramps/Olympic Parkway – "Over Capacity" during the PM peak hour; and
- I-805 NB Ramps/Olympic Parkway – "Over Capacity" during the AM peak hour.

All of the existing SR-125 ramp intersections currently operate at "Under Capacity."

Ramp Metering Analysis

Table 5.2-13 displays the ramp metering analysis conducted at the I-805 northbound on-ramp at Olympic Parkway under Existing conditions. As discussed in the methodology section, based upon data provided by Caltrans District 11, the ramp meters at these locations are only activated between 5:30am and 9:30am, and thus ramp metering analysis was conducted during the AM peak hour under the various study scenarios.

The I-805 NB on-ramp currently has three lanes including one High Occupancy Vehicle (HOV) lane. Based upon field observation, approximately 20% of the total northbound on-ramp traffic was utilizing the HOV lane which results in 80% of the total arrival traffic (demand) utilizing the two non-HOV lanes.

As shown in Table 5.2-13, the peak hour capacity expected to be processed through the ramp meter is greater than the peak hour demand at both the I-805 northbound on-ramps at Olympic Parkway. Therefore, there is no queuing issue at the I-805 NB on-ramp at Olympic Parkway.

Table 5.2-13
Ramp Metering Analysis Existing Conditions

Location	Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay[4] (min)	Queue[5] (ft)
I-805 NB On-Ramp @ Olympic Parkway	AM	741	887	0	0	0

Source: Chen Ryan 2014
Notes:
1 Demand is the peak hour demand expected to use the on-ramp.
2 Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3 Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4 Delay = (Excess Demand/Meter Rate) X 60 min/hr.
5 Queue = (Excess Demand) X 29 ft/veh.

Existing Transit Service

The project study area is currently served by ten Metropolitan Transit System (MTS) routes, including:

- Route 701 – runs between the H Street and the Palomar Street Trolley Stations via Main Street, Hilltop Drive, and F Street. Route 701 currently provides services during weekdays and Saturdays, but not on Sundays.
- Route 703 – runs between the H Street Trolley Station and the Otay Ranch Town Center via Hilltop Drive and East Palomar Street. Route 703 currently provides services on Sundays only.

- Route 704 – runs between the H Street and the Palomar Street Trolley Stations via 4th Avenue, Sharp Medical Center, and Orange Avenue. Route 704 currently provides services during weekdays and Saturdays, but not on Sundays.
- Route 705 – runs between the E Street Trolley Station and Southwestern College via Plaza Bonita and Otay Lakes Road. Route 705 currently provides services during weekdays and Saturdays, but not on Sundays.
- Route 707 – runs between Southwestern College and the Otay Ranch Town Center via East H Street and Eastlake Parkway. Route 707 currently provides services during weekdays (Monday – Friday) only.
- Route 709 – runs between the H Street Trolley Station and Southwestern College via East H Street. Route 709 currently provides services during weekdays and Saturdays, but not on Sundays.
- Route 712 – runs between the Palomar Street Trolley Station and Southwestern College via Palomar Street. Route 712 currently provides services both during weekdays and on the weekends.
- Route 905 – runs between the Iris Avenue Trolley Station and Otay Mesa Port of Entry via SR-905 and Airway Road. Route 905 currently provides services both during weekdays and on the weekends.
- Route 929 – runs between Downtown San Diego and the Iris Avenue Trolley Station via Highland Avenue and 3rd Avenue. Route 929 currently provides services both during weekdays and on the weekends.
- Route 933/934 - runs in a two-way loop from the Iris Avenue Trolley Station in Otay Mesa, to the Palm Avenue Trolley Station in Palm City, then Imperial Beach, Nestor, and back to the Iris Avenue Trolley Station. Route 934 travels clockwise, while Route 933 travels counter clockwise. Both routes currently provide services both during weekdays and on the weekends.

In addition, the San Diego Trolley's Blue Line light rail is located just west of the project study area providing regional connections to many local bus routes within the study area, with stations located at E Street, H Street, Palmar Street, Palm Avenue, and Iris Avenue. The Blue Line provides service between Qualcomm Stadium and San Ysidro/Tijuana and travels parallel to and on the east side of I-5. The Blue Line covers 18.8 miles with 15-minute service seven days-a-week. During weekday rush-hours, the Blue Line operates every 7.5 minutes between Old Town and San Ysidro, with 30-minute service during the late-evenings.

5.2.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a traffic, circulation, or access impact. Impacts to traffic, circulation, and access would be significant if the proposed project would:

A. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersection). The criteria for determining significance for the short-term and long-term scenarios are outlined below:

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Short-Term (Study Horizon Year 0-4)

Intersections

a. A project specific impact if both the following criteria are met:
   i. LOS E or F.
   ii. Project trips comprise five percent or more of entering volume.
b. A cumulative impact would occur if only (i) is met.

Street Links/Segments

If the planning analysis using the volume to capacity ratio indicates LOS C or better, there is no impact. If the planning analysis indicates LOS D, E, or F, the GMOC method should be utilized:

a. Project specific impact if all the following criteria are met:
   i. LOS is LOS D for more than 2 hours or LOS E/F for 1 hour.
   ii. Project trips comprise five percent or more of segment volume.
   iii. Project adds greater than 800 ADT to segment.
b. Cumulative impact if only (i) is met.

Freeway Segments

a. Project specific impact if both the following criteria are met:
   i. Freeway segment LOS is E or F.
   ii. Project comprises 5% or more of the total forecasted ADT on that freeway segment.
b. Cumulative impact if only (i) is met.

Long-Term (Study Horizon Year 5 and later)

Intersections

a. Project specific impact if both the following criteria are met:
   i. LOS E or F.
   ii. Project trips comprise 5% or more of entering volume.
b. A cumulative impact if only (i) is met.

Street Segments

Use the planning analysis using the volume-to-capacity ratio methodology only. The GMOC analysis methodology is not applicable beyond a four-year horizon.

a. Project specific impact if all of the following criteria are met:
   i. LOS is LOS D, LOS E, or LOS F.
   ii. Project trips comprise 5% or more of segment volume.
   iii. Project adds greater than 800 ADT to segment.
b. Cumulative impact if only (i) is met.
c. However if, the intersections along a LOS D or LOS E segment all operate at LOS D or better, the segment impact is not considered significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. If segment Level of Service is LOS F, impact is significant regardless of intersection LOS.
d. Notwithstanding the foregoing, if the impact identified in paragraph (a) above occurs at study horizon year 10 or later, and is off site and not adjacent to the project, the impact is considered cumulative. Study year 10 may be that typical SANDAG model year which is between 8 and 13 years in the future. In this case of a traffic study being performed in the period of 2000 to 2002, because the typical model will only evaluate traffic at years divisible by 5 (i.e., 2005, 2010, 2015 and 2020) study horizon year 10 would correspond to the SANDAG model for year 2010 and would be 8 years in the future. If the model year is less than 7 years in the future, study horizon year 10 would be 13 years in the future.
e. In the event a direct identified project-specific impact in paragraph (a) above occurs at study horizon year 5 or earlier and the impact is off site and not adjacent to this project, but the property immediately adjacent to the identified project-specific impact is also proposed to be developed in approximately the same time frame, an additional analysis may be required to determine whether or not the identified project

specific impact would still occur if the development of the adjacent property does not take place. If the additional analysis concludes that the identified project-specific impact is no longer a direct impact, then the impact shall be considered cumulative.

Freeway Segments

a. Project specific impact if both the following criteria are met:
   i. Freeway segment LOS is LOS E or LOS F.
   ii. Project comprises five percent or more of total forecasted ADT on that freeway segment.
b. Cumulative impact if only (i) is met. Traffic impacts are defined as either *direct impacts* or *cumulative impacts. Direct impacts* are those impacts for which the addition of project trips results in an identifiable degradation in level of service on freeway segments, roadway segments, or at intersections, triggering the need for specific project-related improvements. *Cumulative impacts* are those in which the project trips contribute to a poor level of service at a nominal level and thus requiring the developer to contribute its fair share towards the improvements necessary to mitigate the impact.

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In general, a significant impact would be identified when the addition of project traffic results in a level of service dropping from LOS D or better to substandard LOS E or F. Table 5.2-14 summarizes the impact significance thresholds for facilities operating at substandard level of service with and without the project. These thresholds as applied to roadway segments are based upon an acceptable increase in the Volume/Capacity (V/C) ratio.

Table 5.2-14
City of San Diego Measures of Significant Project Traffic Impacts

	Allowable Change Due to Impact					
	Freeways		*Roadway Segments*		*Intersections*	*Ramp Metering**
LOS with Project	*V/C*	*Speed (mph)*	*V/C*	*Speed (mph)*	*Delay (sec)*	*Delay (min)*
E	0.01	1.0	0.02	1.0	2.0	2.0
F	0.005	0.5	0.01	0.5	1.0	1.0

Source: Chen Ryan 2014
Note: * For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

B. 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.

C. Substantially increase hazards due to a design feature or incompatible uses.

D. Result in inadequate emergency access.

E. Be inconsistent with the General Plan, GDP, ordinances or policies 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.

F. 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

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

5.2.3 Impacts

5.2.3.1 2006 EIR Impacts Conclusions

The following conclusions related to transportation, circulation and access as described in the 2006 EIR are applicable to the proposed project, specifically Village Two:

One future intersection, Rock Mountain Road/La Media Road (Rock Mountain Road has since been renamed to Main Street), would be significantly impacted by buildout of the SPA Plan, resulting in LOS E during AM peak hours and LOS F during PM peak hours. Four roadway segments were found to be cumulatively impacted through implementation of the SPA Plan. These segments include three segments of Rock Mountain Road from Main Street to Eastlake Parkway, with all three segments experiencing LOS F during Year 2015 conditions. The final cumulative impact to roadway segments would also occur on Rock Mountain Road from SR-125 to Eastlake Parkway with an LOS F under Year 2030 conditions.

Significant cumulative impacts were calculated on I-805 since LOS F was calculated for individual scenarios, and the SPA Plan would add traffic to this freeway. In addition, access-related impacts would occur if appropriate lane configurations are not provided at the SPA Plan driveways.

Mitigation measures identified in the 2006 EIR were found to reduce all impacts to a level below significance. However, since the freeway system is developed and managed by Caltrans, the City has only limited ability to affect the level of congestion on these roadways, as such, mitigation is

not within the authority of the City of Chula Vista sufficient to avoid the cumulative contribution to traffic on these roadways and the impact remains significant.

5.2.3.2 Proposed Project Impact Analysis

A. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersection).

In considering whether the proposed project would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, it is necessary to analyze the project's potential impacts relative to the significance criteria utilized by the cities of Chula Vista and San Diego and discussed above. This impact analysis was conducted under five different scenarios: (1) Existing conditions plus project buildout, (2) 2015 conditions with 2015 project, (3) 2020 conditions with 2020 project, (4) 2025 conditions with 2025 project, and (5) 2030 conditions with project buildout. Also included in this analysis is a comparison of traffic impacts between the proposed and adopted general plan circulation element.

Project Trip Generation

Trip generation rates for the proposed Village 2 project were developed utilizing SANDAG's Guide to Vehicular Traffic Generation Rates for the San Diego Region. Tables 5.2-15 through 5.2-18 display daily, as well as AM and PM peak hour project trip generation for each of the four development phases (2015, 2020, 2025, and 2030), respectively.

Table 5.2-15
Village 2 Comprehensive SPA Project Trip Generation Year 2015

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	*Trips*	%	*Trips*
Single Family	138 DU	10/DU	1,380	8	110 (33-in/77-out)	10	138 (97-in/41-out)
Multi-Family	556 DU	8/DU	4,448	8	356 (71-in/285-out)	10	445 (312-in/134-out)
Mixed-Use Commercial	13.3 KSF	110/KSF	1,463	3	44 (26-in/18-out)	9	132 (66-in/66-out)
CPF	5 AC	30/AC	150	5	8 (5-in/3-out)	8	12 (6-in/6-out)
Elementary School	0.0 AC	90/AC	0	32	0 (0-in/0-out)	9	0 (0-in/0-out)
Light Industrial	0.8 AC	90/AC	72	11	9 (7-in/1-ouy)	12	9 (2-in/7-out)
Neighborhood Park	3.4 AC	5/AC	17	4	1 (1-in/1-out)	8	2 (1-in/1-out)
		Total by 2015	**7,530**		**527 (143-in/385-out)**		**738 (484-in/255-out)**

Source: Chen Ryan 2014

As shown in Table 5.2-15, the proposed project would generate a total of 7,530 daily trips by Year 2015, including 527 AM peak hour trips and 738 PM peak hour trips.

Table 5.2-16
Village 2 Comprehensive SPA Project Trip Generation Year 2020

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	*Trips*	%	*Trips*
Single Family	225 DU	10/DU	2,250	8	180 (54-in/126-out)	10	225 (158-in/68-out)
Multi-Family	904 DU	8/DU	7,232	8	579 (116-in/463-out)	10	723 (506-in/217-out)
Mixed-Use Commercial	21.7 KSF	110/KSF	2,387	3	72 (43-in/29-out)	9	215 (107-in/107-out)
CPF	8.1 AC	30/AC	243	5	12 (7-in/5-out)	8	19 (10-in/10-out)
Elementary School	9.5 AC	90/AC	885	32	274 (164-in/10-out)	9	77 (31-in/46-out)
Light Industrial	1.2 AC	90/AC	108	11	12 (11-in/1-out)	12	13 (3-in/10-out)
Neighborhood Park	5.5 AC	5/AC	28	4	1 (1-in/1-out)	8	2 (1-in/1-out)
Total by 2020			**13,103**		**1,129 (396-in/734-out)**		**1,275 (816-in/459-out)**

Source: Chen Ryan 2014

As shown in Table 5.2-16, the proposed project would generate a total of 13,103 daily trips by the Year 2020, including 1,129 AM peak hour trips and 1,275 PM peak hour trips.

Table 5.2-17
Village 2 Comprehensive SPA Project Trip Generation Year 2025

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	*Trips*	%	*Trips*
Single Family	311 DU	10/DU	3,110	8	249 (75-in/174-out)	10	311 (218-in/93-out)
Multi-Family	1251 DU	8/DU	10,008	8	801 (160-in/641-out)	10	1,001 (701-in/300-out)
Mixed-Use Commercial	30 KSF	110/KSF	3,300	3	99 (59-in/40-out)	9	297 (149-in/149-out)
CPF	11.2 AC	30/AC	336	5	17 (10-in/7-out)	8	27 (13-in/13-out)
Elementary School	9.5 AC	90/AC	885	32	274 (164-in/109-out)	9	77 (31-in/46-out)
Light Industrial	1.7 AC	90/AC	153	11	17 (15-in/2-out)	12	18 (4-in/15-out)
Neighborhood Park	7.6 AC	5/AC	38	4	2 (1-in/1-out)	8	3 (2-in/2-out)
Total by 2025			**17,800**		**1,457 (484-in/974-out)**		**1,734 (1,118-in/618-out)**

Source: Chen Ryan 2014

As shown in Table 5.2-17, the proposed project would generate a total of 17,800 daily trips by Year 2025, including 1,457 AM peak hour trips and 1,734 PM peak hour trips. All of the proposed land uses would be developed by year 2025.

Table 5.2-18
Village 2 Comprehensive SPA Project Trip Generation Year 2030

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	*Trips*	%	*Trips*
Single Family	311 DU	10/DU	3,110	8	249 (75-in/174-out)	10	311 (218-in/93-out)
Multi-Family	1251 DU	8/DU	10,008	8	801 (160-in/641-out)	10	1,001 (701-in/300-out)
Mixed-Use Commercial	30 KSF	110/KSF	3,300	3	99 (59-in/40-out)	9	297 (149-in/149-out)
CPF	11.2 AC	30/AC	336	5	17 (10-in/7-out)	8	27 (13-in/13-out)
Elementary School	9.5 AC	90/AC	885	32	274 (164-in/109-out)	9	77 (31-in/46-out)
Light Industrial	1.7 AC	90/AC	153	11	17 (15-in/2-out)	12	18 (4-in/15-out)
Neighborhood Park	7.6 AC	5/AC	38	4	2 (1-in/1-out)	8	3 (2-in/2-out)
		Total by 2025	**17,800**		**1,457 (484-in/974-out)**		**1,734 (1,118-in/618-out)**

Source: Chen Ryan 2014

As shown in Table 5.2-18, the proposed project would generate a total of 17,800 daily trips by the Year 2030, including 1,457 AM peak hour trips and 1,734 PM peak hour trips.

Project trips were disaggregated into those that would remain within the project site (internally captured), and those that would leave the project site (external trips). Only external trips were distributed and assigned to the study area roadways and intersections. Each trip generation rate includes a number of trip purposes, generally categorized as home based work (HBW), home based other (HBO, consists of shopping, school, recreation, etc.) and non-home based (NHB) trips. For developments with mixed land uses, many of the trips generated would have been served on-site. For example, shopping trips (a part of HBO) would be satisfied by the commercial uses within the project site, as would school trips and recreational trips. The same logic would apply to the trip production/attraction interactions between office and commercial uses. It is a common practice, both nationwide and in the San Diego region, to utilize trip reductions reflecting the internal capture of trips associated with mixed-use developments resulting from the fact that complementary land uses (i.e., residential and commercial) help to serve each other's needs on-site.

The proposed project includes residential, commercial, office/light industrial, school, and park uses, and not all of the trips generated by these uses would leave the project site given the nature of the land uses. Estimates for internal versus external trip generation percentages were developed based upon likely origins/destinations of each land use type in combination with standard traffic engineering practice. On that basis, it was determined that approximately 10% of the trips generated by residential uses (single-family and multi-family), office, and light industrial are projected to remain internal to the project site. Other proposed land uses, including shopping, school, recreational, etc. would be supported primarily by residents of the Village 2 project and, as a result, higher internal capture rates were projected for these land

uses, including a 50% rate for commercial uses and 80% for schools, CPF sites and parks. The proportion of internal and external project trips for each village under all study timeframes is provided in Appendix B.

Project Trip Distribution

The distribution of the external project trips was based upon a computer generated "Select Zone" analysis utilizing the Series 11 Year 2030 SANDAG Transportation Model, "Southbay 2, Village 2." Five different trip distributions were developed in conjunction with the anticipated roadway network under the various analysis scenarios and timeframes, as follows:

- Existing
- Year 2015
- Year 2020
- Year 2025
- Year 2030.

The external project trip distribution patterns associated with the existing, Year 2015, Year 2020, Year 2025, and Year 2030 networks are provided in Appendix B.

Project Trip Assignment

Based upon the project trip distributions, the external daily and AM/PM peak hour project trips were assigned to the various roadway networks. Five separate sets of trip assignments were developed including the following:

- Buildout land uses on the Existing network
- 2015 land uses on the Year 2015 network
- 2020 land uses on the Year 2020 network
- 2025 land uses on the Year 2025 network
- Buildout land uses on the Year 2030 network.

The assignment of project trips to the Existing roadway networks and key study area intersections are provided in Appendix B. Similarly, the assignment of project trips to the respective (2015, 2020, 2025, and 2030) roadway networks and key study area intersections are displayed in Appendix B.

Existing Plus Project (Buildout) Conditions

This section provides an analysis of existing traffic conditions with the addition of project trips from buildout of the proposed project. This scenario is regarded as hypothetical when used in connection with a long-range development project such as the proposed project, which is not anticipated to reach full buildout until approximately 2030. The scenario is hypothetical because it assumes that the proposed project would be fully built out immediately and the corresponding full buildout traffic volumes added to existing roadway volumes and infrastructure. Thus, the existing plus project analysis presumes that the existing environment (existing traffic volumes, existing roadway infrastructure, and existing land uses) will not change over the long-term buildout of the project.

As a result of this presumption, future increases in traffic volumes attributable to other development projects (i.e., cumulative traffic volumes) are not accounted for in the analysis. This results in the analysis potentially understating project impacts because capacity that otherwise would be utilized by future development that precedes the proposed project buildout is now available to the project. On the other hand, because the scenario does not account for future planned roadway network improvements that would increase roadway capacities, the analysis potentially results in overstating project impacts. Furthermore, because the analysis does not take into account future development and related changing land uses, the analysis does not account for the corresponding change in trip distribution patterns that accompany changing land uses, which could result in either understating or overstating impacts.

For these reasons, the analysis of the project's potential impacts as measured against the existing conditions baseline that follows, as well as proposed mitigation measures, is presented for information purposes only. The identification of the project's significant impacts, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project such as this.

Existing Plus Project (Buildout) Roadway Network and Traffic Volumes

This scenario includes existing traffic volumes with the addition of the proposed project buildout traffic. Intersection and roadway geometrics under Existing Plus Project conditions would be generally identical to Existing conditions, with the addition of the following roadways to provide necessary access for each of the proposed villages:

- Heritage Road along the frontage of Village 2 – this facility is included as a 6-lane Prime Arterial providing necessary access to Village 2.

In addition, three project driveways were also analyzed under the "Plus Project" conditions, including:

- Santa Victoria Road/Olympic Parkway – signalized intersection
- Heritage Road/Olympic Parkway – signalized intersection
- Heritage Road/Santa Victoria Road – signalized intersection.

Intersection and roadway geometrics under Existing Plus Project conditions are provided in Appendix B.

Intersection Analysis

Table 5.2-19 displays intersection level of service and average vehicle delay results under Existing Plus Project (Buildout) conditions. Level of service calculation worksheets for the Existing Plus Project (Buildout) conditions are provided in Appendix B.

As shown in Table 5.2-19, the following two study intersections, including one in Chula Vista and one in San Diego, would operate at substandard LOS E under Existing Plus Project (Buildout) conditions:

City of Chula Vista

- I-805 SB Ramps/Olympic Parkway (signalized) – LOS E during the PM peak hour and the project traffic would comprise more than 5% of the total intersection entering volume.

Per the City of Chula Vista significant impact criteria, the additional trips generated by buildout of the proposed project would result in significant cumulative impacts at the identified intersection as the buildout project traffic would comprise less than 5% of the total entering volumes at this intersection.

City of San Diego

- Heritage Road/Avenida De Las Vistas (SD) (all-way stop controlled) – LOS E during the AM peak hour and project would add more than 2 second of delay.

Per the City of San Diego significant impact criteria, the addition of trips generated by buildout of the proposed project would result in direct impact at this intersection.

Table 5.2-19
Peak Hour Intersection Level of Service Results – Existing Plus Project Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
Paseo Ranchero/Heritage Road/Telegraph Canyon Road	37.7	D	24.3	C			3.8%/2.9%		No
La Media Road/Telegraph Canyon Road/Otay Lakes Road	32.5	C	32.9	C			4.4%/2.8%		No
Heritage Road/East Palomar Street	27.2	C	22.9	C			13.3%/10.9%		No
La Media Road/East Palomar Street	37.6	D	26.6	C			6.6%/6.0%		No
Melrose Avenue/Orange Avenue	24.9	C	30.8	C			3.5%/1.8%		No
I-805 SB Ramps/Olympic Parkway	46.2	D	59.6	**E**			9.9%/4.8%		**Yes (Cumulative)**
I-805 NB Ramps/Olympic Parkway	54.0	D	35.1	D			11.7%/7.8%		No
Oleander Avenue/Olympic Parkway	49.7	D	45.2	D			13.9%/9.3%		No
Brandywine Avenue/Olympic Parkway	54.8	D	52.6	D			12.9%/8.9%		No
Santa Victoria Road/Olympic Parkway	0.8	A	0.6	A			12.%/10.1%		No
Heritage Road/Olympic Parkway	33.2	C	21.0	C			16.%/12.7%		No
Santa Venetia Street/Olympic Parkway	11.3	B	2.7	A			10.1%/7.2%		No
La Media Road/Olympic Parkway	45.5	D	33.0	C			11.7%/9.3%		No
East Palomar Street/Olympic Parkway	28.4	C	24.4	C			0.9%/0.5%		No
SR-125 SB Ramps/Olympic Parkway	4.3	A	4.9	A			0.5%/0.2%		No
SR-125 NB Ramps/Olympic Parkway	1.1	A	4.2	A			0.3%/0.1%		No
Eastlake Parkway/Olympic Parkway	18.5	B	19.8	B			1.9%/.9%		No
Heritage Road/Santa Victoria Road	18.0	B	11.4	B			100.0%/100.0%		No
La Media Road/Santa Venetia Street	44.9	D	16.2	B			19.%/25.6%		No
La Media Road/Birch Road	40.6	D	27.7	C			41.6%/46.0%		No
Magdalena Avenue/Birch Road	26.4	C	19.1	B			16.6%/15.8%		No
SR-125 SB Ramps/Birch Road	6.0	A	3.9	A			22.5%/17.6%		No
SR-125 NB Ramps/Birch Road	0.9	A	2.2	A			23.7%/16.7%		No

Table 5.2-19
Peak Hour Intersection Level of Service Results – Existing Plus Project Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
Eastlake Parkway/Birch Road	23.5	C	34.0	C			8.5%/5.5%		No
Heritage Road/Santa Liza Avenue	7.1	A	7.4	A			100.0%/100.0%		No
Heritage Road/Main Street* (one-way stop controlled)	10.8	B	13.0	B			14.1%/3.1%		No
La Media Road (SB)/Main Street (WB)	Does Not Exist								
La Media Road (NB)/Main Street (WB)	Does Not Exist								
La Media Road (SB)/Main Street (EB)	Does Not Exist								
La Media Road (NB)/Main Street (EB)	Does Not Exist								
Magdalena Avenue/Main Street	Does Not Exist								
SR-125 SB Ramps/Main Street	Does Not Exist								
SR-125 NB Ramps/Main Street	Does Not Exist								
Heritage Road/Otay Valley Road/Avenida De Las Vistas (SD) (all-way stop controlled)	40.8	**E**	21.8	C	38.0/20.1	**E**/C		2.8/1.7	**Yes (Direct)**
Heritage Road/Otay Mesa Road (SD)	24.1	B	23.5	C	21.6/22.2	C/C		2.5/1.3	No
Cactus Road/Otay Mesa Road (SD)	10.6	B	12.7	B	10.5/11.5	B/B		0.1/1.2	No

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS E or F.
* For one or two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

Roadway Segment Analysis

Tables 5.2-20 and 5.2-21 display the level of service analysis results for key roadway segments under Existing Plus Project (Buildout) conditions in the City of Chula Vista and City of San Diego, respectively. A total of four roadway segments in the City of Chula Vista would operate at substandard LOS D or E under Existing Plus Project (Buildout) conditions, including:

City of Chula Vista

- Olympic Parkway, between I-805 NB Ramps and Oleander Avenue (LOS D) - Proposed project trips would comprise more than 5% of the total segment volume and would add more than 800 ADT. However, the intersections (I-805 NB Ramps/Olympic Parkway and Oleander Avenue/Olympic Parkway) along this segment would operate at acceptable LOS D/D and LOS D/D during the peak hours, respectively. Therefore, the proposed project would not result in a significant project specific impact at this location.
- Olympic Parkway, between Oleander Avenue and Brandywine Avenue (LOS E) – Proposed project trips would comprise more than 5% of the total segment volume and would add more than 800 ADT. However, the intersections (Oleander Avenue/Olympic Parkway and Brandywine Avenue/Olympic Parkway) along this segment would operate at acceptable LOS D/D and LOS D/D during the peak hours, respectively. Therefore, the proposed project would not result in a significant project specific impact at this location.
- Olympic Parkway, between Brandywine Avenue and Santa Victoria Road (LOS E) – Proposed project trips would comprise more than 5% of the total segment volume and would add more than 800 ADT. However, the intersections (Brandywine Avenue/Olympic Parkway and Santa Victoria Road/Olympic Parkway) along this segment would operate at acceptable LOS D/D and LOS A/A during the peak hours, respectively. Therefore, the proposed project would not result in a significant project specific impact at this location.
- Olympic Parkway, between Santa Victoria Road and Heritage Road (LOS E) – Proposed project trips would comprise more than 5% of the total segment volume and would add more than 800 ADT. However, the intersections (Santa Victoria Road/Olympic Parkway and Heritage Road/Olympic Parkway) along this segment would operate at acceptable LOS A/A and LOS C/C during the peak hours, respectively. Therefore, the proposed project would not result in a significant project specific impact at this location.

Table 5.2-20
Roadway Segment Level of Service Results – Existing Plus Project (Buildout) Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Telegraph Canyon Road	Medical Center Drive	Heritage Road/Paseo Ranchero	6-Ln w/RM	46,145	50,000	C	1,068	2.31%	–	No
Telegraph Canyon Road	Heritage Road/Paseo Ranchero	La Media Road/Otay Lakes Road	6-Ln w/RM	36,252	50,000	A	178	0.49%	–	No
Otay Lakes Road	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	27,033	50,000	C	712	2.63%	–	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	42,680	50,000	B	1,068	2.50%	–	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	15,022	30,000	A	1,602	10.66%	–	No
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	20,656	30,000	A	534	2.59%	–	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	12,549	30,000	A	178	1.42%	–	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	23,473	30,000	B	356	1.52%	–	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	29,381	30,000	C	356	1.21%	–	No
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	43,725	50,000	B	4,272	9.77%	–	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	53,670	50,000	**D**	5,162	9.62%	Yes	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	57,602	50,000	**E**	5,340	9.27%	Yes	No
Olympic Parkway	Brandywine Avenue	Santa Victoria Road	6-Ln w/RM	58,208	50,000	**E**	5,518	9.48%	Yes	No
Olympic Parkway	Santa Victoria Road	Heritage Road	6-Ln w/RM	58,208	50,000	**E**	5,518	9.48%	Yes	No
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln w/RM	48,410	50,000	C	178	0.37%	–	No

Table 5.2-20
Roadway Segment Level of Service Results – Existing Plus Project (Buildout) Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln w/RM	45,983	50,000	C	178	0.39%	–	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	31,750	50,000	A	712	2.24%	–	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	36,089	50,000	A	534	1.48%	–	No
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	34,183	70,000	A	356	1.04%	–	No
Olympic Parkway	SR-125 NB Ramps	Eastlake Parkway	8-Ln w/RM	35,964	70,000	A	356	0.99%	–	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	12,720	40,000	A	3,560	27.99%	–	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	13,588	40,000	A	2,848	20.96%	–	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	14,667	50,000	A	2,670	18.20%	–	No
Birch Road	SR-125 NB Ramps	Eastlake Parkway	6-Ln w/RM	13,048	50,000	A	2,314	17.73%	–	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	11,399	50,000	A	534	4.68%	–	No
Main Street	Heritage Road	La Media Road	Does Not Exist							
Main Street	La Media Road	SR-125 SB Ramps	Does Not Exist							
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist							
Main Street	SR-125 NB Ramps	Eastlake Parkway	Does Not Exist							
Otay Valley Road	Main Street	SR-125 SB Ramps	Does Not Exist							
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	14,681	22,000	A	1,424	9.70%	–	No

Table 5.2-20
Roadway Segment Level of Service Results – Existing Plus Project (Buildout) Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	21,680	50,000	A	2,670	12.32%	–	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	17,683	50,000	A	4,806	27.18%	–	No
Heritage Road	Olympic Parkway	Santa Victoria Road	6-Ln w/RM*	6,408	50,000	A	6,408	100.00%	–	No
Heritage Road	Santa Victoria Road	Santa Liza Avenue	6-Ln w/RM*	1,780	50,000	A	1,780	100.00%	–	No
Heritage Road	Santa Liza Avenue	Main Street	Does Not Exist							
Heritage Road	Main Street	Avenida De Las Vistas	2-Ln w/TWLTL	9,321	50,000	A	534	5.73%	–	No
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	24,349	50,000	A	1,780	7.31%	–	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	16,624	50,000	A	1,958	11.78%	–	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	18,900	50,000	A	2,492	13.19%	–	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	14,897	50,000	A	3,382	22.70%	–	No
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	2,606	50,000	A	534	20.49%	–	No
La Media Road	Santa Luna Street	Main Street	Does Not Exist							
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	8,995	22,000	A	712	7.92%	–	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	3,656	12,000	A	356	9.74%	–	No
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	3,478	22,000	A	178	5.12%	–	No

Table 5.2-20
Roadway Segment Level of Service Results – Existing Plus Project (Buildout) Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Eastlake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	12,199	40,000	A	356	2.92%	–	No
Eastlake Parkway	Birch Road	Main Street/Hunte Parkway	6-Ln w/RM	2,246	40,000	A	356	15.85%	–	No

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS D, E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.
* Facility is required for project access.

Table 5.2-21
Roadway Segment Level of Service Results – Existing Plus Project (Buildout) Conditions (City of San Diego)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS D)	LOS w/Project	ADT w/o Project	LOS w/o Project	Change in V/C	Significant Impact?
Otay Mesa Road	Ocean View Hills Parkway	Heritage Road	6-Ln w/RM	35,390	55,000	C	35,212	C	0.003	No
Otay Mesa Road	Heritage Road	Cactus Road	6-Ln w/RM	31,860	55,000	B	31,682	B	0.003	No
Otay Mesa Road	Cactus Road	Britannia Boulevard	6-Ln w/RM	51,156	55,000	D	50,978	D	0.003	No
Heritage Road	Avenida De Las Vistas	Otay Mesa Road	2-Ln	8,340	9,000	D	7,984	D	0.036	No

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS E or F.
RM = Raised Median.

Freeway/State Highway Segment Analysis

The freeway/state highway segment level of service analysis was performed utilizing the methodology presented in Section 5.2.1.1. Table 5.2-22 displays the resulting level of service for I-805, SR-125 and SR-905 under Existing Plus Project (Buildout) conditions.

As shown in Table 5.2-22, all of the study freeway/state highway segments would continue to operate at acceptable LOS C or better under Existing Plus Project (Buildout) conditions. The addition of trips generated by full development of the proposed project would not cause any significant traffic impacts to study area freeway/state highway segments.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized ramp intersections along I-805 and SR-125 within the study area were analyzed under Existing Plus Project (Buildout) conditions using the ILV procedures as described in Section 5.2.1.1. ILV analysis results are displayed in Table 5.2-23 and analysis worksheets for the Existing Plus Project (Buildout) conditions are provided in Appendix B.

Table 5.2-22
Freeway/State Highway Segment Level of Service Results – Existing Plus Project (Buildout) Conditions

Freeway/ State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/Project	Project Contribution (≥ 5%)	Significant Impact?
I-805	Home Street to SR-94	168,346	6.9%	11,616	0.51	4	0.97	4.2%	1,558	0.649	C	0.2%	No
I-805	SR-94 to Market Street	163,624	8.0%	13,090	0.50	4	0.97	4.2%	1,726	0.719	C	0.3%	No
I-805	Market Street to Imperial Avenue	163,980	8.0%	13,118	0.50	5	0.97	4.2%	1,379	0.575	B	0.3%	No
I-805	Imperial Avenue to E Division Street	183,258	8.0%	14,661	0.50	5	0.97	4.2%	1,547	0.645	C	0.3%	No
I-805	E Division Street to Plaza Boulevard	190,936	7.2%	13,747	0.51	5	0.95	3.8%	1,502	0.626	B	0.3%	No
I-805	Plaza Boulevard to SR-54	193,636	8.1%	15,685	0.52	5	0.96	2.2%	1,717	0.715	C	0.3%	No
I-805	SR-54 to Bonita Road	184,326	7.2%	13,271	0.52	4+1Aux	0.96	1.7%	1,607	0.670	C	0.5%	No
I-805	Bonita Road to East H Street	184,326	7.8%	14,377	0.50	5	0.95	1.7%	1,529	0.637	C	0.5%	No
I-805	East H Street to Telegraph Canyon Road	177,126	7.8%	13,816	0.50	5	0.95	1.9%	1,466	0.611	B	0.5%	No
I-805	Telegraph Canyon Road to East Palomar Street	155,692	7.1%	11,054	0.51	4+1Aux	0.92	1.7%	1,370	0.571	B	0.5%	No
I-805	East Palomar Street to Olympic Parkway	155,692	7.1%	11,054	0.51	4+1Aux	0.92	1.7%	1,370	0.571	B	0.4%	No
I-805	Olympic Parkway to Main Street	124,704	6.9%	8,605	0.51	4+1Aux	0.93	5.4%	1,082	0.451	B	0.0%	No
I-805	Main Street to Palm Avenue	118,258	7.1%	8,396	0.58	4+1Aux	0.95	10.3%	1,195	0.498	B	0.3%	No
I-805	Palm Avenue to SR-905	113,158	7.1%	8,034	0.58	4+1Aux	0.95	10.3%	1,151	0.480	B	0.3%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	6,378	7.0%	446	0.58	2	0.95	10.3%	144	0.060	A	0.7%	No
SR-125	Olympic Parkway to Birch Road	4,300	7.0%	301	0.58	2	0.95	10.3%	100	0.042	A	0.0%	No

Table 5.2-22
Freeway/State Highway Segment Level of Service Results – Existing Plus Project (Buildout) Conditions

Freeway/ State Highway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/Project	Project Contribution (≥ 5%)	Significant Impact?
SR-125	Birch Road to Main Street	5,156	7.0%	361	0.58	2	0.95	10.3%	111	0.046	A	1.1%	No
SR-125	Main Street to Otay Valley Road	5,156	7.0%	361	0.58	2	0.95	10.3%	111	0.046	A	1.1%	No
SR-125	Otay Valley Road to Lone Star Road	5,156	7.0%	361	0.58	2	0.95	10.3%	111	0.046	A	1.1%	No
SR-125	Lone Star Road to Otay Mesa Road	5,156	7.0%	361	0.58	2	0.95	10.3%	111	0.046	A	1.1%	No
SR-125	Otay Mesa Road to SR-905	4,978	7.0%	348	0.58	2	0.95	10.3%	111	0.046	A	1.4%	No

Source: Chen Ryan 2014
Notes: Aux = Auxiliary Lane.
M = Managed Lane.

Table 5.2-23
Ramp Intersection Capacity Analysis – Existing Plus Project (Buildout) Conditions

Ramp Intersection	Peak Hour	ILV/Hour	Description
I-805 SB Ramps/Olympic Parkway	AM	1,382	1200–1500: (At Capacity)
	PM	1,688	>1500: (Over Capacity)
I-805 NB Ramps/Olympic Parkway	AM	2,237	>1500: (Over Capacity)
	PM	1,361	1200–1500: (At Capacity)
SR-125 SB Ramps/Olympic Parkway	AM	372	<1200: (Under Capacity)
	PM	285	<1200: (Under Capacity)
SR-125 NB Ramps/Olympic Parkway	AM	194	<1200: (Under Capacity)
	PM	226	<1200: (Under Capacity)
SR-125 SB Ramps/Birch Road	AM	376	<1200: (Under Capacity)
	PM	578	<1200: (Under Capacity)
SR-125 NB Ramps/Birch Road	AM	350	<1200: (Under Capacity)
	PM	481	<1200: (Under Capacity)
SR-125 SB Ramps/Main Street	AM	Does Not Exist	
	PM		
SR-125 NB Ramps/Main Street	AM	Does Not Exist	
	PM		

Source: Chen Ryan 2014

As shown in Table 5.2-23, all of the I-805 ramp intersections would operate at "At Capacity" and/or "Under Capacity," with the exception of the following:

- I-805 SB Ramps/Olympic Parkway – "Over Capacity" during the PM peak hour; and
- I-805 NB Ramps/Olympic Parkway – "Over Capacity" during the AM peak hour.

All of the SR-125 ramp intersections within the study area would operate at "Under Capacity" during both the AM and PM peak hours under the Existing Plus Project (Buildout) conditions.

Ramp Metering Analysis

Table 5.2-24 displays the ramp metering analysis conducted at I-805 northbound on-ramps at Olympic Parkway under Existing Plus Project (Buildout) conditions. Based on observed conditions, it is expected that approximately 80% of the total arrival traffic (demand) would utilize the two non-HOV lanes.

As shown in Table 5.2-24, similar to Existing conditions, the peak hour capacity expected to be processed through the ramp meter would continue to be greater than the peak hour demand at both the I-805 northbound on-ramp at Olympic Parkway. Therefore, no queuing issue would be presented at this on-ramp.

Table 5.2-24
Ramp Metering Analysis – Existing Plus Project (Buildout) Conditions

Location	Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay w/Project[4] (min)	Queue[5] (ft)	Delay w/o Project (min)	Significant Impact?
I-805 NB On-Ramp @ Olympic Parkway	AM	806	887	0	0	0	0	No

Source: Chen Ryan 2014
Notes:
1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand/Meter Rate) X 60 min/hr.
5. Queue = (Excess Demand) X 29 ft/veh

In summary, under the Existing Plus Project analysis, the proposed project would result in significant impacts at the following two intersections:

- I-805 SB Ramps/Olympic Parkway (signalized)
- Heritage Road/Avenida De Las Vistas (SD) (all-way stop controlled).

Under this scenario, the proposed project would have less than significant impacts to roadway segments, freeways/state highway segments, and on-ramp meters.

In comparison, as addressed later in this section, under the Year 2030 scenario, which correctly accounts for intervening growth in cumulative traffic, infrastructure improvements, and other changing land uses, the proposed project would result in significant impacts at the following intersection, roadway segment, and freeway/state highway segment:

Intersections:

- I-805 SB Ramps/Olympic Parkway.

Roadway Segments:

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps.

Freeway/State Highway Segment:

- I-805, from SR-54 to Bonita Road.

Under the Year 2030 scenario, impacts to on-ramp meters would be less than significant.

Thus, in this case, the Existing Plus Project analysis both overstates and understates proposed project impacts. It understates impacts by failing to identify significant impacts to a roadway segment of Orange Avenue and a freeway segment of I-805. It overstates impacts by identifying

one intersection impact that effectively would be remedied during the years preceding project buildout either through mitigation measures implemented by the proposed project, or through planned infrastructure improvements constructed by the project applicant and others.

As such, it would be inaccurate to use the Existing Plus Project scenario to measure significance, that is, for the purpose of identifying project impacts and mitigation. As a result, this scenario is provided for disclosure, information, and comparison purposes only. Significant traffic impacts and recommended mitigation are assessed under the 2015, 2020, 2025, and 2030 scenarios presented below because those scenarios accurately account for the long-range projected development of the proposed project within the context of an ever-changing traffic network and associated land uses.

Year 2015 Traffic Conditions

This section provides an analysis of Year 2015 traffic conditions with the proposed project. Intersection and roadway segment analyses in this section focus on facilities within the City of Chula Vista as interim year information (2015, 2020 and 2025) for facilities within the City of San Diego is not available. Facilities within both the cities of Chula Vista and San Diego are analyzed in the buildout Year 2030 scenario. The analyses were conducted using the methodologies described in Section 5.2.1.1.

Year 2015 Roadway Network and Traffic Volumes

The Year 2015 roadway network would be similar to the existing network with the following exceptions:

<u>To be constructed by the Proposed Project:</u>

- Heritage Road between Olympic Parkway and Main Street – this facility was included as a 6-lane Prime Arterial providing frontage and access for Village 2.
- Santa Victoria Road/Olympic Parkway Intersection – signalized intersection (will provide necessary access to Village 2, which will be partially developed by Year 2015).
- Heritage Road/Olympic Parkway Intersection – signalized intersection, conversion of Heritage Road/Olympic Parkway from a signalized T intersection to a signalized 4-legged intersection (will provide necessary access to Village 2, which will be partially developed by Year 2015).
- Heritage Road/Santa Victoria Road Intersection – signalized intersection (will provide necessary access to Village 2, which will be partially developed by Year 2015).
- Heritage Road/Santa Liza Street Intersection – signalized intersection (will provide necessary access to Village 2, which will be partially developed by Year 2015).

To be constructed by others:

- I-805 South Project, between Home Avenue and East Palomar Street – The I-805 South Project area is roughly 11 miles, between East Palomar Street in Chula Vista and the I-805/SR-15 interchange in San Diego. The project includes the addition of HOV/Express Lanes within the freeway median. Additionally, the project includes the construction of a Direct Access Ramp (DAR) at East Palomar Street in Chula Vista that will connect to the HOV/Express Lanes, as well as intermediate access points, direct connectors, in-line transit stations, and Park & Ride locations. The I-805 South Project will be constructed in two (2) major phases:
    - Phase 1 (2012–2014) – Phase 1 includes building one HOV lane in each direction, and the construction of a DAR, Transit Station and Park & Ride at East Palomar Street in Chula Vista.
    - Phase 2 (2015–2020) – The second phase of the I-805 South Project will further expand transportation choices by building out the HOV lanes into Express Lanes for a total of four lanes, two in each direction. Phase 2 also includes the addition of in-line transit stations and freeway-to-freeway direct connectors. However, on December 16th, 2011, SANDAG Board of Directors approved the purchase of SR-125 and the Addendum to SANDAG's 2030 RTP EIR. The Addendum consists of a swap of the two planned HOV lanes on I-805 between SR-54 and SR-905 (Phase 2 of the I-805 South Project discussed above) for the purchase costs of SR-125, which requires an amendment to the TransNet Extension Ordinance. It also concluded that while the reduction in tolls would result in a shift of traffic from I-805 to SR-125, freeway operations on both facilities would remain acceptable. The proposed Village 2 project was modeled with Phase 2, however in order to remain consistent with the 2030 RTP Addendum, the TIA is analyzed with one HOV lane in each direction (Phase 1) along I-805.
- Heritage Road, south of Main Street to Chula Vista city limit – this facility is included as a 4-lane Major Road in 2015. As indicated in the City's currently adopted General Plan Circulation Element, the ultimate classification designation for Heritage Road south of Main Street is a 6-lane Prime Arterial. This improvement project (STM364 - Heritage Road Bridge Replacement) is included in the Chula Vista adopted FY 2012–13 through FY 2016–17 Capital Improvement Program (CIP) and will be funded by a mix of the Highway Bridge Program, Transportation Development Impact Fees, and other miscellaneous transportation grants.
- Heritage Road/Main Street Intersection - signalized intersection.

If the assumed roadway improvements are not in place as modeled for the Year 2015 scenario, additional traffic impacts could occur. Therefore, a potentially significant impact could occur if assumed improvements are not developed as prescribed in the traffic impact analysis.

If the project equivalent dwelling unit limit for study year 2015 (753 EDU) is exceeded prior to these roadway segments being constructed and open to traffic, then one of the following steps shall be taken:

A. Development of the proposed project shall stop until those assumed future roadways are constructed by others; or
B. City and the project applicant shall meet to determine the need for the incomplete roadway segments. A number of factors, including changes to the tolling structure at SR-125, may affect the traffic patterns in the Otay Ranch. Additional traffic analysis of the roadway network and levels of service assessment may be necessary to determine if such improvements are necessary and the scope and timing of additional circulation improvements; or
C. The project applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or
D. An alternative measure is selected by the city in accordance with the city of Chula Vista Growth Management Ordinance.
E. All to the satisfaction of the City Engineer.

Traffic volumes for the Year 2015 scenario were developed utilizing the SANDAG Series 11 "Southbay 2, Village 2" Year 2015 Model.

Intersection Analysis

Table 5.2-25 displays intersection level of service and average vehicle delay results for the key study area intersections under both the Year 2015 with and without project conditions. Level of service calculation worksheets for the Year 2015 conditions are provided in Appendix B. As shown in Table 5.2-25, all of the study area intersections would operate at acceptable LOS D or better under the Year 2015 conditions. No mitigation is required.

Roadway Segment Analysis

Table 5.2-26 displays the level of service analysis results for key study area roadway segments within the City of Chula Vista under the Year 2015 conditions. As shown in Table 5.2-26, two roadway segments would operate at substandard LOS D in the City of Chula Vista:

- Telegraph Canyon Road, between Medical Center Drive and Heritage Road/Paseo Ranchero (LOS D) – the proposed 2015 project traffic would comprise approximately 0.8% (less than 5%) of the total segment volume and would add 452 (less than 800 ADT).
- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – the proposed 2015 project traffic would comprise approximately 0.5% (less than 5%) of the total segment volume and would add 151 ADT (less than 800 ADT).

As stated in the City of Chula Vista's traffic impact criteria, if the roadway segment planning analysis shows LOS D, E, or F, then the GMOC method should be utilized for roadway segment analysis under short-term conditions (year 0–4). The impact criteria include the following:

a. Project specific impact if all of the following criteria are met:
    i. Level of service is LOS D for more than 2 hours or LOS E/F for 1 hour;
    ii. Project trips comprise five percent or more of segment volume; and
    iii. Project adds greater than 800 ADT to segment
b. Cumulative impact if only (i) is met.

Since project traffic would not comprise more than 5% of the total segment volume nor would it add more than 800 ADT, project specific impacts would not result along any of the roadway segments identified above. As to cumulative impacts, based upon a review of the City's 2013 GMOC Annual Report (dated 4/25/2013) and discussion with City Staff, the roadway segments mentioned above are considered to be GMOC compliant and would continue to operate satisfactorily with the addition of project traffic generated by 2015. Thus, the proposed 2015 project traffic would not result in project specific or cumulative impacts to the project study area roadway segments within Chula Vista. Therefore, impacts would be less than significant as they relate to City of Chula Vista traffic impact criteria and GMOC.

In addition, as a part of the City's Growth Management Program (GMP), the City monitors the operating conditions along Olympic Parkway on an annual basis. In 2011, an expanded traffic analysis was prepared, the Olympic Parkway Capacity Enhancement Analysis prepared by Linscott, Law, & Greenspan, Engineers (LLG), to monitor new development in the Eastern Territories with respect to available capacity on Olympic Parkway east of I-805. The study determined whether GMO thresholds are projected to be reached or exceeded, and whether mitigation measures are necessary to remain compliant with the requirements of the GMP. In conformance with the

requirements of the GMP, a peak-hour arterial analysis was conducted on the segment of westbound Olympic Parkway between Heritage Road and Oleander Avenue under near-term conditions (Years 0–4) based on the City of Chula Vista's Traffic Monitoring Program (TMP) methodology. The Chula Vista TMP is used to assess the operating performance of the City's arterial street system in order to determine compliance with the Threshold Standards of the GMP.

Based on the LLG study, the segment of westbound Olympic Parkway between Heritage Road and Oleander Avenue during AM peak hours would be the first to fall below GMO traffic threshold standards as traffic volumes increase over time with this project and other projects east of I-805. However, the analysis also demonstrated that GMO thresholds would not be reached along Olympic Parkway until building permits for 2,463 dwelling units have been issued for projects east of I-805. The projected 2,463 dwelling unit threshold is used by the City to determine when cumulative impacts may occur along the corridor. The following mitigation measure has been identified in the event the GMO threshold is reached:

1. **GMOC Compliance**: Prior to the issuance of the building permit for the 2,463rd dwelling unit for development east of I-805 (commencing from April 4, 2011), the applicant may:
    a. Prepare a traffic study that demonstrates, to the satisfaction of the City Engineer, that the circulation system has additional capacity without exceeding the GMO traffic threshold standards, or
    b. Demonstrate that other improvements are constructed which provide the additional necessary capacity to comply with the GMO traffic threshold to the satisfaction of the City Engineer, or
    c. Agree to the City Engineer's selection of an alternative method of maintaining GMO traffic threshold compliance, or
    d. Enter into agreement, approved by the City, with other Otay Ranch developers that alleviates congestion and achieves GMO traffic threshold compliance for Olympic Parkway. The Agreement will identify the deficiencies in transportation infrastructure that will need to be constructed, the parties that will construct said needed infrastructure, a timeline for such construction, and provides assurances for construction, in accordance with the City's customary requirements, for said infrastructure.
2. If GMO compliance cannot be achieved through 1)a, b, c or d above, then the City may, in its sole discretion, stop issuing new building permits within the project area, after building permits for 2,463 dwelling units have been issued for any development east of I-805 after April 4, 2011, until such time that GMO traffic threshold standard compliance can be assured to the satisfaction of the City Manager.
3. These measures shall constitute full compliance with growth management objectives and policies in accordance with the requirements of the General Plan, Chapter 10 with regard to traffic thresholds set forth in the GMO.

Table 5.2-25
Peak Hour Intersection Level of Service Result – Year 2015 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
Paseo Ranchero/Heritage Road/Telegraph Canyon Road	37.1	D	31.5	C			0.8%/1.1%		No
La Media Road/Telegraph Canyon Road/Otay Lakes Road	33.7	C	37.6	D			1.0%/1.1%		No
Heritage Road/East Palomar Street	30.4	C	24.2	C			2.2%/2.9%		No
La Media Road/East Palomar Street	40.3	D	38.2	D			1.4%/1.7%		No
Melrose Avenue/Orange Avenue	38.0	D	34.4	C			0.8%/0.8%		No
I-805 SB Ramps/Olympic Parkway	45.7	D	52.7	D			1.4%/1.8%		No
I-805 NB Ramps/Olympic Parkway	46.0	D	34.6	C			2.2%/2.5%		No
Oleander Avenue/Olympic Parkway	50.7	D	36.5	D			2.5%/2.8%		No
Brandywine Avenue/Olympic Parkway	51.1	D	53.3	D			2.5%/3.0%		No
Santa Victoria Road/Olympic Parkway	1.9	A	2.1	A			2.7%/3.3%		No
Heritage Road/Olympic Parkway	42.6	D	50.9	D			3.4%/4.2%		No
Santa Venetia Street/Olympic Parkway	13.5	B	2.9	A			1.9%/2.3%		No
La Media Road/Olympic Parkway	31.9	C	32.4	C			2.3%/2.8%		No
East Palomar Street/Olympic Parkway	27.6	C	23.8	C			0.3%/0.3%		No
SR-125 SB Ramps/Olympic Parkway	4.7	A	7.0	A			0.1%/0.1%		No
SR-125 NB Ramps/Olympic Parkway	4.0	A	4.7	A			0.1%/0.0%		No
Eastlake Parkway/Olympic Parkway	23.8	C	27.0	C			0.2%/0.2%		No
Heritage Road/Santa Victoria Road	15.6	B	18.3	B			8.5%/8.2%		No
La Media Road/Santa Venetia Street	47.0	D	28.4	C			3.1%/4.3%		No
La Media Road/Birch Road	39.2	D	42.9	D			8.2%/8.1%		No
Magdalena Avenue/Birch Road	25.7	C	22.3	C			3.3%/4.5%		No
SR-125 SB Ramps/Birch Road	3.5	A	6.9	A			4.2%/4.7%		No
SR-125 NB Ramps/Birch Road	3.9	A	4.5	A			3.4%/4.6%		No
Eastlake Parkway/Birch Road	22.3	B	25.2	C			1.0%/1.1%		No

Table 5.2-25
Peak Hour Intersection Level of Service Result – Year 2015 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
Heritage Road/Santa Liza Avenue	3.5	A	2.6	A			2.4%/2.3%		No
Heritage Road/Main Street	23.8	C	5.7	A			1.3%/2.2%		Yes (Cumulative)
La Media Road (SB)/Main Street (WB)	Does Not Exist								
La Media Road (NB)/Main Street (WB)	Does Not Exist								
La Media Road (SB)/Main Street (EB)	Does Not Exist								
La Media Road (NB)/Main Street (EB)	Does Not Exist								
Magdalena Avenue/Main Street	Does Not Exist								
SR-125 SB Ramps/Main Street	Does Not Exist								
SR-125 NB Ramps/Main Street	Does Not Exist								

Source: Chen Ryan 2014
Note: Bold letter indicates unacceptable LOS E or F.

Table 5.2-26
Roadway Segment Level of Service Results – Year 2015 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	GMOC Analysis	Significant Impact?
Telegraph Canyon Road	Medical Center Drive	Heritage Road/Paseo Ranchero	6-Ln w/RM	55,600	50,000	**D**	452	0.81%	Acceptable	No
Telegraph Canyon Road	Heritage Road/Paseo Ranchero	La Media Road/Otay Lakes Road	6-Ln w/RM	47,800	50,000	C	75	0.16%	-	No
Otay Lakes Road	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	28,800	50,000	C	301	1.05%	-	No

Table 5.2-26
Roadway Segment Level of Service Results – Year 2015 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	GMOC Analysis	Significant Impact?
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	40,900	50,000	B	452	1.10%	-	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	20,200	30,000	A	678	3.35%	-	No
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	22,800	30,000	B	226	0.99%	-	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	19,300	30,000	A	75	0.39%	-	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	26,400	30,000	C	151	0.57%	-	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	31,800	30,000	**D**	151	0.47%	Acceptable	No
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	40,200	50,000	B	452	1.12%	-	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	41,900	50,000	B	828	1.98%	-	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	34,300	50,000	A	904	2.63%	-	No
Olympic Parkway	Brandywine Avenue	Santa Victoria Road	6-Ln w/RM	24,300	50,000	A	979	4.03%	-	No
Olympic Parkway	Santa Victoria Road	Heritage Road	6-Ln w/RM	23,200	50,000	A	979	4.22%	-	No
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln w/RM	41,200	50,000	B	75	0.18%	-	No
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln w/RM	33,600	50,000	A	75	0.22%	-	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	25,800	50,000	A	301	1.17%	-	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	45,000	50,000	C	226	0.50%	-	No

Table 5.2-26
Roadway Segment Level of Service Results – Year 2015 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	GMOC Analysis	Significant Impact?
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	46,200	70,000	A	151	0.33%	-	No
Olympic Parkway	SR-125 NB Ramps	Eastlake Parkway	8-Ln w/RM	48,000	70,000	A	151	0.31%	-	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	27,600	40,000	A	1,506	5.46%	-	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	23,000	40,000	A	1,205	5.24%	-	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	24,200	50,000	A	1,130	4.67%	-	No
Birch Road	SR-125 NB Ramps	Eastlake Parkway	6-Ln w/RM	26,000	50,000	A	979	3.77%	-	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	30,100	50,000	A	828	2.75%	-	No
Main Street	Heritage Road	La Media Road	Does Not Exist							
Main Street	La Media Road	SR-125 SB Ramps	Does Not Exist							
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist							
Main Street	SR-125 NB Ramps	Eastlake Parkway	Does Not Exist							
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	15,900	22,000	A	602	3.79%	-	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	20,800	50,000	A	1,130	5.43%	-	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	37,800	50,000	B	2,033	5.38%	-	No
Heritage Road	Olympic Parkway	Santa Victoria Road	6-Ln w/RM*	17,800	50,000	A	2,711	15.23%	-	No
Heritage Road	Santa Victoria Road	Santa Liza Avenue	6-Ln w/RM*	24,200	50,000	A	1,355	5.60%	-	No
Heritage Road	Santa Liza Avenue	Main Street	6-Ln w/RM*	28,100	50,000	A	1,205	4.29%	-	No
Heritage Road	Main Street	Avenida De Las Vistas	4-Ln w/RM**	22,600	50,000	B	377	1.67%	-	No
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	22,000	50,000	A	753	3.42%	-	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	16,300	50,000	A	828	5.08%	-	No

Table 5.2-26
Roadway Segment Level of Service Results – Year 2015 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	GMOC Analysis	Significant Impact?
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	26,200	50,000	A	1,054	4.02%	-	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	25,600	50,000	A	1,431	5.59%	-	No
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	12,700	50,000	A	226	1.78%	-	No
La Media Road	Santa Luna Street	Main Street	Does Not Exist							
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	12,900	22,000	A	301	2.33%	-	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	6,800	12,000	A	151	2.21%	-	No
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	11,600	22,000	A	151	1.30%	-	No
Eastlake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	21,000	40,000	A	151	0.72%	-	No
Eastlake Parkway	Birch Road	Main Street/Hunte Parkway	6-Ln w/RM	24,700	40,000	A	151	0.61%	-	No

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS D, E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.
* Facility is required for project access.
** Facility improvement is assumed based on City's CIP.

Freeway/State Highway Segment Analysis

Table 5.2-27 displays freeway level of service analysis results for I-805 and SR-125 under Year 2015 conditions. The freeway/state highway segment level of service analysis was performed utilizing the methodologies presented in 5.2.1.1. As shown in the table, all study freeway/state highway segments along I-805 and SR-125 would operate at acceptable LOS D or better under Year 2015 conditions. The addition of trips generated by the proposed project would not cause any significant traffic impacts to study area freeway/state highway segments. Therefore, impacts would be less than significant.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized ramp intersections along I-805 and SR-125 within the study area were analyzed under Year 2015 conditions using the ILV procedures as described in Section 5.2.1.1. ILV analysis results are displayed in Table 5.2-28 and analysis worksheets for the Year 2015 conditions are provided in Appendix B. All of the I-805 ramp intersections would operate "At Capacity" or "Under Capacity," with the following one (1) exception:

- I-805 SB Ramps/Olympic Parkway – "Over Capacity" during the PM peak hour.

All of the SR-125 ramp intersections within the study area would continue to operate at "Under Capacity" during both the AM and PM peak hours under Year 2015 conditions.

Ramp Metering Analysis

Table 5.2-29 displays the ramp metering analysis conducted at the I-805 northbound on-ramp at Olympic Parkway under Year 2015 conditions. Based on observed existing conditions, it is expected that approximately 80% of the total arrival traffic (demand) would utilize the two non-HOV lanes. As shown in the table, the peak hour demand at the I-805 northbound on-ramp at Olympic Parkway would be less than the capacity that the ramp meter provides. Therefore, the proposed project would not result in a significant impact at the I-805 northbound on-ramp at Olympic Parkway.

Table 5.2-27
Freeway/State Highway Segment Level of Service Results – Year 2015 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Cont. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	Home Street to SR-94	262,600	6.9%	18,119	0.51	4+1ML	0.97	4.2%	1,621	0.675	C	261,600	C	0.4%	No
I-805	SR-94 to Market Street	259,400	8.0%	20,752	0.50	4+1ML	0.97	4.2%	1,821	0.759	C	258,200	C	0.5%	No
I-805	Market Street to Imperial Avenue	330,300	8.0%	26,424	0.50	5+1ML	0.97	4.2%	1,989	0.829	D	329,000	D	0.4%	No
I-805	Imperial Avenue to E Division Street	328,900	8.0%	26,312	0.50	5+1ML	0.97	4.2%	1,979	0.825	D	327,300	D	0.5%	No
I-805	E Division Street to Plaza Boulevard	312,100	7.2%	22,471	0.51	5+1ML	0.95	3.8%	1,759	0.733	C	310,500	C	0.5%	No
I-805	Plaza Boulevard to SR-54	301,300	8.1%	24,405	0.52	5+1ML	0.96	2.2%	1,906	0.794	C	299,700	C	0.5%	No
I-805	SR-54 to Bonita Road	325,700	7.2%	23,450	0.52	4+1Aux+1ML	0.96	1.7%	1,975	0.823	D	323,700	D	0.6%	No
I-805	Bonita Road to East H Street	280,400	7.8%	21,871	0.50	5+1ML	0.95	1.7%	1,656	0.690	C	278,200	C	0.8%	No
I-805	East H Street to Telegraph Canyon Road	277,400	7.8%	21,637	0.50	5+1ML	0.95	1.9%	1,647	0.686	C	275,200	C	0.8%	No
I-805	Telegraph Canyon Road to East Palomar Street	231,600	7.1%	16,444	0.51	4+1Aux+1ML	0.92	1.7%	1,414	0.589	B	229,400	B	0.9%	No

Table 5.2-27
Freeway/State Highway Segment Level of Service Results – Year 2015 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Cont. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	East Palomar Street to Olympic Parkway	208,100	7.1%	14,775	0.51	4+1Aux	0.92	1.7%	1,831	0.763	C	206,800	C	0.6%	No
I-805	Olympic Parkway to Main Street	200,700	6.9%	13,848	0.51	4+1Aux	0.93	5.4%	1,734	0.723	C	200,600	C	0.0%	No
I-805	Main Street to Palm Avenue	201,700	7.1%	14,321	0.58	4+1Aux	0.95	10.3%	2,048	0.853	D	200,900	D	0.4%	No
I-805	Palm Avenue to SR-905	178,700	7.1%	12,688	0.58	4+1Aux	0.95	10.3%	1,815	0.756	C	178,000	C	0.4%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	18,400	7.0%	1,288	0.60	2M	0.92	2.0%	428	0.178	A	18,400	A	0.0%	No
SR-125	Olympic Parkway to Birch Road	14,800	7.0%	1,036	0.60	2M	0.92	2.0%	340	0.142	A	14,800	A	0.0%	No
SR-125	Birch Road to Main Street	25,400	7.0%	1,778	0.60	2M	0.92	2.0%	582	0.243	A	25,000	A	1.6%	No
SR-125	Main Street to Otay Valley Road	25,400	7.0%	1,778	0.60	2M	0.92	2.0%	582	0.243	A	25,000	A	1.6%	No
SR-125	Otay Valley Road to Lone Star Road	25,400	7.0%	1,778	0.60	2M	0.92	2.0%	582	0.243	A	25,000	A	1.6%	No

Table 5.2-27
Freeway/State Highway Segment Level of Service Results – Year 2015 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Cont. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
SR-125	Lone Star Road to Otay Mesa Road	25,400	7.0%	1,778	0.60	2M	0.92	2.0%	582	0.243	A	25,000	A	1.6%	No
SR-125	Otay Mesa Road to SR-905	8,500	7.0%	595	0.60	2M	0.92	2.0%	198	0.083	A	8,400	A	1.2%	No

Source: Chen Ryan 2014
Notes: Aux = Auxiliary Lane, M = Managed Lane

Table 5.2-28
Ramp Intersection Capacity Analysis – Year 2015 Conditions

Ramp Intersection	Peak Hour	With Project		Without Project	
		ILV/Hour	*Description*	*ILV/Hour*	*Description*
I-805 SB Ramps/Olympic Parkway	AM	1,351	1200-1500: (At Capacity)	1,340	1200-1500: (At Capacity)
	PM	1,675	>1500: (Over Capacity)	1,660	>1500: (Over Capacity)
I-805 NB Ramps/Olympic Parkway	AM	1,373	1200-1500: (At Capacity)	1,330	1200-1500: (At Capacity)
	PM	1,328	1200-1500: (At Capacity)	1,295	1200-1500: (At Capacity)
SR-125 SB Ramps/Olympic Parkway	AM	366	<1200: (Under Capacity)	353	<1200: (Under Capacity)
	PM	518	<1200: (Under Capacity)	507	<1200: (Under Capacity)
SR-125 NB Ramps/Olympic Parkway	AM	446	<1200: (Under Capacity)	437	<1200: (Under Capacity)
	PM	440	<1200: (Under Capacity)	420	<1200: (Under Capacity)
SR-125 SB Ramps/Birch Road	AM	536	<1200: (Under Capacity)	535	<1200: (Under Capacity)
	PM	694	<1200: (Under Capacity)	693	<1200: (Under Capacity)
SR-125 NB Ramps/Birch Road	AM	520	<1200: (Under Capacity)	520	<1200: (Under Capacity)
	PM	633	<1200: (Under Capacity)	633	<1200: (Under Capacity)

Table 5.2-28
Ramp Intersection Capacity Analysis – Year 2015 Conditions

Ramp Intersection	Peak Hour	With Project		Without Project	
		ILV/Hour	*Description*	*ILV/Hour*	*Description*
SR-125 SB Ramps/Main Street	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 NB Ramps/Main Street	AM	Does Not Exist		Does Not Exist	
	PM				

Source: Chen Ryan 2014

Table 5.2-29
Ramp Meter Analysis – Year 2015 Conditions

Location	Peak Hour	With Project					Without Project				Significant Impact?
		Demand[1] (veh/hr)	*Meter Rate[2] (veh/hr)*	*Excess Demand[3] (veh/hr)*	*Delay[4] (min)*	*Queue[5] (ft)*	*Demand (veh/hr)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	520	887	0	0	0	504	0	0	0	No

Source: Chen Ryan 2014
Notes:
1 Demand is the peak hour demand expected to use the on-ramp.
2 Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3 Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4 Delay = (Excess Demand/Meter Rate) X 60 min/hr.
5 Queue = (Excess Demand) X 29 ft/veh.

Year 2020 Traffic Conditions

This section provides an analysis of Year 2020 traffic conditions both with and without the proposed project. Level of service analyses for the Year 2020 conditions were conducted using the methodologies described in Section 5.2.1.1.

Year 2020 Roadway Network and Traffic Volumes

The Year 2020 roadway network is similar to the Year 2015 network with the following exceptions:

<u>To be constructed by the Project:</u>

- None

<u>To be constructed by Others:</u>

- Heritage Road, south of Main Street to Chula Vista city limit – this facility is included as its ultimate classification by 2020. As indicated in the City's currently adopted General Plan Circulation Element, the ultimate classification designation for Heritage Road south of Main Street is a 6-lane Prime Arterial. This improvement project (STM364 - Heritage Road Bridge Replacement) is included in the Chula Vista adopted FY 2012–13 through FY 2016–17 Capital Improvement Program (CIP) and will be funded by a mix of the Highway Bridge Program, Transportation Development Impact Fees, and other miscellaneous transportation grants. For additional information, see Appendix B.
- Otay Lakes Road, between H Street and Telegraph Canyon Road – this facility is included as widened from a 4-lane Major Road to a 6-lane Prime Arterial consistent with the classification identified in the City's currently adopted General Plan Circulation Element. This improvement project (STM355 – Otay Lakes Road Widening) is included in the Chula Vista adopted FY 2012–13 through FY 2016–17 Capital Improvement Program (CIP) and will be funded by the Transportation Development Impact Fees. For additional information, see Appendix J.
- Construction of La Media Road, between Santa Luna Street and Main Street, as well as a portion of Main Street that provides access to Village 8 West, Village 8 East, and Village 9.

If the assumed roadway improvements are not in place as modeled for the Year 2020 scenario, additional traffic impacts could occur. Therefore, a potentially significant impact could occur if assumed improvements are not developed as prescribed in the traffic impact analysis.

If the project equivalent dwelling unit limit for study year 2020 (1,311 EDU) is exceeded prior to these roadway segments being constructed and open to traffic, then one of the following steps shall be taken:

A. Development within the Village Two Comprehensive SPA project shall stop until those assumed future roadways are constructed by others; or

B. City and the applicant shall meet to determine the need for the incomplete roadway segments. A number of factors, including changes to the tolling structure at SR-125, may affect the traffic patterns in the Otay Ranch. Additional traffic analysis of the roadway network and levels of service assessment may be necessary to determine if such improvements are necessary and the scope and timing of additional circulation improvements; or

C. Applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or

D. An alternative measure is selected by the city in accordance with the city of Chula Vista Growth Management Ordinance.

E. All to the satisfaction of the City Engineer.

Traffic volumes for the Year 2020 scenario were developed utilizing the SANDAG Series 11 "Southbay 2, Village 2" Year 2020 model.

Intersection Analysis

Table 5.2-30 displays intersection level of service and average vehicle delay results for the key study area intersections under both the Year 2020 with and without project conditions. Level of service calculation worksheets for the Year 2020 conditions are provided in Appendix B.

As shown in the table, all of the study area intersections would operate at acceptable LOS D or better under Year 2020 conditions with the following one (1) exception in the City of Chula Vista:

- I-805 SB Ramps/Olympic Parkway – LOS D during the AM peak hour and LOS F during the PM peak hour. The 2020 project traffic would comprise approximately 1.9% and 2.2% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is less than 5%, the project would result in a cumulative impact at this intersection.

Table 5.2-30
Peak Hour Intersection Level of Service Results – Year 2020 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
Paseo Ranchero/Heritage Road/Telegraph Canyon Road	46.1	D	41.9	D			1.1%/1.4%		No
La Media Road/Telegraph Canyon Road/Otay Lakes Road	34.9	C	46.4	D			1.6%/1.6%		No
Heritage Road/East Palomar Street	38.2	D	30.9	C			2.9%/3.5%		No
La Media Road/East Palomar Street	44.4	D	51.7	D			2.3%/2.5%		No
Melrose Avenue/Orange Avenue	50.7	D	52.0	D			1.0%/0.9%		No
I-805 SB Ramps/Olympic Parkway	50.2	D	95.2	**F**			1.9%/2.2%		Yes (Cumulative)
I-805 NB Ramps/Olympic Parkway	46.9	D	51.9	D			3.2%/3.3%		No
Oleander Avenue/Olympic Parkway	51.0	D	50.2	D			3.8%/3.8%		No
Brandywine Avenue/Olympic Parkway	53.9	D	48.4	D			3.7%/4.2%		No
Santa Victoria Road/Olympic Parkway	2.0	A	2.2	A			4.8%/5.5%		No
Heritage Road/Olympic Parkway	48.9	D	51.9	D			4.5%/5.1%		No
Santa Venetia Street/Olympic Parkway	16.5	B	2.9	A			2.4%/3.4%		No
La Media Road/Olympic Parkway	47.1	D	33.2	C			3.3%/3.9%		No
East Palomar Street/Olympic Parkway	28.8	C	24.6	C			0.4%/0.4%		No
SR-125 SB Ramps/Olympic Parkway	4.9	A	7.1	A			0.3%/0.3%		No
SR-125 NB Ramps/Olympic Parkway	4.0	A	6.7	A			0.2%/0.1%		No
Eastlake Parkway/Olympic Parkway	33.1	C	30.8	C			0.3%/0.3%		No
Heritage Road/Santa Victoria Road	31.5	C	39.8	D			8.9%/9.9%		No
La Media Road/Santa Venetia Street	47.7	D	37.6	D			4.1%/5.2%		No
La Media Road/Birch Road	44.8	D	54.6	D			9.0%/8.3%		No
Magdalena Avenue/Birch Road	36.0	D	43.8	D			4.6%/5.3%		No
SR-125 SB Ramps/Birch Road	3.5	A	12.8	B			5.2%/5.3%		No
SR-125 NB Ramps/Birch Road	6.8	A	9.0	A			4.8%/5.1%		No
Eastlake Parkway/Birch Road	33.8	C	36.9	D			1.1%/1.2%		No

Table 5.2-30
Peak Hour Intersection Level of Service Results – Year 2020 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
Heritage Road/Santa Liza Avenue	9.6	A	4.6	A			4.6%/5.6%		No
Heritage Road/Main Street	28.3	C	28.2	C			3.6%/3.9%		No
La Media Road (SB)/Main Street (WB) (all-way stop controlled)	10.4	B	26.0	D			3.1%/0.6%		No
La Media Road (NB)/Main Street (WB) (all-way stop controlled)	28.0	D	24.1	C			0.9%/2.4%		No
La Media Road (SB)/Main Street (EB) (all-way stop controlled)	13.8	B	31.7	D			4.0%/0.9%		No
La Media Road (NB)/Main Street (EB) (all-way stop controlled)	13.7	B	21.9	C			2.1%/0.6%		No
Magdalena Avenue/Main Street (all-way stop controlled)	16.7	C	18.5	C			3.2%/3.1%		No
SR-125 SB Ramps/Main Street	Does Not Exist								
SR-125 NB Ramps/Main Street	Does Not Exist								

Source: Chen Ryan 2014
Note: Bold letter indicates unacceptable LOS E or F.

Table 5.2-31
Roadway Segment Level of Service Results – Year 2020 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Telegraph Canyon Road	Medical Center Drive	Heritage Road/Paseo Ranchero	6-Ln w/RM	55,700	50,000	**D**	393	0.71%	Yes	No
Telegraph Canyon Road	Heritage Road/Paseo Ranchero	La Media Road/Otay Lakes Road	6-Ln w/RM	49,400	50,000	C	131	0.27%	–	No
Otay Lakes Road	H Street	Telegraph Canyon Road	6-Ln w/RM**	30,500	50,000	A	524	1.72%	–	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	42,500	50,000	B	786	1.85%	–	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	22,900	30,000	B	786	3.43%	–	No
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	23,100	30,000	B	393	1.70%	–	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	20,600	30,000	A	131	0.64%	–	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	27,100	30,000	C	262	0.97%	–	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	31,800	30,000	**D**	262	0.82%	No	**Yes (Cumulative)**
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	41,000	50,000	B	786	1.92%	–	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	42,700	50,000	B	1,703	3.99%	–	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	35,900	50,000	A	1,834	5.11%	–	No
Olympic Parkway	Brandywine Avenue	Santa Victoria Road	6-Ln w/RM	24,500	50,000	A	2,228	9.09%	–	No
Olympic Parkway	Santa Victoria Road	Heritage Road	6-Ln w/RM	20,900	50,000	A	2,228	10.66%	–	No

Table 5.2-31
Roadway Segment Level of Service Results – Year 2020 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln w/RM	46,300	50,000	C	131	0.28%	–	No
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln w/RM	37,900	50,000	B	131	0.35%	–	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	27,700	50,000	A	524	1.89%	–	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	48,400	50,000	C	262	0.54%	–	No
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	50,600	70,000	A	262	0.52%	–	No
Olympic Parkway	SR-125 NB Ramps	Eastlake Parkway	8-Ln w/RM	53,200	70,000	B	262	0.49%	–	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	26,700	40,000	A	2,464	9.22%	–	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	28,500	40,000	A	2,096	7.36%	–	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	30,000	50,000	A	1,965	6.55%	–	No
Birch Road	SR-125 NB Ramps	Eastlake Parkway	6-Ln w/RM	32,300	50,000	A	1,834	5.68%	–	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	34,600	50,000	A	1,441	4.17%	–	No
Main Street	Heritage Road	La Media Road	Does Not Exist							
Main Street	La Media Road	SR-125 SB Ramps	Does Not Exist							
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist							

Table 5.2-31
Roadway Segment Level of Service Results – Year 2020 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Main Street	SR-125 NB Ramps	Eastlake Parkway	Does Not Exist							
Otay Valley Road	Main Street	SR-125 SB Ramps	Does Not Exist							
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	16,200	22,000	A	917	5.66%	–	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	23,900	50,000	A	1,441	6.03%	–	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	45,100	50,000	C	2,621	5.81%	–	No
Heritage Road	Olympic Parkway	Santa Victoria Road	6-Ln w/RM	29,455	50,000	A	4,455	47.11%	–	No
Heritage Road	Santa Victoria Road	Santa Liza Avenue	6-Ln w/RM	38,100	50,000	B	2,621	6.88%	–	No
Heritage Road	Santa Liza Avenue	Main Street	6-Ln w/RM	43,900	50,000	C	2,359	5.37%	–	No
Heritage Road	Main Street	Avenida De Las Vistas	6-Ln w/RM**	28,800	50,000	A	786	2.73%	–	No
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	26,800	50,000	A	1,179	4.40%	–	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	20,000	50,000	A	1,310	6.55%	–	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	32,400	50,000	A	1,834	5.66%	–	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	29,800	50,000	A	1,965	6.60%	–	No
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	7,800	50,000	A	131	1.68%	–	No

Table 5.2-31
Roadway Segment Level of Service Results – Year 2020 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
La Media Road	Santa Luna Street	Main Street	6-Ln w/RM	17,400	50,000	A	550	3.16%	–	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	11,600	22,000	A	364	3.13%	–	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	8,700	12,000	A	210	2.42%	–	No
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	13,400	22,000	A	105	0.78%	–	No
Eastlake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	25,100	40,000	A	262	1.04%	–	No
Eastlake Parkway	Birch Road	Main Street/Hunte Parkway	6-Ln w/RM	16,600	40,000	A	131	0.79%	–	No

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS D, E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.
* Facility is required for project access.
** Facility improvement is assumed based on City's CIP.

Roadway Segment Analysis

Table 5.2-31 above displays the level of service analysis results for key study area roadway segments within the City of Chula Vista under the Year 2020 conditions.

As shown in Table 5.2-31, the following two roadway segments would operate at unacceptable LOS D, E, or F in the City of Chula Vista under Year 2020 conditions:

- Telegraph Canyon Road, between Medical Center Drive and Heritage Road/Paseo Ranchero (LOS D) – the proposed 2020 project traffic would comprise approximately 0.7% (less than 5%) of the total segment volume and would not add more than 800 ADT. In addition, the intersection (Paseo Ranchero/Heritage Road/Telegraph Canyon Road) along this segment would operate at LOS D/D during the peak hours. Therefore, the project traffic would not result in a significant impact at this location.
- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – the proposed 2020 project traffic would comprise approximately 0.8% (less than 5%) of the total segment volume and would add 262 ADT (less than 800 ADT). However, one of the intersections (I-805 SB Ramps/Olympic Parkway) along this segment would operate at substandard LOS D/F during the AM/PM peak hours, respectively. Therefore, the project traffic would result in a significant cumulative impact at this location.

Freeway/State Highway Segment Analysis

Table 5.2-32 displays freeway level of service analysis results for I-805 and SR-125 under the Year 2020 conditions. The freeway/state highway segment level of service analysis was performed utilizing the methodologies presented in 5.2.1.1.

As shown in Table 5.2-32, all study freeway/state highway segments along I-805 and SR-125 would operate at acceptable LOS D or better under the Year 2020 conditions, except the following two segments:.

- I-805, from Market Street to Imperial Avenue (LOS F) – The proposed project would comprise 0.4% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Imperial Avenue to E Division Street (LOS E) – The proposed project would comprise 0.4% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized ramp intersections along I-805 and SR-125 within the study area were analyzed under the Year 2020 conditions using the ILV procedures as described in Section 5.2.1.1. ILV analysis results are displayed in Table 5.2-34 and analysis worksheets for the Year 2020 conditions are provided in Appendix B.

As shown in Table 5.2-33, all of the I-805 ramp intersections would operate at "At Capacity" and/or "Under Capacity," with one exception:

- I-805 NB Ramps/Olympic Parkway – "Over Capacity" during the AM peak hours.

All of the SR-125 ramp intersections within the study area would continue to operate at "Under Capacity" during both the AM and PM peak hours under the Year 2020 conditions.

Ramp Metering Analysis

Table 5.2-34 displays the ramp metering analysis conducted at the I-805 northbound on-ramps at Olympic Parkway and at Main Street under the Year 2020 conditions. Based on observed existing conditions, it is expected that approximately 80% of the total arrival traffic (demand) would utilize the two non-HOV lanes.

As shown in Table 5.2-34, the peak hour demand at the I-805 northbound on-ramp at Olympic Parkway would be less than the capacity that the ramp meter provides. Therefore, the proposed project would not result in a significant impact at the on-ramp I-806 northbound on-ramp at Olympic Parkway.

Table 5.2-32
Freeway/State Highway Segment Level of Service Results – Year 2020 Conditions

Freeway /State Highway	Segment	With Project										Without Project		Project Cont. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	Home Street to SR-94	278,600	6.9%	19,223	0.51	4+1ML	0.97	4.2%	1,937	0.807	D	277,500	C	0.40%	No
I-805	SR-94 to Market Street	273,900	8.0%	21,912	0.50	4+1ML	0.97	4.2%	2,179	0.908	D	272,700	D	0.40%	No
I-805	Market Street to Imperial Avenue	347,400	8.0%	27,792	0.50	5+1ML	0.97	4.2%	2,516	1.048	**F**	346,000	**E**	0.40%	**Yes (Cumulative)**
I-805	Imperial Avenue to E Division Street	345,700	8.0%	27,656	0.50	5+1ML	0.97	4.2%	2,295	0.956	**E**	344,300	D	0.40%	**Yes (Cumulative)**
I-805	E Division Street to Plaza Boulevard	329,900	7.2%	23,753	0.51	5+1ML	0.95	3.8%	2,038	0.849	D	328,500	C	0.40%	No
I-805	Plaza Boulevard to SR-54	319,500	8.1%	25,880	0.52	5+1ML	0.96	2.2%	2,212	0.922	D	317,400	D	0.70%	No
I-805	SR-54 to Bonita Road	295,300	7.2%	21,262	0.52	4+1Aux +1ML	0.96	1.7%	2,122	0.884	D	292,800	C	0.80%	No
I-805	Bonita Road to East H Street	345,200	7.8%	26,926	0.50	5+1ML	0.95	1.7%	1,921	0.800	D	342,700	C	0.70%	No
I-805	East H Street to Telegraph Canyon Road	280,000	7.8%	21,840	0.50	5+1ML	0.95	1.9%	1,902	0.793	C	277,500	C	0.90%	No
I-805	Telegraph Canyon Road to East Palomar Street	249,300	7.1%	17,700	0.51	4+1Aux +1ML	0.92	1.7%	1,655	0.690	C	247,000	C	0.90%	No
I-805	East Palomar Street to Olympic Parkway	223,700	7.1%	15,883	0.51	4+1Aux	0.92	1.7%	1,820	0.758	C	222,100	C	0.70%	No
I-805	Olympic Parkway to Main Street	218,300	6.9%	15,063	0.51	4+1Aux	0.93	5.4%	1,734	0.723	C	218,100	C	0.10%	No

Table 5.2-32
Freeway/State Highway Segment Level of Service Results – Year 2020 Conditions

Freeway /State Highway	Segment	With Project										Without Project		Project Cont. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	Main Street to Palm Avenue	216,900	7.1%	15,400	0.58	4+1Aux	0.95	10.3%	2,037	0.849	D	215,800	C	0.50%	No
I-805	Palm Avenue to SR-905	193,800	7.1%	13,760	0.58	4+1Aux	0.95	10.3%	1,804	0.752	C	193,100	C	0.40%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	22,700	7.0%	1,589	0.60	2M	0.92	2.0%	527	0.220	A	22,300	A	1.8%	No
SR-125	Olympic Parkway to Birch Road	18,600	7.0%	1,302	0.60	2M	0.92	2.0%	428	0.178	A	18,600	A	0.0%	No
SR-125	Birch Road to Main Street	33,400	7.0%	2,338	0.60	2M	0.92	2.0%	768	0.320	A	33,000	A	1.2%	No
SR-125	Main Street to Otay Valley Road	33,400	7.0%	2,338	0.60	2M	0.92	2.0%	768	0.320	A	33,000	A	1.2%	No
SR-125	Otay Valley Road to Lone Star Road	33,400	7.0%	2,338	0.60	2M	0.92	2.0%	768	0.320	A	33,000	A	1.2%	No
SR-125	Lone Star Road to Otay Mesa Road	33,400	7.0%	2,338	0.60	2M	0.92	2.0%	768	0.320	A	33,000	A	1.2%	No
SR-125	Otay Mesa Road to SR-905	10,800	7.0%	756	0.60	2M	0.92	2.0%	253	0.105	A	10,400	A	3.7%	No

Source: Chen Ryan 2014
Notes: Aux = Auxiliary Lane.
ML = Managed Lane.

Table 5.2-33
Ramp Intersection Capacity Analysis – Year 2020 Conditions

Ramp Intersection	Peak Hour	With Project		Without Project	
		ILV/Hour	*Description*	*ILV/Hour*	*Description*
I-805 SB Ramps/Olympic Parkway	AM	1,455	1200-1500: (At Capacity)	1,440	1200-1500: (At Capacity)
	PM	1,899	>1500: (Over Capacity)	1,880	>1500: (Over Capacity)
I-805 NB Ramps/Olympic Parkway	AM	1,432	1200-1500: (At Capacity)	1,362	1200-1500: (At Capacity)
	PM	1,516	>1500: (Over Capacity)	1,455	1200-1500: (At Capacity)
SR-125 SB Ramps/Olympic Parkway	AM	702	<1200: (Under Capacity)	690	<1200: (Under Capacity)
	PM	625	<1200: (Under Capacity)	607	<1200: (Under Capacity)
SR-125 NB Ramps/Olympic Parkway	AM	629	<1200: (Under Capacity)	610	<1200: (Under Capacity)
	PM	712	<1200: (Under Capacity)	657	<1200: (Under Capacity)
SR-125 SB Ramps/Birch Road	AM	516	<1200: (Under Capacity)	513	<1200: (Under Capacity)
	PM	603	<1200: (Under Capacity)	600	<1200: (Under Capacity)
SR-125 NB Ramps/Birch Road	AM	433	<1200: (Under Capacity)	433	<1200: (Under Capacity)
	PM	734	<1200: (Under Capacity)	734	<1200: (Under Capacity)
SR-125 SB Ramps/Main Street	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 NB Ramps/Main Street	AM	Does Not Exist		Does Not Exist	
	PM				

Source: Chen Ryan 2014

Table 5.2-34
Ramp Meter Analysis – Year 2020 Conditions

Location	Peak Hour	With Project					Without Project				Significant Impact?
		Demand[1] (veh/hr)	*Meter Rate[2] (veh/hr)*	*Excess Demand[3] (veh/hr)*	*Delay[4] (min)*	*Queue[5] (ft)*	*Demand (veh/hr)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	539	887	0	0	0	512	0	0	0	No

Source: Chen Ryan 2014

Notes:

1. Demand is the peak hour demand expected to use the on-ramp.
2. Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4. Delay = (Excess Demand/Meter Rate) X 60 min/hr.
5. Queue = (Excess Demand) X 29 ft/veh.

Year 2025 Traffic Conditions

This section provides an analysis of Year 2025 traffic conditions both with and without the proposed project. Intersection and roadway segment analyses in this section focus on only facilities within the City of Chula Vista; facilities within the City of San Diego, along with Chula Vista facilities, are analyzed in the buildout Year 2030 scenarios. Level of service analyses for Year 2025 conditions were conducted using the methodologies described in Section 5.2.1.1.

Year 2025 Roadway Network and Traffic Volumes

The Year 2025 roadway network is similar to the Year 2020 network with the following exceptions:

To be constructed by the Project:

- None

Mitigation carried forward from 2020:

- None

Traffic volumes for the Year 2025 scenario were developed utilizing the SANDAG Series 11 "Southbay 2, Village 2" Year 2025 model .

Intersection Analysis

Table 5.2-35 displays intersection level of service and average vehicle delay results for the study area intersections under both the Year 2025 with and without project conditions. Level of service calculation worksheets for the Year 2025 conditions are provided in Appendix B**.**

As shown in the table, all of the study area intersections would operate at acceptable LOS D or better under Year 2025 conditions with the following eight exceptions in the City of Chula Vista:

- I-805 SB Ramps/Olympic Parkway – LOS F during the PM peak hour. The 2025 project traffic would comprise approximately 2.3% and 2.8% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is less than 5% but the resulting LOS is F, the project would result in a significant cumulative impact at this intersection.
- Heritage Road/Olympic Parkway – LOS E during both the AM and PM peak hours. The 2025 project traffic would comprise approximately 5.3% and 5.8% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is more than 5%, the project would result in a significant project specific impact at this intersection.

- La Media Road/Olympic Parkway – LOS E during the AM peak hour. The 2025 project traffic would comprise approximately 3.5% and 4.6% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is less than 5%, the project would result in a significant cumulative impact at this intersection.
- La Media Road (SB)/Main Street (WB) (all-way stop controlled) – LOS E during the PM peak hour. The 2025 project traffic would comprise approximately 3.0% and 1.3% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is less than 5%, the project would result in a significant cumulative impact at this intersection.
- La Media Road (NB)/Main Street (WB) (all-way stop controlled) – LOS E during the AM peak hour. The 2025 project traffic would comprise approximately 0.7% and 3.1% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is less than 5%, the project would result in a significant cumulative impact at this intersection.
- La Media Road (SB)/Main Street (EB) (all-way stop controlled) – LOS E during the PM peak hour. The 2025 project traffic would comprise approximately 3.8% and 1.3% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is less than 5%, the project would result in a significant cumulative impact at this intersection.
- Magdalena Avenue/Main Street (one-way stop controlled) – LOS E during the PM peak hour. The 2025 project traffic would comprise approximately 3.5% and 2.7% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is less than 5%, the project would result in a significant cumulative impact at this intersection.

Table 5.2-35
Peak Hour Intersection Level of Service Results – Year 2025 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
Paseo Ranchero/Heritage Road/Telegraph Canyon Road	52.6	D	51.3	D			1.4%/1.7%		No
La Media Road/Telegraph Canyon Road/Otay Lakes Road	43.1	D	50.7	D			1.6%/1.7%		No
Heritage Road/East Palomar Street	48.6	D	31.5	C			4.0%/4.9%		No
La Media Road/East Palomar Street	47.8	D	52.5	D			2.8%/2.8%		No
Melrose Avenue/Orange Avenue	52.9	D	53.2	D			1.5%/1.4%		No
I-805 SB Ramps/Olympic Parkway	51.2	D	112.2	**F**			2.3%/2.8%		**Yes (Cumulative)**
I-805 NB Ramps/Olympic Parkway	47.2	D	52.1	D			3.6%/3.9%		No
Oleander Avenue/Olympic Parkway	51.9	D	50.5	D			4.0%/4.3%		No
Brandywine Avenue/Olympic Parkway	53.5	D	54.3	D			4.0%/4.5%		No
Santa Victoria Road/Olympic Parkway	3.4	A	11.9	B			4.1%/5.3%		No
Heritage Road/Olympic Parkway	61.6	**E**	66.6	**E**			5.3%/5.8%		**Yes (Direct)**
Santa Venetia Street/Olympic Parkway	17.0	B	2.9	A			2.6%/4.3%		No
La Media Road/Olympic Parkway	63.8	**E**	51.9	D			3.5%/4.6%		**Yes (Cumulative)**
East Palomar Street/Olympic Parkway	29.0	C	28.2	C			0.6%/0.7%		No
SR-125 SB Ramps/Olympic Parkway	5.2	A	7.1	A			0.3%/0.3%		No
SR-125 NB Ramps/Olympic Parkway	4.8	A	7.3	A			0.2%/0.1%		No
Eastlake Parkway/Olympic Parkway	33.3	C	32.3	C			0.4%/0.4%		No
Heritage Road/Santa Victoria Road	31.9	C	52.7	D			8.2%/9.6%		No
La Media Road/Santa Venetia Street	48.4	D	50.9	D			5.0%/6.5%		No
La Media Road/Birch Road	48.7	D	53.5	D			9.2%/10.7%		No
Magdalena Avenue/Birch Road	53.0	D	48.6	D			5.3%/6.9%		No
SR-125 SB Ramps/Birch Road	3.8	A	5.8	A			5.7%/7.7%		No

Table 5.2-35
Peak Hour Intersection Level of Service Results – Year 2025 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
SR-125 NB Ramps/Birch Road	9.5	A	9.4	A			5.6%/7.6%		No
Eastlake Parkway/Birch Road	42.1	D	48.0	D			1.4%/1.7%		No
Heritage Road/Santa Liza Avenue	10.2	B	5.0	A			3.0%/3.6%		No
Heritage Road/Main Street	31.5	C	30.9	C			2.2%/2.6%		No
La Media Road (SB)/Main Street (WB) (all-way stop controlled)	35.9	**E**	45.5	**E**			3.0%/1.3%		**Yes (Cumulative)**
La Media Road (NB)/Main Street (WB) (all-way stop controlled)	46.1	**E**	41.7	**E**			0.7%/3.1%		**Yes (Cumulative)**
La Media Road (SB)/Main Street (EB) (all-way stop controlled)	43.8	**E**	43.6	**E**			3.8%/1.3%		**Yes (Cumulative)**
La Media Road (NB)/Main Street (EB) (all-way stop controlled)	39.8	**E**	38.1	**E**			2.7%/1.5%		**Yes (Cumulative)**
Magdalena Avenue/Main Street (all-way stop controlled)	47.9	**E**	46.3	**E**			3.5%/2.7%		**Yes (Cumulative)**
SR-125 SB Ramps/Main Street	Does Not Exist								
SR-125 NB Ramps/Main Street	Does Not Exist								

Source: Chen Ryan 2014
Note: Bold letter indicates unacceptable LOS E or F.

Roadway Segment Analysis

Table 5.2-36 displays the level of service analysis results for the study area roadway segments within the City of Chula Vista under the Year 2025 conditions.

As shown in the table, the following seven roadway segments would operate at unacceptable LOS D, E, or F under Year 2025 conditions:

- Telegraph Canyon Road, between Medical Center Drive and Heritage Road/Paseo Ranchero (LOS D) – the proposed 2025 project traffic would comprise approximately 0.7% (less than 5%) of the total segment volume and would add 393 ADT (less than 800 ADT). Additionally, the intersection of Paseo Ranchero/Heritage Road/Telegraph Canyon Road would operate at acceptable LOSD/D during the AM/PM peak hours, respectively. Therefore, the project traffic would not result in a significant impact at this location.
- Telegraph Canyon Road, between Heritage Road/Paseo Ranchero and La Media Road/Otay Lakes Road (LOS D) – the proposed 2025 project traffic would comprise approximately 0.3 % (less than 5%) of the total segment volume and would add 178 ADT (less than 800 ADT). Additionally, the intersection of Paseo Ranchero/Heritage Road/Telegraph Canyon Road would operate at acceptable LOSD/D during the AM/PM peak hours, respectively. Therefore, the project traffic would not result in a significant impact at this location.
- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – the proposed 2020 project traffic would comprise approximately 1.1% (less than 5%) of the total segment volume and would add 356 ADT (less than 800 ADT). However, one of the intersections (I-805 SB Ramps/Olympic Parkway) along this segment would operate at substandard LOS D/F during the AM/PM peak hours, respectively. Therefore, the project traffic would result in a significant cumulative impact at this location.
- Olympic Parkway, between Heritage Road and Santa Venetia Street (LOS D) – the proposed 2025 project traffic would comprise approximately 0.34% (less than 5%) of the total segment volume and would add 178 ADT (less than 800 ADT). However, one of the intersections (Heritage Road/Olympic Parkway) along this segment would operate at substandard LOS E/E during the AM/PM peak hours, respectively. Therefore, the project traffic would result in a significant cumulative impact at this location.
- Olympic Parkway, between East Palomar Street and SR-125 SB Ramps (LOS D) – the proposed 2025 project traffic would comprise approximately 1.0% (less than 5%) of the total segment volume and would add 534 ADT (more than 800 ADT). Additionally, the intersections (East Palomar Street/Olympic Parkway and SR-125 SB Ramps/Olympic

Parkway) along this segment would operate at acceptable LOS C/C and LOS A/A during the peak hours, respectively. Therefore, the project traffic would not result in a significant impact at this location.

- Birch Road, between Magdalena Avenue and SR-125 SB Ramps (LOS D) – the proposed 2025 project traffic would comprise approximately 7.5% (more than 5%) of the total segment volume and would add 3,026 ADT (more than 800 ADT). However, the intersections (Magdalena Avenue/Birch Road and SR-125 SB Ramps/Birch Road) along this segment would operate at acceptable LOS D/D and LOS A/A during the peak hours, respectively. Therefore, the project traffic would not result in a significant impact at this location.
- Heritage Road, between East Palomar Street and Olympic Parkway (LOS D) – the proposed 2025 project traffic would comprise approximately 6.9% (more than 5%) of the total segment volume and would add 3,560 ADT (more than 800 ADT). In addition, one of the intersections (Heritage Road/Olympic Parkway) along this segment would operate at LOS E during both peak hours. Therefore, the project traffic would result in a significant project specific impact at this location.

Freeway/State Highway Segment Analysis

Table 5.2-37 displays freeway level of service analysis results for I-805 and SR-125 under Year 2025 conditions. The freeway/state highway segment level of service analysis was performed utilizing the methodologies presented in Section 5.2.1.1.

As shown in the table, all study freeway/state highway segments along I-805 and SR-125 would operate at acceptable LOS D or better under Year 2025 conditions, with the exception of the following five segments:

- I-805, from SR-94 to Market Street (LOS E) – The proposed project would comprise 0.4% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Market Street to Imperial Avenue (LOS F) – The proposed project would comprise 0.4% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Imperial Avenue to E Division Street (LOS F) – The proposed project would comprise 0.4% (less than 5%) of the total freeway segment volume and, therefore, project

traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.

- I-805, from Plaza Boulevard to SR-54 (LOS E) – The proposed project would comprise 0.7% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Bonita Road to East H Street (LOS E) – The proposed project would comprise 0.7% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.

Table 5.2-36
Roadway Segment Level of Service Results – Year 2025 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Telegraph Canyon Road	Medical Center Drive	Heritage Road/Paseo Ranchero	6-Ln w/RM	55,900	50,000	**D**	534	0.96%	Yes	No
Telegraph Canyon Road	Heritage Road/Paseo Ranchero	La Media Road/Otay Lakes Road	6-Ln w/RM	52,500	50,000	**D**	178	0.34%	Yes	No
Otay Lakes Road	H Street	Telegraph Canyon Road	6-Ln w/RM**	32,600	50,000	A	534	1.64%	–	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	44,700	50,000	C	890	1.99%	–	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	25,600	30,000	B	1,068	4.17%	–	No
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	23,600	30,000	B	356	1.51%	–	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	22,300	30,000	A	178	0.80%	–	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	27,900	30,000	C	356	1.28%	–	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	32,500	30,000	**D**	356	1.10%	No	**Yes (Cumulative)**
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	43,100	50,000	B	1,246	2.89%	–	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	47,200	50,000	C	2,136	4.53%	–	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	40,900	50,000	B	2,314	5.66%	–	No
Olympic Parkway	Brandywine Avenue	Santa Victoria Road	6-Ln w/RM	32,600	50,000	A	3,026	9.28%	–	No

Table 5.2-36
Roadway Segment Level of Service Results – Year 2025 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Olympic Parkway	Santa Victoria Road	Heritage Road	6-Ln w/RM	32,100	50,000	A	3,026	12.25%	–	No
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln w/RM	52,000	50,000	**D**	178	0.34%	No	**Yes (Cumulative)**
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln w/RM	41,900	50,000	B	178	0.42%	–	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	32,100	50,000	A	712	2.22%	–	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	52,800	50,000	**D**	534	1.01%	Yes	No
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	55,100	70,000	B	356	0.65%	–	No
Olympic Parkway	SR-125 NB Ramps	Eastlake Parkway	8-Ln w/RM	58,300	70,000	B	356	0.61%	–	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	33,800	40,000	B	3,382	10.01%	–	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	40,400	40,000	**D**	3,026	7.49%	Yes	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	43,300	50,000	B	2,670	6.17%	–	No
Birch Road	SR-125 NB Ramps	Eastlake Parkway	6-Ln w/RM	45,200	50,000	C	2,492	5.51%	–	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	40,600	50,000	B	1,602	3.95%	–	No
Main Street	Heritage Road	La Media Road	Does Not Exist							
Main Street	La Media Road	SR-125 SB Ramps	6-Ln w/RM	24,800	50,000	A	890	3.59%	–	No

Table 5.2-36
Roadway Segment Level of Service Results – Year 2025 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist							
Main Street	SR-125 NB Ramps	Eastlake Parkway	Does Not Exist							
Otay Valley Road	Main Street	SR-125 SB Ramps	Does Not Exist							
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	19,700	22,000	C	1,246	6.32%	–	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	26,200	50,000	A	1,958	7.47%	–	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	51,400	50,000	**D**	3,560	6.93%	No	**Yes (Direct)**
Heritage Road	Olympic Parkway	Santa Victoria Road	6-Ln w/RM	43,100	50,000	B	6,052	16.95%	–	No
Heritage Road	Santa Victoria Road	Santa Liza Avenue	6-Ln w/RM	40,900	50,000	B	3,204	7.83%	–	No
Heritage Road	Santa Liza Avenue	Main Street	6-Ln w/RM	47,700	50,000	C	2,848	5.97%	–	No
Heritage Road	Main Street	Avenida De Las Vistas	6-Ln w/RM**	32,300	50,000	A	1,068	3.31%	–	No
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	33,200	50,000	A	1,424	4.29%	–	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	26,200	50,000	A	1,602	6.11%	–	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	41,800	50,000	B	2,314	5.54%	–	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	39,400	50,000	B	1,780	4.52%	–	No

Table 5.2-36
Roadway Segment Level of Service Results – Year 2025 Conditions (City of Chula Vista)

Roadway	From	To	Cross-Section	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	29,000	50,000	A	1,246	4.30%	–	No
La Media Road	Santa Luna Street	Main Street	4-Ln w/RM	25,500	30,000	B	1,068	4.19%	–	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	19,200	22,000	B	356	1.85%	–	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	10,300	12,000	B	178	1.73%	–	No
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	21,100	22,000	C	178	0.84%	–	No
Eastlake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	32,400	40,000	B	356	1.10%	–	No
Eastlake Parkway	Birch Road	Main Street/Hunte Parkway	6-Ln w/RM	29,500	40,000	A	356	1.21%	–	No

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS D, E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.
* Facility is required for project access.
** Facility improvement is assumed based on City's CIP.

Table 5.2-37
Freeway/State Highway Level of Service Results – Year 2025 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Cont. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	Home Street to SR-94	278,600	6.9%	19,223	0.51	4+1ML	0.97	4.2%	2,063	0.860	D	277,500	D	0.40%	No
I-805	SR-94 to Market Street	273,900	8.0%	21,912	0.50	4+1ML	0.97	4.2%	2,305	0.960	**E**	272,700	**E**	0.40%	**Yes (Cumulative)**
I-805	Market Street to Imperial Avenue	347,400	8.0%	27,792	0.50	5+1ML	0.97	4.2%	2,663	1.110	**F**	346,000	**F**	0.40%	**Yes (Cumulative)**
I-805	Imperial Avenue to E Division Street	345,700	8.0%	27,656	0.50	5+1ML	0.97	4.2%	2,421	1.009	**F**	344,300	**F**	0.40%	**Yes (Cumulative)**
I-805	E Division Street to Plaza Boulevard	329,900	7.2%	23,753	0.51	5+1ML	0.95	3.8%	2,167	0.903	D	328,500	D	0.40%	No
I-805	Plaza Boulevard to SR-54	319,500	8.1%	25,880	0.52	5+1ML	0.96	2.2%	2,359	0.983	**E**	317,400	**E**	0.70%	**Yes (Cumulative)**
I-805	SR-54 to Bonita Road	295,300	7.2%	21,262	0.52	4+1Aux+1 ML	0.96	1.7%	1,933	0.805	D	292,800	D	0.80%	No
I-805	Bonita Road to East H Street	345,200	7.8%	26,926	0.50	5+1ML	0.95	1.7%	2,378	0.991	**E**	342,700	**E**	0.70%	**Yes (Cumulative)**
I-805	East H Street to Telegraph Canyon Road	280,000	7.8%	21,840	0.50	5+1ML	0.95	1.9%	1,934	0.806	D	277,500	C	0.90%	No
I-805	Telegraph Canyon Road to East Palomar Street	249,300	7.1%	17,700	0.51	4+1Aux+1 ML	0.92	1.7%	1,798	0.749	C	247,000	C	0.90%	No

Table 5.2-37
Freeway/State Highway Level of Service Results – Year 2025 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Cont. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	East Palomar Street to Olympic Parkway	223,700	7.1%	15,883	0.51	4+1Aux	0.92	1.7%	1,973	0.822	D	222,100	D	0.70%	No
I-805	Olympic Parkway to Main Street	218,300	6.9%	15,063	0.51	4+1Aux	0.93	5.4%	1,888	0.787	C	218,100	C	0.10%	No
I-805	Main Street to Palm Avenue	216,900	7.1%	15,400	0.58	4+1Aux	0.95	10.3%	2,192	0.913	D	215,800	D	0.50%	No
I-805	Palm Avenue to SR-905	193,800	7.1%	13,760	0.58	4+1Aux	0.95	10.3%	1,959	0.816	D	193,100	D	0.40%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	22,700	7.0%	1,589	0.60	2M	0.92	2.0%	527	0.220	A	22,300	A	1.8%	No
SR-125	Olympic Parkway to Birch Road	18,600	7.0%	1,302	0.60	2M	0.92	2.0%	428	0.178	A	18,600	A	0.0%	No
SR-125	Main Street to Otay Valley Road	33,400	7.0%	2,338	0.60	2M	0.92	2.0%	768	0.320	A	33,000	A	1.2%	No
SR-125	Otay Valley Road to Lone Star Road	33,400	7.0%	2,338	0.60	2M	0.92	2.0%	768	0.320	A	33,000	A	1.2%	No
SR-125	Main Street to Lone Star Road	33,400	7.0%	2,338	0.60	2M	0.92	2.0%	768	0.320	A	33,000	A	1.2%	No

Table 5.2-37
Freeway/State Highway Level of Service Results – Year 2025 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Cont. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
SR-125	Lone Star Road to Otay Mesa Road	33,400	7.0%	2,338	0.60	2M	0.92	2.0%	768	0.320	A	33,000	A	1.2%	No
SR-125	Otay Mesa Road to SR-905	10,800	7.0%	756	0.60	2M	0.92	2.0%	253	0.105	A	10,400	A	3.7%	No

Source: Chen Ryan 2014
Notes: Aux = Auxiliary Lane.
ML = Managed Lane.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, for information purposes, the signalized ramp intersections along I-805 and SR-125 within the study area were analyzed under the Year 2025 conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in Table 5.2-38 and analysis worksheets for the Year 2025 conditions are provided in Appendix B.

As shown in the table, all of the I-805 ramp intersections would operate "At Capacity" or "Under Capacity," with the following the one exception:

- I-805 SB Ramps/Olympic Parkway – "Over Capacity" during the PM peak hour.

All of the SR-125 ramp intersections within the study area would continue to operate at "Under Capacity" during both the AM and PM peak hours under Year 2025 conditions.

Ramp Metering Analysis

Table 5.2-39 displays the ramp metering analysis conducted at the I-805 northbound on-ramps at Olympic Parkway under Year 2025 conditions. Based on observed existing conditions, it is expected that approximately 80% of the total arrival traffic (demand) would utilize the two non- HOV lanes.

As shown in the table, the peak hour demand at the I-805 northbound on-ramp at Olympic Parkway would be less than the capacity that the ramp meter provides. Therefore, the proposed project would not result in a significant impact at the I-805 northbound on-ramp at Olympic Parkway.

Table 5.2-38
Ramp Intersection Capacity Analysis – Year 2025 Conditions

Ramp Intersection	Peak Hour	With Project		Without Project	
		ILV/Hour	*Description*	*ILV/Hour*	*Description*
I-805 SB Ramps/Olympic Parkway	AM	1,368	*1200-1500: (At Capacity)*	1,350	*1200-1500: (At Capacity)*
	PM	1,981	*>1500: (Over Capacity)*	1,955	*>1500: (Over Capacity)*
I-805 NB Ramps/Olympic Parkway	AM	1,561	*>1500: (Over Capacity)*	1,480	*1200-1500: (At Capacity)*
	PM	1,582	*>1500: (Over Capacity)*	1,505	*>1500: (Over Capacity)*
SR-125 SB Ramps/Olympic Parkway	AM	951	*<1200: (Under Capacity)*	933	*<1200: (Under Capacity)*
	PM	657	*<1200: (Under Capacity)*	600	*<1200: (Under Capacity)*
SR-125 NB Ramps/Olympic Parkway	AM	813	*<1200: (Under Capacity)*	787	*<1200: (Under Capacity)*
	PM	875	*<1200: (Under Capacity)*	793	*<1200: (Under Capacity)*
SR-125 SB Ramps/Birch Road	AM	584	*<1200: (Under Capacity)*	580	*<1200: (Under Capacity)*
	PM	675	*<1200: (Under Capacity)*	670	*<1200: (Under Capacity)*
SR-125 NB Ramps/Birch Road	AM	657	*<1200: (Under Capacity)*	657	*<1200: (Under Capacity)*
	PM	730	*<1200: (Under Capacity)*	730	*<1200: (Under Capacity)*
SR-125 SB Ramps/Main Street	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 NB Ramps/Main Street	AM	Does Not Exist		Does Not Exist	
	PM				

Source: Chen Ryan 2014

Table 5.2-39
Ramp Meter Analysis – Year 2025 Conditions

Location	Peak Hour	With Project					Without Project				Significant Impact?
		Demand[1] (veh/hr)	*Meter Rate[2] (veh/hr)*	*Excess Demand[3] (veh/hr)*	*Delay[4] (min)*	*Queue[5] (ft)*	*Demand (veh/hr)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	591	887	0	0	0	560	0	0	0	No

Source: Chen Ryan 2014

Notes:

1 Demand is the peak hour demand expected to use the on-ramp.

2 Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.

3 Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.

4 Delay = (Excess Demand/Meter Rate) X 60 min/hr.

5 Queue = (Excess Demand) X 29 ft/veh.

Year 2030 Traffic Conditions

This section provides an analysis of Year 2030 traffic conditions both with and without the proposed project.

Year 2030 Roadway Network and Traffic Volumes

The Year 2030 roadway network is based on buildout of the proposed City of Chula Vista General Plan Circulation Element, as well as the City of San Diego's adopted Community Plan Circulation Element.

Within the City of Chula Vista

When compared to the Year 2025 network, the 2030 network includes the following additional roadways:

To be constructed by the Project:

- None

To be constructed by Others:

- Main Street is constructed as a 6-Lane Gateway between SR-125 SB ramps and Eastlake Parkway.
- SR-125/Main Street interchange is included as a full interchange with partial clover leaf.
- Otay Valley Road is constructed as a 4-Lane Major Arterial between Main Street and Village 9 Street "B."
- Otay Valley Road/SR-125 interchange is included as south facing half diamond interchange.

If the assumed roadway improvements are not in place as modeled for the Year 2030 scenario, additional traffic impacts could occur. Therefore, a potentially significant impact could occur if assumed improvements are not developed as prescribed in the traffic impact analysis.

The proposed project is expected to be build out by the Year 2025, if the project equivalent dwelling unit limit for study year 2030 (1,780 EDU) is exceeded prior to these roadway segments being constructed and open to traffic, then one of the following steps shall be taken:

A. Development within the Village Two Comprehensive SPA project shall stop until those assumed future roadways are constructed by others; or

B. City and the applicant shall meet to determine the need for the incomplete roadway segments. A number of factors, including changes to the tolling structure at SR-125, may

affect the traffic patterns in the Otay Ranch. Additional traffic analysis of the roadway network and levels of service assessment may be necessary to determine if such improvements are necessary and the scope and timing of additional circulation improvements; or

C. Applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or

D. An alternative measure is selected by the city in accordance with the city of Chula Vista Growth Management Ordinance.

E. All to the satisfaction of the City Engineer.

Mitigation carried forward from 2025:

- Construction of Main Street, between Heritage Road and La Media Road, as a 6-lane Prime Arterial;
- La Media Road (SB)/Main Street (WB) – signalized;
- La Media Road (NB)/Main Street (WB) – signalized;
- La Media Road (SB)/Main Street (EB) – signalized;
- La Media Road (NB)/Main Street (EB) – signalized; and
- Magdalena Avenue/Main Street – signalized.

Within the City of San Diego

The 2030 network is based on the road improvements included in the City of San Diego's Otay Mesa PFFP FY 2007 for Transportation Projects. For additional detailed information regarding the Otay Mesa PFFP, see Appendix B.

Traffic volumes for the Year 2030 scenario were developed utilizing the SANDAG Series 11 "Southbay 2, Village 2" Year 2030 model.

Intersection Analysis

Table 5.2-40 displays intersection level of service and average vehicle delay results for the study area intersections under both Year 2030 with and without project conditions. Level of service calculation worksheets for Year 2030 conditions are provided in Appendix B**.**

As shown in the table, all of the study area intersections would operate at acceptable LOS D or better under Year 2030 conditions with the following one (1) exception located in the City of Chula Vista:

City of Chula Vista

- I-805 SB Ramps/Olympic Parkway – LOS F during the PM peak hour. The buildout project traffic would comprise approximately 2.1% and 2.7% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is less than 5% but the resulting LOS is F, the project would result in a significant cumulative impact at this intersection.

Roadway Segment Analysis

Table 5.2-41A displays the level of service analysis results for the study area roadway segments within the City of Chula Vista under Year 2030 conditions; while Table 5.2-41B displays the level of service results for roadway segments within the City of San Diego.

As shown in the tables, all study area roadway segments within the City of San Diego would operate at acceptable LOS D or better. As to the City of Chula Vista, the following eight (8) roadway segments would operate at unacceptable LOS D, E, or F under Year 2030 conditions:

- Telegraph Canyon Road, between Medical Center Drive and Heritage Road/Paseo Ranchero (LOS D) – the proposed buildout project traffic would comprise approximately 1.0% (less than 5%) of the total segment volume and would add 534 ADT (less than 800 ADT). In addition, the intersection (Paseo Ranchero/Heritage Road/Telegraph Canyon Road) along this segment would operate at acceptable LOS D/D during the peak hours. Therefore, the project traffic would not result in a significant impact at this location.
- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS E) – the proposed buildout project traffic would comprise approximately 1.5% (less than 5%) of the total segment volume and would add 534 ADT (less than 800 ADT). However, the intersection (I-805 SB Ramps/Olympic Parkway) along this segment would operate at LOS F during the PM peak hour. Therefore, the project traffic would result in a significant cumulative impact at this location.
- Olympic Parkway, between I-805 NB Ramps and Oleander Avenue (LOS E) – the proposed buildout project traffic would comprise approximately 4.4% (less than 5%) of the total segment volume and would add 2,492 ADT (more than 800 ADT). However, the intersections (I-805 NB Ramps/Olympic Parkway and Oleander Avenue/Olympic Parkway) along this segment would both operate at acceptable LOS D/D and LOS D/D during the peak hours respectively. Therefore, the project traffic would not result in a significant impact at this location.
- Main Street, between La Media Road and SR-125 SB Ramps (LOS D) – the proposed buildout project traffic would comprise approximately 0.7% (less than 5%) of the total segment volume and would add 360 ADT (less than 800 ADT). Additionally, the

intersections (Magdalena Avenue/Main Street and SR-125 SB Ramps/Main Street, as well as the 4 intersections located in the couplet) along this segment would all operate at acceptable LOS D or better during the peak hours. Therefore, the project traffic would not result in a significant impact at this location.

- Paseo Ranchero, between H Street and Telegraph Canyon Road (LOS D) – the proposed buildout project traffic would comprise approximately 4.8% (less than 5%) of the total segment volume and would add 1,068 ADT (more than 800 ADT). However, the intersection (Paseo Ranchero/Telegraph Canyon Road) along this segment would operate at acceptable LOS D/D during the peak hours. Therefore, the project traffic would not result in a significant impact at this location.
- Heritage Road, between East Palomar Street and Olympic Parkway (LOS D) – the proposed buildout project traffic would comprise approximately 6.0% (more than 5%) of the total segment volume and would add 3,204 ADT (more than 800 ADT). However, the intersections (Heritage Road/East Palomar Street and Heritage Road/Olympic Parkway) along this segment would both operate at acceptable LOS D/D during the peak hours. Therefore, the project traffic would not result in a significant impact at this location.
- Heritage Road, between Main Street and Avenida De Las Vistas (LOS F) – the proposed buildout project traffic would comprise approximately 3.2% (less than 5%) of the total segment volume and would add 1,958 ADT (more than 800 ADT). Additionally, the intersections (Heritage Road/Main Street and Heritage Road/Avenida De Las Vistas) along this segment would operate at acceptable LOS C/D and LOS A/C during the peak hours, respectively. Therefore, the project traffic would not result in a significant impact at this location.

Table 5.2-40
Peak Hour Intersection Level of Service Results – Year 2030 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
Paseo Ranchero/Heritage Road/Telegraph Canyon Road	54.2	D	53.9	D			1.2%/1.5%		No
La Media Road/Telegraph Canyon Road/Otay Lakes Road	43.3	D	50.7	D			1.3%/1.6%		No
Heritage Road/East Palomar Street	51.1	D	35.7	D			2.0%/2.8%		No
La Media Road/East Palomar Street	53.6	D	53.5	D			2.0%/2.8%		No
Melrose Avenue/Orange Avenue	51.4	D	53.7	D			1.3%/1.4%		No
I-805 SB Ramps/Olympic Parkway	54.3	D	93.9	**F**			2.1%/2.7%		**Yes (Cumulative)**
I-805 NB Ramps/Olympic Parkway	53.2	D	39.1	D			2.8%/3.5%		No
Oleander Avenue/Olympic Parkway	51.6	D	48.2	D			3.0%/4.2%		No
Brandywine Avenue/Olympic Parkway	54.0	D	53.7	D			4.3%/5.5%		No
Santa Victoria Road/Olympic Parkway	3.0	A	13.0	B			4.8%/6.2%		No
Heritage Road/Olympic Parkway	48.6	D	52.9	D			3.5%/4.6%		No
Santa Venetia Street/Olympic Parkway	11.4	B	3.1	A			2.8%/3.7%		No
La Media Road/Olympic Parkway	53.6	D	51.5	D			3.4%/4.0%		No
East Palomar Street/Olympic Parkway	35.5	D	54.0	D			0.6%/0.6%		No
SR-125 SB Ramps/Olympic Parkway	6.6	A	10.7	B			0.3%/0.3%		No
SR-125 NB Ramps/Olympic Parkway	9.5	A	9.5	A			0.2%/0.1%		No
Eastlake Parkway/Olympic Parkway	32.6	C	32.8	C			0.2%/0.2%		No
Heritage Road/Santa Victoria Road	46.7	D	49.3	D			7.2%/8.9%		No
La Media Road/Santa Venetia Street	48.1	D	44.9	D			4.3%/6.7%		No
La Media Road/Birch Road	46.6	D	51.6	D			12.2%/14.3%		No
Magdalena Avenue/Birch Road	47.0	D	41.8	D			7.2%/9.4%		No
SR-125 SB Ramps/Birch Road	12.1	B	6.9	A			8.4%/9.6%		No
SR-125 NB Ramps/Birch Road	9.7	A	11.1	B			7.7%/8.8%		No

Table 5.2-40
Peak Hour Intersection Level of Service Results – Year 2030 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
Eastlake Parkway/Birch Road	51.2	D	51.5	D			1.6%/1.7%		No
Heritage Road/Santa Liza Avenue	21.0	C	6.0	A			4.4%/5.1%		No
Heritage Road/Main Street	46.2	D	51.8	D			1.9%/2.2%		No
La Media Road (SB)/Main Street (WB)	4.1	A	16.1	B			2.6%/1.4%		No
La Media Road (NB)/Main Street (WB)	4.5	A	7.8	A			0.9%/2.7%		No
La Media Road (SB)/Main Street (EB)	2.6	A	16.3	B			3.0%/1.1%		No
La Media Road (NB)/Main Street (EB)	12.7	B	6.5	A			2.6%/1.3%		No
Magdalena Avenue/Main Street	30.0	C	25.7	C			1.5%/1.8%		No
SR-125 SB Ramps/Main Street	8.6	A	9.8	A			1.4%/1.8%		No
SR-125 NB Ramps/Main Street	9.6	A	13.0	B			0.1%/0.3%		No
Heritage Road/Otay Valley Road/Avenida De Las Vistas (SD)	22.8	C	22.5	C	14.0/21.0	B/C		8.8/1.5	No
Heritage Road/Otay Mesa Road (SD)	36.1	D	42.7	D	35.6/40.9	D/D		0.5/1.8	No
Cactus Road/Otay Mesa Road (SD)	44.3	D	53.3	D	43.6/51.8	D/D		0.7/1.5	No

Source: Chen Ryan 2014
Note: Bold letter indicates unacceptable LOS E or F.

Table 5.2-41A
Roadway Segment Level of Service Results – Year 2030 Conditions (City of Chula Vista)

Roadway	From	To	Classification	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Telegraph Canyon Road	Medical Center Drive	Heritage Road/Paseo Ranchero	6-ln Prime	55,200	50,000	**D**	534	0.97%	Yes	No
Telegraph Canyon Road	Heritage Road/Paseo Ranchero	La Media Road/Otay Lakes Road	6-ln Prime	48,300	50,000	C	178	0.37%	–	No
Otay Lakes Road	H Street	Telegraph Canyon Road	6-ln Prime	30,500	50,000	A	356	1.17%	–	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-ln Prime	43,900	50,000	C	890	2.03%	–	No
East Palomar Street	Medical Center Drive	Heritage Road	4-ln Major	22,900	30,000	B	890	3.89%	–	No
East Palomar Street	Heritage Road	La Media Road	4-ln Major	23,000	30,000	B	534	2.32%	–	No
East Palomar Street	La Media Road	Olympic Parkway	4-ln Major	25,700	30,000	B	356	1.39%	–	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-ln Major	28,600	30,000	C	356	1.24%	–	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-ln Major	36,800	30,000	**E**	534	1.45%	No	**Yes (Cumulative)**
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-ln Prime	47,100	50,000	C	1,602	3.40%	–	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-ln Prime	56,600	50,000	**E**	2,492	4.40%	Yes	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-ln Prime	48,800	50,000	C	2,670	5.47%	–	No
Olympic Parkway	Brandywine Avenue	Santa Victoria Road	6-ln Prime	42,600	50,000	B	3,204	7.52%	–	No

Table 5.2-41A
Roadway Segment Level of Service Results – Year 2030 Conditions (City of Chula Vista)

Roadway	From	To	Classification	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Olympic Parkway	Santa Victoria Road	Heritage Road	6-ln Prime	42,700	50,000	B	3,204	7.50%	–	No
Olympic Parkway	Heritage Road	Santa Venetia Street	6-ln Prime	39,300	50,000	B	178	0.45%	–	No
Olympic Parkway	Santa Venetia Street	La Media Road	6-ln Prime	32,100	50,000	A	178	0.55%	–	No
Olympic Parkway	La Media Road	East Palomar Street	6-ln Prime	26,800	50,000	A	712	2.66%	–	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-ln Prime	47,000	50,000	C	534	1.14%	–	No
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-ln Expressway	49,100	70,000	A	356	0.73%	–	No
Olympic Parkway	SR-125 NB Ramps	Eastlake Parkway	8-ln Expressway	51,800	70,000	A	178	0.34%	–	No
Birch Road	La Media Road	Magdalena Avenue	6-ln Major	31,700	40,000	B	4,450	14.04%	–	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-ln Major	32,100	40,000	B	3,738	11.64%	–	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-ln Prime	32,100	50,000	A	3,204	9.98%	–	No
Birch Road	SR-125 NB Ramps	Eastlake Parkway	6-ln Prime	32,400	50,000	A	3,204	9.89%	–	No
Main Street	Brandywine Avenue	Heritage Road	6-ln Prime	50,300	50,000	**D**	712	1.42%	Yes	No
Main Street	Heritage Road	La Media Road	6-ln Prime	49,200	50,000	C	100	0.20%	-	No
Main Street	La Media Road	SR-125 SB Ramps	6-ln Prime	54,800	50,000	**D**	356	0.65%	Yes	No
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	6-ln Gateway**	54,900	61,200	D	178	0.32%	–	No

Table 5.2-41A
Roadway Segment Level of Service Results – Year 2030 Conditions (City of Chula Vista)

Roadway	From	To	Classification	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Main Street	SR-125 NB Ramps	Eastlake Parkway	6-ln Gateway**	60,500	61,200	D	178	0.29%	–	No
Otay Valley Road	Main Street	SR-125 SB Ramps	4-ln Major	21,300	30,000	A	356	1.67%	–	No
Paseo Ranchero	H Street	Telegraph Canyon Road	Class I Collector	22,500	22,000	**D**	1,068	4.75%	Yes	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-ln Prime	27,600	50,000	A	1,780	6.45%	–	No
Heritage Road	East Palomar Street	Olympic Parkway	6-ln Prime	53,800	50,000	**D**	3,204	5.96%	Yes	No
Heritage Road	Olympic Parkway	Santa Victoria Road	6-ln Prime	42,100	50,000	B	5,874	13.95%	–	No
Heritage Road	Santa Victoria Road	Santa Liza Avenue	6-ln Prime	41,500	50,000	B	3,204	7.72%	–	No
Heritage Road	Santa Liza Avenue	Main Street	6-ln Prime	47,900	50,000	C	2,670	5.57%	–	No
Heritage Road	Main Street	Avenida De Las Vistas	6-ln Prime	61,700	50,000	**E**	1,958	3.17%	Yes	No
La Media Road	Telegraph Canyon Road	East Palomar Street	6-ln Prime	31,400	50,000	A	1,246	3.97%	–	No
La Media Road	East Palomar Street	Olympic Parkway	6-ln Prime	26,800	50,000	A	1,424	5.31%	–	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-ln Prime	33,100	50,000	A	2,136	6.45%	–	No
La Media Road	Santa Venetia Street	Birch Road	6-ln Prime	33,300	50,000	A	2,314	6.95%	–	No
La Media Road	Birch Road	Santa Luna Street	6-ln Prime	18,600	50,000	A	890	4.78%	–	No
La Media Road	Santa Luna Street	Main Street	4-ln Major	18,500	30,000	A	712	3.85%	–	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	Class I Collector	12,800	22,000	A	712	5.56%	–	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	Class II Collector	4,900	12,000	A	178	3.63%	–	No

Table 5.2-41A
Roadway Segment Level of Service Results – Year 2030 Conditions (City of Chula Vista)

Roadway	From	To	Classification	ADT w/Project	LOS Threshold (LOS C)	LOS w/Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Magdalena Avenue	Santa Luna Street	Main Street	Class I Collector	12,100	22,000	A	178	1.47%	–	No
Eastlake Parkway	Olympic Parkway	Birch Road	6-ln Major	28,800	40,000	A	534	1.85%	–	No
Eastlake Parkway	Birch Road	Main Street/Hunte Parkway	6-ln Major	22,900	40,000	A	178	0.78%	–	No

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS D, E or F.
*Facility is required for project access.
**Consistent with the buildout of the adopted Circulation Element classification.

Table 5.2-41B
Roadway Segment Level of Service Results – Year 2030 Conditions (City of San Diego)

Roadway	From	To	Adopted CE Classification	ADT w/Project	LOS Threshold (LOS D)	LOS w/Project	ADT w/o Project	LOS w/o Project	Change in V/C	Significant Impact?
Otay Mesa Road	Ocean View Hills Parkway	Heritage Road	6-ln Prime	48,700	55,000	C	47,900	C	0.013	No
Otay Mesa Road	Heritage Road	Cactus Road	6-ln Prime	45,800	55,000	C	42,800	C	0.050	No
Otay Mesa Road	Cactus Road	Britannia Boulevard	6-ln Prime	48,800	55,000	C	47,000	C	0.030	No
Heritage Road	Avenida De Las Vistas	Otay Mesa Road	6-ln Prime	54,200	55,000	D	49,100	C	0.085	No

Source: Chen Ryan 2014

Freeway/State Highway Segment Analysis

Table 5.2-42 displays freeway level of service analysis results for I-805 and SR-125 under Year 2030 conditions. The freeway/state highway segment level of service analysis was performed utilizing the methodologies presented in 5.2.1.1. As shown in the table, all study freeway/state highway segments along I-805 and SR-125 would operate at acceptable LOS D or better under Year 2030 conditions, except for the following seven segments:

- I-805, from SR-94 to Market Street (LOS F) – The proposed project would comprise 0.4% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Market Street to Imperial Avenue (LOS F) – The proposed project would comprise 0.3% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Imperial Avenue to E Division Street (LOS F) – The proposed project would comprise 0.3% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Plaza Boulevard to SR-54 (LOS F) – The proposed project would comprise 0.4% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from SR-54 to Bonita Road (LOS F) – The proposed project would comprise 0.6% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Bonita Road to East H Street (LOS E) – The proposed project would comprise 0.6% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment

would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.

- I-805, from East H Street to Telegraph Canyon Road (LOS E) – The proposed project would comprise 0.7% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, for information purposes, the signalized ramp intersections along I-805 and SR-125 within the study area were analyzed under the Year 2030 conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in Table 5.2-43 and analysis worksheets for the Year 2030 conditions are provided in Appendix B. As shown in the table, all of the I-805 ramp intersections would operate "At Capacity" or "Under Capacity," with the following the two exceptions:

- I-805 SB Ramps/Olympic Parkway – "Over Capacity" during the AM and PM peak hour;
- I-805 NB Ramps/Olympic Parkway – "Over Capacity" during the AM peak hour.

All of the SR-125 ramp intersections within the study area would continue to operate at "Under Capacity" during both the AM and PM peak hours under Year 2030 conditions.

Ramp Metering Analysis

Table 5.2-44 displays the ramp metering analysis conducted at the I-805 northbound on-ramp at Olympic Parkway under Year 2030 conditions. Based on observed existing conditions, it is expected that approximately 80% of the total arrival traffic (demand) would utilize the two non-HOV lanes. As shown in the table, the peak hour demand at the I-805 northbound on-ramp at Olympic Parkway would be less than the capacity that the ramp meter provides. Therefore, the proposed project would not result in a significant impact at the I-805 northbound on-ramp at Olympic Parkway.

Table 5.2-42
Freeway/State Highway Segment Level of Service Results – Year 2030 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contr. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	Home Street to SR-94	296,800	6.9%	20,479	0.51	4+1ML	0.97	4.2%	2,200	0.917	D	295,700	D	0.40%	No
I-805	SR-94 to Market Street	286,400	8.0%	22,912	0.50	4+1ML	0.97	4.2%	2,410	1.004	**F**	285,300	**F**	0.40%	**Yes (Cumulative)**
I-805	Market Street to Imperial Avenue	353,400	8.0%	28,272	0.50	5+1ML	0.97	4.2%	2,705	1.127	**F**	352,200	**F**	0.30%	**Yes (Cumulative)**
I-805	Imperial Avenue to E Division Street	351,500	8.0%	28,120	0.50	5+1ML	0.97	4.2%	2,463	1.026	**F**	350,300	**F**	0.30%	**Yes (Cumulative)**
I-805	E Division Street to Plaza Boulevard	338,700	7.2%	24,386	0.51	5+1ML	0.95	3.8%	2,220	0.925	D	337,300	D	0.40%	No
I-805	Plaza Boulevard to SR-54	329,800	8.1%	26,714	0.52	5+1ML	0.96	2.2%	2,443	1.018	**F**	328,400	**F**	0.40%	**Yes (Cumulative)**
I-805	SR-54 to Bonita Road	372,200	7.2%	26,798	0.52	4+1Aux+1 ML	0.96	1.7%	2,437	1.015	**F**	370,100	**F**	0.60%	**Yes (Cumulative)**
I-805	Bonita Road to East H Street	329,100	7.8%	25,670	0.50	5+1ML	0.95	1.7%	2,272	0.947	**E**	327,000	**E**	0.60%	**Yes (Cumulative)**
I-805	East H Street to Telegraph Canyon Road	327,500	7.8%	25,545	0.50	5+1ML	0.95	1.9%	2,263	0.943	**E**	325,200	**E**	0.70%	**Yes (Cumulative)**

Table 5.2-42
Freeway/State Highway Segment Level of Service Results – Year 2030 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contr. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	Telegraph Canyon Road to East Palomar Street	286,300	7.1%	20,327	0.51	4+1Aux+1 ML	0.92	1.7%	2,061	0.859	D	284,000	D	0.80%	No
I-805	East Palomar Street to Olympic Parkway	271,500	7.1%	19,277	0.51	4+1Aux+1 ML	0.92	1.7%	1,962	0.818	D	269,900	D	0.60%	No
I-805	Olympic Parkway to Main Street	266,400	6.9%	18,382	0.51	4+1Aux+1 ML	0.93	5.4%	1,877	0.782	C	265,900	C	0.20%	No
I-805	Main Street to Palm Avenue	258,700	7.1%	18,368	0.58	4+1Aux+1 ML	0.95	10.3%	2,147	0.895	D	258,000	D	0.30%	No
I-805	Palm Avenue to SR-905	237,600	7.1%	16,870	0.58	4+1Aux+1 ML	0.95	10.3%	1,970	0.821	D	236,900	D	0.30%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	38,900	7.0%	2,723	0.60	2M	0.92	2.0%	900	0.375	A	38,500	A	1.0%	No
SR-125	Olympic Parkway to Birch Road	33,900	7.0%	2,373	0.60	2M	0.92	2.0%	779	0.325	A	33,700	A	0.6%	No
SR-125	Birch Road to Main Street	38,700	7.0%	2,709	0.60	2M	0.92	2.0%	889	0.370	A	37,800	A	2.3%	No
SR-125	Main Street to Otay Valley Road	94,700	7.0%	6,629	0.60	2M	0.92	2.0%	2,185	0.910	D	93,800	D	1.0%	No

Table 5.2-42
Freeway/State Highway Segment Level of Service Results – Year 2030 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contr. (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
SR-125	Otay Valley Road to Lone Star Road	94,700	7.0%	6,629	0.60	2M	0.92	2.0%	2,185	0.910	D	93,800	D	1.0%	No
SR-125	Lone Star Road to Otay Mesa Road	94,700	7.0%	6,629	0.60	2M	0.92	2.0%	2,185	0.910	D	93,800	D	1.0%	No
SR-125	Otay Mesa Road to SR-905	33,500	7.0%	2,345	0.60	2M	0.92	2.0%	768	0.320	A	32,600	A	2.7%	No

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS E or F.
Aux = Auxiliary Lane.
ML = Managed Lane.

Table 5.2-43
Ramp Intersection Capacity Analysis – Year 2030 Conditions

Ramp Intersection	Peak Hour	With Project		Without Project	
		ILV/Hour	*Description*	*ILV/Hour*	*Description*
I-805 SB Ramps/Olympic Parkway	AM	1,533	*>1500: (Over Capacity)*	1,515	*>1500: (Over Capacity)*
	PM	1,896	*>1500: (Over Capacity)*	1,870	*>1500: (Over Capacity)*
I-805 NB Ramps/Olympic Parkway	AM	2,210	*>1500: (Over Capacity)*	2,140	*>1500: (Over Capacity)*
	PM	1,502	*>1500: (Over Capacity)*	1,450	*1200-1500: (At Capacity)*
SR-125 SB Ramps/Olympic Parkway	AM	565	*<1200: (Under Capacity)*	510	*<1200: (Under Capacity)*
	PM	558	*<1200: (Under Capacity)*	527	*<1200: (Under Capacity)*
SR-125 NB Ramps/Olympic Parkway	AM	522	*<1200: (Under Capacity)*	503	*<1200: (Under Capacity)*
	PM	668	*<1200: (Under Capacity)*	610	*<1200: (Under Capacity)*

Table 5.2-43
Ramp Intersection Capacity Analysis – Year 2030 Conditions

Ramp Intersection	Peak Hour	With Project		Without Project	
		ILV/Hour	*Description*	*ILV/Hour*	*Description*
SR-125 SB Ramps/Birch Road	AM	640	*<1200: (Under Capacity)*	637	*<1200: (Under Capacity)*
	PM	875	*<1200: (Under Capacity)*	870	*<1200: (Under Capacity)*
SR-125 NB Ramps/Birch Road	AM	660	*<1200: (Under Capacity)*	658	*<1200: (Under Capacity)*
	PM	790	*<1200: (Under Capacity)*	790	*<1200: (Under Capacity)*
SR-125 SB Ramps/Main Street	AM	684	*<1200: (Under Capacity)*	675	*<1200: (Under Capacity)*
	PM	823	*<1200: (Under Capacity)*	795	*<1200: (Under Capacity)*
SR-125 NB Ramps/Main Street	AM	667	*<1200: (Under Capacity)*	868	*<1200: (Under Capacity)*
	PM	687	*<1200: (Under Capacity)*	1,063	*<1200: (Under Capacity)*

Source: Chen Ryan 2014

Table 5.2-44
Ramp Meter Analysis – Year 2030 Conditions

Location	Peak Hour	With Project					Without Project				Significant Impact?
		Demand[1] (veh/hr)	*Meter Rate[2] (veh/hr)*	*Excess Demand[3] (veh/hr)*	*Delay[4] (min)*	*Queue[5] (ft)*	*Demand (veh/hr)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	862	887	0	0	0	836	0	0	0	No

Source: Chen Ryan 2014
Notes:
1 Demand is the peak hour demand expected to use the on-ramp.
2 Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.
3 Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.
4 Delay = (Excess Demand/Meter Rate) X 60 min/hr.
5 Queue = (Excess Demand) X 29 ft/veh.

Summary of Impacts

Level of significance for each of the study scenarios can be found in detail below in Section 5.2.4, Level of Significance Prior to Mitigation. Mitigation measures for each significant impact can be found listed in Section 5.2.5, Mitigation Measures, and the resulting significance after implementation of recommended mitigation measures can be found in Section 5.2.6, Level of Significance After Mitigation.

Plan-to-Plan (Proposed vs. Adopted) Analysis

This section provides a plan-to-plan analysis assessing potential impacts to the City of Chula Vista's General Plan Circulation Element roadways within the project study area, that result from changes in the transportation network, land uses, densities, and/or intensities associated with the proposed project.

Circulation Element Networks and Traffic Volumes

Adopted Plan

The City Council recently certified the Supplemental Environmental Impact Report (SEIR) and adopted the related Amendments to the City of Chula Vista General Plan (GPA-09-01) and Otay Ranch General Development Plan (PCM-09-11). The adopted Circulation Element (Adopted Plan) is shown in Appendix B. Average Daily Traffic (ADT) volumes for study area roadway and freeway segments under the Adopted Plan are displayed in Appendix B. These volumes were obtained from the TIA prepared by LLG Engineers (dated May 11, 2012).

Plan-to-Plan Impact Assessments

Roadway Segment Analysis

Table 5.2-45 displays the level of service analysis results for the study area roadway segments within the City of Chula Vista under both the Adopted and Proposed Plans.

As shown in the tables and based upon the impact criteria discussed in Section 5.2.2, the Proposed Plan would result in a significant impact to Orange Avenue, between Melrose Avenue and I-805 SB Ramps. Under the Proposed Plan, the ADT along this roadway segment would remain the same as the Adopted Plan. However the intersection of I-805 SB Ramps/Olympic Parkway would operate at LOS D/F during the AM/PM peak, respectively. Thus the project would have a significant cumulative impact to this location. This impact also was identified previously under the Existing plus Project, Year 2020, 2025, and 2030 scenarios. The recommended improvements would require widening of Orange Avenue/Olympic Parkway; however, there are right-of-way constraints that would make such improvements infeasible.

Therefore, mitigation is considered infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Freeway/State Highway Segment Analysis

Table 5.2-46 displays freeway level of service analysis results for I-805 and SR-125 under both the Adopted and Proposed Plans.

Based upon the impact criteria discussed in Section 2.8, the Proposed Plan would have a cumulative impact to the following seven (7) freeway segments when compared to the Adopted Plan:

- I-805, from SR-94 to Market Street;
- I-805, from Market Street to Imperial Avenue;
- I-805, from Imperial Avenue to E Division Street;
- I-805, from Plaza Boulevard to SR-54;
- I-805, from SR-54 to Bonita Road;
- I-805, from Bonita Road to East H Street; and
- I-805, from East H Street to Telegraph Canyon Road.

These impacts were identified previously under the Year 2030 scenario. The second phase of the I-805 South Project would further expand transportation choices by building out the HOV lanes into Express Lanes for a total of four lanes, two in each direction. Phase 2 also includes the addition of in-line transit stations and freeway-to-freeway direct connectors. However, on December 16th, 2011, SANDAG Board of Directors approved the purchase of SR-125 and the Addendum to SANDAG's 2030 RTP EIR. The Addendum consists of a swap of the two planned HOV lanes on I-805 between SR-54 and SR-905 (Phase 2 of the I-805 South Project discussed above) for the purchase costs of SR-125, which requires an amendment to the TransNet Extension Ordinance. It also concluded that while the reduction in tolls would result in a shift of traffic from I-805 to SR-125, freeway operations on both facilities would remain acceptable. The proposed Village 2 project was modeled with Phase 2, however in order to remain consistent with the 2030 RTP Addendum, the TIA is analyzed with one HOV lane in each direction (Phase 1) along I-805. At this time, neither Caltrans nor SANDAG has plans to construct additional lanes on the impacted facilities, nor is there a plan or program in place into which the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

Table 5.2-45
Roadway Segment Level of Service Results – Proposed Plan vs. Adopted Plan

Roadway	Segment	Proposed Plan				Adopted Plan				Δ	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Telegraph Canyon Road	Medical Center Drive to Heritage Road/Paseo Ranchero	6-In Prime	55,200	50,000	**D**	6-In Prime	54,400	50,000	**D**	800	1.47%	Yes	No
Telegraph Canyon Road	Heritage Road/Paseo Ranchero to La Media Road/Otay Lakes Road	6-In Prime	48,300	50,000	C	6-In Prime	47,100	50,000	C	1,200	2.55%		No
Otay Lakes Road	H Street to Telegraph Canyon Road	6-In Prime	30,500	50,000	A	6-In Prime	29,800	50,000	A	700	2.35%		No
Otay Lakes Road	La Media Road to Rutgers Avenue	6-In Prime	43,900	50,000	C	6-In Prime	41,100	50,000	B	2,800	6.81%		No
East Palomar Street	Medical Center Drive to Heritage Road	4-In Major	22,900	30,000	B	4-In Major	21,000	30,000	A	1,900	9.05%		No
East Palomar Street	Heritage Road to La Media Road	4-In Major	23,000	30,000	B	4-In Major	22,500	30,000	B	500	2.22%		No
East Palomar Street	La Media Road to Olympic Parkway	4-In Major	25,700	30,000	B	4-In Major	24,700	30,000	A	1,000	4.05%		No
Orange Avenue	Hilltop Drive to Melrose Avenue	4-In Major	28,600	30,000	C	4-In Major	28,200	30,000	C	400	1.42%		No

Table 5.2-45
Roadway Segment Level of Service Results – Proposed Plan vs. Adopted Plan

Roadway	Segment	Proposed Plan				Adopted Plan				Δ	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Orange Avenue	Melrose Avenue to I-805 SB Ramps	4-In Major	35,800	30,000	**E**	4-In Major	34,300	30,000	**E**	1,500	4.37%	No	**Yes**
Olympic Parkway	I-805 SB Ramps to I-805 NB Ramps	6-In Prime	47,100	50,000	C	6-In Prime	42,500	50,000	B	4,600	10.82%		No
Olympic Parkway	I-805 NB Ramps to Oleander Avenue	6-In Prime	56,600	50,000	**E**	6-In Prime	50,700	50,000	**D**	5,900	11.64%	Yes	No
Olympic Parkway	Oleander Avenue to Brandywine Avenue	6-In Prime	48,800	50,000	C	6-In Prime	42,800	50,000	B	6,000	14.02%		No
Olympic Parkway	Brandywine Avenue to Santa Victoria Road	6-In Prime	42,600	50,000	B	6-In Prime	34,800	50,000	A	7,800	22.41%		No
Olympic Parkway	Santa Victoria Road to Heritage Road	6-In Prime	42,700	50,000	B	6-In Prime	34,800	50,000	A	7,900	22.70%		No
Olympic Parkway	Heritage Road to Santa Venetia Street	6-In Prime	39,300	50,000	B	6-In Prime	33,300	50,000	A	6,000	18.02%		No
Olympic Parkway	Santa Venetia Street to La Media Road	6-In Prime	32,100	50,000	A	6-In Prime	27,500	50,000	A	4,600	16.73%		No
Olympic Parkway	La Media Road to East Palomar Street	6-In Prime	26,800	50,000	A	6-In Prime	24,800	50,000	B	2,000	8.06%		No
Olympic Parkway	East Palomar Street to SR-125 SB Ramps	6-In Prime	47,000	50,000	C	6-In Prime	43,900	50,000	C	3,100	7.06%		No

Table 5.2-45
Roadway Segment Level of Service Results – Proposed Plan vs. Adopted Plan

Roadway	Segment	Proposed Plan				Adopted Plan				Δ	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Olympic Parkway	SR-125 SB Ramps to SR-125 NB Ramps	8-ln Expressway	49,100	70,000	A	8-ln Expressway	46,400	70,000	A	2,700	5.82%		No
Olympic Parkway	SR-125 NB Ramps to Eastlake Parkway	8-ln Expressway	51,800	70,000	A	8-ln Expressway	49,400	70,000	A	2,400	4.86%		No
Birch Road	La Media Road to Magdalena Avenue	6-ln Major	31,700	40,000	B	6-ln Major	26,200	40,000	A	5,500	20.99%		No
Birch Road	Magdalena Avenue to SR-125 SB Ramps	6-ln Major	32,100	40,000	B	6-ln Major	26,000	40,000	A	6,100	23.46%		No
Birch Road	SR-125 SB Ramps to SR-125 NB Ramps	6-ln Prime	32,100	50,000	A	6-ln Prime	27,400	50,000	A	4,700	17.15%		No
Birch Road	SR-125 NB Ramps to Eastlake Parkway	6-ln Prime	32,400	50,000	A	6-ln Prime	28,500	50,000	A	3,900	13.68%		No
Main Street	Brandywine Avenue to Heritage Road	6-ln Prime	50,300	50,000	**D**	6-ln Prime	50,200	50,000	**D**	100	0.20%	Yes	No
Main Street	Heritage Road to La Media Road	6-ln Prime	49,200	50,000	C	6-ln Prime	44,900	50,000	C	4,300	9.58%		No
Main Street	La Media Road to SR-125 SB Ramps	6-ln Prime	54,800	50,000	**D**	6-ln Prime	33,100	50,000	A	21,700	65.56%	Yes	No

Table 5.2-45
Roadway Segment Level of Service Results – Proposed Plan vs. Adopted Plan

Roadway	Segment	Proposed Plan				Adopted Plan				Δ	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Main Street	SR-125 SB Ramps to SR-125 NB Ramps	6-In Gateway*	54,900	61,200*	D	6-In Gateway*	35,000	61,200*	A	19,900	56.86%		No
Main Street	SR-125 NB Ramps to Eastlake Parkway	6-In Gateway*	60,500	61,200*	D	6-In Gateway*	43,400	61,200*	B	17,100	39.40%		No
Otay Valley Road	Main Street to SR-125	4-In Major	21,300	30,000	A	4-In Major	31,400	30,000	**D**	-4,700	-32.17%		No
Paseo Ranchero	H Street to Telegraph Canyon Road	Class I Collector	22,500	22,000	**D**	Class I Collector	22,200	22,000	**D**	300	1.35%	Yes	No
Heritage Road	Telegraph Canyon Road to East Palomar Street	6-In Prime	27,600	50,000	A	6-In Prime	26,600	50,000	A	1,000	3.76%		No
Heritage Road	East Palomar Street to Olympic Parkway	6-In Prime	53,800	50,000	**D**	6-In Prime	50,700	50,000	**D**	3,100	6.11%	Yes	No
Heritage Road	Olympic Parkway to Santa Victoria Road	6-In Prime	38,900	50,000	B	6-In Prime	38,600	50,000	B	300	0.78%		No
Heritage Road	Santa Victoria Road to Santa Liza Avenue	6-In Prime	41,500	50,000	B	6-In Prime	38,600	50,000	B	2,900	7.51%		No
Heritage Road	Santa Liza Avenue to Main Street	6-In Prime	47,900	50,000	C	6-In Prime	42,300	50,000	B	5,600	13.24%		No

Table 5.2-45
Roadway Segment Level of Service Results – Proposed Plan vs. Adopted Plan

Roadway	Segment	Proposed Plan				Adopted Plan				Δ	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Heritage Road	Main Street to Avenida De Las Vistas	6-ln Prime	61,700	50,000	**E**	6-ln Prime	61,400	50,000	**E**	300	0.49%	Yes	No
La Media Road	Telegraph Canyon Road to East Palomar Street	6-ln Prime	31,400	50,000	A	6-ln Prime	29,900	50,000	A	1,500	5.02%		No
La Media Road	East Palomar Street to Olympic Parkway	6-ln Prime	26,800	50,000	A	6-ln Prime	26,600	50,000	A	200	0.75%		No
La Media Road	Olympic Parkway to Santa Venetia Street	6-ln Prime	33,100	50,000	A	6-ln Prime	27,500	50,000	A	5,600	20.36%		No
La Media Road	Santa Venetia Street to Birch Road	6-ln Prime	33,300	50,000	A	6-ln Prime	28,300	50,000	A	5,000	17.67%		No
La Media Road	Birch Road to Santa Luna Street	6-ln Prime	18,600	50,000	A	6-ln Prime	18,000	50,000	A	600	3.33%		No
La Media Road	Santa Luna Street to Main Street	4-ln Town Center Arterial	18,500	30,000	A	4-ln Town Center Arterial	18,000	50,000	A	500	2.78%		No
Magdalena Avenue	Birch Road to Wolf Canyon Loop	Class I Collector	12,800	22,000	A	Class I Collector	12,300	22,000	A	500	4.07%		No
Magdalena Avenue	Wolf Canyon Loop to Santa Luna Street	Class II Collector	4,900	12,000	A	Class II Collector	5,000	12,000	A	-100	-2.00%		No

Table 5.2-45
Roadway Segment Level of Service Results – Proposed Plan vs. Adopted Plan

Roadway	Segment	Proposed Plan				Adopted Plan				Δ	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Magdalena Avenue	Santa Luna Street to Main Street	Class I Collector	12,100	22,000	A	Class I Collector	11,100	22,000	A	1,000	9.01%		No
Eastlake Parkway	Olympic Parkway to Birch Road	6-ln Major	28,800	40,000	A	6-ln Major	27,600	40,000	A	1,200	4.35%		No
Eastlake Parkway	Birch Road to Main Street/Hunte Parkway	6-ln Major	22,900	40,000	A	6-ln Major	22,800	40,000	A	100	0.44%		No

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS (D), E or F.
* LOS D is considered acceptable for a 6-lane Gateway.

Table 5.2-46
Freeway/State Highway Segment Level of Service Results – Proposed Plan vs. Adopted Plan

Freeway/ State Highway	Segment	# of Lanes Per Direction	Proposed Plan		Adopted Plan		Project Contribution (≥ 5%)	Significant Impact?
			ADT	*LOS*	*ADT*	*LOS*		
I-805	Home Avenue to SR-94	4M+1ML	296,800	D	256,400	C	15.76%	No
I-805	SR-94 to Market Street	4M+1ML	286,400	**F**	284,200	**E**	0.77%	**Yes**
I-805	Market Street to Imperial Avenue	5M+1ML	353,400	**F**	351,700	**F**	0.48%	**Yes**
I-805	Imperial Avenue to E Division Street	5M+1ML	351,500	**F**	350,200	**F**	0.37%	**Yes**
I-805	E Division Street to Plaza Boulevard	5M+1ML	338,700	D	337,300	D	0.42%	No
I-805	Plaza Boulevard to SR-54	5M+1ML	329,800	**F**	328,300	**F**	0.46%	**Yes**
I-805	SR-54 to Bonita Road	4M+1Aux+1ML	372,200	**F**	370,500	**F**	0.46%	**Yes**
I-805	Bonita Road to East H Street	5M+1ML	329,100	**E**	327,400	**E**	0.52%	**Yes**
I-805	East H Street to Telegraph Canyon Road	5M+1ML	327,500	**E**	325,800	**E**	0.52%	**Yes**

Table 5.2-46
Freeway/State Highway Segment Level of Service Results – Proposed Plan vs. Adopted Plan

Freeway/ State Highway	Segment	# of Lanes Per Direction	Proposed Plan		Adopted Plan		Project Contribution (≥ 5%)	Significant Impact?
			ADT	*LOS*	*ADT*	*LOS*		
I-805	Telegraph Canyon Road to East Palomar Street	4M+1Aux+1ML	286,300	D	285,800	D	0.17%	No
I-805	East Palomar Street to Olympic Parkway	4M+1Aux+1ML	271,500	D	272,200	D	-0.26%	No
I-805	Olympic Parkway to Main Street	4M+1Aux+1ML	266,400	C	268,000	C	-0.60%	No
I-805	Main Street to Palm Avenue	4M+1Aux+1ML	258,700	D	258,100	D	0.23%	No
I-805	Palm Avenue to SR-905	4M+1Aux+1ML	237,600	D	201,800	C	17.74%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	2M	38,900	A	34,500	A	12.75%	No
SR-125	Olympic Parkway to Birch Road	2M	33,900	A	28,100	A	20.64%	No
SR-125	Birch Road to Main Street	2M	38,700	A	30,200	A	28.15%	No
SR-125	Main Street to Otay Valley Road	2M	94,700	D	46,300	B	104.54%	No
SR-125	Otay Valley Road to Lone Star Road	2M	94,700	D	90,700	D	4.41%	No
SR-125	Lone Star Road to Otay Mesa Road	2M	94,700	C	80,600	C	17.49%	No
SR-125	Otay Mesa Road to SR-905	2M	33,500	A	33,700	A	-0.59%	No

Source: Chen Ryan 2014
Notes: Bold letter indicates unacceptable LOS E or F.
M = Mainline. Aux = Auxiliary Lane. ML = Managed Lane.

Additional analysis of the proposed project's consistency with the Chula Vista General Plan and Otay Ranch GDP is provided below.

General Plan Transportation Policies

The proposed project is part of the Otay Ranch GDP, which planned for the extension of mass transit through the community and required right-of-way to be set aside in anticipation of future transit lines. The proposed land plans were designed to create village cores to accommodate transit stops by locating transit adjacent to high-density housing and/or mixed-use retail/ commercial. In addition, the combination of land uses proposed within each village would reduce reliance on the automobile and reduce the length of vehicle trips because residents would not have to leave the villages to access these uses. Future transit stops could be located adjacent to or within village core in Village Two. Transit plans have been coordinated with SANDAG and are included in the SPA plans. Additionally, traffic calming measures such as diagonal parking, reduced street widths, wide sidewalks, landscaped parkways, raised intersections, and bay parking with landscaped pop-outs would facilitate pedestrian activity in each village. Streets internal Village Two would implement the Otay Ranch street standards, which were developed with City staff to slow traffic and allow for use of personal mobility devices. The project also would implement the City's Trail Plan, through compliance with the regional trail program on major arterials, Otay Valley Regional Park Trails Plan, and Greenbelt Master Plan. Bicycle lanes also would be provided consistent with the designated bicycle routes as identified in the City's adopted Bikeway Master Plan (City of Chula Vista 2011).

General Development Plan Transportation Policies

The Otay Ranch GDP requires a traffic analysis to be conducted to identify additional transportation mitigation measures for the construction of new roads, bridges, and roadway improvements. In addition, projects are required to implement transportation demand/system management programs and/or facilities or other measures necessary to mitigate traffic impacts on circulation element roads. The standard to be achieved requires the proposed project to avoid reduction in the existing LOS C with the exception that LOS D may occur on signalized arterial segments for a period not to exceed a total of 2 hours per day. If the existing LOS is below C (with the exception of the allowable D), mitigation measures must be imposed as conditions of approval (City of Chula Vista 2013).

As described above, a traffic analysis was conducted for the proposed project, which is summarized in detail in this section (Section 5.2). Mitigation measures are identified in Section 5.2.5 to mitigate impacts to the City's circulation system consistent with existing standards and thresholds. The project features a mixed-use setting and strong transit focus that will reduce vehicle trips on the City's circulation system. While the GDP does not identify any

thresholds for internal village streets, the proposed grid system has been designed to allow maximum buildout of land uses consistent with the General Plan and GDP, and the PFFP identifies triggers to ensure the internal street system is constructed prior to or concurrent with the identified need. In addition, the proposed project would implement the City's adopted Bikeway Master Plan (City of Chula Vista 2011), as described above.

For these reasons, the proposed project would be consistent with the General Plan, GDP, ordinances, and policies establishing measures of effectiveness for the performance of the circulation system. Therefore, impacts would be less than significant.

Construction Trips

Construction of the project would have the potential to generate traffic from worker trips, soil hauling, and building material and equipment deliveries. During grading of the site, a maximum of 400,000 cubic yards of soil could be imported to the project site, as indicated in Section 4.4.5 of this EIR. Additionally, workers would be required on site for construction within Village Two. Construction traffic is not anticipated to generate enough traffic to result in a significant impact. Additionally, construction activities would be short-term in nature. As a result, traffic impacts resulting from construction of the proposed project would be less than significant.

B. 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.

The proposed project would result in development of mixed-use residential and commercial land uses that does not include a change in air traffic patterns. Therefore, impacts would be less than significant.

C. Substantially increase hazards due to a design feature or incompatible uses.

The proposed project includes a circulation network that would serve the project area and surrounding uses. The proposed streets are designed to be consistent with the City of Chula Vista 2002 Street Design Standards and have been refined to reflect the specific opportunities and constraints within the project area. Since the proposed circulation network would be consistent with the City's Street Design Standards, the proposed project would not increase hazards due to a design feature or incompatible uses. Therefore, impacts would be less than significant. For additional information regarding site access and on-site circulation, see Appendix B, Chapter 12.0.

D. Result in inadequate emergency access.

Fire Station No. 7 is in operation in Village Two and would be available to respond to emergency calls within the proposed project area.

The Village Two project is located in the southeastern portion of the City of Chula Vista. Site access to Village Two is proposed via the following six driveways:

- Santa Victoria Road – accessing Olympic Parkway (signalized);
- Santa Victoria Road – accessing Heritage Road (signalized);
- Santa Liza Street – accessing Heritage Road (signalized);
- Santa Venetia – accessing Olympic Parkway (signalized);
- Santa Venetia – accessing La Media Road (signalized); and
- State Street – accessing La Media Road (signalized).

As stated above, the internal roadways, along with access points, would be designed per City standards, which would ensure design consideration for emergency vehicles. Compliance with street design standards, along with six Village access points and proximity of Fire Station No. 7 would result in less than significant impacts.

E. Be inconsistent with the General Plan, GDP, ordinances or policies 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.

City of Chula Vista General Plan

The analysis presented under Threshold (A) considers the applicable General Plan, goals and polices that establish measures of effectiveness for the performance of the circulation system. The 2006 EIR relied on the 1989 version of the General Plan. It has since been comprehensively updated in 2005. The City of Chula Vista General Plan contains objectives and policies that support transit, encourage alternative transportation measures and the development of transit-friendly roads, support parking management policies, and ensure pedestrian-oriented environments. Relevant General Plan objectives related to transportation include the following (also see Section 5.2.1.1):

- **Objective LUT 17**: Plan and coordinate development to be compatible and supportive of planned transit.
- **Objective LUT 18**: Reduce traffic demand through Transportation Demand Management (TDM) strategies, increased use of transit, bicycles, walking, and other trip reduction measures.
- **Objective LUT 19**: Coordinate with the regional transportation planning agency, SANDAG, and transit service providers such as the Metropolitan Transit System, to develop a state-of-the-art transit system that provides excellent service to residents; workers; students; and the disabled, both within the City, and with inter-regional destinations.
- **Objective LUT 20:** Make transit-friendly roads a top consideration in land use and development design.
- **Objective LUT 21:** Continue efforts to develop and maintain a safe and efficient transportation system with adequate roadway capacity to serve future residents, while preserving the unique character and integrity of recognized communities within the City.
- **Objective LUT 23**: Promote the use of non-polluting and renewable alternatives for mobility through a system of bicycle and pedestrian paths and trails that are safe, attractive and convenient forms of transportation.
- **Objective LUT 30**: Use parking management to better utilize parking facilities and implement policies to reduce parking demand before considering public expenditures for additional parking facilities.
- **Objective LUT 31**: Provide parking facilities that are appropriately integrated with land uses, maximize efficiency, accommodate alternative vehicles, and reduce parking impacts.
- **Objective LUT 32**: Evaluate the use and applicability of various strategies to provide parking.
- **Objective LUT 33:** Ensure that parking facilities are appropriately sited and well-designed in order to minimize adverse effects on the pedestrian-oriented environment, and to enhance aesthetic qualities.
- **Objective LUT 63**: Provide efficient multi-modal access and connections to and between activity centers.

Increasing the number of dwelling units (and population) in Village Two would provide additional ridership for the regional BRT and local bus systems. This would increase ridership/viability of the transit system and reduce automobile dependence, emissions, and traffic. With viable commercial uses, Village Two residents would be able to meet daily needs such as groceries, dry cleaning and entertainment within the village. By providing these uses, as well as schools and parks, close to resident's homes, the opportunity for walking and biking

would be provided rather than automobile use. This would promote a healthy lifestyle, encourage local businesses, and reduce automobile dependence, emissions, and traffic. Overall, the proposed project would continue to be compatible with General Plan objectives associated with transportation and circulation.

Otay Ranch GDP

The Otay Ranch GDP requires a traffic analysis to be conducted to identify additional transportation mitigation measures for the construction of new roads, bridges, and roadway improvements. In addition, projects are required to implement transportation demand/system management programs and/or facilities or other measures necessary to mitigate traffic impacts on circulation element roads. The standard to be achieved requires the proposed project to avoid reduction in the existing LOS C with the exception that LOS D may occur on signalized arterial segments for a period not to exceed a total of 2 hours per day. Relevant Otay Ranch GDP goals related to mobility include the following:

- **Goal:** Provide a safe and efficient transportation system within Otay Ranch with convenient linkages to regional transportation elements abutting the Otay Ranch.
- **Goal:** Achieve a balanced transportation system which emphasizes alternatives to automobile use and is responsive to the needs of residents.

As described in the response to Threshold (A), the proposed project is part of the Otay Ranch GDP, which planned for the extension of mass transit through the community and required right-of-way to be set aside in anticipation of future transit lines. As further described below, the proposed land plans were designed to create village cores to accommodate transit stops adjacent to high density housing and/or mixed use retail/commercial. Transit plans have been coordinated with SANDAG and are included in the SPA Plans. Viable commercial uses within Village Two would allow residents to meet daily needs such as groceries, dry cleaning and entertainment within the village. By providing these uses, as well as schools and parks, close to resident's homes, the opportunity for walking and biking would be provided rather than automobile use. Providing two elementary schools within Village Two puts residents and students closer to those schools which would allow implementation of programs such as 'walking school buses' where students walk to school in groups as opposed to getting rides or busing. This would promote a healthy lifestyle for students while reducing automobile dependence, emissions, and traffic. Overall, the proposed project would be consistent with the goals outlined in the Otay Ranch GDP.

F. 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.

The analysis presented under Threshold (A) considers the applicable congestion management program and the standards established for designated roads and highways as part of the analysis.

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

The proposed project would not introduce changes to the public transit, bicycle, or pedestrian facilities established by the approved Village 2 project as it would only alter land use densities.

As described in the response to Threshold (A) and (E), the proposed project is part of the Otay Ranch GDP, which planned for the extension of mass transit through the community and required right-of-way to be set aside in anticipation of future transit lines. As further described below, the proposed land plans were designed to create village cores to accommodate transit stops adjacent to high density housing and/or mixed use retail/commercial. Transit plans have been coordinated with SANDAG and are included in the SPA Plans. Additionally, traffic calming measures would facilitate pedestrian activity in each village. Internal streets would implement the Otay Ranch street standards, which were developed to slow traffic and allow for use of personal mobility devices. The proposed project would also implement the City's Trail Plan, through compliance with the regional trail program on major arterials, the Otay Valley Regional Park Trails Plan, and the Greenbelt Master Plan. Bicycle lanes would also be provided consistent with the designated bicycle routes as identified in the City's adopted Bikeway Master Plan.

Public transportation is an integral part of the Otay Ranch Community, including the proposed Village 2 Comprehensive SPA project. The design of Otay Ranch promotes access to public transit and locates land uses in proximity to proposed transit stations. Transit stop locations and design within Otay Ranch are based on the following principles:

- Locate transit stops where there are a number of major pedestrian generators.
- Locate transit stops and pedestrian walkways to provide access while respecting the privacy of residential areas.
- At the intersection of two or more transit routes, locate bus stops to minimize walking distance between transfer stations.

- Locate bus turn-outs on the far side of the intersections to avoid conflicts between transit vehicles and automobile traffic, permitting right-turning vehicles to continue turning movements.
- Transit stops should be provided with adequate walkway lighting and well designated shelters.
- Walkway ramps should be provided at transit stops to ensure accessibility.

As noted in Section 5.2.1, the MTS currently provides bus service through the East Planning Area of the City of Chula Vista; this service can be extended to serve the proposed project areas as development, and corresponding transit ridership demands, increase. Regional transit plans also provide for commuter lines to serve villages in Otay Ranch, as well as to connect Otay Ranch to other activity centers in the region. The SANDAG 2050 Regional Transportation Plan Revenue Constrained scenario identifies several public transit improvements that will potentially serve the study area, such as BRT Route 628, 680, and rapid bus Route 635.

The Planned South Bay BRT will provide significant transit opportunities for those who live or work in Otay Ranch. It will follow a long-planned transit route as vehicles will travel north on State Route 125 from the Otay Mesa border crossing, then west through eastern Chula Vista, head north on Interstate 805 utilizing the carpool, or High Occupancy Vehicle (HOV), lanes, and then travel west on State Route 94 into Downtown San Diego. The South Bay BRT will have a direct connection to the carpool lanes on I-805 via a direct access ramp at East Palomar Street. The BRT project will include 11 stations along the 21-mile BRT route, connecting South Bay residents to employment and activity centers in Downtown San Diego and other areas within the South Bay. The South Bay BRT will serve offices, shopping centers, recreational facilities, transit-oriented residential communities, schools, and Park & Ride lots, as well as the United States/Mexico port of entry at Otay Mesa.

Since the proposed project would incorporate public transit, bicycle, and pedestrian facilities in each village, consistent with the Otay Ranch GDP and related transit, bicycle, and pedestrian plans, it would not conflict with policies, plans, or programs related to these modes of transportation. Furthermore, based on the existing bus and trolley transit services described in Section 5.2.1, in combination with both planned transit improvements to serve the project study area and the transit features that are part of the Otay Ranch community, the proposed project would not conflict with public transit programs nor would it decrease the performance or safety of such facilities. As such, the project's transit-related impacts would be less than significant.

5.2.4 Level of Significance Prior to Mitigation

This section provides a summary of the potential significant impacts of the proposed project under each of the scenarios analyzed, prior to the implementation of the mitigation measures.

5.2.4.1 Year 2015 Conditions

Intersections

None of the study area intersections would be significantly impacted under the Year 2015 conditions.

Roadway Segments

None of the study area roadway segments in the City of Chula Vista would be significantly impacted under the Year 2015 conditions.

Freeways/State Highways

None of the study area freeway/state highway facilities would be significantly impacted under the Year 2015 conditions.

Ramp Metering

The I-805 northbound on-ramp at Olympic Parkway would not be significantly impacted under Year 2015 conditions.

5.2.4.2 Year 2020 Conditions

Intersections

The proposed project would have cumulatively significant impacts at one of the study area intersections in the City of Chula Vista:

- I-805 SB Ramps/Olympic Parkway (CV).

Roadway Segments

One roadway segments would be cumulatively impacted by the proposed project traffic in the City of Chula Vista under Year 2020 conditions:

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps.

Freeways/State Highways

The proposed project would have cumulatively significant impacts at two freeway/state highway:

- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E Division Street.

Ramp Metering

The I-805 northbound on-ramp at Olympic Parkway would not be significantly impacted under Year 2020 conditions.

5.2.4.3 Year 2025 Conditions

Intersections

The proposed project would have significant impacts at eight of the Chula Vista study area intersections, including one project specific and seven cumulatively impacted locations:

Project Specific

- Heritage Road/Olympic Parkway.

Cumulative

- I-805 SB Ramps/Olympic Parkway
- La Media Road/Olympic Parkway
- La Media Road (SB)/Main Street (WB)
- La Media Road (NB)/Main Street (WB)
- La Media Road (SB)/Main Street (EB)
- La Media Road (NB)/Main Street (EB)
- Magdalena Avenue/Main Street.

Roadway Segments

Three roadway segments in Chula Vista would be significantly impacted by project traffic under Year 2025 conditions, one directly impacted and two cumulatively impacted:

Project Specific

- Heritage Road, between East Palomar Street and Olympic Parkway.

Cumulative

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps
- Olympic Parkway, between Heritage Road and Santa Venetia Street.

Freeways/State Highways

The proposed project would have cumulatively significant impacts at five freeway/state highway facilities

- I-805, from SR-94 to Market Street
- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E Division Street
- I-805, from Plaza Boulevard to SR-54
- I-805, from Bonita Road to East H Street.

Ramp Metering

The I-805 northbound on-ramp at Olympic Parkway would not be significantly impacted under Year 2025 conditions.

5.2.4.4 Year 2030 Conditions

Intersections

The proposed project would result in a cumulatively significant impact at one intersection in the City of Chula Vista:

- I-805 SB Ramps/Olympic Parkway.

Roadway Segments

One roadway segment in the City of Chula Vista would be cumulatively impacted by the proposed project traffic under the Year 2030 conditions:

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps.

Freeway/State Highway Segments

The following seven freeway/state highway segment would be cumulatively impacted by the buildout of the proposed project:

- I-805, from SR-94 to Market Street
- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E Division Street

- I-805, from Plaza Boulevard to SR-54
- I-805, from SR-54 to Bonita Road
- I-805, from Bonita Road to East H Street
- I-805, from East H Street to Telegraph Canyon Road.

Ramp Metering

The I-805 northbound on-ramp at Olympic Parkway would not be significantly impacted under Year 2030 conditions.

5.2.5 Mitigation Measures

Due to the changes in proposed density, population, and trip distribution, mitigation measures provided in the 2006 EIR to address specific roadway segment and intersection project-specific or cumulative impacts are no longer applicable to the proposed project. Below are mitigation measures based upon recommendations provided in the Traffic Impact Report prepared by Chen Ryan (Appendix B).

Unless otherwise noted, the following mitigation measures would reduce the identified significant impacts to traffic, circulation, and access, to less than significant. The impacts, mitigation measures, and post-mitigation LOS are summarized in Table 5.2-47.

5.2.5.1 Year 2015 Conditions

Intersection

None of the study area intersections in the City of Chula Vista would be significantly impacted, and therefore, no mitigation measures would be required under the Year 2015 conditions.

Roadway Segments

None of the study area roadway segments in the City of Chula Vista would be significantly impacted, and therefore, no mitigation measures would be required under the Year 2015 conditions.

Freeways/State Highways

None of the study area freeway/state highway facilities would be significantly impacted, and therefore, no mitigation measures would be required under the Year 2015 conditions.

Ramp Metering

The I-805 northbound on-ramp at Olympic Parkway would not be significantly impacted, and therefore no mitigation measures would be required under Year 2015 conditions.

5.2.5.2 Year 2020 Conditions

Intersections

Cumulative Impact Mitigation

- **MM-TCA-1 -** *I-805 SB Ramps/Olympic Parkway* (CV) – Prior to issuance of the final map that contains the 753rd equivalent dwelling unit (EDU) of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share toward the construction of an additional left-turn lane at the I-805 southbound off-ramp, as well as a 3rd through lane along the Olympic Parkway eastbound approach.

However, as previously noted, there are right-of-way constraints that would make such widening infeasible and, in addition, there is no plan or program in place into which the project applicant could pay its fair-share towards such improvement. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Roadway Segments

Cumulative Impact Mitigation

- **MM-TCA-2 -** *Orange Avenue, between Melrose Avenue and I-805 SB Ramps* (CV) – Prior to issuance of the final map that contains the 753rd equivalent dwelling unit (EDU) of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of widening Orange Avenue between Melrose Avenue and the I-805 SB Ramps from 4 lanes to 6 lanes (Major Road).

The recommended improvements would require widening Orange Avenue/Olympic Parkway; however, there are right-of-way constraints that would make such improvements infeasible. In addition, there is no plan or program in place into which the project applicant could pay its fair-share towards the cost of such improvement. Therefore, the impact will remain cumulatively significant and unavoidable at this location.

Freeways/State Highways

The second phase of the I-805 South Project would further expand transportation choices by building out the HOV lanes into Express Lanes for a total of four lanes, two in each direction. Phase 2 also includes the addition of in-line transit stations and freeway-to-freeway direct connectors. However, on December 16th, 2011, SANDAG Board of Directors approved the purchase of SR-125 and the Addendum to SANDAG's 2030 RTP EIR. The Addendum consists of a swap of the two planned HOV lanes on I-805 between SR-54 and SR-905 (Phase 2 of the I-805 South Project discussed above) for the purchase costs of SR-125, which requires an

amendment to the TransNet Extension Ordinance. It also concluded that while the reduction in tolls would result in a shift of traffic from I-805 to SR-125, freeway operations on both facilities would remain acceptable. The proposed project was modeled with Phase 2, however in order to remain consistent with the 2030 RTP Addendum, the TIA is analyzed with one HOV lane in each direction (Phase 1) along I-805. At this time, neither Caltrans nor SANDAG has plans to construct additional lanes on the impacted facilities, nor is there a plan or program in place into which the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

Ramp Metering

The I-805 northbound on-ramp at Olympic Parkway would not be significantly impacted, and therefore no mitigation measures would be required under Year 2020 conditions.

5.2.5.3 Year 2025 Conditions

Intersections

Project Specific Impact Mitigation

- **MM-TCA-3 –** *Heritage Road/Olympic Parkway* (CV) – Prior to occupancy of the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall cause, through the payment of Transportation Development Impact Fees (TDIF), the construction of Main Street, between Heritage Road and La Media Road, as a 6-lane Prime Arterial.

The construction of this segment of Main Street, which is included within the City's TDIF program and will be constructed by the City, would provide a direct east-west route along Main Street and mitigate the identified specific project impact. Prior to the construction of Main Street between Heritage Road and La Media Road, the City will conduct a project-specific review of the potential environmental impacts associated with construction of the road extension.

Cumulative Impact Mitigation

- **MM-TCA-4 –** *I-805 SB Ramps/Olympic Parkway* (CV) – Prior to the issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share toward the construction of an additional left-turn lane at the I-805 southbound off-ramp, as well as a 3rd through lane along the Olympic Parkway eastbound approach.

However, as previously noted, there are right-of-way constraints that would make such widening infeasible and, in addition, there is no plan or program in place into which the project applicant

could pay its fair-share towards such improvement. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

- **MM-TCA-5 –** *La Media Road/Olympic Parkway* (CV) – Prior to the issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall cause, through the payment of Transportation Development Impact Fees (TDIF), the construction of Main Street, between Heritage Road and La Media Road, as a 6-lane Prime Arterial.

The construction of this segment of Main Street, which is included within the City's TDIF program and will be constructed by the City, would provide a direct east-west route along Main Street and mitigate the identified specific project impact.

Potential impacts associated with the Main Street extension previously were addressed in several environmental documents, including the Chula Vista Vision 2020 General Plan Update Final EIR (City of Chula Vista 2005), the City's Multiple Species Conservation Plan (MSCP) Subarea Plan (City of Chula Vista 2003), the Otay Ranch Resource Management Plan (RMP) (City of Chula Vista and County of San Diego 1993), and the Otay Ranch Resource Management Plan Phase 2 (City of Chula Vista and County of San Diego 2002). Prior to the construction of Main Street between Heritage Road and La Media Road, the City will conduct a project-specific review of the potential environmental impacts associated with construction of the road extension.

- **MM-TCA-6 –** *La Media Road (SB)/Main Street (WB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (SB)/Main Street (WB).

Based upon Figure 4C-103 of the 2012 edition of the *California Manual of Uniformed Traffic Control Devices* (MUTCD) this intersection would satisfy both the "Minimum Vehicular Volume" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet for this intersection is provided in Appendix B.

- **MM-TCA-7 –** *La Media Road (NB)/Main Street (WB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (NB)/Main Street (WB).

Based upon Figure 4C-103 of the MUTCD this intersection would satisfy both the "Minimum Vehicular Volume" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet for this intersection is provided in Appendix B.

- **MM-TCA-8 –** *La Media Road (SB)/Main Street (EB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (SB)/Main Street (EB).

Based upon Figure 4C-103 of the MUTCD this intersection would satisfy both the "Minimum Vehicular Volume" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet for this intersection is provided in Appendix B.

- **MM-TCA-9 –** *La Media Road (NB)/Main Street (EB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (NB)/Main Street (EB).

Based upon Figure 4C-103 of the MUTCD this intersection would satisfy both the "Minimum Vehicular Volume" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet for this intersection is provided in Appendix B.

- **MM-TCA-10 –** *Magdalena Avenue/Main Street* (one-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of Magdalena Avenue/Main Street.

Based upon Figure 4C-103 of the MUTCD this intersection would satisfy both the "Minimum Vehicular Volume" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet for this intersection is provided in Appendix B.

Roadway Segments

Project Specific Impacts

- **MM-TCA-11 –** *Heritage Road, between East Palomar Street and Olympic Parkway* (CV) – Prior to the issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay Transportation Development Impact Fees (TDIF) for the construction of Main Street, between Heritage Road and La Media Road, as a 6-lane Prime Arterial, including the construction of Main Street bridge.

The construction of this segment of Main Street is included within the City's TDIF program Transportation and the first phase of the construction is included in the City's CIP Program for

2013–2016 (STM357). Based on direction provided by the City, the project applicant shall pay TDIF to mitigate this direct impact.

This connection will provide an important direct east-west linkage and reduce traffic along Heritage Road – Olympic Parkway – La Media Road, thereby reducing the identified significant impact on Olympic Parkway between Heritage Road and Santa Venetia Street to less than significant.

Cumulative Impact Mitigation

- **MM-TCA-12 –** *Orange Avenue, between Melrose Avenue and I-805 SB Ramps* (CV) – Prior to issuance of the final map that contains for the 1,311th EDU of the Village Two Comprehensive SPA, or issuance of an occupancy permit for the overall 2,463rd EDU, whichever comes first, the project applicant or its designee shall pay its fair share towards the cost of widening Orange Avenue between Melrose Avenue and the I-805 SB Ramps from 4 lanes to 6 lanes (Major Road).

The recommended improvements would require widening Orange Avenue/Olympic Parkway between Melrose Avenue and the I-805 SB Ramps; however, as previously noted, there are right-of-way constraints that would make such improvements infeasible and, in addition, there is no plan or program in place into which the project applicant could pay its fair-share towards such improvement. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

- **MM-TCA-13 –** *Olympic Parkway, between Heritage Road and Santa Venetia Street* (CV) – Prior to the issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay Transportation Development Impact Fees (TDIF) for the construction of Main Street, between Heritage Road and La Media Road, as a 6-lane Prime Arterial, including the construction of Main Street Bridge.

The construction of this segment of Main Street is included within the City's TDIF program Transportation and the first phase of the construction is included in the City's CIP Program for 2013–2016 (STM357). Based on direction provided by the City, the project applicant shall pay TDIF to mitigate this direct impact.

This connection will provide an important direct east-west linkage and reduce traffic along Heritage Road – Olympic Parkway – La Media Road, thereby reducing the identified significant impact on Olympic Parkway between Heritage Road and Santa Venetia Street to less than significant.

Freeways/State Highways

The second phase of the I-805 South Project would further expand transportation choices by building out the HOV lanes into Express Lanes for a total of four lanes, two in each direction. Phase 2 also includes the addition of in-line transit stations and freeway-to-freeway direct connectors. However, on December 16th, 2011, SANDAG Board of Directors approved the purchase of SR-125 and the Addendum to SANDAG's 2030 RTP EIR. The Addendum consists of a swap of the two planned HOV lanes on I-805 between SR-54 and SR-905 (Phase 2 of the I-805 South Project discussed above) for the purchase costs of SR-125, which requires an amendment to the TransNet Extension Ordinance. It also concluded that while the reduction in tolls would result in a shift of traffic from I-805 to SR-125, freeway operations on both facilities would remain acceptable. The proposed Village 2 project was modeled with Phase 2, however in order to remain consistent with the 2030 RTP Addendum, the TIA is analyzed with one HOV lane in each direction (Phase 1) along I-805. At this time, neither Caltrans nor SANDAG has plans to construct additional lanes on the impacted facilities, nor is there a plan or program in place into which the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

Ramp Metering

The I-805 northbound on-ramp at Olympic Parkway would not be significantly impacted, and therefore no mitigation measures would be required under Year 2025 conditions.

5.2.5.4 Year 2030 Conditions

Intersections

Cumulative Impact Mitigation

- **MM-TCA-14 -** *I-805 SB Ramps/Olympic Parkway* (CV) – Prior to project buildout, the project applicant or its designee shall pay its fair-share toward the construction of an additional left-turn lane at the I-805 southbound off-ramp, as well as a 3rd through lane along the Olympic Parkway eastbound approach.

However, as previously noted, there are right-of-way constraints that would make such widening infeasible and, in addition, there is no plan or program in place into which the project applicant could pay its fair-share towards such improvement. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Roadway Segments

Cumulative Impact Mitigation

- **MM-TCA-15 –** *Orange Avenue, between Melrose Avenue and I-805 SB Ramps* (CV) – Prior to project buildout, the project applicant or its designee shall pay its fair share toward the costs of widening Orange Avenue between Melrose Avenue and the I-805 SB Ramps from 4 lanes to 6 lanes (Major Road).

The recommended improvements would require widening Orange Avenue/Olympic Parkway; however, as previously noted, there are right-of-way constraints that would make such improvements infeasible and, in addition, there is no plan or program in place into which the project applicant could pay its fair-share towards such improvement. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Freeways/State Highways

The second phase of the I-805 South Project would further expand transportation choices by building out the HOV lanes into Express Lanes for a total of four lanes, two in each direction. Phase 2 also includes the addition of in-line transit stations and freeway-to-freeway direct connectors. However, on December 16th, 2011, SANDAG Board of Directors approved the purchase of SR-125 and the Addendum to SANDAG's 2030 RTP EIR. The Addendum consists of a swap of the two planned HOV lanes on I-805 between SR-54 and SR-905 (Phase 2 of the I-805 South Project discussed above) for the purchase costs of SR-125, which requires an amendment to the TransNet Extension Ordinance. It also concluded that while the reduction in tolls would result in a shift of traffic from I-805 to SR-125, freeway operations on both facilities would remain acceptable. The proposed Village 2 project was modeled with Phase 2, however in order to remain consistent with the 2030 RTP Addendum, the TIA is analyzed with one HOV lane in each direction (Phase 1) along I-805. At this time, neither Caltrans nor SANDAG has plans to construct additional lanes on the impacted facilities, nor is there a plan or program in place into which the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

Ramp Metering

The I-805 northbound on-ramp at Olympic Parkway would not be significantly impacted, and therefore no mitigation measures would be required under Year 2030 conditions.

Table 5.2-47
Summary of Significant Impacts and Mitigation Measures

Impacted Facility /Mitigation Measure	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Intersection					
I-805 SB Ramps/Olympic Parkway **MM-TCA-1, MM-TCA-4, MM-TCA-14**	Type of Impact	–	Cumulative	Cumulative	Cumulative
	Mitigation Measure	–	No feasible mitigation, impact remains significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable
	Pre-Mitigation LOS (AM/PM)	–	**E/F**	D/**F**	D/**F**
	Trigger	–	–	–	–
	Post Mitigation LOS (AM/PM)	–	–	–	–
Heritage Road/Olympic Parkway **MM-TCA-3**	Type of Impact	–	–	Project Specific	–
	Mitigation Measure	–	–	Payment towards TDIF for the construction of Main Street	–
	Pre-Mitigation LOS (AM/PM)	–	–	**E/E**	–
	Trigger	–	–	First final map that contain the 1,311th EDU of Village Two Comprehensive SPA	–
	Post Mitigation LOS (AM/PM)	–	–	D/D	–
La Media Road/Olympic Parkway **MM-TCA-5**	Type of Impact	–	–	Cumulative	–
	Mitigation Measure	–	–	Payment towards TDIF for the construction of Main Street	–
	Pre-Mitigation LOS (AM/PM)	–	–	**E**/D	–
	Trigger	–	–	First final map that contain the 1,311th EDU of Village Two Comprehensive SPA	–
	Post Mitigation LOS (AM/PM)	–	–	D/D	–

Table 5.2-47
Summary of Significant Impacts and Mitigation Measures

Impacted Facility /Mitigation Measure	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
La Media Road (SB)/Main Street (WB) **MM-TCA-6**	Type of Impact	–	–	Cumulative	–
	Mitigation Measure	–	–	Payment towards TDIF for Signalization	–
	Pre-Mitigation LOS (AM/PM)	–	–	**E/E**	–
	Trigger	–	–	First final map that contain the 1,311th EDU of Village Two Comprehensive SPA	–
	Post Mitigation LOS (AM/PM)	–	–	A/A	–
La Media Road (NB)/Main Street (WB) **MM-TCA-7**	Type of Impact	–	–	Cumulative	–
	Mitigation Measure	–	–	Payment towards TDIF for Signalization	–
	Pre-Mitigation LOS (AM/PM)	–	–	**E/E**	–
	Trigger	–	–	First final map that contain the 1,311th EDU of Village Two Comprehensive SPA	–
	Post Mitigation LOS (AM/PM)	–	–	A/A	–
La Media Road (SB)/Main Street (EB) **MM-TCA-8**	Type of Impact	–	–	Cumulative	–
	Mitigation Measure	–	–	Payment towards TDIF for Signalization	–
	Pre-Mitigation LOS (AM/PM)	–	–	**E/E**	–
	Trigger	–	–	First final map that contain the 1,311th EDU of Village Two Comprehensive SPA	–
	Post Mitigation LOS (AM/PM)	–	–	A/A	–
La Media Road (NB)/Main Street (EB) (all-way stop controlled)	Type of Impact	–	–	Cumulative	–
	Mitigation Measure	–	–	Payment towards TDIF for Signalization	–

Table 5.2-47
Summary of Significant Impacts and Mitigation Measures

Impacted Facility /Mitigation Measure	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
MM-TCA-9	Pre-Mitigation LOS (AM/PM)	–	–	**E/E**	–
	Trigger	–	–	First final map that contain the 1,311th EDU of Village Two Comprehensive SPA	–
	Post Mitigation LOS (AM/PM)	–	–	A/A	–
Magdalena Avenue/Main Street **MM-TCA-10**	Type of Impact	–	–	Cumulative	–
	Mitigation Measure	–	–	Payment towards TDIF for Signalization	–
	Pre-Mitigation LOS (AM/PM)	–	–	**E/E**	–
	Trigger	–	–	First final map that contain the 1,311th EDU of Village Two Comprehensive SPA	–
	Post Mitigation LOS (AM/PM)	–	–	B/B	–
Roadway Segment					
Orange Avenue, between Melrose Avenue and I-805 SB Ramps **MM-TCA-2, MM-TCA-12, MM-TCA-15**	Type of Impact	–	Cumulative	Cumulative	Cumulative
	Mitigation Measure	–	No feasible mitigation, impact remains significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable
	Pre-Mitigation LOS	–	**D**	**D**	**E**
	Trigger	–	–	–	–
	Post Mitigation LOS	–	–	–	–
Olympic Parkway, between Heritage Road and Santa Venetia Street **MM-TCA-13**	Type of Impact	–	–	Cumulative	–
	Mitigation Measure	–	–	Payment towards TDIF for the construction of Main Street, between Heritage Road and La Media Road	–
	Pre-Mitigation LOS	–	–	**D**	–

Table 5.2-47
Summary of Significant Impacts and Mitigation Measures

Impacted Facility /Mitigation Measure	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
	Trigger	–	–	First final map that contain the 1,311th EDU of Village Two Comprehensive SPA	–
	Post Mitigation LOS	–	–	B	–
Heritage Road, between East Palomar Street and Olympic Parkway **MM-TCA-11**	Type of Impact	–	–	Project Specific	–
	Mitigation Measure	–	–	Payment towards TDIF for the construction of Main Street, between Heritage Road and La Media Road	–
	Pre-Mitigation LOS	–	–	**D**	–
	Trigger	–	–	First final map that contain the 1,311th EDU of Village Two Comprehensive SPA	–
	Post Mitigation LOS	–	–	**D** (Intersection along segment operating @ LOS D or better)	–
Freeway/State Highway Segment					
I-805, from SR-94 to Market Street				Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
I-805, from Market Street to Imperial Avenue			Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable

Table 5.2-47
Summary of Significant Impacts and Mitigation Measures

Impacted Facility /Mitigation Measure	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
I-805, from Imperial Avenue to E Division Street			Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
I-805, from Plaza Boulevard to SR-54				Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
I-805, from SR-54 to Bonita Road	–	–	–	–	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
I-805, from Bonita Road to East H Street				Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
I-805, from East H Street to Telegraph Canyon Road					Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
Freeway/State Highway Ramp Metering					
None					

Source: Chen Ryan 2014

5.2.6 Level of Significance After Mitigation

5.2.6.1 Year 2015 Conditions

The proposed project would not result in any significant impacts under Year 2015 conditions.

5.2.6.2 Year 2020 Conditions

Intersections

The I-805 SB Ramp/Olympic Parkway intersection would continue to operate at an unacceptable LOS F during the PM peak hour due to no feasible mitigation measure existing. Therefore, this impact cannot be mitigated and the cumulative impact would remain significant and unavoidable.

Roadway Segments

The proposed project would have a significant cumulative impact to Orange Avenue, between Melrose Avenue and the I-805 SB Ramps. As previously noted, there are right-of-way constraints that would make such improvements infeasible and, in addition, there is no plan or program in place into which the project applicant could pay its fair-share towards such improvement. Therefore, mitigation is infeasible and cumulative impacts would remain significant and unavoidable.

Freeway/Highway Segments

The proposed project would have significant cumulative impacts to two freeway segments:

- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E Division Street.

As discussed above, at this time, neither Caltrans nor SANDAG has plans to construct additional lanes on the impacted facilities, nor is there a plan or program in place into which the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

5.2.6.3 Year 2025 Conditions

Intersections

Table 5.2-48 displays level of service analysis results for the mitigated intersections under Year 2025 conditions. As shown in the table, with the construction of Main Street between Heritage Road and La Media Road, and the signalization of the impacted intersections, all impacted

intersections would operate at acceptable LOS D or better during both the AM and PM peak hours under Year 2025 conditions. Therefore, impacts would be less than significant.

However, no feasible mitigation for the I-805 SB Ramps/Olympic Parkway intersection exists due to right-of-way constraints and the absence of a plan or program into which the project applicant could pay its fair-share towards. Therefore, the cumulative impact to this intersection would remain significant and unavoidable.

Table 5.2-48
Mitigated Intersection Level of Service – Year 2025 Conditions

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*	
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*	*Avg. Delay (sec.)*	*LOS*	*Avg. Delay (sec.)*	*LOS*
I-805 SB Ramps/Olympic Parkway	51.2	D	112.2	**F**	No Feasible Mitigation			
Heritage Road/Olympic Parkway	61.6	**E**	66.6	**F**	44.8	D	45.4	D
La Media Road/Olympic Parkway	63.8	**E**	51.9	D	49.5	D	35.6	D
La Media Road (SB)/Main Street (WB)	35.9	**E**	45.5	**E**	3.8	A	6.9	A
La Media Road (NB)/Main Street (WB)	46.1	**E**	41.7	**E**	5.0	A	3.7	A
La Media Road (SB)/Main Street (EB)	43.8	**E**	43.6	**E**	1.2	A	0.5	A
La Media Road (NB)/Main Street (EB)	39.8	**E**	38.1	**E**	2.5	A	1.9	A
Magdalena Avenue/Main Street	47.9	**E**	46.3	**E**	18.2	B	12.7	B

Source: Chen Ryan 2014
Note: Bold letter indicates unacceptable LOS E or F.

Roadway Segments

Table 5.2-49 displays level of service analysis results for the mitigated roadway segments under Year 2025 conditions. As shown in the table, with the construction of Main Street between Heritage Road and La Media Road, Olympic Parkway between Heritage Road and Santa Venetia would operate at acceptable LOS B; while Heritage Road between East Palomar Street and Olympic Parkway would continue to operate at substandard LOS D. However, the construction of Main Street, between Heritage Road and La Media Road would improve the intersection operations at Heritage Road/Olympic Parkway to acceptable LOS D during the peak hours, and indirectly improve operations along the connecting roadway segment of Heritage Road, between East Palomar Street and Olympic Parkway. As a result, the project impact to Heritage Road, between East Palomar Street and Olympic Parkway, would no longer be significant.

Also as shown on Table 5.2-49, Main Street, between Heritage Road and La Media Road (14,300 ADT) would operate at acceptable LOS A as a 6-lane Prime Arterial. It is important to note that Main Street would operate at acceptable LOS A as a 4-lane Major Arterial in 2025.

Table 5.2-49
Mitigated Roadway Segment Level of Service – Year 2025 Conditions

Roadway Segment	Before Mitigation			After Mitigation		
	ADT	*Cross-Section*	*LOS*	*ADT*	*Cross-Section*	*LOS*
Olympic Parkway, between Heritage Road and Santa Venetia Street	52,000	6-Ln w/RM	**D**	37,700	No Change	B
Heritage Road, between East Palomar Street and Olympic Parkway	51,400	6-Ln w/RM	**D**	51,400	No Change	**D**
Main Street, between Heritage Road and La Media Road (*New*)	Does Not Exist			14,300	6-Ln Prime Arterial	A

Source: Chen Ryan 2014
Note: Bold letter indicates unacceptable LOS D, E or F.

Freeway/State Highways

Under Year 2025 conditions, the proposed project would have significant cumulative impacts to five freeway/state highway segments:

- I-805, from SR-94 to Market Street;
- I-805, from Market Street to Imperial Avenue;
- I-805, from Imperial Avenue to E Division Street;
- I-805, from Plaza Boulevard to SR-54; and
- I-805, from Bonita Road to East H Street.

As previously noted, neither Caltrans nor SANDAG has plans to construct additional lanes on the impacted facilities, nor is there a plan or program in place into which the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

5.2.6.4 Year 2030 Conditions

Intersections

Under Year 2030 Conditions, the proposed project would have a significant cumulative impact to the I-805 SB Ramps/Olympic Parkway intersection. As previously noted, there are right-of-way constraints that would make such improvements infeasible and, in addition, there is no plan or program in place into which the project applicant could pay its fair-share towards such improvement. Therefore, mitigation is infeasible and cumulative impacts would remain significant and unavoidable.

Roadway Segments

Under Year 2030 Conditions, the proposed project would have a significant cumulative impact to Orange Avenue, between Melrose Avenue and the I-805 SB Ramps. As previously noted, there are right-of-way constraints that would make such improvements infeasible and, in addition, there is no plan or program in place into which the project applicant could pay its fair-share towards such improvement. Therefore, mitigation is infeasible and cumulative impacts would remain significant and unavoidable.

Freeways/State Highways

Under Year 2030 Conditions, the proposed project would have significant cumulative impacts to seven freeway/state highway segments:

- I-805, from SR-94 to Market Street;
- I-805, from Market Street to Imperial Avenue;
- I-805, from Imperial Avenue to E Division Street;
- I-805, from Plaza Boulevard to SR-54;
- I-805, from SR-54 to Bonita Road;
- I-805, from Bonita Road to East H Street; and
- I-805, from East H Street to Telegraph Canyon Road.

As previously stated, neither Caltrans nor SANDAG has any plans to construct additional lanes on the impacted facilities, nor is there a plan or program in place into which the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

5.2.7 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts and change the conclusions reached by the analysis of the 2006 EIR. Due to the proposed increase in population and changes in land use density, and calculated trip distributions and generations found in the Traffic Impact Report, impacts and mitigation identified in the 2006 EIR are no longer applicable; this EIR identifies new impacts and new mitigation is required.

5.3 AIR QUALITY

This section of the Environmental Impact Report (EIR) addresses the potential air quality impacts resulting from the proposed Village Two Comprehensive Sectional Planning Area (SPA) Plan Amendment project. The discussion found in this section is primarily based on the Air Quality Analysis for the Otay Ranch Village Two Comprehensive Specific Plan Amendment (Air Quality Report) that was prepared by Scientific Resources Associated (SRA) in April 2014. The complete report is contained in Appendix C of this EIR.

This section tiers from the 2006 EIR (City of Chula Vista 2006). The 2006 EIR addressed the Village Two, Three, and portion of Four development's potential environmental effects. The analysis and discussion of air quality issues contained in the SPA Plan EIR is incorporated by reference and available for public inspection upon request to the City.

5.3.1 Existing Conditions

5.3.1.1 Regulatory Framework

Federal

Clean Air Act

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The U.S. Environmental Protection Agency (U.S. EPA) is responsible for implementing most aspects of the Clean Air Act, including the setting of National Ambient Air Quality Standards (NAAQS) for major air pollutants, hazardous air pollutant standards, approval of state attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric ozone (O_3) protection, and enforcement provisions.

NAAQS are established by the U.S. EPA for "criteria pollutants" under the Clean Air Act, which are O_3, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The Clean Air Act requires the U.S. EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a State Implementation Plan (SIP) that demonstrates how those areas will attain the standards within mandated time frames.

State Level

California Clean Air Act

The federal Clean Air Act allows states to adopt ambient air quality standards and other regulations, provided those standards and regulations are at least as stringent as federal standards. Accordingly, the California Clean Air Act was adopted in 1988, and establishes the state's air quality goals, planning mechanisms, regulatory strategies, and standards of progress.

Under the California Clean Air Act, the task of air quality management and regulation has been legislatively granted to the California Air Resources Board (CARB), with subsidiary responsibilities assigned to air quality management districts (AQMDs) and air pollution control districts (APCDs) at the regional and county levels. CARB is responsible for ensuring implementation of the California Clean Air Act, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products. Pursuant to the authority granted to it, CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS.

The NAAQS and CAAQS are presented in Table 5.3-1, Ambient Air Quality Standards.

Table 5.3-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary[3,4]*	*Secondary[3,5]*
O_3	1 hour	0.09 ppm (180 μg/m^3)	—	Same as Primary Standard
	8 hour	0.070 ppm (137 μg/m^3)	0.075 ppm (147 μg/m^3)	
CO	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8 hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	
NO_2[6]	1 hour	0.18 ppm (339 μg/m^3)	0.100 ppm (188 μg/m^3)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)	
SO_2[7]	1 hour	0.25 ppm (655 μg/m^3)	0.75 ppm (196 μg/m^3)	—
	3 hour	—	—	0.5 ppm (1300 μg/m^3)
	24 hour	0.04 ppm (105 μg/m^3)	0.14 ppm (for certain areas)[7]	
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)[7]	—
PM_{10}[8]	24 hour	50 μg/m^3	150 μg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m^3	—	

Table 5.3-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary[3,4]*	*Secondary[3,5]*
$PM_{2.5}$[8]	24 hour	—	35 μg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 μg/m^3	12.0 μg/m^3	15.0 μg/m^3
Lead[9,10]	30-day Average	1.5 μg/m^3	—	—
	Calendar Quarter	—	1.5 μg/m^3 (for certain areas)[10]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m^3	
Hydrogen sulfide	1 hour	0.03 ppm (42 μg/m^3)	—	—
Vinyl chloride[9]	24 hour	0.01 ppm (26 μg/m^3)	—	—
Sulfates	24 hour	25 μg/m3	—	—
Visibility reducing particles[11]	8 hour (10:00 a.m. to 6:00 p.m. PST)	See footnote 11	—	—

ppm = parts per million by volume μg/m^3 = micrograms per cubic meter mg/m^3 = milligrams per cubic meter

Source: CARB 2013a.

Notes:

1 California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, 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.

2 National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 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 NO_2 and SO_2, the standard is attained when the 3-year average of the 98th and 99th percentile, respectively, of the daily maximum 1-hour average at each monitor within an area does not exceed the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon 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.

4 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

5 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

6 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

7 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

8 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μg/m^3 to 12 μg/m^3. The existing national 24-hour PM 2.5 standards (primary and secondary) were retained at 35 μg/m^3, as was the annual secondary standard of 15 μg/m^3. The existing 24-hour PM10 standards (primary and secondary) of 150 μg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[90] CARB 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.

[10] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[11] In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Toxic Air Contaminants

In 1983, the California Legislature enacted a program to identify the health effects of toxic air contaminants (TACs) and to reduce exposure to these contaminants to protect the public health (AB 1807; Health and Safety Code Sections 39650–39674). The legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

Diesel exhaust particulate matter emissions have since been established as TACs. Following the identification of diesel particulate matter as an air toxic in 1998, CARB has worked on developing strategies and regulations aimed at reducing the risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel Fueled Engines and Vehicles (CARB 2000). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter by 85% by 2020. A number of programs and strategies to reduce diesel particulate matter that have been or are in the process of being developed include:

- **The Carl Moyer Program.** This program, administered by CARB, was initially approved in February 1999 and is regularly updated. The most recent program guidelines were approved in April 2011. It provides grants to private companies, public agencies, or individuals operating heavy-duty diesel engines to cover an incremental portion of the cost of cleaner on-road, off-road, marine, locomotive, and agricultural irrigation pump engines.
- **California Diesel Fuel Regulations.** The California Diesel Fuel Regulations (CCR, Title 13, Sections 2281–2285, and Title 17, Section 93114) set limits on the aromatic hydrocarbon and sulfur content for diesel fuel marketed in California. Under these rules, starting in June 2006 in accordance with the phase-in schedule, vehicular diesel fuel must not have a sulfur content that exceeds 15 parts per million (ppm) by weight. The regulations also specify that on or after October 1, 1993, the aromatic hydrocarbon content of vehicular diesel fuel must not exceed 10% by volume.

- **On-Road Heavy-Duty Diesel New Engine Program.** This program develops strategies and regulations to reduce diesel emissions from new on-road diesel-powered equipment. Emission control regulations have been coordinated with the U.S. EPA and require that new engines manufactured in and subsequent to 2004 meet new emissions requirements for particulates and other pollutants.
- **Heavy-Duty Diesel In-Use Strategies Program.** The goal of this program is to develop and implement strategies for reducing diesel emissions from existing on and off-road diesel engines. The Retrofit Assessment section is responsible for the development and implementation of procedures for assessing, recommending, and approving emission control devices. The Retrofit Implementation section is responsible for developing plans for retrofitting on- and off-road engines with emission reducing technologies. To date plans being developed or implemented have targeted solid waste collection vehicles, on-road heavy-duty public fleet vehicles, and fuel delivery trucks. Generally, these plans require that a percentage of the fleet, based on age of the vehicles, be retrofitted on a predetermined schedule.

Other programs include:

- **Off-Road Mobile Sources Emission Reduction Program.** The goal of this program is to develop regulations to control emissions from diesel, gasoline, and alternative-fueled off-road mobile engines. These sources include a range of equipment from lawn mowers to construction equipment to locomotives.
- **Heavy-Duty Vehicle Inspection and Periodic Smoke Inspection Program.** This program provides periodic inspections to ensure that truck and bus fleets do not emit excessive amounts of smoke.
- **Lower-Emission School Bus Program.** Under this program, and in coordination with the California Energy Commission, CARB is developing guidelines to provide criteria for the purchase of new school buses and the retrofit of existing school buses to reduce particulate matter emissions.

As an ongoing process, CARB continues to establish new programs and regulations for the control of diesel particulate emissions as appropriate. The continued development and implementation of these programs and policies ensures that public exposure to diesel particulate matter will continue to decline.

California Health & Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment,

nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local Level

San Diego Air Pollution Control District

While CARB is responsible for the regulation of mobile emission sources within the state, local AQMDs and APCDs are responsible for enforcing standards and regulating stationary sources. The project site is located within the San Diego Air Basin (SDAB) and is subject to the guidelines and regulations of the San Diego Air Pollution Control District (SDAPCD).

In San Diego County, O_3 and particulate matter are the pollutants of main concern, since exceedances of state ambient air quality standards for those pollutants are experienced here in most years. For this reason, the SDAB has been designated as a nonattainment area for the state PM_{10}, $PM_{2.5}$, and O_3 standards. The SDAB is also a federal O_3 nonattainment area and a CO maintenance area (western part of the SDAB only); the project area is a CO attainment area).

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The Regional Air Quality Strategy (RAQS) for the SDAB was initially adopted in 1991, and is updated on a triennial basis (most recently in 2009). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County and the cities in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the County as part of the development of their general plans.

The Eight-Hour Ozone Attainment Plan for San Diego County indicates that local controls and state programs would allow the region to reach attainment of the federal 8-hour O_3 standard by 2009 (SDAPCD 2007). In this plan, SDAPCD relies on the RAQS to demonstrate how the region will comply with the federal O_3 standard. The RAQS details how the region will manage and reduce O_3 precursors (oxides of nitrogen (NO_x) and volatile organic compounds (VOCs)) by identifying measures and regulations intended to reduce these contaminants. The control measures identified in the RAQS generally focus on stationary sources; however, the emissions inventories and projections in the RAQS address all potential sources, including those under the authority of

CARB and the U.S. EPA. Incentive programs for reduction of emissions from heavy-duty diesel vehicles, off-road equipment, and school buses are also established in the RAQS.

In December 2005, SDAPCD prepared a report titled Measures to Reduce Particulate Matter in San Diego County to address implementation of Senate Bill (SB) 656 in San Diego County (SB 656 required additional controls to reduce ambient concentrations of PM_{10} and $PM_{2.5}$) (SDAPCD 2005). In the report, SDAPCD evaluated the implementation of source-control measures that would reduce particulate matter emissions associated with residential wood combustion; various construction activities including earthmoving, demolition, and grading; bulk material storage and handling; carryout and trackout removal and cleanup methods; inactive disturbed land; disturbed open areas; unpaved parking lots/staging areas; unpaved roads; and windblown dust.

As stated above, the SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SDAB. The following rules and regulations would apply to the construction of the proposed project:

- **SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property (SDAPCD 1969).
- **SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust.** Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site (SDAPCD 2009).
- **SDAPCD Regulation IV: Prohibitions; Rule 67.0: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD 2001).

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The Chula Vista City Council has adopted the 2008 State Energy Code (Title 24) with an amendment requiring an increased energy efficiency standard. This amendment went into effect on February 26, 2010, as Section 15.26.030 of the Municipal Code. As required by this amendment, all building permits applied for and submitted on or after this date are subject to these increased energy efficiency standards. The increase in energy efficiency is a percentage above the 2008 Energy Code and is dependent on climate zone and type of development proposed. The designation is as follows:

- New residential and nonresidential projects that fall within climate zone 7 must be at least 15% more energy efficient than the 2008 Energy Code. Climate zone 7 encompasses the majority of the City Of Chula Vista (City of Chula Vista 2010) and includes the project site.
- New low-rise residential projects (three-stories or less) that fall within climate zone 10 must be at least 20% more energy efficient than the 2008 Energy Code. New non-residential, high-rise residential or hotel/motel projects that fall within climate zone 10 must be at least 15% more energy efficient than the 2008 Energy Code. Climate zone 10 encompasses the easternmost portion of the City of Chula Vista (City of Chula Vista 2010).

Additionally, Objective E-6 of the Chula Vista General Plan contains multiple policies focused on the improvement of air quality. Objective E-6 is intended to provide for the improvement of "local air quality by minimizing the production and emission of air pollutants and toxic air contaminants and limit the exposure of people to such pollutants." The General Plan contains 15 policies that are designed to facilitate achievement of this objective, including the encouragement of compact, mixed use development (E-6.1); facilitation of transit use (E-6.2); development of strategies to minimize CO hot spots (E-6.11); and, siting of new development in locations that minimize potential impacts of poor air quality on sensitive receptors (E-6.15).

Also included in the City's General Plan is the Growth Management Ordinance. Air quality is identified as an important part of the quality of life in Chula Vista; and, one of the stated policies (Policy GM 4.4) adapts city regulations to meet federal and state air quality standards. In addition, the Growth Management Ordinance (Municipal Code Section 19.09.050B) requires that an Air Quality Improvement Plan (AQIP) be prepared for all major development projects as part of the SPA Plan process.

Finally, Part II, Chapter 6, Section 6 of the Otay Ranch General Development Plan (GDP) adopted by the City of Chula Vista establishes goals to minimize the adverse impacts of development on air quality, including creating a safe and efficient multi-modal transportation network that serves to minimize the number and length of single-passenger vehicle trips:

- **Objective:** Minimize the number and length of single passenger vehicle trips to and from employment and commercial centers to achieve an average of 1.5 persons per passenger vehicle during weekday commute hours.
- **Policies:**
    - Encourage, as appropriate, alternative transportation incentives offered to employees, alternative work hour programs, alternative transportation promotional materials, information on car pool and van pool matching services, transit pass information, space for car-pool and van-pool-riders-wanted advertisements, information about transit and rail service, as well as information about bicycle facilities, routes, storage, and location of nearby shower and locker facilities.
    - Promote telecommuting and teleconferencing programs and policies in employment centers.
    - Establish or participate in education-based commute programs, which minimize the number and length of single passenger vehicle trips.
    - Provide on-site amenities in commercial and employment centers to include childcare facilities, post offices, banking services, cafeterias/delis/restaurants, etc.

5.3.1.2 Existing Setting

5.3.1.2.1 Climate and Topography

The weather of the San Diego region, as in most of Southern California, is influenced by the Pacific Ocean and its semi-permanent high-pressure systems that result in dry, warm summers and mild, occasionally wet winters. The average temperature ranges (in degree Fahrenheit (°F)) from the mid-40s to the high 90s. Most of the region's precipitation falls from November to April, with infrequent (approximately 10%) precipitation during the summer. The average seasonal precipitation along the coast is approximately 10 inches; the amount increases with elevation as moist air is lifted over the mountains.

The topography in the San Diego region varies greatly, from beaches on the west to mountains and desert on the east; along with local meteorology, it influences the dispersal and movement of pollutants in the basin. The mountains to the east prohibit dispersal of pollutants in that direction and help trap them in inversion layers.

The SPA Plan area is located at the western edge of the Otay Valley Parcel of the Otay Ranch GDP area. The SPA Plan area is bounded by Olympic Parkway to the north and La Media Road to the east. Village Two occupies the northern portion of the area located to the east of Heritage Road. A portion of Village Two, "Village Two West," is located to the west of Heritage Road.

The SPA Plan area is topographically diverse with elevations ranging from 240 feet above mean sea level (AMSL) in the southern portions to 535 feet AMSL in the northeastern portion. The project area consists of rolling hills in its central portion and relatively steep tributary canyons in its northern and southern portions. The project area is surrounded by other Otay Ranch development areas. The Otay Landfill is located south of Village Two West and west of Heritage Road.

The interaction of ocean, land, and the Pacific High Pressure Zone maintains clear skies for much of the year and influences the direction of prevailing winds (westerly to northwesterly). Local terrain is often the dominant factor inland, and winds in inland mountainous areas tend to blow through the valleys during the day and down the hills and valleys at night. The high pressure cell also creates two types of temperature inversions that may act to degrade local air quality.

The climate of the Chula Vista area is characterized by a repetitive pattern of frequent early morning cloudiness, hazy afternoon sunshine, daytime onshore breezes and little temperature change throughout the year. Most of the annual rainfall occurs in the winter months. An average of 9.73 inches of rain falls each year, mainly occurring from mid-November to early April. The average maximum temperature is 68.5 degrees F, while the average minimum temperature is 53.5 degrees F (WRCC 2013).

The same atmospheric conditions that create a desirable living climate combine to limit the ability of the atmosphere to disperse the air pollution generated by the large population attracted by the climate. The onshore winds across the coastline diminish quickly when they reach the foothill communities east of San Diego, and the sinking air within the offshore high pressure system forms a massive temperature inversion that traps all air pollutants near the ground. The resulting horizontal and vertical stagnation, in conjunction with ample sunshine, cause a number of reactive pollutants to undergo photochemical reactions and form smog that degrades visibility and irritates tear ducts and nasal membranes.

5.3.1.2.2 Air Pollution Climatology

The project site is located within the SDAB, which is one of 15 air basins that geographically divide the State of California. The SDAB is currently classified as a federal nonattainment area for O_3 and a state nonattainment area for PM_{10}, $PM_{2.5}$, and O_3.

The SDAB lies in the southwest corner of California and comprises the entire San Diego region, covering 4,260 square miles, and is an area of high air pollution potential. The basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

The SDAB experiences frequent temperature inversions. Subsidence inversions occur during the warmer months as descending air associated with the Pacific High Pressure Zone meets cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. Another type of inversion, a radiation inversion, develops on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses also can trap pollutants. As the pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce O_3, commonly known as smog.

Light daytime winds, predominately from the west, further aggravate the condition by driving air pollutants inland, toward the mountains. During the fall and winter, air quality problems are created due to CO and NO_x emissions. CO concentrations are generally higher in the morning and late evening. In the morning, CO levels are elevated due to cold temperatures and the large number of motor vehicles traveling. Higher CO levels during the late evenings are a result of stagnant atmospheric conditions trapping CO in the area. Since CO is produced almost entirely from automobiles, the highest CO concentrations in the basin are associated with heavy traffic. NO_2 levels are also generally higher during fall and winter days.

Under certain conditions, atmospheric oscillation results in the offshore transport of air from the Los Angeles region to San Diego County. This often produces high O_3 concentrations, as measured at air pollutant monitoring stations within the County. The transport of air pollutants from Los Angeles to San Diego has also occurred within the stable layer of the elevated subsidence inversion, where high levels of O_3 are transported.

5.3.1.2.3 Sensitive Receptors

Reduced visibility, eye irritation, and adverse health impacts upon those persons termed sensitive receptors are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution, as identified by CARB, include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

Otay Ranch High School is located immediately adjacent to the northeastern portion of Village Two. Village Two area is surrounded by residential to the north and east, across Olympic Parkway and La Media Road. The project site is currently partially developed, with some residential units in the northern and northeastern portion of Village Two currently occupied. The proposed project would be developed in phases (as it is currently), with proposed residences and schools utilized while other portions of Village Two still undergoing construction.

5.3.1.2.4 Pollutants and Effects

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include: O_3, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead. These pollutants are discussed below.[1] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone. O_3 is a colorless gas that is formed in the atmosphere when VOCs,[2] sometimes referred to as reactive organic gases (ROGs), and NO_x react in the presence of ultraviolet sunlight. O_3 is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of VOCs and NO_x, the precursors of O_3, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O_3 formation and ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

Nitrogen Dioxide. Most NO_2, like O_3, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_x and are major contributors to O_3 formation. High concentrations of NO_2 can cause breathing difficulties and result in a brownish-red cast to the

[1] The following descriptions of health effects for each of the criteria air pollutants associated with project construction and operations are based on the U.S. EPA's Six Common Air Pollutants (EPA 2010) and CARB's Glossary of Air Pollutant Terms (CARB 2013b) published information.

[2] VOCs are defined to include any compound of carbon, excluding CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. While there are no CAAQS or NAAQS for this pollutant, VOCs are regulated because a reduction in VOC emissions reduces certain chemical reactions that contribute to the formation of O_3. VOCs are also transformed into organic aerosols in the atmosphere, which contributes to higher PM_{10} levels and lower visibility.

atmosphere with reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis and some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million by volume (ppm).

Carbon Monoxide. CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions; primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Fine particulate matter, or $PM_{2.5}$, is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOC. Inhalable or coarse particulate matter, or PM_{10}, is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates, can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport absorbed gases, such as chlorides or ammonium, into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline, the manufacturing of batteries, paint, ink, ceramics, and ammunition and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancerous health effects. A toxic substance released into the air is considered a TAC. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced either on short-term (acute) or long-term (chronic) exposure to a given TAC. CARB has identified diesel engine exhaust particulate matter as the predominant TAC in California. Diesel particulate matter is emitted into the air by diesel-powered mobile vehicles, including heavy-duty diesel trucks, construction equipment, and passenger vehicles. Certain ROGs may also are designated as TACs.

5.3.1.2.5 Local Air Quality

SDAB Attainment Designation

An area is designated in attainment when it is in compliance with the NAAQS and/or CAAQS. These standards are set by the U.S. EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare.

The criteria pollutants of primary concern that are considered in this analysis include O_3, NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$. Although there are no ambient standards for VOCs or NO_x, they are important as precursors to O_3.

The portion of the SDAB where the project site is located is designated by the U.S. EPA as an attainment area for the 1997 8-hour NAAQS for O_3 and as a marginal nonattainment area for the 2008 8-hour NAAQS for O_3.The SDAB is designated in attainment for all other criteria pollutants under the NAAQS with the exception of PM_{10}, which was determined to be unclassifiable.

The SDAB is currently designated nonattainment for O_3 and particulate matter, PM_{10} and $PM_{2.5}$, under the CAAQS. It is designated attainment for the CAAQS for CO, NO_2, SO_2, lead, and sulfates.

Table 5.3-2, SDAB Attainment Classification, summarizes the SDAB's federal and state attainment designations for each of the criteria pollutants.

Table 5.3-2
SDAB Attainment Classification

Pollutant	Federal Designation[a]	State Designation[b]
O_3 (1 hour)	Attainment[1]	Nonattainment
O_3 (8-hour – 1997) (8-hour – 2008)	Attainment (Maintenance) Nonattainment (Marginal)	Nonattainment
CO	Unclassifiable/Attainment[2]	Attainment
PM_{10}	Unclassifiable[3]	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Unclassifiable/Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(no federal standard)	Attainment
Hydrogen Sulfide	(no federal standard)	Unclassified
Visibility-Reducing Particles	(no federal standard)	Unclassified

Sources: [a]EPA 2013a; [b]CARB 2013c.
Notes:
1 The federal 1-hour standard of 0.12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.
2 The western and central portions of the SDAB are designated attainment, while the eastern portion is designated unclassifiable/attainment.
3 At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

Air Quality Monitoring Data

The SDAPCD operates a network of ambient air monitoring stations throughout San Diego County, which measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The SDAPCD monitors air quality conditions at ten locations throughout the Basin. The Chula Vista monitoring station is the nearest location to the project site where criteria pollutant concentrations are monitored.

Ambient concentrations of pollutants from 2008 through 2012 are presented in Table 5.4-3, Ambient Air Quality Data. The number of days exceeding the AAQS are shown in Table 5.4-4, Frequency of Air Quality Standard Violations. Air quality within the project region is in compliance with both CAAQS and NAAQS for NO_2, CO, and SO_2.

Table 5.3-3
Ambient Air Quality Data (ppm unless otherwise indicated)

Pollutant	Averaging Time	2008	2009	2010	2011	2012	Most Stringent Ambient Air Quality Standard	Monitoring Station 1
O_3	8 hour	0.084	0.075	0.082	0.057	0.078	0.070	Chula Vista
	1 hour	0.107	0.098	0.107	0.083	0.085	0.09	
PM_{10}	Annual	26.7 µg/m³	26.2 µg/m³	24.6 µg/m³	21.9	21.5	20 µg/m³	Chula Vista
	24 hour	54.0 µg/m³	58.0 µg/m³	43.0 µg/m³	45.0 µg/m³	37.0 µg/m³	50 µg/m³	
$PM_{2.5}$	Annual[3]	12.3 µg/m³	11.4 µg/m³	10.8 µg/m³	10.6 µg/m³	10.0	12 µg/m³	Chula Vista
	24 hour	32.9 µg/m³	43.7 µg/m³	22.7 µg/m³	27.9 µg/m³	34.3 µg/m³	35 µg/m³	
NO_2	Annual	0.015	0.013	0.012	0.012	0.011	0.030	Chula Vista
	1 hour	0.072	0.065	0.050	0.057	0.051	0.18 [2]	
CO	8 hour	1.87	1.43	1.56	1.46	1.85	9.0	Chula Vista
	1 hour [4]	3.0	2.0	2.0	1.7	2.2	20	
SO_2	Annual	0.002	0.002	0.001	0.001	NA	0.030	Chula Vista
	24 hour	0.004	0.003	0.002	0.001	NA	0.04	

Sources: CARB 2013d; EPA 2013b.
Data represent maximum values
Notes:
1 Chula Vista Monitoring Station located at 80 E. J Street, Chula Vista, California.
2 A new 1-hour NAAQS for NO_2 became effective in April 2010. Data reflect compliance with the 1-hour CAAQS.
3 Annual data for 2010 and 2011 $PM_{2.5}$ taken from El Cajon monitoring station.
4 Data were taken from EPA 2013b.
NA = data not available

Table 5.3-4
Frequency of Air Quality Standard Violations

Monitoring Site	Year	Number of Days Exceeding Standard					
		State 1-Hour Ozone	*State 8-Hour Ozone*	*National 8-Hour Ozone*	*State 24-Hour PM_{10} **	*National 24-Hour PM_{10}**	*National 24-Hour $PM_{2.5}$**
Chula Vista	2008	1	4	3	6.1 (1)	0	0
	2009	1	3	0	12.2 (2)	0	3.1 (1)
	2010	1	3	2	0	0	—
	2011	0	0	0	0	0	—
	2012	0	1	1	0	0	0

Source: CARB 2013d.
* Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and 3 days, respectively. "Number of days exceeding the standards" is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

5.3.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of an air quality impact. Impacts to air quality would be significant if the proposed project would:

A. Conflict with or obstruct implementation of the applicable air quality plan or General Plan policies.

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-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.

Criteria Pollutants

The City of Chula Vista evaluates project emissions based on the quantitative emission thresholds established by the South Coast Air Quality Management District (SCAQMD) in its CEQA Air Quality Handbook, which were updated in 2011 (SCAQMD 2011). The SCAQMD set forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality. It should be noted that the use of these significance thresholds is conservative, as the SCAQMD's significance thresholds were originally based on

the South Coast Air Basin's extreme ozone nonattainment status for the 1-hour NAAQS, whereas the SDAB was designated as an attainment area for the 1-hour NAAQS.

Project-related air quality impacts estimated in this environmental analysis pursuant to Significance Threshold (B), above, would be considered significant if any of the applicable significance thresholds presented in Table 5.4-5, City of Chula Vista Air Quality Significance Thresholds, are exceeded. For these pollutants, if emissions exceed the thresholds shown in Table 5.4-5, the project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality pursuant to Significance Threshold (C), above.

Table 5.3-5
City of Chula Vista Air Quality Significance Thresholds

Pollutant	Construction	Operation
Criteria Pollutants Mass Daily Thresholds		
VOC	75 lbs/day	55 lbs/day
NO_x	100 lbs/day	55 lbs/day
CO	550 lbs/day	550 lbs/day
SO_x	150 lbs/day	150 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day

Source: SCAQMD CEQA Handbook (SCAQMD 2011)
VOC – volatile organic compounds
NO_x – oxides of nitrogen
CO – carbon monoxide
SO_x – sulfur oxides
PM_{10} – particulate matter less than or equal to 10 microns
$PM_{2.5}$ – particulate matter less than or equal to 2.5 microns

5.3.3 Impacts

5.3.3.1 2006 SPA Plan EIR Impacts Conclusions

The 2006 SPA Plan EIR made the following conclusions related to air quality for the SPA Plan, and specifically Village Two were applicable:

- The SPA Plan would not be consistent with the growth projections of the local regional air quality plan, resulting in a significant impact. Mitigation of this planning impact would require the updating of the regional plan to reflect the general plan with the proposed project. This effort is the responsibility of SANDAG and outside the role of the City of Chula Vista.
- The SPA Plan would result in a cumulatively significant long-term contribution to regional PM_{10} and ozone levels as a result of projected emissions of ROG, an ozone precursor. The SPA Plan would also result in a short-term significant fugitive dust impact as a result of emissions generated during construction.

- Within Village Two, no residential uses would be placed in the landfill buffer, therefore; no significant air quality-related health risk effects or odor complaints due to the proximity of the Village Two to the landfill would occur.
- Compliance with goals and objectives of the City's General Plan and implementation of provided mitigation measures would reduce air quality impacts from construction to below a level of significance. Because there are no applicable or feasible mitigation measures within the control of the City to reduce mobile source emissions to below a level of significance, those operation-related impacts to air quality would remain significant and unmitigated.

5.3.3.2 Proposed Project Impact Analysis

A. Conflict with or obstruct implementation of the applicable air quality plan or General Plan policies.

SIP and RAQS

The air quality plans relevant to this discussion are the SIP and RAQS. The SIP includes strategies and tactics to be used to attain and maintain acceptable air quality in the SDAB based on the NAAQS, while the RAQS includes strategies for the SDAB to meet the CAAQS. Consistency with the RAQS is assessed via two lines of inquiry: (1) whether the proposed project exceeds the growth assumptions contained in the RAQS; and, (2) if the growth assumptions are exceeded, whether the proposed project increases the frequency or severity of existing air quality violations, contributes to new violations, or delays the timely attainment of air quality standards or interim reductions, as specified in the RAQS.

As to the first line of inquiry: The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County and the cities in the county, to project future emissions and determine the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the county as part of the development of their general plans. If a project proposes development that is greater than anticipated in the local plan and SANDAG's growth projections, the project might conflict with the RAQS and SIP and may contribute to a potentially significant cumulative impact on air quality.

The following criteria for determining whether a project conforms with the RAQS are appropriate:

1. Is a regional air quality plan being implemented in the project area?
2. Is the project consistent with the growth assumptions in the regional air quality plan?
3. Does the project incorporate all feasible and available air quality control measures?

According to the RAQS, "The RAQS control measures focus on emission sources under the District's authority, specifically stationary emission sources and some area-wide sources." However, the RAQS also includes the inventories and reductions for mobile sources, and includes six Transportation Control Measures designed to reduce emissions from vehicles. Vehicles are the main source of emissions associated with the development of Village Two. The six Transportation Control Measures in the RAQS are as follows:

- Transit Improvement and Expansion Program
- Vanpool Program
- HOV Lanes
- Park-and-Ride Facilities
- Bicycle Facilities
- Traffic Signal Improvements

To meet the goals of the RAQS and SIP, the project includes measures to encourage transit use and mixed-use development. The project would achieve a reduction in vehicle trips by providing a mix of uses and access to transit. Accordingly, the project would meet the goals of the RAQS and SIP to reduce vehicle trips and associated air quality impacts (SRA 2014). The proposed project would comply with all applicable rules and regulations that have been adopted as part of the SIP. Because the project is consistent with the goals of the RAQS and SIP, the project would not conflict with or obstruct implementation of the RAQS and SIP. However, the proposed project would require amendments to the City of Chula Vista General Plan, the Otay Ranch General Development Plan, the Specific Plan, and the Otay Ranch Core Master Precise Plan. Accordingly, the project as proposed is not accounted for in the current SIP emissions budget. Consequently, the proposed project is not consistent with Chula Vista's General Plan and is not considered consistent with the growth assumptions in the RAQS and SIP. As such, impacts would be considered significant and unavoidable.

City of Chula Vista General Plan

The 2006 EIR relied on the 1989 version of the General Plan. It has since been comprehensively updated in 2005. The proposed project would require amendments to the City of Chula Vista General Plan, the Otay Ranch General Development Plan, and the Otay Ranch Core Master Precise Plan. Accordingly, the project as proposed is not accounted for in the current SIP emissions budget. Consequently, the proposed project is not consistent with the General Plan and is not considered consistent with the growth assumptions in the RAQS and SIP. However, provided the project does not conflict with or obstruct implementation of the applicable air quality plans including the RAQS and SIP, which have goals of reducing emissions through the

implementation of rules and regulations designed to reduce emissions of ozone precursors, and which encourage the reduction of vehicles miles traveled (VMT), the project would not have a significant impact (SRA 2014). Objective E-6 of the Chula Vista General Plan contains multiple policies focused on the improvement of air quality.

- **Objective E-6:** Improve local air quality by minimizing the production and emission of air pollutants and toxic air contaminants and limit the exposure of people to such pollutants.

The General Plan contains 15 policies that are designed to facilitate achievement of this objective, including the encouragement of compact, mixed use development (E-6.1); facilitation of transit use (E-6.2); development of strategies to minimize CO hot spots (E-6.11); and, siting of new development in locations that minimize potential impacts of poor air quality on sensitive receptors (E-6.15). Also included in the City's General Plan is the Growth Management Ordinance. Air quality is identified as an important part of the quality of life in Chula Vista; and, one of the stated policies (Policy GM 4.4) adapts city regulations to meet federal and state air quality standards. In addition, the Growth Management Ordinance (Municipal Code Section 19.09.050B) requires that an AQIP be prepared for all major development projects as part of the SPA Plan process.

The project would provide a mixed-use development with access to transit. The project-specific Traffic Analysis (Chen Ryan 2014) indicates that the project site is currently served by 10 Metropolitan Transit Service (MTS) Routes. In addition, the San Diego Trolley's Blue Line light rail is located west of the project site providing regional connections to many local bus routes within the area, with stations located at E Street, H Street, Palomar Street, Palm Avenue, and Iris Avenue. The proposed project is also anticipating future Bus Rapid Transit (BRT) service on La Media road, and would provide access to the BRT adjacent to the project's mixed uses upon development of the BRT facilities. These types of public transportation options would help reduce vehicle emissions and impacts to air quality. Additionally, compliance with goals and objectives of the City's General Plan and implementation of mitigation measures would reduce air quality impacts. However, because there are no applicable or feasible mitigation measures within the control of the City to reduce mobile source emissions to below a level of significance, operation-related impacts to air quality would remain significant and unavoidable.

Otay Ranch GDP

Part II, Chapter 6, Section 6 of the Otay Ranch GDP adopted by the City of Chula Vista establishes goals to minimize the adverse impacts of development on air quality, including creating a safe and efficient multi-modal transportation network that serves to minimize the number and length of single-passenger vehicle trips:

- **Goal:** Minimize the adverse impacts of development on air quality.
- **Goal:** Land development patterns which minimize the adverse impacts of development on air quality.

The proposed project includes village development supported by mixed-use centers, transit service, pedestrian and bicycle facilities, all of which promote reduced vehicle use and air emission sources. Land use design would ensure sensitive receptors would be located away from higher-emitting uses. Emissions associated with vehicles would be reduced by the proposed project, to the extent feasible, through implementation of project design features, including incorporating a mix of uses into the project and access to transit through access to MTS bus routes. Additionally, there is a potential for development of a BRT station adjacent to the project site. However, consistent with the analysis provided in the *Air Quality Report for Villages Two, Three, Planning Area 8b, and a Portion of Village Four*, because the proposed project would require an amendment to the City of Chula Vista General Plan and Otay Ranch GDP, impacts would be considered significant (SRA 2014). No mitigation is available to reduce this impact below a level of significance; therefore, this impact is considered significant and unavoidable.

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

Construction Emissions

Construction activities, including soil disturbance dust emissions and combustion pollutants from on-site construction equipment and from off-site trucks hauling dirt, cement or building materials, would create a temporary addition of pollutants to the local airshed. These emissions are quite variable in both time and space and differ considerably among various construction projects. Such emission levels can, therefore, only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts. Because of their temporary nature, construction activity impacts have often been considered as having a less-than-significant air quality impact. However, the cumulative impact from all simultaneous construction in the basin is a contributor to the overall pollution burden. A number of current APCD strategies thus focus on dust control and on using cleaner off-road equipment to reduce the contribution from construction projects.

Earthmoving activities were addressed in the Otay Ranch Villages Two, Three, and a Portion of Village Four Sectional Planning Area Plan Final Second Tier Environmental Impact Report (City of Chula Vista 2006). While the total amount of import left to be completed would be higher for the proposed project than for the currently approved plan (588,018 cubic yards versus 367,844 cubic yards), the total daily amount of earthmoving would not be anticipated to differ from the

amounts evaluated in the previous 2006 EIR. The proposed project would require approximately 13,767,000 cubic yards of cut and 13,122,000 cubic yards of fill, occurring over 18 months. Divided by 18 months, 22 days per month, the daily amount of earthmoving previously evaluated for the project site would be approximately 67,901 cubic yards per day (SRA 2014).

Construction activities associated with the construction of the project would therefore involve the following phases:

- Building construction activities
- Paving activities
- Architectural coating application

Construction of the originally approved project under the 2006 EIR has already commenced. Based on the Traffic Analysis, the following would be completed in the first phase of construction:

- 138 single-family dwelling units
- 556 multi-family dwelling units
- 13,300 square feet of mixed-use commercial
- 5 acres of community purpose facilities
- 0.8 acres of light industrial uses
- 3.4 acres of park uses

For the purpose of calculating construction emissions, it is estimated that 250 residential dwelling units would be constructed per year for future years. The additional uses (school, community purpose facilities, mixed-use commercial, light industrial uses, and park uses) would be complete by 2025, as would construction of the additional residential units.

The proposed project is subject to SDAPCD Rule 55 – Fugitive Dust Control. This requires that the project take steps to restrict visible emissions of fugitive dust beyond the property line. Compliance with Rule 55 would limit any fugitive dust (PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities. To account for dust control measures in the calculations, it was assumed that the active sites would be watered at least three times daily, resulting in an approximately 61% reduction of particulate matter as indicated in the standard mitigation measures assumed within the CalEEMod Model.

Also, projects would utilize low-VOC paints that would not exceed 100 grams of VOC per liter for interior surface and 150 grams of VOC per liter for exterior surfaces, in accordance with the requirements of APCD Rule 67.0 for architectural coatings.

The following measures are therefore included as part of project to reduce emissions:

- Watering three times daily to control fugitive dust to meet the requirements of SDAPCD Rule 55.
- Use of low-VOC paints as required under SDAPCD Rule 67.
- The Project includes mixed commercial uses, parks, and a school at the site, and is located within the Otay Ranch Village 2 development which includes additional uses. The mixed-use nature of the project will encourage pedestrian and bicycle travel as an alternative to the automobile.
- The Project's land use plan includes widened landscaped medians and parkways to reduce paving, which reduces heat buildup and the demand for air conditioning. Street trees also are included in the parkways and medians order to provide shade that further reduces ambient air temperatures.
- According to the Traffic Impact Analysis, the project is within walking distance of ten MTS bus routes. In addition, the project is working to include a BRT station adjacent to the mixed-use commercial portion of the site.
- Pedestrian pathways and trails will accommodate pedestrian movement from the residential site to the school and adjacent park and commercial uses. Additionally, streets will be designed to accommodate bicycle travel.
- Project-wide recycling for single-family, multi-family, resort, school, commercial, and retail establishments will be required as required under the County's recycling ordinance.
- Energy efficiency of buildings constructed to the CalGREEN Program would achieve more than 15% reduction over Title 24 as of 2008.
- Indoor residential appliances will carry the Environmental Protection Agency's (EPA) ENERGYSTAR® certification, as applicable and feasible.
- All residential units will be part of the local utility demand response program to limit peak energy usage for cooling.
- Indoor residential plumbing products will carry the EPA's WaterSense certification.
- High-efficiency irrigation equipment, such as evapotranspiration controllers, soil moisture sensors and drip emitters, will be required for all projects that install separate irrigation water meters, per City of Chula Vista Landscape Water Conservation Ordinance of the City of Chula Vista Municipal Code Chapter 20, Section 12.

- Water efficient vegetation, including native species, will be planted in public and private landscaped areas.
- Natural turf in residential development will be limited to no more than 30% of the outdoor open space.
- The site design will incorporate passive solar design and building orientation principles to take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during the summer.
- Vertical landscape elements, such as trees, large shrubs and climbing fines, shall be installed in order to shade southern and western building facades to reduce energy needed for heating and cooling.
- Energy efficient lighting for streets, parks, and other public spaces will be required. Private developers will use energy efficient lighting and design.
- Installation of natural gas fireplaces.

The calculations are based on an estimate of the maximum daily construction emissions, assuming that these construction project design features would be employed. Table 5.3-6 presents a summary of the annual emissions based on the CalEEMod model results for the construction of the project. CalEEMod outputs are provided in Appendix C.

As shown in Table 5.3-6, maximum daily emissions of all criteria pollutants would be below the significance thresholds for all criteria pollutants. The project design features that would be included as part of the project are as follows:

Construction fugitive dust would be reduced by implementing dust control measures. These measures include watering of active grading sites and unpaved roads a minimum of three times daily, replacement of ground cover as quickly as possible, reducing speeds on unpaved roads/surfaces to 15 miles per hour or less, and reducing dust during unloading and loading operations. Because the emissions are less than the significance thresholds with and without implementation of fugitive dust control measures, these measures are not considered mitigation measures and are considered construction best management practices.

In addition, the proposed project would be required to use low-VOC coatings as required under SDAPCD Rule 67.0.

Table 5.3-6
Estimated Maximum Daily Construction Emissions (pounds/day)

Proposed Project Emissions						
Year of Construction	*VOC*	*NO_X*	*CO*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2014	25.83	91.02	118.11	0.20	10.76	4.97
2015	24.89	87.98	111.68	0.20	10.66	4.88
2016	23.65	85.58	106.25	0.20	10.61	4.83
2017	23.83	99.82	117.05	0.25	11.87	5.29
2018	23.13	99.85	115.94	0.26	12.13	5.38
2019	22.61	99.91	115.34	0.27	12.38	5.47
2020	22.45	99.82	117.96	0.28	12.83	5.63
2021	21.05	75.02	101.22	0.26	12.33	5.03
2022	20.37	71.46	98.7	0.26	12.32	5.02
2023	19.99	67.83	95.94	0.26	12.31	5.01
2024	19.45	67.53	93.19	0.26	12.31	5.01
2025	19.12	67.30	91.65	0.26	12.32	5.01
Maximum Daily Emissions	25.83	99.91	118.11	0.28	12.83	5.63
City of Chula Vista Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: SRA 2014

As shown in Table 5.3-6, maximum daily construction emissions for all criteria pollutants would not exceed the City's significance thresholds. Construction impacts to air quality would be less than significant.

Operational Emissions

Operational impacts associated with the proposed project would include impacts associated with vehicular traffic, as well as area sources such as natural gas use, consumer products use, and architectural coatings use for maintenance purposes. Emissions associated with project operations were estimated using the CalEEMod Model, based on the trip generation rates in the Traffic Analysis (Chen Ryan Associates 2013). The Traffic Analysis provided trip generation rates for four horizon years for the project: 2015, 2020, 2025, and 2030. Emissions were calculated for each of the four horizon years. The analysis includes measures that would reduce emissions, including natural gas-fired fireplaces, meeting the City's requirement of exceeding Title 24 energy efficiency standards (as of 2008) by 15%, and project design features such as a mix of uses and access to transit. The use of natural gas fireplaces is a project design feature. Table 5.3-7 provides a summary of the estimated operational emissions for the project by year.

Table 5.3-7
Estimated Daily Maximum Operational Emissions (pounds/day)

Proposed Project Emissions	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
2015						
Summer						
Motor Vehicles	57.00	49.89	231.65	0.45	31.11	8.74
Area Sources	31.28	0.68	57.98	0.00	1.24	1.23
Energy Use	0.32	2.72	1.22	0.02	0.22	0.22
Total	**88.59**	**53.29**	**290.86**	**0.47**	**32.57**	**10.19**
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	No	No	No	No	No
Winter						
Motor Vehicles	67.83	52.99	245.87	0.43	31.12	8.75
Area Sources	31.28	0.68	57.98	0.00	1.24	1.23
Energy Use	0.32	2.72	1.22	0.02	0.22	0.22
Total	**99.46**	**56.39**	**305.08**	**0.45**	**32.58**	**10.20**
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	No	No	No	No
2020						
Summer						
Motor Vehicles	71.72	54.04	266.10	0.75	51.20	14.21
Area Sources	51.97	1.07	92.98	0.00	2.02	2.01
Energy Use	0.52	4.49	2.05	0.03	0.36	0.36
Total	**124.21**	**59.60**	**361.12**	**0.78**	**53.59**	**16.58**
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	No	No	No	No
Winter						
Motor Vehicles	85.69	57.40	283.97	0.75	51.21	14.22
Area Sources	51.97	1.07	92.98	0.00	2.02	2.01
Energy Use	0.52	4.49	2.05	0.03	0.36	0.36
Total	**138.19**	**62.97**	**379.00**	**0.75**	**53.59**	**16.59**
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	No	No	No	No
2025						
Summer						
Motor Vehicles	83.09	53.36	294.08	1.04	70.54	19.56
Area Sources	71.31	1.47	128.06	0.00	2.80	2.78
Energy Use	0.72	6.19	2.81	0.04	0.50	0.50
Total	**155.12**	**61.02**	**424.96**	**1.08**	**73.85**	**22.84**

Table 5.3-7
Estimated Daily Maximum Operational Emissions (pounds/day)

Proposed Project Emissions	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	No	No	No	No
Winter						
Motor Vehicles	99.96	56.75	312.25	0.99	70.55	19.56
Area Sources	71.31	1.47	128.06	0.00	2.80	2.78
Energy Use	0.72	6.19	2.81	0.04	0.50	0.50
Total	**155.12**	**61.02**	**424.96**	**1.08**	**73.85**	**22.84**
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	No	No	No	No
2030						
Summer						
Motor Vehicles	74.84	46.79	264.97	1.04	70.55	19.56
Area Sources	71.31	1.47	127.89	6.74e-003	2.80	2.78
Energy Use	0.72	6.19	2.81	0.04	0.50	0.50
Total	**146.87**	**54.45**	**395.67**	**1.08**	**73.85**	**22.84**
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**No**	**No**	**No**	**No**	**No**
Winter						
Motor Vehicles	90.28	49.69	281.17	0.99	70.55	19.57
Area Sources	71.31	1.47	127.89	6.74e-003	2.80	2.78
Energy Use	0.72	6.19	2.81	0.04	0.50	0.50
Total	**162.31**	**57.35**	**411.87**	**1.03**	**73.85**	**22.85**
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	**No**	**No**	**No**	**No**

Source: SRA 2014

As shown in Table 5.3-7, operational emissions associated with the proposed project would exceed the significance thresholds for VOCs and NOx for all buildout years. The emissions are attributable to vehicles and area sources, including use of consumer products. Emissions associated with consumer products use would occur regardless of the location of residences, and there are no available mitigation measures that would reduce these emissions to below a level of significance. Emissions associated with vehicles have been reduced in the project through implementation of project design features, including incorporating a mix of uses into the project and access to transit through access to MTS bus routes. Additionally, there is a potential for

development of a BRT station adjacent to the project site; however, no reductions have been included to account for this future measure. There are no additional measures that would reduce emissions associated with project operations to below a level of significance. Impacts would, therefore, be significant and unavoidable.

CO Hotspots

Projects that involve traffic impacts may have the potential for CO "hot spots" to occur (i.e., high concentrations of CO at intersections). The traffic impact analysis (Chen Ryan Associates 2013) evaluated the proposed project's impacts at 36 intersections within the study area. Based on the analysis, significant impacts were projected at the following intersections:

Existing plus Project:

- Heritage Road/Otay Valley Road/Avenida de las Vistas
- I-805 SB Ramps/Olympic Parkway Year 2015 Conditions
- Heritage Road/Main Street Year 2020 Conditions
- I-805 SB Ramps/Olympic Parkway Year 2025 Conditions
- I-805 SB Ramps/Olympic Parkway
- Heritage Road/Olympic Parkway
- La Media Road/Olympic Parkway
- La Media Road SB/Main Street WB
- La Media Road NB/Main Street WB
- La Media Road SB/Main Street EB
- La Media Road NB/Main Street EB
- Magdalena Road/Main Street Year 2030 Conditions
- I-805 SB Ramps/Olympic Parkway

Based on the Traffic Impact Analysis, all significant impacts would be mitigated to below a level of significance except impacts at the intersection of I-805 SB Ramps and Olympic Parkway. This impact was identified as cumulatively significant and unavoidable. Because the proposed project's contribution to the impact is considered cumulatively significant, a CO "hot spots" analysis was conducted to address the potential for exceedances of the CO standard.

To evaluate the potential for CO "hot spots" at the intersections for which the Traffic Impact Study predicted significant impacts, the procedures in the Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol were used (SRA 2014). As recommended in the Protocol,

CALINE4 modeling was conducted for the intersections identified above for the scenarios with and without project traffic. Modeling was conducted based on the guidance in Appendix C of the Protocol to calculate maximum predicted 1-hour CO concentrations. Predicted 1-hour CO concentrations were then scaled to evaluate maximum predicted 8-hour CO concentrations using the recommended scaling factor of 0.7 for urban locations.

Inputs to the CALINE4 model were obtained from the Traffic Impact Analysis. As recommended in the Protocol, receptors were located at locations that were approximately 3 meters from the mixing zone, and at a height of 1.8 meters. Average approach and departure speeds were assumed to be 1 mph to account for congestion at the intersection and provide a worst case estimate of emissions. Emission factors for those speeds were estimated from the EMFAC2011 for Existing, 2015, 2020, 2025, and 2030 conditions.

In accordance with the Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol, it is also necessary to estimate future background CO concentrations in the project vicinity to determine the potential impact plus background and evaluate the potential for CO "hot spots" due to the project. As a conservative estimate of background CO concentrations, the existing maximum 1-hour background concentration of CO that was measured at the Chula Vista monitoring station for the period 2010 to 2012 of 2.1 ppm was used to represent future maximum background 1-hour CO concentrations. The existing maximum 8-hour background concentration of CO that was measured at the San Diego monitoring station during the period from 2010 to 2012 of 1.56 ppm was also used to provide a conservative estimate of the maximum 8-hour background concentrations in the project vicinity. CO concentrations in the future may be lower as inspection and maintenance programs and more stringent emission controls are placed on vehicles.

Table 5.3-8 presents a summary of the predicted CO concentrations (impact plus background) for the intersections evaluated. As shown in Table 5.3-8, the predicted CO concentrations would be substantially below the 1-hour and 8-hour NAAQS and CAAQS for CO shown in Table 5.3-1 of this report. Therefore, no exceedances of the CO standard are predicted, and the project would not cause or contribute to a violation of this air quality standard.

Table 5.3-8
CO Hotspots Evaluation -- Predicted CO Concentrations, ppm

Maximum 1-hour Concentration Plus Background, ppm CAAQS = 20 ppm; NAAQS = 35 ppm; Background 2.1 ppm		
Intersection	*AM*	*PM*
Existing Plus Project Condition		
I-805 SB Ramps/Olympic Pkwy	4.3	4.9
Year 2015		
I-805 SB Ramps/Olympic Pkwy	4.3	4.9

Table 5.3-8
CO Hotspots Evaluation -- Predicted CO Concentrations, ppm

Maximum 1-hour Concentration Plus Background, ppm **CAAQS = 20 ppm; NAAQS = 35 ppm; Background 2.1 ppm**		
Intersection	*AM*	*PM*
Year 2020		
I-805 SB Ramps/Olympic Pkwy	3.6	4.2
Year 2025		
I-805 SB Ramps/Olympic Pkwy	3.2	3.5
Year 2030		
I-805 SB Ramps/Olympic Pkwy	3.0	3.2
Maximum 8-hour Concentration Plus Background, ppm ***CAAQS = 20 ppm; NAAQS = 35 ppm; Background 1.56 ppm***		
Intersection	*AM*	*PM*
Existing Plus Project Condition		
I-805 SB Ramps/Olympic Pkwy	3.52	
Year 2015		
I-805 SB Ramps/Olympic Pkwy	3.52	
Year 2020		
I-805 SB Ramps/Olympic Pkwy	3.03	
Year 2025		
I-805 SB Ramps/Olympic Pkwy	2.54	
Year 2030		
I-805 SB Ramps/Olympic Pkwy	2.33	

Source: SRA 2014

As shown in Table 5.3-8, no exceedances of the CO standard are predicted, and the project would not cause or contribute to a violation of this air quality standard. Impacts regarding CO hotspots would be less than significant.

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).

In analyzing cumulative impacts from the proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SDAB is designated as nonattainment for selected air pollutants under the CAAQS and NAAQS. If the proposed project does not exceed thresholds and is determined to have less than significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, the project would only be considered to have a significant cumulative impact if the project's

contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact).

The SDAB is currently classified as a non-attainment area for the NAAQS and CAAQS for O_3, which is caused by contributions from O_3 precursors NO_x and VOCs. The SDAB is also classified as a non-attainment area for the CAAQS for PM_{10} and $PM_{2.5}$.

As part of the RAQS and SIP planning process, the SDAPCD develops an emission inventory, based on projections from the SANDAG, of growth in the region as well as on information maintained by the SDAPCD on stationary source emissions within the SDAB. The SDAPCD then uses the emission inventory to conduct airshed modeling, which provides a demonstration that the SDAB will attain and maintain the O_3 standards. Provided a project's emissions are consistent with the projections within the RAQS and SIP, the project would not result in a cumulatively considerable impact on O_3 within the SDAB.

With regard to emissions of O_3 precursors NOx and VOCs during construction, the SIP includes emissions associated with construction in its emissions budget and therefore within its attainment demonstration. The O_3 precursor emissions associated with project construction are well below the screening level thresholds and are well within the construction emissions budget contained in the SIP, which includes a demonstration that the SDAB will attain and maintain the O_3 standards. Thus because the project would be consistent with the SIP regarding construction activities and therefore consistent with the attainment demonstration for O_3 attainment contained within the SIP for construction, the project would not result in a cumulatively considerable impact that would cause or contribute to a violation of the O_3 standard during construction.

Because the proposed project would result in operational emissions of VOCs and NOx that are above the significance thresholds, the project would result in a cumulatively significant impact on air quality. Additionally, the proposed project would require amendments to the City of Chula Vista General Plan, the Otay Ranch General Development Plan, the Specific Plan, and the Otay Ranch Core Master Precise Plan. Accordingly, the project as proposed is not accounted for in the current SIP emissions budget. Consequently, the proposed project is not consistent with Chula Vista's General Plan and is not considered consistent with the growth assumptions in the RAQS and SIP. As discussed previously, the impact has been reduced to the extent feasible due to implementation of measures that reduce air emissions. There are no further measures that would reduce the emissions below the City's significance thresholds. Impacts from VOC and NOx are therefore cumulatively considerable.

Regarding fugitive dust, simultaneous major construction projects are not anticipated within 100 meters of the project site. Furthermore, particulate emissions for both construction and

operations are below the significance thresholds. Therefore, no cumulatively considerable PM_{10} impact would result from construction or operation of the project.

D. Expose sensitive receptors to substantial pollutant concentrations.

Sensitive receptors are defined as schools, hospitals, resident care facilities, or day-care centers, as well as residential receptors in the project vicinity and at the project site in the areas that are already constructed. The threshold concerns whether the project could expose sensitive receptors to substantial pollutant concentrations, either of criteria pollutants, or of toxic air contaminants (TACs).

If a project has the potential to result in emissions of any TAC which result in a cancer risk of greater than 10 in 1 million or substantial non-cancer risk, the project would be deemed to have a potentially significant impact. Residential and commercial uses are not land uses that would emit substantial amounts of TACs. The truck traffic that would be associated with the construction activities would include both off-site trips during soil import to the site, and on-site trips to redistribute excavated material and minor on-road trips to deliver construction materials.

Should the light industrial area include land uses that involve sources of emissions of TACs, the sources would be subject to the requirements of SDAPCD Rule 1200, and would be required to prepare a health risk assessment to demonstrate that impacts are less than 1 in a million excess cancer risk without Toxics Best Available Control Technology, or less than 10 in a million with Toxics Best Available Control Technology. TAC emission sources would also be required to obtain a permit to operate from the SDAPCD. Thus toxic air contaminant impacts associated with the project itself would be less than significant.

The proximity of the project to the Otay Landfill and its TAC emissions was addressed in the 2006 EIR, and no changes to the buffer areas are proposed as part of the proposed project. Due to the distance of residential receptors from the active landfill area and associated TAC emission, and because the buffer zone would adequately reduce landfill-related impacts to sensitive receptors, the proposed project would not result in exposure of sensitive receptors to substantial TAC concentrations. Impacts would be less than significant.

E. Create objectionable odors affecting a substantial number of people.

Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. These compounds would be emitted in various amounts and at various locations during construction. Odors are highest near the source and would quickly dissipate off site; any odors associated with construction would be temporary. Due to the temporary nature of construction odors and the anticipated dissipation of odors off site, impacts during construction would be less than significant.

The project is a residential and mixed-use development and would not include land uses that would be sources of nuisance odors. Thus the potential for odor impacts associated with the project is less than significant.

5.3.4 Level of Significance Prior to Mitigation

As described under Threshold (A), the proposed project would not be consistent with the goals and policies of local air quality plans including the SIP and RAQS; therefore, impacts would be significant and unavoidable.

As described under Threshold (B), daily construction emissions for all criteria pollutants including VOC, NO_x, SO_x, PM10 and $PM_{2.5}$would not exceed the City's significance thresholds. Impacts would be less than significant and no mitigation is required.

As described under Threshold (B), daily operational emissions for CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions would not exceed the City's significance thresholds. However, VOC and NO_x emissions associated with operation of the project would exceed the City of Chula Vista's significance thresholds. Significant reductions in VOC and NO_x emissions would be required to reduce emissions of these pollutants to less than significant and feasible mitigation measures are not available to achieve these reductions as emissions are attributable to consumer product use and mobile emissions. Therefore, criteria pollutant emissions for VOC and NO_x are anticipated to be above the thresholds. This impact, therefore, is considered significant and unavoidable.

As described under Threshold (C), the project's contribution to cumulative construction emissions would be less than significant. However, operation of the proposed project would result in a cumulatively considerable contribution to regional VOC and NO_x emissions. Impacts would be significant and unavoidable. With regard to CO hotspot impacts, impacts would be less than significant.

As described under Threshold (D), the proposed project would not result in a long-term source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction. Impact to sensitive receptors would be less than significant.

As described under Threshold (E), impacts associated with odors during construction and operations, would be less than significant.

5.3.5 Mitigation Measures

No mitigation measures beyond the project design features identified for the proposed project would be implemented during construction or operation. Because exceedances of operational emissions are

attributable to consumer products use and mobile emissions, no additional feasible mitigation measures are available to reduce operational emissions to a level that is less than significant.

5.3.6 Level of Significance After Mitigation

Due to absence of feasible mitigation measures, the proposed project would remain inconsistent with the goals of local air quality plans. This impact would remain significant and unavoidable.

Construction emissions of all criteria pollutants would be below the thresholds; therefore, impacts during construction would be less than significant. No mitigation is required.

Daily operational emissions for VOCs, NO_x would remain significant and unavoidable due to the absence of feasible mitigation measures.

The potentially significant impacts arising from the siting of on-site land uses that emit TACs would be less than significant. No mitigation is required.

Odor impacts would remain less than significant. No mitigation is required.

5.3.7 Change in Results of the 2006 EIR Analysis

Implementation of the proposed project would not change the conclusions of the 2006 EIR with respect to inconsistency with the RAQS and odor. However, it would increase the severity of impacts compared to the 2006 EIR due to the increase in land use density, therefore resulting in new identified air quality impacts. Due to proposed project design features, no new mitigation is required.

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5.4 NOISE

This section of the EIR addresses the potential noise impacts resulting from the proposed project. The discussion found in this section is based on the Noise Assessment Technical Report for the Otay Ranch Village Two Comprehensive SPA Plan Amendment (noise report) that was prepared by Dudek in March 2014. The complete report is contained in Appendix D.

This section tiers from the 2006 EIR (City of Chula Vista 2006). The 2006 EIR addressed the Village Two, Three, and portion of Four development's potential environmental effects. The analysis and discussion of public services issues contained in the 2006 EIR is incorporated by reference and available for public inspection upon request to the City.

5.4.1 Existing Conditions

5.4.1.1 Regulatory Framework

Federal

Federal Aviation Administration Standards

Enforced by the FAA, Code of Federal Regulations (CFR) Title 14, Part 150 prescribes the procedures, standards and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses which are normally compatible with various levels of exposure to noise by individuals. The FAA has determined that interior sound levels up to 45 dBA Ldn (or CNEL) are acceptable within residential buildings. The FAA also considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA Ldn (or CNEL).

Federal Highway Administration Standards

CFR Title 23, Part 772 sets procedures for the abatement of highway traffic noise and construction noise. Title 23 is implemented by the Department of Transportation Federal Highway Administration (FHWA). The purpose of this regulation is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways. All highway projects which are developed in conformance with this regulation shall be deemed to be in conformance with the Department of Transportation FHWA Noise Standards. Title 23 establishes 67 dBA as the worst-case hourly average noise level standard for impacts of federal highway projects to land uses including residences, recreational uses, hotels, hospitals, and libraries (23 CFR Chapter 1, Part 772, Section 772.19).

Federal Transit Administration Standards and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (May 2006) are routinely used for projects proposed by local jurisdictions. The FTA and Federal Railroad Administration (FRA) have published guidelines for assessing the impacts of groundborne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of architectural damage for conventional sensitive structures from groundborne vibration is 0.2 inches/second PPV.

State

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, finds that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations (CCR) sets standards which new development in California must meet. According to Title 24 Section 1207, interior noise levels are not to exceed 45 dB CNEL for new multi-family residences, hotels and other attached residences. Title 24 does not apply to single-family homes.

Section 1207 of Title 24 also requires that an interior acoustical study demonstrating that interior noise levels due to exterior sources will be less than or equal to 45 CNEL be performed for affected multi-family structures that are exposed to exterior noise levels in excess of 60 CNEL.

2010 California Green Building Standards Code

Section 5.507 of the California Green Building Standards Code (CalGreen) establishes requirements for acoustical control in non-residential buildings. The standards require that wall and roof-ceiling assemblies making up the building envelope shall have a sound transmission class value of at least 50, and exterior windows shall have a minimum sound

transmission class of 30 for any of the following building locations: 1) within 1,000 feet (300 meters) of right of ways of freeways, 2) within 5 miles (8 kilometers) of airports serving more than 10,000 commercial jets per year, and 3) where sound levels at the property line regularly exceed 65 dBA, other than occasional sound due to church bells, train horns, emergency vehicles and public warning systems. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have a sound transmission class of at least 40. Additionally, Section A5.507.5 requires that classrooms have a maximum interior background noise level of no more than 45 dBA Leq.

Local

City of Chula Vista General Plan

The City of Chula Vista General Plan Noise Element establishes noise criteria for various land uses (City of Chula Vista 2005). The maximum allowable exterior noise level at outdoor usable areas for new residential development is an annual CNEL of 65 dB. The City's exterior land use-noise compatibility guidelines for various land uses are depicted in Table 5.4-1. For residential development, the City typically applies the noise criteria at the backyards of single-family homes and at private patios, exterior balconies, and exterior common use areas of multi-family developments.

Table 5.4-1
City of Chula Vista Exterior Land Use/Noise Compatibility Guidelines

Land Use	Annual CNEL in Decibels					
	50	*55*	*60*	*65*	*70*	*75*
Residential						
Schools, Libraries, Daycare Facilities, Convalescent Homes, Outdoor Use Areas, and other Similar Uses Considered Noise Sensitive						
Neighborhood Parks, Playgrounds						
Community Parks, Athletic Fields						
Offices and Professional						
Places of Worship (excluding outdoor use areas)						
Golf Courses						
Retail and Wholesale Commercial, Restaurants, Movie Theaters						
Industrial, Manufacturing						

Note: Shaded box indicates allowable decibel level
Source: City of Chula Vista 2005

In addition, Objective E22 (Protect the community from the effects of transportation noise) of the City's General Plan Noise Element, Policy E22.5 requires projects to construct appropriate mitigation measures to attenuate existing and projected traffic noise levels, in

accordance with applicable standards, including the exterior land use/noise compatibility guidelines listed in Table 5.4-1.

For offsite project-related traffic, the City considers a noise impact to be significant if implementation of the proposed project results in noise levels that exceed the exterior noise limits established in the City's General Plan, including 65 dBA CNEL for residences, schools, and recreational uses; 70 dBA CNEL for offices, community parks and athletic fields; and 75 dBA CNEL for commercial uses. For transportation-related noise, a significant impact would occur if the proposed project results in a 3 dBA CNEL or greater increase in traffic noise on a roadway segment and the resultant noise level would exceed the General Plan exterior noise limits.

City of Chula Vista Municipal Code

The City of Chula Vista Noise Ordinance (Municipal Code Section 19.68) contains regulations restricting land use-related noise-generating activities and operations to avoid noise nuisance in the community. Section 19.68.030 establishes the maximum allowable exterior noise limits, based upon the classification of the receiving land use. These standards typically apply to stationary sources such as noise from mechanical equipment or event noise, as opposed to traffic noise. For instance, a school, commercial enterprise, or industrial operation must not generate noise which exceeds a certain specified noise level at any property boundary where an adjacent residential use exists. These property-line noise standards are shown in Table 5.4-2. The noise standards in Table 5.4-2 do not apply to construction activities.

Table 5.4-2
City of Chula Vista Exterior Property-Line Noise Limits

Noise Level (dBA)(1,2,3)		
Receiving Land Use Category	*10:00 p.m. to 7:00 a.m. (Weekdays)* *10:00 p.m. to 8:00 a.m. (Weekends)*	*7:00 a.m. to 10:00 p.m. (Weekdays)* *8:00 a.m. to 10:00 p.m. (Weekends)*
All residential (except multiple dwelling)	45	55
Multiple dwelling residential	50	60
Commercial	60	65
Light industry – I-R and I-L zones	70	70
Heavy Industry – I zone	80	80

1 Environmental Noise – Leq in any hour, Nuisance Noise – not be exceeded any time
2 According to Section 19.68.030(B)(2), if the alleged offensive noise contains a steady, audible sound such as a whine, screech or hum, or contains a repetitive impulsive noise such as hammering or riveting, the standard limits shall be reduced by 5 dB.
3 f the measured ambient level, measured when the alleged noise violation source is not operating, exceeds the standard noise limit, the allowable noise exposure standard shall be the ambient noise level.
Source: City of Chula Vista 2013

Title 17 of the Chula Vista Municipal Code (Environmental Quality), Chapter 24, addresses managing noisy and disorderly conduct. Section 17.24.040.C.8 specifically addresses restrictions

against generation of construction noise in overnight periods. The use of any tools, power machinery, or equipment, or the conduct of construction and building work in residential zones so as to cause noises disturbing to the peace, comfort, and quiet enjoyment of property of any person residing or working in the vicinity, shall be prohibited between the hours of 10:00 p.m.–7:00 a.m., Monday–Friday, and between the hours of 10:00 p.m.–8:00 a.m., Saturday and Sunday, except when the work is necessary for emergency repairs required for the health and safety of any member of the community (City of Chula Vista 2013).

City of Chula Vista Multiple Species Conservation Program Subarea Plan

The Multiple Species Conservation Program (MSCP) Subarea Plan regulates impacts to sensitive biological resources, including noise impacts. In accordance with Section 7.5.2 of the Chula Vista Subarea Plan, Adjacency Management Issues, uses in or adjacent to the Preserve should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the Preserve. Excessively noisy areas or activities adjacent to breeding areas, including temporary grading activities, must incorporate noise reduction measures or be curtailed during the breeding season of sensitive bird species, consistent with Table 3-5 of the MSCP Subregional Plan, included as Appendix A to the MSCP Subarea Plan. In general, the construction noise threshold for sensitive biological resources is an hourly average noise level of 60 dBA and no clearing, grubbing, and/or grading is permitted within the MSCP Preserve during the breeding season of the sensitive species present.

Otay Ranch General Development Plan

The purpose of the Otay Ranch Noise goals, objectives and policies is to direct the identification of conditions under which noise occurs and provide general guidelines to protect Otay Ranch residents from the adverse effects of unwanted sound. Policy directions are provided to simultaneously control noise at its source, along its transmission path, and at the receiver site.

<u>Goals, Objectives and Policies</u>

Goal: Promote a quiet community where residents live without noise that is detrimental to health and enjoyment of property.

Goal: Ensure residents are not adversely affected by noise.

Objective: Otay Ranch shall have a noise abatement program to enforce regulations to control noise.

Policy: Prohibit excessive noises that are a detriment to the health and safety of residents.

Policy: Limit noise at the source, along the path of transmission and/or at the receiver site.

Policy: Reduce the need for noise mitigation through site and land use planning techniques, whenever feasible.

Policy: Consider the effects of noise, especially from transportation, in land use decisions to ensure noise compatibility.

Policy: Comply with applicable noise ordinances and performance standards in zoning ordinances.

Policy: Use the Environmental Review Process to evaluate the effects of noise.

Policy: Regularly review technological developments and building techniques that decrease the project related noise impacts on site and off site and specify needed noise mitigation measures.

5.4.1.2 Existing Setting

The project area is generally located along the southern boundary of the City of Chula Vista, east boundary of the project site is located immediately south of Olympic Parkway, and the eastern project boundary is located immediately west of La Media Road. Olympic Parkway has existing interchanges on Interstate 805 and SR-125. Heritage Road, which currently terminates at Olympic Parkway, is planned to roughly bisect the Village Two project site. Once extended to the south to intercept Main Street, Heritage Road would connect the project site with other roadways to the south. Regional access to the project is generally provided by the roadway facilities described above. Traffic along these major local roadways would be the dominant source of noise contributing to the future community noise level within the project site.

5.4.1.3 Ambient Noise

Typical Conditions (Undeveloped Land)

Today, much of the project site exists as undeveloped open space. Areas within Village Two that are not located immediately adjacent to an existing roadway would be expected to have ambient noise levels less than typical levels found in the urban environment. One short-term noise measurement was conducted within the Village Two project site in order to characterize the baseline conditions representative of the undeveloped areas (refer to Figure 5.4-1).

DUDEK

AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 5.4-1

Location of Field Noise Measurements

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

Document Path: Z:\Projects\j678201\MAPDOC\MAPS\Supp EIR Figs\Section 5\Section 5.4 Noise\Fig 5.4-1 Measurements.mxd

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Table 5.4-3 provides the results of the noise measurement within Village Two. Assuming that the noise measurement represents the hourly average noise level (which is valid for environmental noise sources that are steady or nearly steady), an approximate CNEL value can be calculated by adding 7 dB to the hourly average noise level. Table 5.4-3 provides a calculated existing CNEL level, based on the approach of employing the measured L_{eq} value as the hourly average noise level.

Table 5.4-3
Existing Community Noise Equivalent Level (CNEL) Distant from Existing Roadways

Description	Date/Time	L_{EQ}	CNEL
Village Two Ambient	11/05/13 3:10-3:30 p.m.	50 dB	57 dB

Source: Dudek 2014

Transportation Noise Sources

Existing Roadway Related Noise and Modeled Calibration Results

Noise measurements were conducted along existing segments of the major roadways described for Village Two. Please refer to Figure 5.4-1, which depicts the location of noise measurements conducted for the assessment of roadway traffic noise. Table 5.4-4 provides descriptions of the measurement locations with respect to each roadway centerline, observed traffic speeds, measured noise levels (as equivalent noise level, or L_{eq}), concurrent traffic volumes for each vehicle type (i.e., number of vehicles passing the measurement point during the measurement), and the corresponding CadnaA noise modeling results. As shown in Table 5.4-4, the difference between the measured and modeled traffic noise levels was found to be one to two decibels for each of the measurements, which is regarded in the state of the practice (i.e., generally accepted and utilized methodologies by noise control practitioners) as an acceptable degree of tolerance between measured and modeled (California Department of Transportation 2009). No correction factors were applied to any of the subsequent traffic modeling results.

Table 5.4-4
Existing Measured Average Sound Levels Associated with Local Roadways Near Village Two and Validation Results

Site	Description	Date / Time	Measured L_{eq}[1]	Cars	MT[2]	HT[3]	Busses	MC[4]	MPH[5]	Corresponding Model Calibration Result (L_{eq}[1])	Difference (Measured –Modeled)
2	Approx. 70 feet to center line of Olympic Parkway	11/05/13 2:10–2:30 p.m.	72 dB	936	0	17	14	10	50	71 dB	1 dB

Table 5.4-4
Existing Measured Average Sound Levels Associated with Local Roadways Near Village Two and Validation Results

Site	Description	Date / Time	Measured L_{eq}[1]	Cars	MT[2]	HT[3]	Busses	MC[4]	MPH[5]	Corresponding Model Calibration Result (L_{eq}[1])	Difference (Measured –Modeled)
3	Approx. 65 feet to center line of La Media Road	11/05/13 2:40–3:00 p.m.	59 dB	213	0	0	0	0	45	61 dB	2 dB
4	Approx. 65 feet to center line of Heritage Road	11/05/13 1:30–1:50 p.m.	68 dB	229	1	2	0	1	55	66 dB	2 dB

Notes:
1 Equivalent Continuous Sound Level (Time-Average Sound Level)
2 Medium Trucks (Includes busses)
3 Heavy Trucks
4 Motorcycle
5 Miles Per Hour (observed speed of traffic during noise measurement)
General Notes: Temperature 76-77 degrees, clear sky, calm wind.
Source: Dudek 2014

Traffic Noise Modeling – Existing Conditions

The existing CNEL along major roadways anticipated to affect future noise levels within / adjacent to Village Two was determined based on the ambient noise measurements, using the current daily traffic volume pertinent to each road as identified in the Chen-Ryan traffic impact assessment (normalized for automobile [95%], medium and heavy truck [2% each], and motorcycle [1%] percentages) in the traffic noise prediction model. The existing CNEL modeled for each major roadway is presented in Table 5.4-5.

It should be noted the dB values in Table 5.4-4 calculated for existing roadway traffic volumes are on a CNEL basis, and are therefore different than the dB L_{eq} values measured for each roadway in the field (and presented in Table 5.4-4). The measured L_{eq} values simply reflect actual traffic occurring during the short term measurement, which is used to calibrate the model. The noise level (CNEL) from existing traffic volume is then calculated using the calibrated model.

Table 5.4-5
Existing Community Noise Equivalent Level (CNEL) Associated with Local Roadways

Description of Roadway/ Noise Modeling Location	Traffic Analysis Period	Traffic Volume (Average Daily Trips)	Observed /Modeled Average Traffic Speed	CNEL
Approximately 70 feet to center line of Olympic Parkway	Existing Conditions	5,269	50 MPH	73 dB
Approximately 65 feet to center line of La Media Road	Existing Conditions	1,641	45 MPH	67 dB
Approximately 65 feet to center line of Heritage Road	Existing Conditions	1,288	40 MPH	70 dB

Source: Dudek 2014

Based upon the modeled CNEL values presented in Table 5.4-5, Olympic Parkway, La Media Road and Heritage Road currently generate noise levels in excess of 65 dB CNEL beyond the roadway rights-of-way.

Aviation

Brown Field Airport is located along the north side of Otay Mesa Road, approximately 2.5 miles south of Village Two. The runways are oriented in an east/west direction. This general aviation airport is located in and operated by the City of San Diego. It accommodates propeller and jet powered aircraft and serves as a port of entry for private aircraft entering the United States from Mexico. It is also used for military and law enforcement agencies and is classified as a "reliever airport" by the FAA. According to the ALUCP for Brown Field, the airport has an 8,000 foot long runway. The predominant runway alignments are east-west. The types of aircraft that use the airport vary from small single-engine pistons to large corporate jets and military aircraft, including helicopters. There were 101,117 operations at Brown Field in 2011, and 91,025 operations in 2010. The 2010 ALUCP indicate that the project site (i.e., Village Two) is north and outside of the 60 and 65 dB CNEL noise contours for Brown Field. According to existing data for Brown Field, the project site would not be exposed to noise levels from aircraft operations that exceed 60–65 dB CNEL, or within the airport's area of influence.

Railroads

Chula Vista is served by the San Diego trolley system, which is operated by the San Diego Metropolitan Transit System. The San Diego Trolley Blue Line passes through the western part of Chula Vista, along the east side of I-5, with stations at E Street, H Street, and Palomar Street. Freight trains also utilize the same rail line during nighttime hours. Two primary rail haulers of freight, the Burlington Northern Santa Fe (BNSF) and the San Diego and Imperial Valley (SDIV) railroads, link the San Diego County coastal region (including Chula Vista) to

the larger national railway system. The SDIV operates freight service on the SANDAG-owned railway in the southwestern part of San Diego County, including Chula Vista, where it is known as the San Diego and Arizona Eastern (SD&AE) Railway. The rail line is located in the coastal area of Chula Vista near I-5, approximately five miles west of the project site. Due to distance, railway noise is not audible at the project site.

Operational Noise Sources

The project site is generally undeveloped. Currently developed land uses within Village Two are residences. Land uses adjacent to the proposed project largely include residential (surrounding villages), community and recreational facilities (Fire Station Number 7 and parks), Otay Ranch High School, and Otay Ranch Landfill.

Otay Ranch High School is an existing source of operational noise, and is located north of Village Two. Noise sources associated with Otay Ranch High School include bells, other signaling devices, and activities on the campus such as crowd noise and loudspeakers at football games. Bells and other signaling devices are classified as stationary non-emergency signaling devices by the City, and schools are prohibited in the noise ordinance from sounding these devices for more than 120 seconds continually in an hourly period or intermittent sounding over a five-minute period in any hour. Typically, the main sources of noise from high schools to the surrounding area are organized sports activities at the football stadium that involve amplified speakers and crowd noise. The football field is located on the southwest side of the campus; the nearest loudspeaker (one of six) is located approximately 140 feet north of the proposed residential uses in Neighborhood R-8C of Village Two. The field's "acoustic centroid"[1] is located approximately 320 feet from the nearest residential lot in Neighborhood R-8C.

The Noise Technical Report for Otay Ranch Villages 2 and 3, Planning Area 1B, and a Portion of Village 4 (RECON 2005) determined that the worst-case noise level for a championship game event at the Otay Ranch High School would be 71 dBA at a distance of 50 feet from each of the stadium loudspeakers located approximately 30 feet above the playing field. This type of event is considered a worst-case scenario for game noise because championship games generally include a full stadium of spectators. When the speakers were not in use, crowd noise was estimated to emit a noise level of approximately 65 dBA at 60 feet from the top of the stadium stands. Based on these estimates, football games currently generate a noise level of approximately 63 dB at the proposed multi-family residential used in Neighborhood R-8C when speakers are in use, and 50 dB when crowd noise is the primary noise source. Therefore,

[1] The idealized point from which the various noise sources within an area could be said to be emanating from, derived by multiplying the nearest and farthest distances and taking the square root (California Department of Transportation 2009)

recreational activities at Otay Ranch High School would exceed the City's noise standard of 55 dBA at the proposed project site.

Noise Sensitive Land Uses

NSLUs are land uses that may be subject to stress and/or interference from excessive noise. The Chula Vista General Plan defines NSLUs as residences, schools, hospitals, libraries, parks, places of worship, and outdoor use areas, including outdoor dining spaces. Industrial and commercial land uses are generally not considered sensitive to noise. All currently occupied residential dwelling units located on the project site are considered NSLUs. The nearest off-site NSLU to the project site is Otay Ranch High School, located immediately adjacent to the northeastern corner of Village Two. The Chula Vista MSCP Subarea Plan defines sensitive wildlife species as noise sensitive. MSCP Preserve area is located adjacent to the southern boundary of each Village.

5.4.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a noise impact. Impacts to noise would be significant if the proposed project would:

A. Expose persons to or generation of noise levels in excess of standards established in the Chula Vista General Plan or noise ordinance, or applicable standards of other agencies.

B. Expose persons to or generation of excessive groundborne vibration or groundborne noise levels.

C. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

D. Result in a substantial 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 (ALUP) or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

F. Be inconsistent with the Chula Vista General Plan, Otay Ranch General Development Plan or other objectives and policies regarding noise thereby resulting in a significant physical impact.

5.4.3 Impacts

5.4.3.1 2006 EIR Impacts Conclusions

The following conclusions related to noise as described in the 2006 EIR as amended are applicable to the proposed project, specifically Village Two:

Potential sources of noise related to Village Two include construction noise, traffic generated noise, noise from activities at the high school, noise from the community park, and noise from industrial uses.

Construction activities, especially heavy equipment, would create short-term noise increases near construction areas. However, compliance with the existing City's Municipal Code would reduce this impact to below a level of significance.

Noise within the SPA Plan Area, including Village Two, would be affected by traffic on Olympic Parkway, Birch Road, La Media Road, Heritage Road, and several internal streets. The traffic on area streets could generate noise levels greater than the City's residential exterior standard of 65 CNEL at adjacent ground-level sensitive receptors, which could cause a significant impact without mitigation.

Proposed residential units to the south of the high school stadium within Village Two would be affected by activities at the stadium with exterior noise levels projected to exceed 65 CNEL. This could cause a significant impact without mitigation.

Active uses in the community park are not expected to exceed noise ordinance standards for Village Two to the north.

Traffic noise levels are not projected to exceed 75 CNEL in industrial use areas. Noise levels produced on the industrial properties have the potential to affect adjacent residential uses and adjacent wildlife. Depending on the specifics of the industrial uses, this would potentially be a significant impact.

Implementation of the mitigation measures provided in the 2006 EIR was found to reduce all significant and potentially significant impacts to a level below significance.

Due to the provision of a noise technical study by Dudek in 2014 for the proposed project that includes mitigation measures based on its separate analysis from the previous noise technical study by RECON in 2005 prepared for the 2006 EIR, the majority of the previous mitigation measures included in the 2006 EIR are no longer relevant or applicable unless otherwise specified in the discussion below. Additional mitigation identified as part of this environmental review that were not previously identified in the 2006 EIR are provided in Section 5.4.5 below.

5.4.3.2 Proposed Project Impact Analysis

A. Expose persons to or generation of noise levels in excess of standards established in the Chula Vista General Plan or noise ordinance, or applicable standards of other agencies.

On-Site Traffic Noise Exposure – Major Roadways

Major local roadways providing direct access to the project site would be the predominant source of noise contributing to the future community noise level within Village Two. Future traffic along these major roadways represents the principle source for potential noise exposure levels that exceed adopted criterion for noise sensitive land uses within the project site. Figure 5.4-2 shows the roadway segments analyzed within Village Two as well as the regional roadway network.

To evaluate future on-site noise exposure levels from traffic along major roadways, the CadnaA noise prediction model (using FHWA's TNM version 2.5 emission levels) was run with worst-case traffic volumes as provided in the Village Two Traffic Impact Analysis (Chen Ryan 2014). Dudek compiled roadway traffic volumes for each roadway segment reported in the Chen Ryan analysis, for each year of analysis (i.e., existing, existing with build-out, 2015, 2020, 2025, and 2030). The tables in Appendix B of the noise report provide the volume comparison for all roadway segments across all the analysis years. Without exception, for each of the major roadways with direct influence within any portion of the proposed project, the maximum traffic volume occurs in either Year 2025 or Year 2030. Years 2025 and 2030; therefore represent the worst-case on-site traffic noise exposure for the project.

Because of the size of the off-site traffic impact analysis area (as listed in Appendix B of the noise report) and the number of associated roadway segments, a preliminary screening analysis[2] was done to estimate the relative increase in traffic noise from the project. Using this preliminary screening analysis, it was found that none of the major roadway or freeway segments in the Chen Ryan traffic impact analysis would have an estimated increase in noise levels of two dB or more (either in the Existing plus Project scenario or the Future with Project scenarios). Therefore the roadways modeled in detail using the CadnaA model were limited to those adjacent to the Village Two project site (Olympic Parkway, La Media Road and Heritage Road).

The noise modeling utilized the current site plans and grading elevations available from the project designers; off-site modeling used elevations from Google Earth; and the traffic speeds were the posted speed limits (for existing roadways) or the presumed speed limits for future roadways based upon roadway type (i.e., 40 mph for the Heritage Road extension south of

[2] Using the following basic relation: Delta = $10*\text{Log}(V_2/V_1)$, where Delta is the change in noise level, V_2 is the "new" volume, and V_1 is the "prior" volume. Ref: Harris, 1991

Olympic Parkway). The assumed traffic mix for the arterials was 95% autos, 2% medium trucks (including busses), 2% heavy trucks and 1% motorcycles.

To evaluate noise exposure for future residential lots located within the project area, location points representing noise receivers were placed in the yard area of selected lots (see Figures 5.4-3 and 5.4-4 for noise receiver locations). In general, two receiver points (one at a height of five feet above the future, graded elevation and one at a height of 15 feet (in order to approximate the noise level at the second-floor façade) were specified to represent each block of approximately 4–7 side-by-side lots along the frontage of each major roadway within/adjacent to the project site. Upon completion of a run of the model, the noise exposure level is identified for each receiver point. Using this method, residential zones along each of the major roadways were assessed to determine if off-site traffic-related noise exposure could exceed the 65 dB CNEL exterior noise criterion at on-site residences.

Olympic Parkway provides access from Interstate 805 and SR-125 to Village Two, and is aligned along the northern boundary of the development portion of the Village. Olympic Parkway under the Year 2025 Plus Project scenario would carry up to 52,000 ADT (average daily traffic) adjacent to Village Two, and up to 39,300 ADT adjacent to Village Two in the Year 2030 Plus Project scenario. Residences are planned at the northern boundary of the development area, which are adjacent to Olympic Parkway. Modeled noise levels for representative noise-sensitive receptors are summarized in Table 7 (Year 2025 with Project) and Table 8 (Year 2030 with Project) of the noise report (Appendix D). The traffic noise contours (Years 2025 and 2030 with Project) for Village Two are shown in Figures 5.4-3 and 5.4-4, respectively. As shown, the first row of homes closest to Olympic Parkway could be exposed to noise levels ranging to 67 dB CNEL from future traffic. This noise level associated with future Olympic Parkway traffic volumes would exceed the exterior noise criterion of 65 dB CNEL. Therefore, this noise level would be a potentially significant impact and mitigation is required (MM-NOI-1).

Heritage Road would extend southward from Olympic Parkway through Village Two. Heritage Road is a major arterial forecast to carry up to 47,700 ADT through Village Two in Year 2025 and up to 53,800 ADT through Village Two in 2030. Modeled noise levels for representative noise-sensitive receptors are summarized in Tables 7 and 8 of the noise report (Appendix D). The traffic noise contours (Years 2025 and 2030 with Project) for Village Two are shown in Figures 5.4-3 and 5.4-4. As shown, the first row of homes aligned closest to Heritage Road could be exposed to noise levels ranging to 62 dB CNEL from future traffic. This noise level associated with future Heritage Road traffic volumes would not exceed the exterior noise criterion of 65 dB CNEL. Therefore, impacts would be less than significant.

DUDEK

AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 5.4-2

Modeled Roadway Segments

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

Document Path: Z:\Projects\j678201\MAPDOC\MAPS\Supp EIR Figs\Section 5\Section 5.4 Noise\Fig 5.4-2 Modeled Rd Segments.mxd

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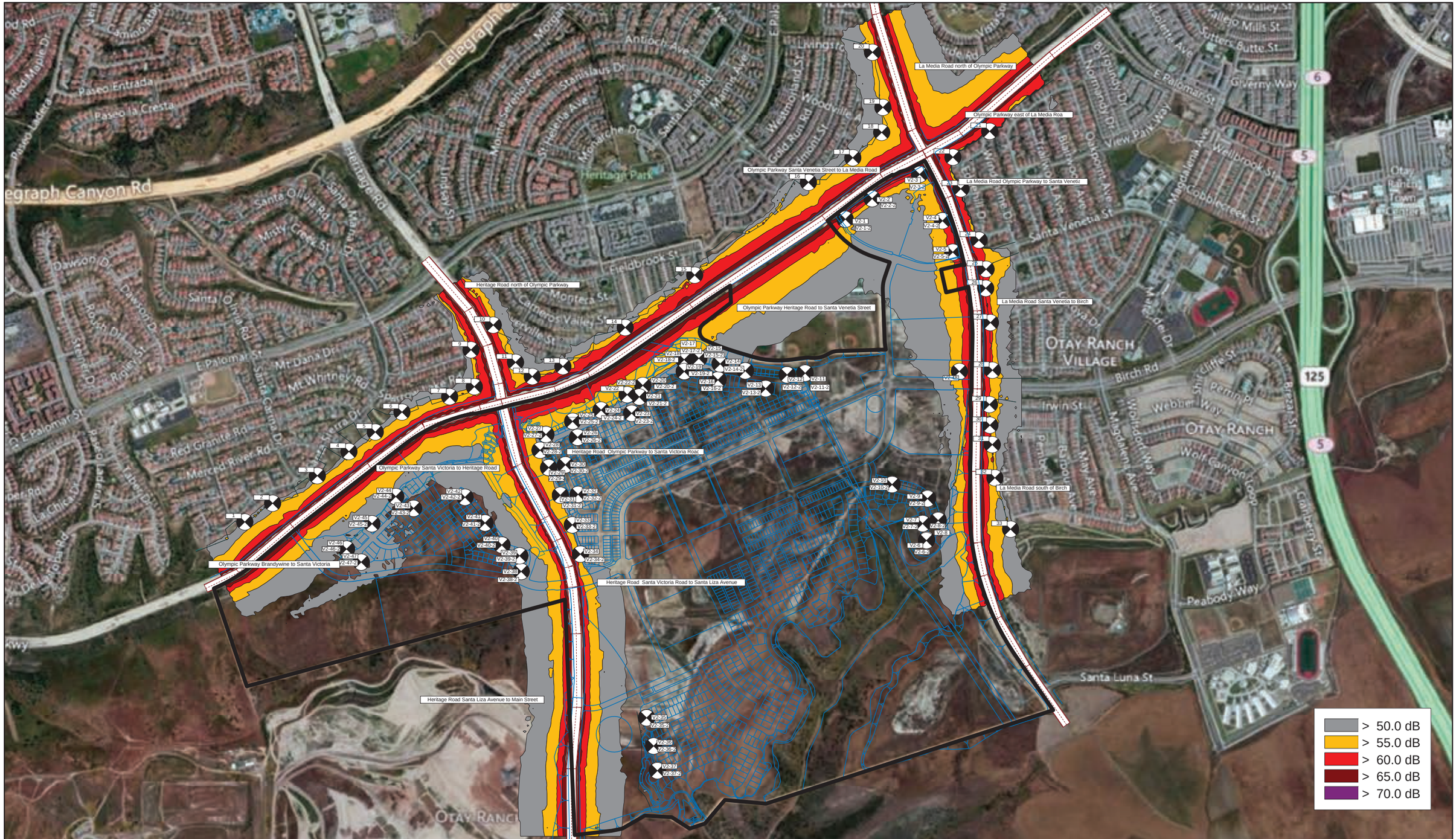

DUDEK

SOURCE: DUDEK 2014

FIGURE 5.4-3

Village Two Predicted Traffic Noise Contours (dB CNEL) Future (Year 2025) with Project

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

Document Path: Z:\Projects\j672\2011\MAP\DOC\MAPS\Supp EIR Figs\Section 5\Section 5.4 Noise

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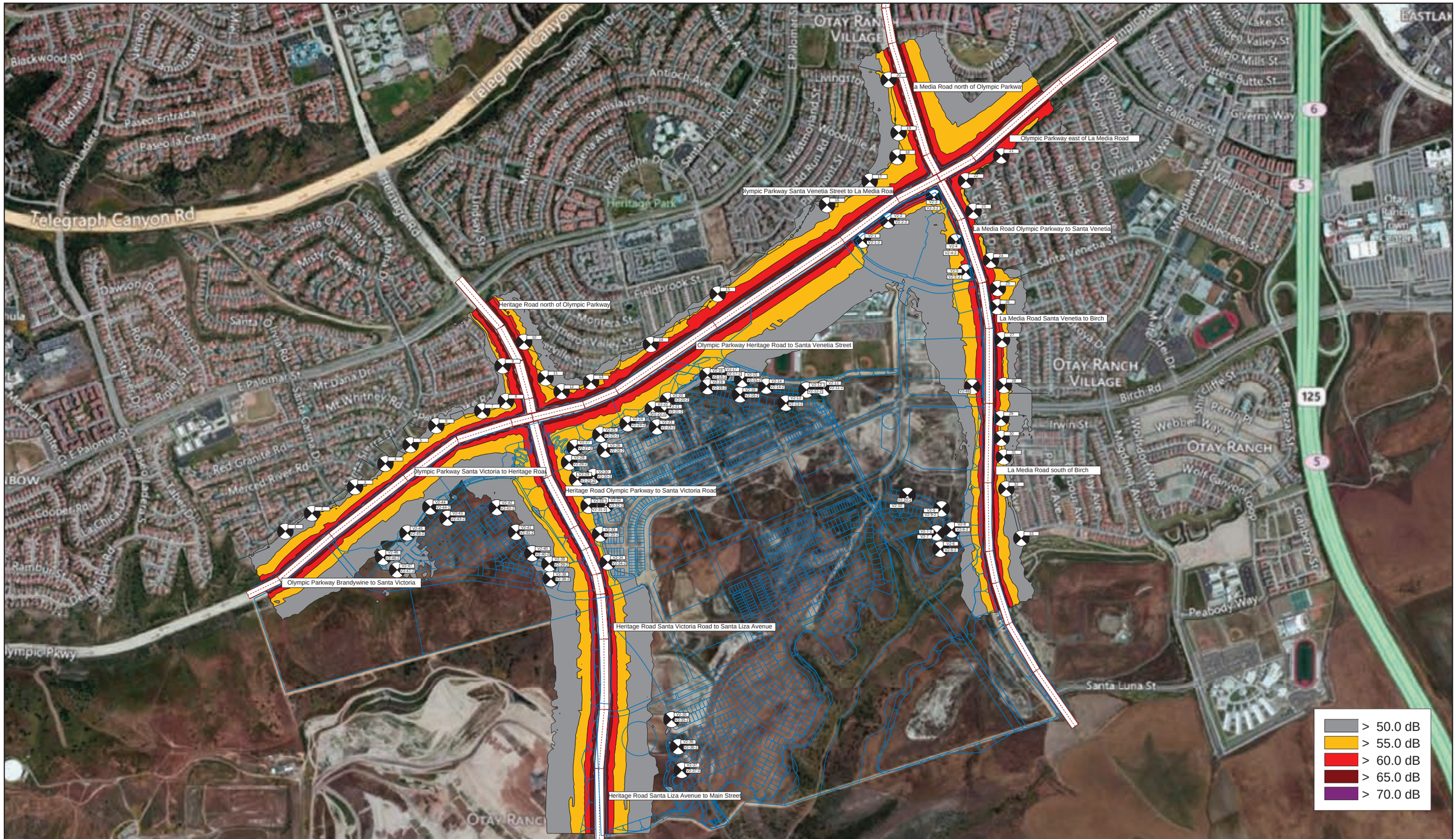

DUDEK

SOURCE: DUDEK 2014

FIGURE 5.4-4

Village Two Predicted Traffic Noise Contours (dB CNEL) Future (Year 2030) with Project

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La Media Road is located along the eastern boundary of Village Two. Currently La Media Road terminates at Santa Luna Street, but by Year 2030 it would extend southward to Main Street. La Media Road is a major arterial forecast to carry up to 41,800 ADT adjacent to Village Two in 2025 and up to 33,100 ADT adjacent to Village Two in 2030. Modeled noise levels for representative noise-sensitive receptors are summarized in Tables 7 and 8 of the noise report (Appendix D). The traffic noise contours (Years 2025 and 2030 with Project) for Village Two are shown in Figures 5.4-3 and 5.4-4. As shown, the first row of homes aligned closest to La Media Road could be exposed to noise levels ranging to 64 dB CNEL from future traffic. This noise level associated with future La Media Road traffic volumes would not exceed the exterior noise criterion of 65 dB CNEL. Therefore, impacts would be less than significant impact.

Interior noise levels at residences adjacent to Olympic Parkway, Heritage Road and La Media Road would have the potential to exceed 45 dBA CNEL; therefore, a potentially significant impact related to interior noise levels would also occur and mitigation is required.

Receiver V2-48 represents a mixed-use land area; such an area could include retail commercial, outdoor dining/use areas or similar land uses. As shown in Table 7 of the noise report (Appendix D), the predicted noise level at this location would not exceed the City's 65 dB CNEL noise standard for outdoor dining/use areas, and would therefore be less than significant.

Off-Site Noise Impacts Associated with Project Traffic

Traffic related noise impacts, especially in the context of a master plan development analysis, must primarily evaluate the future noise environment resulting from long-range community build-out. This is performed using the traffic volumes anticipated from General Plan buildout, as assessed by the assigned project transportation engineer. Future project traffic volumes within the development are largely derived from the project itself, and are addressed by noise barriers and other measures (see Section 5.4.5, Mitigation Measures). With distribution of project generated trips onto the area roadway network off site, the noise contribution from project-related trips versus regional traffic tends to diminish.

To evaluate the change in noise level on existing off-site noise-sensitive receivers from project trip contributions, traffic noise modeling was performed using the CadnaA noise model. First, the approximate geometry and distance from the roadway centerline to the closest existing noise sensitive use located along each roadway segment of concern was determined from aerial imagery (Google Earth), and receiver numbers were assigned for each modeled sensitive receptor. The presence or absence of community perimeter walls and/or other intervening terrain was also accounted for in the CadnaA model, using aerial imagery (Google Earth). Next, existing traffic volume data (on an average daily trip basis) for each segment was entered into the model, using the posted speed limit for each road segment as the input speed for vehicles, and existing

noise levels were calculated. Thereafter, both existing and project traffic volume data was entered into the model and "with Project" noise levels determined. Lastly, the "Existing Plus Project" traffic volumes were compared with the existing volumes to determine whether the project increase would result in a significant impact. The results are presented in Table 5.4-6.

Table 5.4-6
Project Contribution to Off-Site Traffic Noise – Existing Plus Project
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Existing	*Existing + Project*	*dB Change*
Olympic Parkway Brandywine to Santa Victoria	1	55	56	1
	2	56	57	1
Olympic Parkway Santa Victoria to Heritage Road	3	58	58	0
	4	56	56	0
	5	55	56	1
	6	57	58	1
	7	59	60	1
	8	60	60	0
Heritage Road north of Olympic Parkway	9	57	58	1
	10	57	58	1
	11	55	56	1
Olympic Parkway Heritage Road to Santa Venetia Street	12	60	60	0
	13	61	61	0
	14	59	59	0
	15	54	54	0
Olympic Parkway Santa Venetia Street to La Media Road	16	55	55	0
	17	58	58	0
	18	60	60	0
La Media Road north of Olympic Parkway	19	58	58	0
	20	58	58	0
Olympic Parkway east of La Media Road	21	63	63	0
	22	62	63	1
La Media Road Olympic Parkway to Santa Venetia	23	60	60	0
	24	58	58	0
La Media Road Santa Venetia to Birch	25	59	60	1
	26	60	61	1
	27	59	60	1
	28	58	59	1
La Media Road south of Birch	29	55	56	1
	30	53	54	1
	31	51	52	1
	32	49	50	1
	33	45	46	1

Source: Dudek 2014

As shown above in Table 5.4-6, in all instances the addition of project traffic to the roadway network would result in an increase in the CNEL of one decibel or less. In the context of community noise, a change in sound level of one decibel or less is not readily detectable.

As mentioned previously, the City considers a noise impact to be significant if the existing condition is below 65 dB CNEL and with the addition of project conditions, the noise level then exceeds 65 dB CNEL. If the existing noise level is 65 dB CNEL or greater and the project impact increases the noise level by three dB or more (an audible increase), a significant impact would occur. The project would not cause noise levels to increase from below 65 dB CNEL to greater than 65 dB CNEL along any of the modeled existing off-site roadways with adjacent noise-sensitive land uses. In addition, the existing homes along the nearby segments of the roads shown in Table 5.4-6 already include sound walls designed to reduce the noise exposure from the adjacent roadway to 65 dB CNEL or less. These sound walls were previously constructed in anticipation of substantial increases in the traffic volume along these roadways. The traffic noise modeling conducted as part of this noise assessment accounts for the residential sound walls. The CNEL values depicted in Table 5.4-6 reflect the noise on the residential side of the sound walls along the residential property boundary. Because the noise level increase from the project would not be substantial and the resulting noise levels are below the applicable 65 dB CNEL threshold, off-site traffic noise impacts would be less than significant.

Noise Generation – Commercial and Industrial Land Uses

One commercial/mixed use site and three mixed use sites are designated for Village Two. These sites are envisioned to provide opportunities for neighborhood-oriented retail, such as grocery and convenience stores, services for residences including financial institutions, health clubs, insurance agencies, and restaurants. The mixed use sites are centrally located between residences and the school (S-2) and park site.

Sources of commercial noise typically include activities at loading/unloading docks and parking lots; heating/ventilation and air conditioning equipment (HVAC); maintenance activities; and additional truck traffic along adjacent roads.

Noise levels associated with the commercial activities would vary depending on the number of delivery trucks, loading dock areas and customer traffic generated by the commercial site, as well as the location of parking areas. Similarly, HVAC equipment noise would vary depending on the number and types of equipment selected. Typical HVAC equipment can result in noise levels that average between 50 and 65 dBA L_{eq} at 50 feet (City of Santa Ana 2010). Therefore, impacts from commercial land uses would be potentially significant and mitigation is required.

Industrial zones are designated along the east and west sides of Heritage Road south of Santa Victoria Road, near the southwest side of Village Two. The proposed industrial areas are encompassed within the buffer for the municipal landfill located west of the project boundaries. Because of the presence of the landfill along the proposed industrial use zone, the project industrial land uses are not anticipated to have noise impacts upon neighboring off-site areas and land uses. In other words, sanitary landfill operations are quasi-industrial themselves, and are not classified as noise-sensitive. Industrial land uses possess many of the same noise generating characteristics as commercial uses (loading/unloading docks and parking lots; HVAC equipment; maintenance activities; and additional truck traffic along adjacent roads), but often include manufacturing processes and materials handling operations with additional noise generation potential. These industrial activities would have the potential to result in average noise levels above the City's noise thresholds. Therefore, each proposed industrial development will be required to prepare a detailed acoustic evaluation as part of the development permit application review process to ensure elevated noise generation, which could adversely affect project residences to the south, are avoided. Therefore, impacts would be potentially significant and mitigation is required.

Parks and Recreation Related Noise

Six park sites are planned for Village Two. Visitors to the parks would participate in active and passive recreational activities. At any one location, the hourly average sound level associated with recreational noise is difficult to predict due to many variables. These factors include the type of recreational activity, the location of people and the amount and level of conversation and cheering. Based upon the most recent design drawings, three of the proposed parks would be separated from residences or other noise-sensitive land uses by a local roadway of approximately 60 feet or more. However, three of the parks (P-1, P-3, P-6B) would be located adjacent to residences. Thus, noise levels from the proposed parks could exceed 65 dB during daytime park operating hours. Therefore, impacts would be potentially significant and mitigation is required (MM-NOI-6).

According to the Chula Vista Municipal Code Section 2.66.270, some parks in the city are permitted to stay open as late as 10:30 p.m.; the noise threshold between 10:00 p.m. and 10:30 p.m. is lower (45 dB) and therefore there could be significant impacts after 10 p.m. It is likely that noise levels after 10:00 p.m. would generally be lower than those occurring during peak park activity hours; however, noise levels could exceed the 45 dB threshold. Therefore, impacts would be potentially significant and mitigation is required (MM-NOI-6).

School-Related Noise

Two elementary schools are designated for Village Two, one of which was approved as part of the 2006 EIR (S-1), and one of which is being proposed as part of this project (S-2). Schools are both noise-sensitive and noise generating. With respect to its position as a noise-sensitive land use, the relationship to major roadways within the project site is the primary determinant for whether potentially significant increased noise levels could occur at the school sites.

Proposed school site S-1 is located approximately at the center of the development area, bounded on all four sides by local roads (including Santa Victoria Road to the south). S-1 has already been analyzed as part of the 2006 EIR. School site S-2 is located south of Santa Victoria Road, and east of Heritage Road. A residential site (Neighborhood R-27) is planned to be to the north of S-2, and a park site (P-5) is planned to be to the south. Local roads are planned to be to the east and west sides for S-2. Traffic volume projections are not available for the roads bordering these school sites; therefore, future noise contours from roadway operations are not available. However, it is possible that future traffic volumes carried on one or more of these bordering roads could have an associated 65 dB CNEL contour that extends to the school sites. Therefore, traffic-related noise exposure levels within exterior use areas for the schools (i.e., playground, sports fields, athletic courts, etc.) could exceed the established noise standards, thereby resulting in potentially significant noise impacts. Due to potentially significant impacts, mitigation is required.

With respect to being a noise-generating land use, schools may generate noise from amplified noise such as bells and loudspeaker announcements. Bells or other announcement devices are classified as stationary non-emergency signaling devices by the city. The noise ordinance prohibits schools from sounding these devices for more than 120 seconds (2 minutes) continually in an hourly period, or intermittent sounding over a five-minute period in any hour. The elementary schools would comply with city noise standards and would not result in significant impact related to bells and loudspeaker announcements.

The elementary schools would each include recreational facilities in the form of a school playground. Noise from these facilities would be limited to daytime hours. The level of activity at these facilities during recess and afterschool activities is assumed to be similar to active use of the multi-purpose fields at the parks and recreation areas discussed above. Therefore, the schools would have the potential to generate noise levels up to 65 dBA at 50 feet.

The elementary school sites in Village Two have a roadway on each frontage of the school site, separating the school site from adjacent residential properties. The exceptions to this are the northern and southern boundaries of S-2, which are bordered by residential and parkland uses, respectively. For the portions of S-2 directly adjacent to land uses that present a potentially

significant impact, mitigation measures would reduce potential adjacency impacts to a less than significant level. For the frontages of the school sites separated by a roadway, the boundary roads have a minimum right-of-way width of 58 feet. Based upon the noise source data described above, and typical environmental (i.e., outdoor) attenuation rates for a point source, playground noise from the school would not be greater than 65 dB (L_{eq}) at the edge of the road right-of-way adjacent to residential property boundaries (the right-of-way edge is at not less than 58 feet from the playground, the playground noise would be 65 dB or less at 50 feet, or 8 feet within the right-of-way boundary). For comparison to the General Plan, the sound exposure level from the playground at 50 feet would be approximately 51 dB CNEL, which is within acceptable ranges. Therefore, school recreational noise impacts to NSLUs not immediately adjacent to S-2 would be less than significant.

Otay Ranch High School is an existing source of operational noise, and is located north of Village Two. Noise sources associated with Otay Ranch High School include bells, other signaling devices, and activities on the campus such as crowd noise and loudspeakers at football games. Bells and other signaling devices are classified as stationary non-emergency signaling devices by the City, and schools are prohibited in the noise ordinance from sounding these devices for more than 120 seconds continually in an hourly period or intermittent sounding over a five-minute period in any hour. Typically, the main sources of noise from high schools to the surrounding area are organized sports activities at the football stadium that involve amplified speakers and crowd noise. The football field is located on the southwest side of the campus; the nearest loudspeaker (one of six) is located approximately 140 feet north of the proposed residential uses in Neighborhood R-8C of Village Two. The field's "acoustic centroid"[3] is located approximately 320 feet from the nearest residential lot in Neighborhood R-8C.

The Noise Technical Report for Otay Ranch Villages 2 and 3, Planning Area 1B, and a Portion of Village 4 (RECON 2005) determined that the worst-case noise level for a championship game event at the Otay Ranch High School would be 71 dBA at a distance of 50 feet from each of the stadium loudspeakers located approximately 30 feet above the playing field. This type of event is considered a worst-case scenario for game noise because championship games generally include a full stadium of spectators. When the speakers were not in use, crowd noise was estimated to emit a noise level of approximately 65 dBA at 60 feet from the top of the stadium stands. Based on these estimates, football games currently generate a noise level of approximately 63 dB at the proposed multi-family residential used in Neighborhood R-8C when speakers are in use, and 50 dB when crowd noise is the primary noise source. Therefore, recreational activities at Otay Ranch High School would exceed the City's noise standard of 55

[3] The idealized point from which the various noise sources within an area could be said to be emanating from, derived by multiplying the nearest and farthest distances and taking the square root (California Department of Transportation, 2009)

dBA at the proposed project site. A potentially significant impact would occur and mitigation is required (MM-NOI-8).

MSCP Preserve

There are no operational noise significance thresholds for the Preserve; however, for purposes of consistency with construction noise requirements, the following analyzes the potential for operational noise levels that would exceed 60 dBA, which is the construction noise threshold for the Preserve during breeding season.

Following construction, the southernmost residences in Village Two would be located adjacent to MSCP Preserve area (OS-2). However, residences are not sources of substantial noise. Occasional maintenance activities would be required along the trail edge of development, such as vegetation and sediment removal; however, these activities would not require heavy construction equipment that would generate excessive noise. Occasional vehicle trips would not result in a substantial increase in noise levels. As described in the Preserve Edge Plan in the SPA Plans, a manual weeding program would be prepared for the Preserve edge. Occasional maintenance of the off-site utilities may require heavy equipment; however, such activities would be infrequent and temporary. The Chula Vista MSCP Plan states that infrastructure repairs and maintenance are allowable as needed in the MSCP Preserve. Maintenance would be subject to the MSCP requirement that, to the extent practicable, access for non-emergency routine maintenance would be limited during bird breeding seasons in areas where breeding and/or nesting activity may occur. Therefore, impacts would be less than significant.

Impacts From Operation of Off-Site Facilities

The Otay Valley Rock Quarry is located south of Village Two, approximately 0.8 mile from the project site. According to the EIR prepared for the proposed quarry reclamation plan amendment, daytime average noise levels along the perimeter of the quarry range from approximately 45 dBA to 55 dBA (City of Chula Vista 2011). Village Two and the quarry are separated by the planned Villages Three and Four. Operation of the quarry is generally not audible on the project site, as demonstrated by the ambient noise measurements taken at the site. Intermittent noise from particularly loud operations, such as blasting, may be occasionally audible on the project site. Due to the temporary and periodic nature of noise from the quarry operations, impacts would be less than significant to development in Village Two.

B. Expose persons to or generation of excessive groundborne vibration or groundborne noise levels.

Project-related construction activities have the potential to create groundborne vibration. Construction activities can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings founded on the soil in the vicinity of the construction site respond to these vibrations, with varying results ranging from no perceptible effects at the lowest levels, perceptible vibrations at moderate levels, and slight damage at the highest levels (Federal Transit Administration 2006). There are no businesses or institutions with highly sensitive equipment (such as hospitals, laboratories or printing presses) in the vicinity of the project. The nearest such institution would be the Sharp Chula Vista Medical Center, located approximately one mile from the project site. At one mile from the nearest construction activity, the facility would be located outside of the vibration screening distances for major construction activity (200 feet) and pile driving (600 feet). Therefore construction activity would not affect any off-site vibration-sensitive land use and impacts related to groundborne vibration during construction at off-site land uses would be less than significant.

The highest vibration levels during construction typically occur during pile-driving, blasting or demolition activities. Neither pile driving, blasting or demolition activities are anticipated as part of this project. Vibrations from smaller, rubber-tired trucks and other equipment would typically not result in perceptible or damage-inducing vibration levels beyond a distance of approximately 45 feet[4].

It should be noted that ground vibrations from construction activities do not often reach the levels that can damage structures or affect activities that are not vibration-sensitive, although the vibrations may be felt by nearby persons in close proximity and result in annoyance (FTA 2006). Additionally, the Village Two development would consist of new buildings constructed in accordance with all building codes and would not be susceptible to vibration damage. Vibration impacts would be temporary and would cease following construction. Thus, the potential for on-site impacts from vibration would be less than significant.

[4] Assumes vibration levels from a loaded truck (86 VdB at reference distance of 25 feet). Resulting vibration level at a distance of 45 feet would be approximately 78 VdB, which is below the FTA criteria for Type 2 (residential) land uses of 80 VdB for infrequent events.

C. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Noise effects of the project would, for the most part, be confined to the project area and are evaluated on a project-specific basis. Long-term on-site activities associated with the project would not have a regional effect upon community noise levels, and therefore need not be considered in combination with approved or proposed projects in the region. The one exception is the project's contribution to traffic-related noise levels, which extend beyond the site boundaries, and which must be considered in the context of proposed projects in the region. The project's contribution to cumulatively significant noise impacts is presented in Tables 5.4-7 and 5.4-8. The methodology again uses noise traffic modeling to compare the resulting noise levels from Year 2025 and Year 2030 traffic volumes alone, versus Year 2025 and Year 2030 Plus Project traffic volumes.

Table 5.4-7
Project Contribution to Off-Site Traffic Noise – Year 2025
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Year 2025	*Year 2025 + Project*	*dB Change*
Olympic Parkway Brandywine to Santa Victoria	1	53	53	0
	2	53	54	1
Olympic Parkway Santa Victoria to Heritage Road	3	55	55	0
	4	52	53	1
	5	52	52	0
	6	54	54	0
	7	56	57	1
	8	59	59	0
Heritage Road north of Olympic Parkway	9	62	62	0
	10	62	62	0
	11	56	57	1
Olympic Parkway Heritage Road to Santa Venetia Street	12	60	60	0
	13	61	61	0
	14	59	59	0
	15	55	55	0
Olympic Parkway Santa Venetia Street to La Media Road	16	56	56	0
	17	58	59	1
	18	61	61	0
La Media Road north of Olympic Parkway	19	59	59	0
	20	60	60	0
Olympic Parkway east of La Media Road	21	63	63	0
	22	63	63	0
La Media Road Olympic Parkway to Santa Venetia	23	63	63	0
	24	61	61	0

Table 5.4-7
Project Contribution to Off-Site Traffic Noise – Year 2025
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Year 2025	*Year 2025 + Project*	*dB Change*
La Media Road Santa Venetia to Birch	25	63	63	0
	26	65	65	0
	27	64	64	0
	28	63	63	0
La Media Road south of Birch	29	64	64	0
	30	63	63	0
	31	61	61	0
	32	59	59	0
	33	54	55	1

Source: Dudek 2014

Table 5.4-8
Project Contribution to Off-Site Traffic Noise – Year 2030
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Year 2030	*Year 2030 + Project*	*dB Change*
Olympic Parkway Brandywine to Santa Victoria	1	52	52	0
	2	52	53	1
Olympic Parkway Santa Victoria to Heritage Road	3	53	53	0
	4	51	51	0
	5	51	51	0
	6	53	53	0
	7	55	56	1
	8	59	59	0
Heritage Road north of Olympic Parkway	9	62	62	0
	10	62	62	0
	11	56	57	1
Olympic Parkway Heritage Road to Santa Venetia Street	12	59	59	0
	13	60	60	0
	14	58	58	0
	15	54	54	0
Olympic Parkway Santa Venetia Street to La Media Road	16	55	55	0
	17	57	58	1
	18	60	60	0
La Media Road north of Olympic Parkway	19	58	58	0
	20	60	60	0

Table 5.4-8
Project Contribution to Off-Site Traffic Noise – Year 2030
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Year 2030	*Year 2030 + Project*	*dB Change*
Olympic Parkway east of La Media Road	21	63	63	0
	22	62	63	1
La Media Road Olympic Parkway to Santa Venetia	23	62	62	0
	24	60	60	0
La Media Road Santa Venetia to Birch	25	62	62	0
	26	64	64	0
	27	63	64	1
	28	62	63	1
La Media Road south of Birch	29	62	62	0
	30	61	61	0
	31	59	59	0
	32	57	57	0
	33	53	53	0

Source: Dudek 2014

As seen in Tables 5.4-7 and 5.4-8, the project's contribution to cumulative noise levels would be limited, a one dB increase at most, which by itself is not a discernible increase. Additionally as shown in Tables 5.4-7 and 5.4-8, the proposed project would not contribute any increase in noise levels at those locations equal to or exceeding the City's 65 dB CNEL noise standard for residential land uses under "Without Project" conditions. Therefore, the project's contribution to increased noise levels would not be cumulatively considerable and cumulative impacts would be less than significant. Consequently, mitigation is not required for the project's contribution to off-site noise impacts associated with General Plan build out traffic volumes.

D. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Because the development of the project would be a multi-year endeavor, portions of the development would be completed and occupied during the construction of subsequent portions (phases). Therefore, the occupied project phases have the potential to be impacted by noise from on-going construction activities. Additionally, construction of Village Two, which is adjacent to existing noise-sensitive uses (such as Otay Ranch High School, located to the north of the project), has the potential to result in short-term noise impacts at adjacent noise-sensitive land uses.

Noise from construction activity is generated by the broad array of powered, noise-producing mechanical equipment used in the construction process. This equipment ranges from hand-held pneumatic tools to bulldozers, dump trucks, and front loaders. The exact complement of noise-producing equipment that would be in use during any particular period has not yet been determined. Noisy construction activities could be in progress on more than one part of the project site at a given time. However, the noise levels from construction activity during various phases of a typical construction project have been evaluated, and their use provides an acceptable prediction of a project's potential noise impacts.

In order to assess the potential noise effects of construction, this noise analysis used data from an extensive field study of various types of industrial and commercial construction projects (U.S. Environmental Protection Agency 1971). Noise levels associated with various construction phases where all pertinent equipment is present and operating, at a reference distance of 50 feet, are shown in Table 5.4-9. Because of vehicle technology improvements and stricter noise regulations since the field study was published, this analysis uses the average noise levels shown in Table 5.4-9 for the loudest construction phase. This information indicates that the overall average noise level generated on a construction site could be 89 dBA at a distance of 50 feet during excavation and finishing phases. The noise levels presented are value ranges; the magnitude of construction noise emission typically varies over time because construction activity is intermittent and the power demands on construction equipment (and the resulting noise output).

Table 5.4-9
Typical Noise Levels from Construction Activities for Large Construction Projects

Construction Activity	Average Sound Level at 50 feet (dBA L_{eq})[a]	Standard Deviation (dB)
Ground Clearing	84	7
Excavation	89	6
Foundations	78	3
Erection	87	6
Finishing	89	7

[a] Sound level with all pertinent equipment operating.
Source: U.S. Environmental Protection Agency 1971; Dudek 2014

Noise levels generated by construction equipment (or by any point source) decrease at a rate of approximately six dBA per doubling of distance from the source (Harris 1979). Therefore, if a particular construction activity generated average noise levels of 89 dBA at 50 feet, the L_{eq} would be 83 dBA at 100 feet, 77 dBA at 200 feet, 71 dBA at 400 feet, and so on. This calculated reduction in noise level is based on the loss of energy resulting from the geometric spreading of the sound wave as it leaves the source and travels outward. Intervening structures that block the line of sight, such as buildings, would further decrease the resultant

noise level by a minimum of five dBA. The effects of molecular air absorption and anomalous excess attenuation would reduce the noise level from construction activities at more distant locations at the rates of 0.7 dBA and 1.0 dBA per 1,000 feet, respectively.

Impacts to Noise Sensitive Land Uses

With respect to the potential for construction of the project or phases to have nuisance noise impacts upon completed and occupied components within Village Two, a worst-case scenario would be a completed "block" or "neighborhood" separated only by an internal public roadway from another block that is under construction. The narrowest roadway proposed within Village Two has a right-of-way of 58 feet. Construction noise is attenuated by approximately six dB for every doubling of distance. Thus, assuming no shielding from intervening barriers or buildings, the maximum noise levels would be approximately 88 dBA at the residential property lines situated across a 58-foot roadway right-of-way from active construction. This noise level could intermittently occur for a few days when construction equipment is operating immediately adjacent to the opposite side of the roadway right-of-way from occupied homes. The remainder of the time the construction noise level would be less because the equipment would be operating in a large area farther away from the existing residences. When the construction equipment is operating, the existing residences could be disturbed by the activities. The generation of noise from construction activities during noise sensitive time periods upon completed and occupied components of the project would be a significant impact and mitigation is required. Additionally, construction noise could affect existing off-site noise-sensitive land uses. The nearest off-site noise-sensitive land uses relative to the project site is Otay Ranch High School, located adjacent to the project site boundary. As such, project generated construction noise would pose a potentially significant impact on noise-sensitive receptors if construction hour limitations are not imposed. However, with adherence to a restricted construction schedule dictating project-related site preparation and construction activities limited to the hours between 7:00 am–6:00 pm, Monday–Friday and between the hours of 8:00 am–6:00 pm Saturday, significant construction-related noise impacts could be avoided. Therefore, short-term construction impacts would be potentially significant to Otay Ranch High School and mitigation is required.

Impacts to MSCP Preserve Areas

The MSCP Subarea Plan regulates impacts to sensitive biological resources, including noise impacts. In general, the construction noise threshold for sensitive biological resources is an hourly average noise level of 60 dBA and no clearing, grubbing, and/or grading is permitted within the MSCP Preserve during the breeding season of the sensitive species present. Mitigation Measure 5.3-8 of the 2006 EIR includes requirements for pre-

construction surveys to determine the location of sensitive species and the establishment of noise buffers if species are present.

With implementation of the mitigation measures required in the 2006 EIR, the proposed project would have less than significant temporary noise impacts from construction activities. No additional mitigation is required.

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, expose people residing or working in the project area to excessive noise levels.

Development containing noise-sensitive land uses that is proposed in proximity to an airport has the potential to experience nuisance noise from airport operations. Typically, if the development proposal is located within the Airport Influence Area of an adopted Airport Land Use Plan (ALUP) or Airport Land Use Compatibility Plan (ALUCP), or within the vicinity of a private airstrip not subject to an airport land use plan, noise from airport operations is to be assessed for potential impacts upon the development.

Brown Field Airport is located along the north side of Otay Mesa Road, approximately 2.5 miles south of Village Two. The runways are oriented in an east/west direction.

The project site is subject to overflights of planes and helicopters taking off from Brown Field, which are audible on the project site and would be audible in the future. Overflights from Brown Field may be considered a nuisance to residents. In accordance with standard condition #46 in Section 5-300 of the City's Subdivision Manual, applicants are required to record an Airport Overflight Agreement against the property to the satisfaction of the Director of Development Services prior to recordation of any Final Map. This condition would run with the property, and as such, potential nuisance noise from aircraft overflights would be disclosed to future residents.

The San Diego County Airport Land Use Commission adopted and amended an ALUCP for Brown Field in 2010 (County of San Diego 2010). The 2010 ALUCP indicates that the project site (i.e., Village Two) is north and outside of the 60 and 65 dB CNEL noise contours for Brown Field. According to existing data for Brown Field, the project site would not be exposed to noise levels from aircraft operations that exceed 60–65 dB CNEL. In that 65 dB CNEL is an acceptable exterior noise exposure level for all of the land uses proposed within the project, airport noise exposure levels would be less than significant.

F. Be inconsistent with General Plan, GDP or other objectives and policies regarding noise thereby resulting in a significant physical impact.

City of Chula Vista General Plan

Since the time of the completion and certification of the 2006 EIR, the Chula Vista General Plan has been comprehensively updated from the previous 1989 version to the current 2005 version, or Chula Vista Vision 2020. The project proposes an increase in density, and to support that increase, would also include an additional elementary school, parkland, and CPFs. While specific land use patterns would be altered from the currently approved SPA Plan, the change in density would not interfere with the primary policies and goals of Village Two, the SPA Plan, and by extension the GDP and General Plan. The proposed project would promote the policies and goals of the General Plan including: minimizing noise impacts from adjacent land uses such as schools and residences; mitigation of interior noise levels; promotion of available noise attenuation technologies; implementation and enforcement of the City's noise ordinance; minimizing traffic noise through redistribution of traffic volume and calming measures; promotion of a quiet community; and ensuring that residents are not adversely affected by noise. The following noise objectives outlined in the General Plan include, but are not limited to, the following:

- **Objective PFS 10.3:** Require that proposed land uses adjacent to a school site be planned in such a manner as to minimize noise impacts and maximize compatibility between the uses.
- **Objective E 21:** Protect people from excessive noise through careful land use planning and the incorporation of appropriate mitigation techniques.
- **Objective E 22:** Protect the community from the effects of transportation noise.

A site-specific noise assessment was conducted for the proposed project prepared by Dudek (Dudek 2014), and mitigation is provided in the technical report that would reduce noise impacts to land uses within Village Two. All project development proposed under the proposed project would be built and designed according to the City of Chula Vista General Plan noise compatibility guidelines and noise regulations outlined in the City's municipal code. The proposed project's internal roadway network would be designed to minimize noise impacts from major roadways and site design would include mitigation to reduce noise impacts generated by mobile sources along roadways. Internal roadways would be designed to encourage slower traffic through posted speed limit signs, traffic calming measures such as corner sidewalk bulb outs, allowing bicycles to share the road right-of-way, and encourage pedestrian and bicycle modes of transportation. Therefore, the proposed project would not conflict with the General Plan and impacts would be less than significant.

Otay Ranch GDP

The purpose of the goals related to noise outlined in the Otay Ranch GDP, is to direct the identification of conditions under which noise occurs and provide general guidelines to protect Otay Ranch residents from the adverse effects of unwanted sound. Policy directions are provided to simultaneously control noise at its source, along its transmission path, and at the receiver site. The following noise goals outlined in the Otay Ranch GDP include, but are not limited to, the following:

- **Goal:** Promote a quiet community where residents live without noise that is detrimental to health and enjoyment of property.
- **Goal:** Ensure residents are not adversely affected by noise.

While specific land use patterns would be altered from the currently approved SPA Plan, the change in density would not interfere with the primary policies and goals of Village Two. The existing homes along the nearby segments of the roads include sound walls designed to reduce the noise exposure from the adjacent roadway to 65 dB CNEL or less. These sound walls were previously constructed in anticipation of substantial increases in the traffic volume along these roadways. Noise levels associated with the commercial activities would vary depending on the number of delivery trucks, loading dock areas and customer traffic generated by the commercial site, as well as the location of parking areas. Park maintenance activities would include the use of gasoline-powered mowers, trimmers, blowers, and edgers resulting in intermittent short-term temporary noise increases. Overall, the proposed project would comply with goals and objectives outlined in the Otay Ranch GDP to ensure that unwanted or loud noise does not disrupt the lives of those residing in Village Two. Therefore, the proposed project would not conflict with the Otay Ranch GDP and impacts would be less than significant.

5.4.4 Level of Significance Prior to Mitigation

On-Site Traffic Noise Exposure – Major Roadways

Olympic Parkway traffic volumes would exceed the exterior noise criterion of 65 dB CNEL, and would be considered a potentially significant impact. Mitigation for this potentially significant impact is provided, and involves construction of a sound wall along the top of the slope on the side of the lots adjacent to Olympic Parkway (see Section 5.4.5, Mitigation Measures, MM NOI-1).

The noise level associated with future Heritage Road traffic volumes would not exceed the exterior noise criterion of 65 dB CNEL, and would be considered a less than significant impact. No mitigation is required.

The noise level associated with future La Media Road traffic volumes would not exceed the exterior noise criterion of 65 dB CNEL, and would be considered a less than significant impact. No mitigation is required.

Interior noise levels at residences adjacent to Olympic Parkway, Heritage Road and La Media Road would have the potential to exceed 45 dBA CNEL; therefore, a potentially significant impact related to interior noise levels would also occur. Mitigation for this potentially significant impact is provided (see Section 5.4.5, Mitigation Measures, MM-NOI-2 and NOI-3).

Off-Site Noise Impacts Associated with Project Traffic

When full project build-out has occurred in Year 2030, the proposed project's contribution to overall traffic volumes on the completed roadway network would be insignificant. Additionally, the project would not cause noise levels to increase from below 65 dB CNEL to greater than 65 dB CNEL along any of the existing off-site roadways with adjacent noise-sensitive land uses. In addition, the existing homes along the nearby segments of the roads in Table 5.4-6 already include sound walls designed to reduce the noise exposure from the adjacent roadway to 65 dB CNEL or less; these sound walls were previously constructed in anticipation of substantial increases in the traffic volume along these roadways. Impacts associated with off-site noise would be less than significant.

Noise Generation – Commercial and Industrial Land Uses

Noise levels associated with the commercial activities would vary depending on the number of delivery trucks, loading dock areas and customer traffic generated by the commercial site, as well as the location of parking areas. Similarly, HVAC equipment noise would vary depending on the number and types of equipment selected. Typical HVAC equipment can result in noise levels that average between 50 and 65 dBA L_{eq} at 50 feet (City of Santa Ana 2010). To avoid potentially significant impacts related to commercial use noise, mitigation is provided (see Section 5.4.5, Mitigation Measures, MM-NOI-4).

These industrial activities would have the potential to result in average noise levels above the City's noise thresholds, and would be considered a potentially significant impact. Therefore, each proposed industrial development will be required to prepare a detailed acoustic evaluation as part of the development permit application review process to ensure elevated noise generation, which could adversely affect project residences to the south, are avoided. To avoid any potential impacts related to industrial use noise, mitigation is provided (see Section 5.4.5, Mitigation Measures, MM-NOI-5).

Parks and Recreation Related Noise

Noise levels from the proposed parks could exceed 65 dB during daytime park operating hours. Therefore, impacts would be potentially significant and mitigation is required. Additionally, the noise threshold between 10:00 p.m. and 10:30 p.m. is lower (45 dB) and therefore there could be significant impacts after 10 p.m. It is likely that noise levels after 10:00 p.m. would generally be lower than those occurring during peak park activity hours; however, noise levels could exceed the 45 dB threshold. Therefore, impacts would be potentially significant and mitigation is required. Mitigation in the form of a site-specific acoustic analysis is provided (see Section 5.4.5, Mitigation Measures, MM-NOI-6).

School-Related Noise

Traffic-related noise exposure levels within exterior use areas for the schools (i.e., playground, sports fields, athletic courts, etc.) could exceed the established noise standards, thereby resulting in potentially significant noise impacts. To avoid potentially significant noise impacts, mitigation is provided (see Section 5.4.5, Mitigation Measures, MM-NOI-7).

For the portions of school S-2 directly adjacent to land uses, a potentially significant impact would occur, MM-NOI-7 would reduce potential adjacency impacts to a less than significant level. For the frontages of the school sites separated by a roadway, impacts would be less than significant.

Recreational activities at Otay Ranch High School would exceed the City's noise standard of 55 dBA at the proposed project site, and a potentially significant impact would occur. To avoid potentially significant noise impacts, mitigation is provided (see Section 5.4.5, Mitigation Measures, MM-NOI-8).

MSCP Preserve

Residences are not considered substantial noise generators and operational edge landscaping would be subject to MSCP Plan requirements, therefore impact would be less than significant.

Temporary or Periodic Increase in Ambient Noise Levels

Project generated construction noise would pose a potentially significant impact on noise-sensitive receptors if construction hour limitations are not imposed. However, with adherence to a restricted construction schedule dictating project-related site preparation and construction activities limited to the hours between 7:00 am–6:00 pm, Monday–Friday and between the hours of 8:00 am–6:00 pm Saturday, significant construction-related noise impacts could be avoided.

To avoid potentially significant construction-related noise impacts, mitigation is provided (see Section 5.4.5, Mitigation Measures, MM-NOI-9).

With implementation of the mitigation measures required in the 2006 EIR, the less than significant impacts would occur to the MSCP Preserve.

Groundborne Vibration or Groundborne Noise Levels

Construction activity would not affect any off-site vibration-sensitive land use and any vibration impacts would be temporary and would cease following construction, therefore impacts related to groundborne vibration during construction at on- and off-site land uses would be less than significant.

Permanent Increase in Ambient Noise Levels

As seen in Tables 5.4-7 and 5.4-8, the project's contribution to cumulative noise levels would be limited, a one dB increase at most, which by itself is not a discernible increase. Additionally as shown in Tables 5.4-7 and 5.4-8, the proposed project would not contribute any increase in noise levels at those locations equal to or exceeding the City's 65 dB CNEL noise standard for residential land uses under "Without Project" conditions. Therefore, the project's contribution to increased noise levels would not be cumulatively considerable and cumulative impacts would be less than significant.

Airport Noise

The project site would not be exposed to noise levels from aircraft operations that exceed 60–65 dB CNEL. In that 65 dB CNEL is an acceptable exterior noise exposure level for all of the land uses proposed within the project, airport noise exposure levels would be less than significant.

In addition, applicants are required to record an Airport Overflight Agreement; this condition would run with the property, and as such, potential nuisance noise from aircraft overflights would be disclosed to future residents.

Consistency with General Plan, GDP or Other Objectives and Policies

The project would be consistent with all applicable noise policies found in the General Plan. The Otay Ranch GDP objectives and policies related to noise are consistent with those in the City's General Plan. Therefore, impacts would be less than significant**.**

5.4.5 Mitigation Measures

Preparation of the noise report included new analysis based on the traffic impact report prepared by Chen Ryan in September 2013. Changes in density and different land use distributions of the proposed project as compared to the current SPA Plan also formed the basis of analysis and recommended mitigation measures. Due to the provision of a noise technical study by Dudek in 2014 for the proposed project that includes mitigation measures based on its separate analysis from the previous noise technical study by RECON in 2005 prepared for the 2006 EIR, the majority of the previous mitigation measures included in the 2006 EIR are no longer relevant or applicable unless otherwise specified in the discussion above. The following mitigation measures, which are standard techniques utilized to mitigate noise, are recommended by the noise technical study prepared by Dudek in 2014 to address the identified potentially significant noise impacts.

MM-NOI-1 Prior to the approval of grading permits for residential development adjacent to Olympic Parkway at Neighborhood R-12A, the project applicant or its designee shall be responsible for the preparation of a subsequent acoustical study based on the final map design and implementation of any measures recommended as a result of the analysis to the satisfaction of the Development Services Director (or their designee). The study shall include, but not be limited to the following:

1. Location, height, and building material of the noise barriers in accordance with Figure 11 (Approximate Sound Wall Locations), contained in the Noise Assessment Technical Report for the Otay Ranch Village Two Comprehensive SPA Plan Amendment (Dudek 2014). The sound wall noise barriers shall be a minimum of six feet in height, must have a surface density of at least four pounds per square foot, and be free of openings and cracks. The wall may be constructed of acrylic glass, masonry material, earthen berm, or a combination of these materials. Heights are provided relative to final pad elevation. Required heights may be achieved through construction of walls, berms or a wall/berm combination;
2. A detailed analysis that demonstrates that barriers and/or setbacks have been incorporated into the project design, such that noise exposure to residential receivers placed in all useable outdoor areas, including multi-family residential patios and balconies, are at or below 65 dBA CNEL; and
3. Should pad grade elevations, lot configuration/site design, and/or traffic assumptions change during the processing of any final maps, the barriers shall be refined to reflect those modifications.

MM-NOI-2 Site-Specific Acoustic Analysis – Single-Family Residences. Concurrent with design review and prior to the approval of building permits for single-family residential development in Neighborhoods R-8A and R-8C (only units fronting Olympic Parkway), where the exterior noise level exceeds 60 dBA CNEL, the applicant shall prepare an acoustical analysis ensuring that interior noise levels due to exterior noise sources will be at or below 45 dBA CNEL. Design-level architectural plans shall be used to the exterior-to-interior transmissions loss for habitable rooms. Contingent upon the results of the interior acoustical analysis, units may need to include an air conditioning system to provide a habitable interior environment with the windows closed while meeting the interior standard of 45 dBA CNEL. The acoustical analysis shall be prepared to the satisfaction of the Director of Development Services (or their designee), and all required noise control measures identified in the acoustical analysis shall be made conditions of building permit issuance.

MM-NOI-3 Site-Specific Acoustic Analysis – Multi-Family Residences. Concurrent with design review and prior to the approval of building permits for multi-family areas where first and/or second floor exterior noise levels exceed 60 dBA CNEL and/or where required outdoor area (patios or balconies) noise levels exceed 65 dBA CNEL (all units fronting Heritage Road, Olympic Parkway, or La Media Road in Neighborhoods R-5A, R-6, R-12A, R-12B, and MU-3), the applicant shall prepare an acoustical analysis demonstrating compliance with California's Title 24 Interior Noise Standards (i.e., 45 dBA CNEL) and the City's Exterior Land Use/Noise Compatibility Guidelines for outdoor use areas (i.e., 65 dBA CNEL). Design-level architectural plans will be available during design review and will permit the accurate calculation of transmissions loss for habitable rooms. For these areas, it may be necessary for the windows to be able to remain closed to ensure that interior noise levels meet the interior standard of 45 dBA CNEL. Consequently, the design for buildings in these areas may need to include a ventilation or air conditioning system to provide a habitable interior environment with the windows closed based on the result on the interior acoustical analysis.

MM-NOI-4 As part of the site plan/development plan review process conducted in connection with future commercial, mixed residential, and commercial land use development applications submitted to the City, the applicant or its designee shall prepare site-specific acoustical analyses to the satisfaction of the Director of Development Services (or their designee) to ensure noise levels generated by the proposed use will comply with the City's General Plan noise standards (maximum exterior noise levels of 65 CNEL). The applicant for each development proposal shall be responsible to fund the required acoustical analysis, which shall be prepared to the

satisfaction of the Director of Development Services (or its designee). All required noise control measures identified in the acoustical analysis shall be made conditions of development approval.

MM-NOI-5 As part of the site plan/development plan review process conducted in connection with future industrial development applications submitted to the City, the applicant or its designee shall prepare a site-specific acoustical analysis to ensure noise levels generated by the proposed use will comply with the City's General Plan noise standards for residential property boundaries proximate to the industrial zone (maximum exterior noise levels of 65 CNEL). The applicant for each development proposal shall be responsible to fund the required acoustical analysis, which shall be prepared to the satisfaction of the Director of Development Services (or their designee). All required noise control measures identified in the acoustical analysis shall be made conditions of development approval.

MM-NOI-6 Site Specific Acoustic Analysis - Neighborhood Parks. Concurrent with the preparation of site-specific plan(s) and prior to the approval of a precise grading plan for the neighborhood parks within Village Two, the applicant shall prepare, or in the case the City being the lead on the preparation of the site-specific plan, the applicant shall fund the preparation of an acoustical analysis that shall be conducted to ensure that noise levels generated from any active uses at the neighborhood parks, such as sports fields and playgrounds, do not exceed the exterior noise limits of the receiving land use category as identified in the Chula Vista Noise Ordinance. The applicant shall be responsible for the implementation of any measures recommended as a result of the analysis. Measures to reduce noise levels may include, but would not be limited to or siting of structures or buildings to provide setbacks between active areas and adjacent noise sensitive uses. Final noise attenuation design shall be determined by a site-specific acoustic analysis conducted by a qualified acoustical engineer, to the satisfaction of the Development Services Director, or their designee.

MM-NOI-7 Concurrent with design review and prior to the approval of building permits for the elementary schools (S-1 and S-2), the applicant shall be responsible for the preparation of an acoustical analysis ensuring that noise levels at exterior use areas (i.e., playground, sports fields, athletic courts, etc.) will be below 65 dBA CNEL and implementation of any measures recommended as a result of the analysis. Measures to reduce noise levels may include, but would not be limited to, setback of structures from the roadway, installing acoustic barriers, or orienting outdoor activity areas away from roadways so that surrounding

structures provide noise attenuation. The acoustical analysis shall also address control measures for outdoor school activity noise and its effect upon immediately adjacent land uses, to ensure school activity related noise levels do not exceed 65 dB CNEL at exterior use areas of adjacent residential properties. The analysis shall also demonstrate that barriers or setbacks have been incorporated into the project design, such that, when considered with proposed construction specifications, ground level and upper story interior noise levels shall not exceed 45 dBA CNEL. Roof-ceiling assemblies making up the building envelope shall have a sound transmission class value of at least 50, and exterior windows shall have a minimum sound transmission class of 30 in compliance with the California Green Building standards code. The acoustical analysis shall be prepared to the satisfaction of the school district, and all required noise control measures identified in the acoustical analysis shall be made conditions of development approval.

MM-NOI-8 Prior to the approval of grading permits for residential development adjacent to Otay Ranch High School at Neighborhood R-8C, the project applicant or its designee shall be responsible for the preparation of a subsequent acoustical study based on the final map design and implementation of any measures recommended as a result of the analysis to the satisfaction of the Development Services Director (or their designee). The study shall include, but not be limited to the following:

1. Location, height, and building material of a noise barrier in accordance with Figure 11 (Approximate Sound Wall Locations, Neighborhood R-8C), contained in the Noise Assessment Technical Report for the Otay Ranch Village Two Comprehensive SPA Plan Amendment (Dudek 2014). The sound wall noise barriers shall be a minimum of six feet in height, must have a surface density of at least four pounds per square foot, and be free of openings and cracks. The wall may be constructed of acrylic glass, masonry material, earthen berm, or a combination of these materials. Heights are provided relative to final pad elevation. Required heights may be achieved through construction of walls, berms or a wall/berm combination;
2. A detailed analysis that demonstrates that barriers and/or setbacks have been incorporated into the project design, such that noise exposure to residential receivers placed in all useable outdoor areas, including multi-family residential patios and balconies, are at or below 65 dBA CNEL; and
3. Should pad grade elevations, lot configuration/site design, and/or traffic assumptions change during the processing of any final maps, the barriers shall be refined to reflect those modifications.

MM-NOI-9 All project-related site preparation and construction activities shall be limited to the hours between 7:00 am–6:00 pm, Monday –Friday, and between 8:00 am–6:00 pm Saturday. No construction activities shall occur on Federal holidays (e.g., Thanksgiving, July 4th, Labor Day, etc.). All maintenance of construction equipment shall be limited to the same hours. This language shall be added to the Project grading plans. Non-noise-generating construction activities such as interior painting are not subject to these restrictions.

5.4.6 Level of Significance After Mitigation

The mitigation measures listed in Section 5.4.5 would reduce potential noise impacts to less than significant.

5.4.7 Change in Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts and change the conclusions reached by the analysis of the 2006 EIR. Due to the addition of neighborhood R-8C and increase in traffic volume resulting from the proposed project, new impacts are identified and new mitigation measures are required.

5.5 BIOLOGICAL RESOURCES

This section describes the existing biological resources within the project area, analyzes the potential environmental effects of the Otay Ranch Village Two Comprehensive Sectional Planning Area (SPA) Plan Amendment (proposed project), and recommends mitigation measures where necessary to reduce or avoid significant effects. Findings are based on the Biological Resources Analysis for the Otay Ranch Village Two Comprehensive Sectional Planning Area Plan Amendment, City of Chula Vista, California (Biological Technical Report) (Dudek 2014) prepared by Dudek in March 2014. The report is included as Appendix E of this Environmental Impact Report (EIR).

This section tiers from the 2006 EIR (City of Chula Vista 2006). The 2006 EIR addressed the Village Two, Three, and portion of Four development's potential environmental effects. The analysis and discussion of biological resources issues contained in the 2006 EIR is incorporated by reference and available for public inspection upon request to the City.

The review of biological resources found in the Biological Technical Report focuses on the area within the proposed neighborhood R-8C, within which the biological resources have changed since the preparation of the 2006 EIR. The biological resources for Village Two were thoroughly described in the biological technical report prepared in support of the EIR (Dudek 2006). The project addressed by the 2006 EIR was compared to the current proposed project. Only those biological resources that were not fully addressed in the 2006 EIR are included in the following discussion and analysis. The proposed project's Biological Technical Report provides the results of a jurisdictional wetland delineation, habitat assessment for special-status species and provides avoidance and/or mitigation measures to reduce impact to a level below significance where appropriate.

All mitigation measures as provided in the 2006 EIR as amended are still relevant and would be implemented and included as part of the Mitigation Monitoring and Reporting Program for the project. Additional mitigation identified as part of this environmental review that were not previously identified in the 2006 SPA Plan EIR as amended are provided in Section 5.5.8.

5.5.1 Existing Conditions

5.5.1.1 Regulatory Setting

Federal Level

Federal Endangered Species Act

The federal Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.), provides for listing of endangered and threatened species of plants and animals and designation of critical habitat for listed animal species. The ESA also prohibits all persons subject to U.S. jurisdiction from "taking" endangered species, which includes any harm or harassment. Section 7 of the ESA requires that federal agencies, prior to project approval, consult the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) to ensure adequate protection of listed species that may be affected by the project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The list of bird species covered by the MBTA is extensive and is detailed in 50 CFR 10.13. The regulatory definition of "migratory bird" is broad and includes any mutation or hybrid of a listed species, including any part, egg, or nest of such a bird (50 CFR 10.12). Migratory birds are not necessarily federally listed endangered or threatened birds under the ESA. The MBTA, which is enforced by USFWS, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird or attempt such actions, except as permitted by regulation. The applicable regulations prohibit the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11).

Clean Water Act

The federal Water Pollution Control Act Amendments of 1972 (Clean Water Act; 33 U.S.C. 1251 et seq.), as amended by the Water Quality Act of 1987 (PL 1000-4), is the major federal legislation governing water quality. The purpose of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Discharges into waters of the United States are regulated under Section 404. Waters of the United States include (1) all navigable waters (including all waters subject to the ebb and flow of tides); (2) all interstate waters and wetlands; (3) all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, or natural ponds; (4) all impoundments of waters mentioned above; (5) all tributaries to waters mentioned above; (6) the

territorial seas; and (7) all wetlands adjacent to waters mentioned above. In California, the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) are responsible for implementing the Clean Water Act. Important applicable sections of the Clean Water Act are discussed below:

- **Section 303** requires states to develop water quality standards for inland surface and ocean waters and submit to the EPA for approval. Under Section 303(d), the state is required to list waters that do not meet water quality standards and to develop action plans, called total maximum daily loads, to improve water quality.
- **Section 304** provides for water quality standards, criteria, and guidelines.
- **Section 401** requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the Clean Water Act. Certification is provided by the respective RWQCB.
- **Section 402** establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. The NPDES program is administered by the RWQCB. Conformance with Section 402 is typically addressed in conjunction with water quality certification under Section 401.
- **Section 404** provides for issuance of dredge/fill permits by the U.S. Army Corps of Engineers (ACOE). Permits typically include conditions to minimize impacts on water quality. Common conditions include (1) ACOE review and approval of sediment quality analysis before dredging, (2) a detailed pre- and post-construction monitoring plan that includes disposal site monitoring, and (3) required compensation for loss of waters of the United States.

U.S. Army Corps of Engineers

The ACOE has primary federal responsibility for administering regulations that concern waters and wetlands in the project area. In this regard, the ACOE acts under two statutory authorities, the Rivers and Harbors Act (33 U.S.C., Sections 9 and 10), which governs specified activities in navigable waters, and the Clean Water Act (Section 404), which governs specified activities in waters of the United States, including wetlands and special aquatic sites. Wetlands and non-wetland waters, e.g., rivers, streams and natural ponds, are a subset of waters of the United States and receive protection under Section 404 of the Clean Water Act. The ACOE has primary federal responsibility for administering regulations that concern waters and wetlands in the project area under statutory authority of the Clean Water Act (Section 404). In addition, the regulations and policies of various federal agencies mandate that the filling of wetlands be avoided to the extent

feasible. The ACOE requires obtaining a permit if a project proposes placing structures within navigable waters and/or alteration of waters of the United States.

State Level

California Endangered Species Act

Similar to the federal ESA, the California ESA of 1970 provides protection to species considered threatened or endangered by the State of California (California Fish and Game Code, Section 2050 et seq.). The California ESA recognizes the importance of threatened and endangered fish, wildlife, and plant species and their habitats, and prohibits the taking of any endangered, threatened, or rare plant and/or animal species unless specifically permitted for education or management purposes.

California Fish and Game Code

The California Fish and Game Code regulates the handling and management of the state's fish and wildlife. Most of the code is administered or enforced by the California Department of Fish and Wildlife (CDFW; prior to September 2012, California Department of Fish and Game (CDFG)). One section of the code generally applies to public infrastructure projects such as the proposed project:

- **Section 1602** regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFW has jurisdiction over riparian habitats associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act of 1969, updated in 2012 (California Water Code, Section 13000 et seq.), provides for statewide coordination of water quality regulations. The act established the California SWRCB as the statewide authority, and nine separate RWQCBs were developed to oversee water quality on a day-to-day basis.

Local Level

City of Chula Vista Multiple Species Conservation Program Subarea Plan

The Multiple Species Conservation Program (MSCP) Subarea Plan is implemented through individual Subarea Plans adopted by each jurisdiction receiving Take authorization for covered

species. The Chula Vista MSCP Subarea Plan was approved by the City in May 2003 and received Take authorization in January 2005. The Subarea Plan provides for conservation of upland habitats and species through preserve design, regulation of impacts and uses, and management of the Preserve. The proposed project is considered a "Covered Project" under the Chula Vista MSCP Subarea Plan. "Covered Projects" are projects in which hard-line Preserve boundaries have been established pursuant to the approved Chula Vista Subarea Plan, and where conservation measures consistent with the MSCP have been specified as conditions of approval. The 100% Conservation Areas are either already in public ownership or will be dedicated to the Preserve as part of the development approval process for Covered Projects. Any portions of Covered Projects that are located within 100% Conservation Areas must be consistent with conditions allowing specific land uses within the Preserve as outlined in Section 6.0 of the Subarea Plan and are subject to the narrow endemic Species Policy (avoidance and minimization) and the Wetlands Protection Program.

Narrow Endemic Species Protection

The following specific provisions are applicable to the project area.

Development Areas within Covered Projects. Covered Projects provide protection of narrow endemic species through consideration of narrow endemic species in the Preserve design for those projects. Take of Covered Species, including narrow endemic species, for development areas within Covered Projects will be extended at the time of development approval. There are no limitations on impacts to narrow endemic species within the development areas of Covered Projects.

100% Conservation Areas within Covered Projects. Projects located within the 100% Conservation Areas of Covered Projects (i.e., within the Preserve) are limited to uses described in Sections 6.1, 6.2, and 6.3 of the Subarea Plan. Impacts to covered narrow endemic species from planned and future facilities located within the 100% Conservation Areas of Covered Projects will be avoided to the maximum extent practicable. Where impacts are demonstrated to be unavoidable, impacts will be limited to 5% of the total narrow endemic species population within the project area. Unavoidable impacts to narrow endemics are subject to the equivalency findings, limitations and provisions of Section 5.2.3.6, Equivalency Findings, of the Subarea Plan.

Wetlands Protection

As part of the CEQA review, development projects that contain wetlands will be required to demonstrate that impacts to wetlands have been avoided to the greatest extent practicable and, where impacts are nonetheless proposed, that such impacts have been minimized. For unavoidable impacts to wetlands within the development footprint, the mitigation ratio will be in accordance with the wetlands mitigation ratios identified in the Subarea Plan. The wetlands mitigation ratios provide a standard for each habitat type but may be adjusted depending on the

functions and values of both the impacted wetlands, as well as the wetlands mitigation proposed by the project. The City may also consider the wetland habitat type(s) being impacted and utilized for mitigation in establishing whether these standards have been met.

Otay Ranch General Development Plan

The Otay Ranch General Development Plan (GDP) was approved jointly by the City of Chula Vista and County of San Diego in 1993 for the future development of Otay Ranch. The Otay Ranch GDP was amended in December 2005 as part of the City's General Plan Update and most recently was amended in February 2013. The GDP establishes land use plans, design guidelines, objectives, policies, and implementation measures that apply to all portions of Otay Ranch while supporting a balance of housing, shops, workplaces, schools, parks, civic facilities, and open spaces. The majority of development is intended to be clustered in villages, with conveniently located "core" features and well-defined edges such as the Chula Vista greenbelt, open spaces, and wildlife corridors. The goals of the Otay Ranch GDP are to: (1) create a well-integrated, balanced land use; (2) reduce reliance on the automobile and promotion of alternative modes of transportation; and (3) diversify the economic base within Otay Ranch.

Otay Ranch Resource Management Plan

The Otay Ranch Resource Management Plan (RMP) was adopted in 1993 with the approval of the Otay Ranch General Development Plan to establish a permanent preserve within Otay Ranch. The RMP is comprised of two separate documents, the Phase 1 RMP and Phase 2 RMP (adopted in 1996 and revised in 2002). The Phase 1 RMP identifies Preserve areas within Otay Ranch, and contains policies regarding species and habitat conservation and long-term management of the Preserve. The Phase 2 RMP includes ranch-wide studies that were conducted pursuant to the Phase 1 RMP and provides additional detail on conveyance, management and funding (City of Chula Vista and County of San Diego 1993 and 2002). The purpose of the Otay Ranch Preserve is to protect and enhance biological, paleontological, cultural, and scenic resources. Plan objectives include biological diversity and promotion of the survival and recovery of native species and habitats. The RMP identifies an open space system of 11,375 acres to be dedicated within the Otay Ranch, targeting lands that include important resources such as vernal pools, coastal sage scrub habitat, coastal California gnatcatcher populations, and potential wetlands restoration areas. The Otay Ranch Preserve would also connect large areas of open space through a series of wildlife corridors, and cover portions of Salt Creek Canyon to Otay Valley. The preserve boundaries from the RMP have been incorporated into the adopted Otay Ranch GDP. The preserve/development boundary of the GDP is consistent with the objectives, policies, and criteria established in the RMP (City of Chula Vista and County of San Diego 1993 and 2002).

The Phase 2 Resource Management Plan (Phase 2 RMP or RMP 2), adopted in 1996 and revised in 2002, identified implementation measures that included procedures for dedicating parcels of land to the resource preserve and for determining the proportionate share for each village.

Land identified by the RMP as part of the 11,375-acre Otay Ranch Preserve is required to be conveyed to the preserve prior to the approval of final maps. The conveyance ratio (ratio of land to be dedicated per acre of development) is 1.188 acres dedicated for each developable acre that is final mapped. This ratio was established by the RMP 2. The RMP 2 identified 9,574 "developable acres" in Otay Ranch, which are defined as the total amount of developable acreage minus "common uses" (local parks, schools arterials, SR-125 and lands designated as a public use area) and "Limited Development Areas." In order for the conveyance of the entire 11,375-acre Otay Ranch Preserve, the RMP 2 calculated that 1.188 acres of preserve land must be dedicated for each developable acre (11,375 acres of preserve divided by 9,574 developable acres). The conveyance obligation is required to be met on a village-by village basis.

5.5.1.2 Project Description and Location

The overall project footprint is either the same or has been fully evaluated for biological resources in the 2006 EIR, except for the area within the R-8C land use area (proposed residential land use). Neighborhood R-8C does not exist under the current SPA Plan; the proposed R-8C land area was analyzed as open space in the 2006 EIR (refer back to Figure 4-4 in the Project Description) and is now proposed as residential development. This area was not included in the impacts evaluation in the previous analysis and thus is the subject of the Biological Technical Report and this EIR. The area within which R-8C is proposed is approximately 11 acres.

The proposed project is located within the City of Chula Vista in southwestern San Diego County, approximately 3.5 miles east of downtown Chula Vista and 13 miles southeast of Downtown San Diego. Village Two is generally bounded by Olympic Parkway to the north, La Media Road to the east, Village Three and Four to the south, and the Otay Landfill to the west. The R-8C area with which this analysis is concerned is an approximate 11-acre area that is located southeast of Olympic Parkway, west of La Media Road, and north of Santa Diana Road. The R-8C area is bounded by existing development or areas currently under construction. The current biological analysis focused on the area between the north and south facing manufactured slopes, southwest of Otay Ranch High School. The approximate center of the R-8C area is at longitude 117.99° West and latitude 33.62° North within Section 9, Township 18 South, Range 1 West on the U.S. Geological Survey (USGS) 7.5-minute Otay Mesa Quadrangle map.

The two soil types within the R-8C area, according to the San Diego County Soil Survey (Bowman 1973), include Salinas clay loam, 2–9% slopes; and Diablo clay 9–15%.

5.5.2 Methodology

Field Reconnaissance

A biological survey and wetland delineation was conducted for the study area by Dudek biologists Thomas Liddicoat and Emily Wier on November 4, 2013. The survey included mapping of existing vegetation communities and a detailed evaluation of potential jurisdictional wetlands or waters. A wildlife habitat assessment was conducted by Anita Hayworth Ph.D. on January 17, 2014, to review the potential for special status species within the study area. Additional vegetation mapping of the study area was conducted on January 21, 2014, by Vipul Joshi. Table 5.5-1 summarizes the survey information.

Table 5.5-1
Survey Conditions

Date	Time	Personnel	Survey Conditions
11/04/13	0920–1600	Thomas Liddicoat; Emily Wier	95–100% cloud cover, 1–5 miles per hour wind, 64° Fahrenheit
1/17/14	1030-1200	Anita Hayworth	0% cloud cover, 1–5 miles per hour wind, 78° Fahrenheit
1/21/14	0900-1200	Vipul Joshi	50% cloud cover, 1–5 miles per hour wind, 68° Fahrenheit

Source: Dudek 2014

Resource Mapping

The survey was conducted on-foot and all portions of the study area were thoroughly investigated to visually cover 100% of the project study area. A 100-scale (i.e., 100 feet = 1 inch) field map (Bing Maps 2013) with layers of aerial imagery was utilized to map vegetation communities, land cover types, and record any jurisdictional areas directly in the field.

The vegetation community and land cover mapping follows the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). In some cases, Oberbauer (2008) is also utilized as a reference, especially with regards to land cover types. Areas that supported at least 20% native plant species, but fewer than 50% native cover were mapped as a disturbed native vegetation community (i.e., disturbed mulefat scrub). Vegetation community and land cover mapping was conducted throughout the study area.

The wildlife assessment was conducted by walking through the study area, noting the quality and composition of the habitats present and recording species observed.

All plant and wildlife species encountered during the survey were identified and recorded directly into a field notebook. Those species that could not be identified immediately were brought into the laboratory for further investigation. Latin and common names for plant species

follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2013).

Wetland Delineation

The biological investigation included identifying resources within the proposed project boundary that may be subject to regulations and resource agencies as described in Section 5.5.1.1 above. Area R-8C is subject to resource agency jurisdiction over potential wetlands, waters, and wetland vegetation across the site.

A formal delineation of jurisdictional "waters of the United States," including wetlands, under the regulation of the ACOE, CDFW, and RWQCB was conducted for the proposed project. The delineation was performed in accordance with the methods prescribed in the 1987 *Wetland Delineation Manual, Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Environmental Laboratory 1987) and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (*Version 2.0*) (ACOE 2008).

Pursuant to the federal Clean Water Act, ACOE- and RWQCB-jurisdictional areas include those supporting all three wetlands criteria described in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation.

To assist in the determination of jurisdictional areas on site, data was collected at eight sampling points. Hydrology, vegetation, and soils were assessed and sampling data was collected on approved ACOE forms (see Appendix E). The project site was evaluated for evidence of an ordinary high water mark (OHWM), surface water, saturation, and wetland vegetation. The extent of any identified jurisdictional areas was determined by mapping the areas with similar vegetation and topography to the sampled locations. Jurisdictional features were determined and recorded directly in the field using a GPS unit. Subsequent to the field work, this GPS data was transferred to topographic base, and a GIS coverage was created.

Special Status Species Assessment

The potential for special status plant and wildlife species was evaluated based on the survey visits made to the study area and the past occurrence information presented in the 2006 biological technical report (Dudek 2006). The conclusions of the potential to occur for special status species are presented in Appendix E.

5.5.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a biological resources impact. Impacts to biological resources would be significant if the proposed project would:

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. Wildlife Service.

B. Have a substantial 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. Fish and 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 native resident or migratory fish or wildlife species or with established native resident or 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 Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

G. Be inconsistent with General Plan biological resource policies thereby resulting in a significant physical impact.

5.5.4 Impacts

5.5.4.1 2006 EIR Impacts Conclusions

The following conclusions related to biological resources as described in the 2006 EIR are applicable to the proposed project, specifically Village Two:

The implementation of the SPA Plan, including Village Two, would have a substantial adverse effect, both directly and through habitat modifications, on species identified as candidate, sensitive, and special status species in the Otay Ranch RMP, the City's Subarea Plan, and by CDFW and USFWS.

Implementation of Village Two would have a substantial adverse effect on riparian habitats and other sensitive natural communities identified in the Otay Ranch RMP, the City's Subarea Plan, and by CDFW and USFWS.

Village Two, would have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act, including jurisdictional waters and vernal pools.

Village Two would result in impacts to non-native grasslands and agricultural lands that would contribute to impacts to regional raptor foraging habitat.

Implementation of the SPA Plan, including Village Two, would result in significant and unmitigable impacts to regional raptor foraging habitat. However, incorporation of mitigation measures provided in the 2006 EIR would reduce the all other identified direct and indirect impacts to biological resources to below a level of significance.

All mitigation measures as provided in the 2006 EIR are still relevant and would be implemented and included as part of the Mitigation Monitoring and Reporting Program for the project. Additional mitigation identified as part of this environmental review that were not previously identified in the 2006 EIR are provided in Section 5.5.8 below.

5.5.4.2 Proposed Project Impact Analysis

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. Wildlife Service.

In general, there are few special status plant species with moderate to high potential to occur within the approximately 10-acre study area (Appendix E). The area was previously mapped as predominantly non-native land habitats or covers and over time, with runoff from adjacent development, has recently developed a wetland area. This recent occurrence would not be expected to contain special status plant species since it is a recent and man-cause occurrence. Much of the rest of the area has been graded or is composed of non-native species, similar to the original condition. In the 2006 rare plant surveys, no rare plants were detected in the study area. Regardless, based on the soils and habitat present, and the distribution and habitat requirements of special status plant species, the following have a moderate to high potential to occur within the study area: San Diego marsh-elder (*Iva hayesiana*) and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*). Both of these species are known to occur within drainages within this region of Chula Vista but also, both species are readily detectable at all times of year and were not observed within the drainage.

There is limited habitat value for wildlife in the study area due to the previous grading of slopes and the overall weedy nature of the vegetation (Appendix E). However, there is a small patch of southern willow scrub in conjunction with patches of mulefat scrub. There are a number of mid-sized willow trees within the southern willow scrub that potentially provide nesting opportunities for riparian bird species. With the addition of the adjacent mulefat scrub, there are also foraging opportunities. There is a moderate potential for the least Bell's vireo (*Vireo bellii pusillus*) to occur within the R-8C area during its breeding season (March 15 to September 15). The least Bell's vireo is a federal and state-listed endangered species and an MSCP covered species. Therefore, impacts are potentially significant and mitigation is required.

Other special status wildlife species with a moderate to high potential to occur within the study area include: western spadefoot (*Spea hammondi*), two-striped garter snake (*Thamnophis hammondii*), Cooper's hawk (*Accipiter cooperii*), yellow warbler (*Setophaga petechial brewsteri*), yellow-breasted chat (*Icteria virens*), and western bluebird (*Sialia mexicana*). The western spadefoot, two-striped garter snake, yellow warbler, and yellow-breasted chat are state Species of Special Concern. The Cooper's hawk is a state Watchlist species. The Cooper's hawk and western bluebird are MSCP Covered Species. Due to the small area and lower status of these species, impacts are considered less than significant.

In addition to the potential presence of riparian wildlife species, there is some non-native grassland present that may be used by grassland dwelling species. These include the following species: burrowing owl (*Athene cunicularia*), silvery legless lizard (*Anniella pulchra pulchra*), orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), California horned lark (*Eremophila alpestris*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). These species would be considered to have a moderate to high potential to occur within the study area. The burrowing owl, orange-throated whiptail, silvery legless lizard, Dulzura pocket mouse, and San Diego black-tailed jackrabbit are state Species of Special Concern. The California horned lark is a state Watchlist species. The orange-throated whiptail and burrowing owl are MSCP Covered Species. Due to the decline of the population of the burrowing owl within the region, impacts are potentially significant and require mitigation.

B. Have a substantial 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. Fish and Wildlife Service.

Vegetation Communities/Land Cover Types

Four vegetation communities and four land cover types were identified within the R-8C area which include: non-native grassland (NNG), mulefat scrub (MFS), disturbed mulefat scrub

(dMFS), freshwater marsh (FWM), southern willow scrub (SWS), open water (OW), developed land (DEV), disturbed land (DL). Table 5.5-2 provides the acreage of each vegetation community. The previous mapping that was prepared in 2006 (Dudek 2006) was updated and revised to provide the current conditions in the study area. A comparison of the vegetation communities from the previous mapping versus that prepared in 2013 is provided in Table 2.

Table 5.5-2
Existing Vegetation Communities

Vegetation Community	Current Acreage	Previous Mapping (2006)
Uplands		
Non-native grassland	1.81	6.78
Total uplands	*1.81*	*6.78*
Wetlands and Waters of the U.S.		
Mulefat Scrub	0.18	0.0
Disturbed Mulefat Scrub	0.24	0.0
Coastal and Valley Freshwater Marsh	0.14	0.0
Southern Willow Scrub	0.35	0.0
Open Water	0.05	0.0
Total wetlands/waters	*0.97*	*0.0*
Land Covers		
Disturbed Land	7.88	0.0
Developed		2.91
Agriculture		0.97
Total land covers	*7.88*	*3.88*
Total	**10.66**	**10.66**

Source: Dudek 2014

Jurisdictional Delineation

Results of the delineation indicate there are two types of regulated jurisdictional resources within the R-8C area including wetlands and non-wetlands waters of the United States.

The jurisdictional wetlands identified on site are defined by the ACOE manual (i.e., three parameters: hydrophytic vegetation, hydric soils, and hydrology) and predominantly follow the extent of mapped vegetation communities (either MFS, dMFS, SWS, or FWM). The jurisdictional wetlands are relatively permanent waters of the U.S. regulated under the joint jurisdiction of ACOE, RWQCB, and CDFW except for one area that is under the jurisdiction of CDFW only. During the site investigation water flows (approximately 1-foot wide 4 inches deep) were present in a meandering channel within vegetation.

Although not considered ACOE wetlands (i.e., not meeting all three parameters), the swale area mapped as DH-S and the OW are considered a non-wetland waters of the U.S. under the joint

regulation of ACOE, RWQCB, and CDFW. During the site investigation both areas contained ponded water and had an evident bed and bank.

All of the jurisdictional boundaries mapped during the investigation are spatially presented on Figure 5.5-1 and the corresponding acreages are provided in Table 5.5-3. The results of the eight data stations are presented in Table 5.5-3.

Table 5.5-3
Jurisdictional Areas

Jurisdictional Resource	Vegetation Community/Land Cover Type	Resource Agency Jurisdiction (Acres)		
		ACOE/RWQCB/CDFW	*CDFW*	*Grand Total*
Wetlands				
	Mulefat Scrub	0.18		0.18
	Disturbed Mulefat Scrub	0.19	0.05	0.24
	Freshwater Marsh	0.14		0.14
	Southern Willow Scrub	0.35		0.35
	Subtotal			*0.91*
Non-Wetland Waters of the U.S.				
	Open Water	0.05		0.05
	Disturbed Habitat Swale	0.01		0.01
	Subtotal			*0.06*
	Grand Total			**0.97**

Source: Dudek 2014

A small area of dMFS (dMFS-C) is characterized by Data Station 3 and is determined to not meet the three criteria for ACOE wetlands however it does support the hydrophytic vegetation parameter to define CDFW riparian wetlands as shown in Table 5.5.-4.

Table 5.5-4
Data Station Summary

Data Station	Wetland Determination Field Indicators			Determination	Jurisdiction
	Vegetation	*Hydric Soils*	*Hydrology*		
1 (DS-1A)	✓	✓	✓	Wetland	ACOE, RWQCB, CDFW
2 (DS-1B)	–	✓	–	Non-wetland	None
3 (DS-1C)	✓	–	✓	CDFW riparian	CDFW
4 (DS-1D)	✓	–	–	CDFW riparian	CDFW
5 (DS-2)	–	✓	–	Non-wetland	None
6 (DS-3A)	✓	✓	✓	Wetland	ACOE, RWQCB, CDFW
7 (DS-3B)	–	✓	–	Non-wetland	None
8 (DS-4)	–	–	–	Non-wetland	None

Source: Dudek 2014

The proposed project would directly impact wetlands vegetation communities and jurisdictional wetlands as outlined in Tables 5.5-2 and 5.5-3 through development of the R-8C area and would be subject to the relevant resource agency's regulations. These vegetation communities and wetlands include: mulefat scrub, disturbed mulefat scrub, freshwater marsh, southern willow scrub, open water, and disturbed habitat swale. Therefore, impacts to these vegetation communities and wetlands would be significant, and mitigation is required.

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.

See response to Threshold (B) above. The proposed project would impact up to 0.97 acres of jurisdictional wetlands in the R-8C area. Therefore, impacts would be significant and mitigation is required.

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Impacts could occur to migratory birds utilizing nesting habitat identified within the R-8C area. The nesting and breeding season for migratory birds is January 15 to August 31. If construction should occur within that time, impacts would potentially be significant and mitigation is required.

E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Development of the proposed project within the R-8C area would not conflict with any local policies or ordinances beyond what was previously analyzed in the 2006 EIR. No additional impacts would occur.

F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

The project would not alter the proposed preserved boundary located within Wolf Canyon subject to the local Habitat Conservation Plan (HCP) analyzed as part of the 2006 EIR. No additional impacts would occur.

G. Be inconsistent with General Plan biological resource policies thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The Chula Vista General Plan and Otay Ranch GDP have been updated since the time of the drafting and certification of the 2006 EIR. Governing policies of the General Plan include conservation of sensitive biological resources through implementation of the MSCP Subarea plan and establishment of an open space preserve system. The following objective is outlined in the General Plan relevant to biological resources:

- **Objective E 1:** Conserve Chula Vista's sensitive biological resources.

The proposed project would only differ in development footprint through the addition of the R-8C land use area. The development of this land would not interfere with the open space preserve system that would be established in Wolf Canyon as discussed in the 2006 EIR. Therefore, the proposed project would be consistent with the General Plan and GDP and impacts would be less than significant.

Otay Ranch GDP

The GDP establishes land use plans, design guidelines, objectives, policies, and implementation measures that apply to all portions of Otay Ranch while supporting a balance of housing, shops, workplaces, schools, parks, civic facilities, and open spaces. The majority of development is intended to be clustered in villages, with conveniently located "core" features and well-defined edges such as the Chula Vista greenbelt, open spaces, and wildlife corridors. The goals of the Otay Ranch GDP are to: (1) create a well-integrated, balanced land use; (2) reduce reliance on the automobile and promotion of alternative modes of transportation; and (3) diversify the economic base within Otay Ranch. The following goals are included in the Otay Ranch GDP related to biological resources:

- **Goal:** Establishment of an open space system that will become a permanent preserve dedicated to the protection and enhancement of the biological, paleontological, cultural resources (archaeological and historical resources), flood plain, and scenic resources of Otay Ranch, the maintenance of long-term biological diversity, and the assurance of the survival and recovery of native species and habitats within the preserve, and to serve as the functional equivalent of the County of San Diego Resource Protection Ordinance.
- **Goal:** Environmentally sensitive development should preserve and protect significant resources and large open space areas.

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FIGURE 5.5-1

Vegetation Communities and Wetland Delineation

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As described above, the proposed project would only differ in development footprint through the addition of the R-8C land use area. The development of this land would not interfere with the open space preserve system that would be established in Wolf Canyon as discussed in the 2006 EIR. The proposed project would conserve Chula Vista's sensitive biological resources to the extent feasible, as well as implement minimization and avoidance measures included in the Chula Vista MSCP Subarea Plan. Overall, the proposed project would be consistent with Otay Ranch GDP goals associated with biological resources and impacts would be less than significant.

5.5.5 Level of Significance Prior to Mitigation

Impacts to wetlands and wetland vegetation communities are significant and require mitigation. Impacts to these jurisdictional areas resulting from the implementation of the proposed project are subject to the regulations and requirements of the wetland resource agencies. Due to the moderate potential for least Bell's vireo within the vegetation in the drainage, impacts to the species, if present, also are significant and require mitigation.

5.5.6 Mitigation Measures

In addition to mitigation identified in the 2006 EIR, the following mitigation measures are identified in the Biological Technical Report and would be implemented as part of the proposed project:

MM-BIO-1 A total of up to 0.91 acres of wetland and 0.06 acre of waters of the U.S./State within the Project may be impacted within the Development Area. Prior to issuance of land development permits, including clearing, grubbing, and grading permits for areas that impact jurisdictional waters, the Project Applicant shall provide evidence that all required regulatory permits, such as those required under Section 404 of the federal Clean Water Act, Section 1600 of the California Fish and Game Code, and the Porter Cologne Water Quality Act.

MM-BIO-2 Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the developer(s) shall prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the City, ACOE, and CDFW. This plan shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures. Areas under the jurisdictional authority of ACOE and CDFW shall be delineated on all grading plans. Mitigation areas shall occur within the Otay River watershed or other suitable location in accordance with the Wetlands Mitigation and Monitoring Plan to the satisfaction of the City, ACOE, and CDFW. The Project Applicant shall also be required to implement the Wetlands Mitigation and Monitoring Plan subject to the oversight of the City, ACOE, and CDFW.

MM-BIO-3 To avoid any direct impacts to raptors and/or any migratory birds protected under the MBTA, removal of habitat that supports active nests on the proposed area of disturbance should occur outside of the breeding season for these species (January 15 to August 31). If removal of habitat on the proposed area of disturbance must occur during the breeding season, the Project Applicant shall retain a City-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, and the results must be submitted to the City for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the City, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's Mitigation Monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

MM-BIO-4 Due to the moderate potential for least Bell's vireo to be present within the drainage, no construction will occur within 300 feet of the riparian habitat within the drainage during the vireo breeding season (March 15 to September 15). If construction, including clearing, grubbing, grading, must occur during the breeding season, protocol surveys will be conducted for least Bell's vireo. The survey shall be performed to the satisfaction of the Development Services Director (or their designee) by a qualified biologist familiar with the City's MSCP Subarea Plan. The results of the pre-construction survey must be submitted in a report to the Development Services Director (or their designee) for review and approval prior to the issuance of any land development permits and prior to initiating any construction activities. If the least Bell's vireo is detected, a minimum 300-foot buffer delineated by orange biological fencing shall be established around the habitat to ensure that no work shall occur within the occupied habitat from March 15 through September 15 and on-site noise reduction techniques shall be implemented to ensure that construction noise levels do not exceed 60 dB(A) L_{eq}-h at the location of any occupied sensitive habitat areas. The Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on-site-specific conditions. If the results of the pre-construction survey determine that the survey area is unoccupied, the work may commence at the discretion of the Development Services Director (or their designee) following the review and approval of the pre-construction report.

MM-BIO-5 Prior to issuance of any land development permits (including clearing and grubbing or grading permits), the project Applicant shall retain a City-approved biologist to conduct focused pre-construction surveys for burrowing owls. The surveys shall be performed no earlier than 30 days prior to the commencement of any clearing, grubbing, or grading activities. If occupied burrows are detected, the City-approved biologist shall prepare a passive relocation mitigation plan subject to the review and approval by the Wildlife agencies and City including any subsequent burrowing owl relocation plans to avoid impacts from construction-related activities.

MM-BIO-6 Prior to recordation of each Final Map, the Applicant shall convey land within the Otay Ranch Preserve to the Otay Ranch Preserve Owner/Manager (POM) or its designee at a ratio of 1.188 acres for each acre of development area, as defined in the RMP. Access for maintenance purposes shall also be conveyed to the satisfaction of the POM, and each tentative map shall be subject to a condition that the Applicant shall execute a maintenance agreement with the POM stating that it is the responsibility of the Applicant to maintain the conveyed parcel until the Preserve CFD has generated sufficient revenues to enable the POM to assume maintenance responsibilities. The Applicant shall maintain and manage the offered conveyance property consistent with the RMP Phase 2 until the Preserve CFD has generated sufficient revenues to enable the POM to assume maintenance and management responsibilities.

MM-BIO-7 Prior to the POM's formal acceptance of the conveyed land in fee title, the project Applicant shall prepare, to the satisfaction of the POM, Area Specific Management Directives (ASMDs) for the associated conveyance areas. The ASMDs shall incorporate the guidelines and specific requirements of the Otay Ranch RMP plans and programs, management requirements of Table 3-5 of the MSCP Subregional Plan and information and recommendations from any relevant special studies. Guidelines and requirements from these documents shall be evaluated in relationship to the Preserve configuration and specific habitats and species found within the associated conveyance areas and incorporated into the ASMDs to the satisfaction of the POM.

5.5.7 Level of Significance After Mitigation

With incorporation of the mitigation measures provided above, all impacts to wetlands and wildlife species would be reduced to a level below significance.

5.5.8 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts and change the conclusions of the 2006 EIR. Neighborhood R-8C, which is proposed as residential development under the project, was previously analyzed as open space in the 2006 EIR. New impacts are identified and new mitigation is required.

5.6 WATER QUALITY AND HYDROLOGY

This section describes the hydrologic setting within the project area and evaluates the potential for changes in drainage, runoff, and water quality resulting from implementation of the proposed project. The 2006 EIR (City of Chula Vista 2006) analyzed the potential impacts and identified mitigation measures related to hydrology and drainage for the entire Village Two area. The 2006 EIR concluded that implementation of the SPA Plan for Village Two would result in significant and mitigable environmental impacts to hydrology and drainage. The analysis and discussion of hydrology contained in the 2006 EIR are incorporated by reference. The discussion found in this section is also based on the Drainage Studies and Water Quality Technical Reports for Village Two North, South and R-15c, and West (hydrology reports) (Hunsaker and Associates 2013a, 2013b, 2013c, 2013d, 2013e, and 2013f) that were prepared by Hunsaker and Associates. The complete reports are contained in Appendix F of this EIR.

5.6.1 Existing Conditions

5.6.1.1 Regulatory Framework

Federal Level

Clean Water Act

The U.S. Environmental Protection Agency (EPA) regulates water quality under the Clean Water Act (CWA) (also known as the Federal Water Pollution Control Act). Enacted in 1972 and significantly amended in subsequent years, the Clean Water Act is designed to restore and maintain the chemical, physical, and biological integrity of waters of the United States. The Clean Water Act provides the legal framework for several water quality regulations, including the National Pollutant Discharge Elimination System (NPDES). The NPDES program characterizes receiving water, identifies harmful constituents, targets potential sources of pollutants and implements a comprehensive stormwater management program. Construction and industrial activities are typically regulated under statewide general permits that are issued by the State Water Resources Control Board (SWRCB). The Regional Water Quality Control Board (RWQCB) also issues waste discharge requirements that serve as NPDES permits under the authority delegated to the RWQCBs under the CWA.

The Clean Water Act requires NPDES permits for the discharge of pollutants to waters of the United States from any point source. In 1987, the Clean Water Act was amended to require that the EPA establish regulations for permitting of municipal and industrial stormwater discharges under the NPDES permit program. In November 1990, under Phase I of the urban runoff management strategy, the EPA published NPDES permit applicant requirements for municipal, industrial and construction stormwater discharges. These requirements are

implemented through permits issued by the SWRCB or the local RWQCB in which the project is located (California RWQCB San Diego Region, herein San Diego RWQCB) and/or the governing municipality where the project is located.

The EPA delegated its responsibility for administration of portions of the Clean Water Act to state and regional agencies. The Clean Water Act requires states to adopt water quality standards for receiving water bodies and to have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of constituents, such as lead, suspended sediment, and fecal coliform bacteria, or narrative statements that represent the quality of water that supports a particular use.

National and State Safe Drinking Water Acts

The federal Safe Drinking Water Act, established in 1974, is administered by the EPA and sets drinking water standards throughout the country. The drinking water standards established in the act, as set forth in the Code of Federal Regulations (CFR), are referred to as the National Primary Drinking Water Regulations (Primary Standards; 40 CFR 141), and the National Secondary Drinking Water Regulations (Secondary Standards; 40 CFR 143). According to the EPA, the Primary Standards are legally enforceable standards that apply to public water systems. The Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects in drinking water. The EPA recommends the Secondary Standards for water systems but does not require systems to comply. California passed its own Safe Drinking Water Act in 1986 that authorizes the state's Department of Health Services to protect the public from contaminants in drinking water by establishing maximum contaminant levels (as set forth in the California Code of Regulations (CCR), Title 22, Division 4, Chapter 15) that are at least as stringent as those developed by the EPA, as required by the federal Safe Drinking Water Act.

Federal Antidegradation Policy

The federal Antidegradation Policy (40 CFR 131.12) requires states to develop statewide antidegradation policies and identify methods for implementing them. Pursuant to this policy, state antidegradation policies and implementation methods shall, at a minimum, protect and maintain (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource. State permitting actions must be consistent with the federal Antidegradation Policy.

State Level

California Toxics Rule

Because of gaps in California's regulations, the EPA promulgated the California Toxics Rule (40 CFR 131.38), which established numeric water quality criteria for certain toxic substances in California surface waters. The California Toxics Rule establishes acute (i.e., short-term) and chronic (i.e., long-term) standards for water bodies that are designated by the Santa Ana Regional Water Quality Control Board (RWQCB) as having beneficial uses protective of aquatic life or human health.

Section 402(p) – Construction General Permit (CGP)

Pursuant to the Porter-Cologne Act, Section 402(p), requiring regulations for permitting of stormwater runoff from construction activity that results in soil disturbances of at least one acre of total land area (and project that meet other specific criteria), the SWRCB has issued a statewide general NPDES permit and waste discharge requirements for stormwater discharges from construction sites (NPDES No. CAS000002): National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (CGP), effective July 1, 2010).

These regulations prohibit discharges of polluted stormwater from construction projects that disturb one or more acres of soil unless the discharge complies with the general NPDES permit requirements. The San Diego RWQCB oversees permits in the project area. It is the responsibility of the landowner to obtain coverage under the GCP prior to commencement of construction activities. Coverage under the CGP is attained by completing and filing a Notice of Intent with the SWRCB. Each applicant under the CGP must ensure that a stormwater pollution prevention plan (SWPPP) is prepared prior to grading and implemented during construction. The primary objective of the SWPPP is to identify, construct, implement, and maintain best management practices (BMPs) to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction. The CGP requires the control of pollutants to meet Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology standards. Compliance with the requirements of the CGP is used as one method to evaluate project construction-related impacts on surface water quality. To ensure that the preparation and implementation of the SWPPP is sufficient for effective pollution prevention, it must be created and implemented by a Qualified SWPPP Developer (QSD) and Qualified SWPPP Practitioner (QSP) that have attended a SWRCB sponsored or approved QSD and/or QSP training course. Typical BMPs include the following:

- **Minimizing disturbed areas.** Clearing of land is limited to that which will be actively under construction in the near term, new land disturbance during the rainy season is

minimized, and disturbance to sensitive areas or areas that would not be affected by construction is minimized.

- **Stabilizing disturbed areas.** Temporary stabilization of disturbed soils is provided whenever active construction is not occurring on a portion of the site, and permanent stabilization is provided by finish grading and permanent landscaping.
- **Protecting slopes and channels.** Outside of the approved grading plan area, disturbance of natural channels is avoided, slopes and crossings are stabilized and increases in runoff velocity caused by the project is managed to avoid erosion to slopes and channels.
- **Controlling the site perimeter.** Upstream runoff is diverted around or safely conveyed through the project and is kept free of excessive sediment and other constituents.
- **Controlling internal erosion.** Sediment-laden waters from disturbed, active areas within the site are detained.

It is assumed that the CGP adopted by the SWRCB on September 2, 2009, effective on July 1, 2010 would be in effect during construction of the project (SWRCB 2009). Provisions of the CGP that are pertinent to the project include:

- **Technology-Based Numeric Action Levels** for pH and turbidity.
- **Technology-Based Numeric Effluent Limitations** (NELs) for pH during any construction phase where there is a high risk of pH discharge, and turbidity for all discharges.
- **Risk-Based Permitting Approach**, which establishes three levels of risk calculation: Risk Levels 1, 2, or 3 will be assigned to correspond with perceived low, medium, or high water quality risk.

The risk level is determined based on two factors: (1) the project sediment risk, which is based on an estimate of project-related bare-ground soil loss determined by the Revised Universal Soil Loss Equation, and (2) the receiving water risk, which is based on whether there are established impairments or TMDLs for sediment or whether the receiving water is designated with beneficial uses for coldwater, spawning, or migratory habitats.

Based on the project location and receiving waters, the project is likely to have a low sediment risk and low receiving water risk. Consequently, it is likely that the project will fall into the low Risk Level 1 category, but could potentially fall into the Risk Level 2 category. A Risk Level 1 classification for the project would limit NELs and monitoring requirements. A Risk Level 2 designation would trigger some NELs and monitoring:

- *Minimum Requirements Specified.* Specifies more minimum BMPs and requirements that were previously only required as elements of the SWPPP or were suggested by guidance.

- *Effluent Monitoring and Reporting.* Requires effluent monitoring and reporting for pH and turbidity in stormwater discharges, depending on the risk level. Effluent monitoring would not be required by the project if it is classified at Risk Level 1.
- *Receiving Water Monitoring and Reporting.* Requires some Risk Level 3 discharges to monitor receiving waters. This requirement would not likely apply to the project.
- *Rain Event Action Plan (REAP).* Requires certain sites to develop and implement a REAP that must be designed to protect all exposed portions of the site within 48 hours prior to any likely precipitation event.
- *Annual Reporting.* Requires all projects that are enrolled for more than one continuous 3-month period to submit information and annually certify that their site is in compliance with these requirements.
- *Certification/Training Requirements for Key Project Personnel.* Requires that key personnel (e.g., SWPPP preparers, inspectors) have specific training or certifications to ensure that their level of knowledge and skills are adequate to design and evaluate project specifications that will comply with permit requirements.

Local Level

Development Storm Water Manual

New development and redevelopment projects in the City are subject to the requirements of the City of Chula Vista Development Storm Water Manual (City of Chula Vista 2011). The Storm Water Manual is updated every 5 years concurrent with the reissuance of the NPDES for San Diego County. The Storm Water Manual meets the hydromodification control requirements of the NPDES Municipal Permit issued to Chula Vista by the San Diego RWQCB. New development and redevelopment projects are required to minimize impacts on receiving water quality and habitat by incorporating construction and post-construction BMPs in their project design. Construction BMPs typically include erosion control, sediment control, non-stormwater management and material management practices. The applicant is required to prepare a SWPPP which identifies all applicable construction BMPs. Post-construction BMPs include low impact development site design, source control, treatment control and hydromodification control practices. The manual provides guidance and established standards and criteria to meet those requirements. The underlying authority for the Storm Water Manuals derived from the NPDES, Order No. R9-2007-0001, the City of Chula Vista Storm Water Mitigation Plan (SUSMP), and CVMC, Chapter 14.20 The Storm Water Manual also provides Construction Storm Water Performance Standards (Development Storm Water Manual, Section 7), which includes site

management requirements, site-specific performance standards, seasonal requirements, limitation of grading, and advanced treatment (City of Chula Vista 2011).

On May 8, 2013, the RWQCB approved a regional municipal separate storm sewer system (MS4) permit for San Diego, southern Orange, and southwestern Riverside counties (Order No. R9-2013-0001). The region-wide National Pollutant Discharge Elimination System (NPDES) Permit (commonly referred to as the Regional MS4 Permit) sets the framework for municipalities, such as the City of Chula Vista, to implement a collaborative watershed-based approach to restore and maintain the health of surface waters. The Regional MS4 Permit requires development of Water Quality Improvement Plans (WQIPs) that will allow the City of Chula Vista (and other watershed stakeholders) to prioritize and address pollutants through an appropriate suite of best management practices (BMPs) in each watershed.

The City of Chula Vista lies within the San Diego Bay Watershed Management Area and is one of the responsible municipalities for the watershed's WQIP. The San Diego Bay watershed WQIP is currently in development, with a regulatory requirement of final submission to the RWQCB in June of 2015.

City of Chula Vista Storm Water Management Standards and Chula Vista Development Storm Water Manual

For the purposes of post-construction stormwater quality management, the proposed project would follow the guidelines and requirements set forth in the following documents:

- Development Storm Water Manual (DSWM), adopted by the City of Chula Vista in 2011, applies to all projects requiring any permit approvals on or after March 24, 2010. All other development or redevelopment projects that have obtained their Grading or Building Permits prior to March 24, 2010, are required to comply with the requirements of the NPDES Municipal Permit, Order No. R9-2007-0001 and the DSWM dated January 2011 which also contains the City of Chula Vista's Standard Urban Storm Water Mitigation Plan (SUSMP) requirements (City of Chula Vista 2011).
- SDRWQCB Order No. R9-2007-0001, a renewal of NPDES Permit No. CAS0108758, Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, the San Diego Unified Port District, and the San Diego County Regional Airport Authority (Order No. R9-2007-0001, or "Municipal Storm Water Permit"), adopted by the SDRWQCB on January 24, 2007.

The DSWM provides guidance for new development, redevelopment and public projects to achieve compliance with the City of Chula Vista's SUSMP. On January 24, 2007, the

SDRWQCB adopted Order No. R9-2007-0001, renewing the Municipal Storm Water Permit, Order No. R9-2007-0001, which supersedes Order No. 2001-01, includes several changes to requirements for post-construction stormwater management and would result in SUSMPs being modified and changes to standards for post-construction stormwater management practices. Specific changes that would directly affect the design of the proposed project include:

- **Low Impact Development (LID) BMP Requirements:** Project applicants with Priority Development Projects would be required to implement LID BMPs which would collectively minimize directly connected impervious areas and promote infiltration. The LID BMP requirements are described in Section D.1.d.(4) of Order No. R9-2007-0001.
- **Hydromodification:** Limitations on Increases of Runoff Discharge Rates and Durations: Under Section D.1.g of Order No. R9-2007-0001, the Co-permittees would be required to prepare a Hydromodification Management Plan (HMP) and incorporate its requirements into their SUSMPs. Hydromodification refers to changes in a watershed's runoff characteristics resulting from development, together with associated morphological changes to channels receiving the runoff, such as changes in sediment transport characteristics and the hydraulic geometry (width, depth, slope) of channels. These changes result in streambank erosion and sedimentation, leading to habitat degradation due to loss of overhead cover and loss of instream habitat structures.

Upon ultimate development, the proposed project would fall into five pollutant categories, including: (1) Detached Residential Development, (2) Attached Residential Development, (3) Hillside Development greater than 5,000 square feet, (4) Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff, and (5) Streets, roads, highways, and freeways. At this time, retail gasoline outlets (RGOs), which are also a Priority Development Project Category included in Section D.1.d.(2) of Order No. R9-2007-0001, are not anticipated. Upon final design, the land uses within the project area may differ.

Enough information is provided in Order No. R9-2007-0001 such that the Master Design of the proposed project can incorporate design elements, while still meeting the requirements of the City of Chula Vista's existing Storm Water Standards Manual. All development within the proposed project would be subject to the City of Chula Vista's SUSMP at the time of grading permit issuance.

Chula Vista Municipal Code Section 14.20, Storm Water Management and Discharge Control

The purpose of this ordinance is to promote the health, safety and general welfare of the citizen of Chula Vista by prohibiting non-stormwater discharges to the stormwater conveyance system, preventing discharges to the stormwater conveyance system from disposal of materials other than stormwater, reducing pollutants in stormwater discharges to the maximum extent practicable,

and reducing pollutants in stormwater discharges in order to achieve applicable water quality objectives for surface waters in San Diego County. This ordinance states that it is unlawful for any person to cause either individually or jointly, any discharge into or from the stormwater conveyance system that results in or contributes to a violation of any NPDES permit. Any person engaged in activities that may result in pollutants entering the stormwater conveyance system shall, to the maximum extent practical, undertake all measures to reduce the risk of illegal discharges. The following requirements apply:

- **Best Management Practices Implementation.** It is unlawful for any person not to comply with the BMPs and pollution control requirements established by the city or other responsible agency to eliminate or reduce pollutants entering the city stormwater conveyance system. BMPs shall be complied with throughout the life of the activity.
- **Stormwater Pollution Prevention Plan.** When the enforcement official determines that a business or business-related activity causes or may cause an illegal discharge to the stormwater conveyance system then the enforcement official may require the business to develop and implement a SWPPP. Businesses which may be required to prepare and implement a SWPPP include, but are not limited to, those which perform maintenance, storage, manufacturing, assembly, equipment operations, vehicle loading and/or cleanup activities partially or wholly out of doors.
- **Coordination with Hazardous Materials Response Plans and Inventory.** Any activity subject to the hazardous materials inventory and response program, pursuant to Chapter 6.95 of the California Health and Safety Code, shall include provisions for compliance with this chapter in its hazardous materials response plan, including prohibitions of unlawful non-stormwater discharges and illegal discharges and provisions requiring the use of BMPs to reduce the discharge of pollutants in stormwater.
- **Impervious Surfaces**. Persons owning or operating a parking lot or an impervious surface (including, but not limited to, service station pavements or paved private streets and roads) used for automobile-related or similar purposes shall clean those surfaces as frequently and as thoroughly as is necessary, in accordance with BMPs, to prevent the discharge of pollutants to the city stormwater conveyance system. Sweepings or cleaning residue from parking lots or impervious surfaces shall not be swept or otherwise made or allowed to go into any stormwater conveyance, gutter or roadway, but must be disposed of in accordance with regional solid waste procedures and practices.
- **Compliance with NPDES Permit for Storm Water Discharges**. Each discharger subject to any NPDES permit for stormwater discharges shall comply with all requirements of such permit.

The DSWM is incorporated into this ordinance by reference. The ordinance states that no landowner or development project proponent in Chula Vista shall receive any city permit or approval for land development activity or significant redevelopment activity unless the project meets or will meet the requirements of the manual.

City of Chula Vista General Plan

The Public Facilities and Services and Environmental Elements of the City of Chula Vista General Plan address reliable drainage facilities and the protection of water quality. The Public Facilities and Services Element includes objectives to increase efficiencies in handling stormwater runoff through use of alternative technologies (Objective PFS 2). Objective E 2 in the Environmental Element is to protect and improve water quality within surface water bodies and groundwater resources within and downstream of Chula Vista.

Zoning Code and Growth Management Ordinance

In accordance with CVMC Section 19.80.030, development is not permitted in the City of Chula Vista that would degrade stormwater collection systems below acceptable standards. Similarly, Section 19.09 (Growth Management) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09 H specifically requires that (1) Stormwater flows and volumes shall not exceed City engineering standards as set forth in the subdivision manual and (2) the GMOC shall annually review the performance of the City's storm drain system to determine its ability to meet the goals and objectives of the subdivision manual. Section 19.09 also requires a Public Facilities Financing Plan (PFFP) and the demonstration that public services, such as police services, meet the GMOC quality of life threshold standards. The analysis of storm drain systems provided in this section, along with the PFFP to ensure funding for any needed expansion of services, confirm that storm drain systems would be provided commensurate with development and demand.

5.6.1.2 Existing Setting

Surface Water and Hydrological Setting

The project area is located in the southwestern portion of the San Diego Basin. The San Diego Basin has been divided into 11 hydrographic units and 54 hydrographic subunits, which are based primarily on surface water drainage basins. The proposed SPA Plan area is located within the Otay Hydrographic Subunit of the Otay Hydrographic Unit.

Surface water in the Otay Hydrographic Subunit downstream from Otay Lakes is ephemeral (temporary) and generally found in man-made ponds. The RWQCB rates the surface water in the

subunit as having beneficial uses for agriculture, non-contact recreational sport, wildlife, rare and endangered species, and potential beneficial uses for industry.

The landscape of the project area is predominantly rolling hills with arroyos draining to canyons that flow west and south away from the Otay Reservoir basin. The natural drainage basin for the Village Two site is a combination of watersheds that drain directly into Poggi Canyon from the north and west portions of Village Two and Wolf Canyon from the south portions of Village Two. Since the approval of the current SPA Plan, development has begun on portions of Village Two. The topography of the northern portions of Village Two have been altered from its previous, natural condition to include mass graded pads, developed residential units, and roadways. Runoff from the developing northern portions of Village Two still drains into Poggi Canyon. Drainage from both Poggi Canyon and Wolf Canyon ultimately flows into the Otay River to the south of Village Two.

Poggi Canyon

The constructed Poggi Canyon Creek channel runs along the north side of Olympic Parkway and then crosses under Olympic Parkway at the southern boundary of Village One, near the northwest corner of the existing high school, where it runs along the northern boundary of Village Two. Combined runoff, from existing development to the north and east, flows in a westerly direction via the constructed channel on the north side of Olympic Parkway through Otay Ranch Village One. Flows from the northeastern portion of Village Two (south of Olympic Parkway) are conveyed to this channel via a 48- inch RCP. Runoff from the existing high school site confluences with runoff in Poggi Canyon Creek at the downstream headwall south of Olympic Parkway. Between the high school site and Heritage Road, this runoff is combined with runoff from the undeveloped Village Two site from the south and conveyed via an existing trapezoidal channel. The combined runoff from Village One and the undeveloped Village Two flows under Santa Victoria Road and into the existing Poggi Canyon Regional Detention Facility. This detention basin is located on the west side of Village Two adjacent to Olympic Parkway. The Poggi Canyon Creek contains several drop structures and energy dissipater devices along its path, which were designed to keep volumes under control and reduce erosion. The existing detention facility was designed to mitigate the 100-year developed condition peak flow rate in Poggi Canyon below the predeveloped 100-year peak flow. Per the October 14, 1999 Master Drainage Study for Poggi Canyon Creek, the pre-developed 100-year flow at the detention basin location was determined to be roughly 1,300 cubic feet per second (cfs). Thus, the basin must mitigate developed condition peak flowrates to 1,300 cfs or less.

Wolf Canyon

The Wolf Canyon watershed is characterized by rolling hills and heavily grazed land. The Wolf Canyon area east of the proposed extension of La Media (south of Birch Parkway) will consist of the Otay Ranch Village Seven development, which is currently under construction, and the proposed Eastern Urban Center. Wolf Canyon's main drainage course forms the southern and eastern boundary of Village Two and the northern boundary for the Village Four park site. A large tributary confluences with Wolf Canyon Creek near the downstream limit of Village Two. A significant portion of the Village Two property drains to this tributary while the remainder drains directly to Wolf Canyon Creek. Following the confluence, the creek flows in a southerly direction just east of the Village Three property where it discharges runoff to the Otay River south of the project site.

Groundwater Hydrogeology

Groundwater occurs in all sedimentary units and the various surficial deposits present on Otay Ranch. Regional groundwater flow is generally from east to west while the direction of local groundwater flow is controlled by the orientation of the drainage basins and topography. The quantity and quality of groundwater varies according to the permeability of the geologic formation and local topography. Permeability rates within the Otay Valley parcel are greatest in the Otay River valley. Groundwater recharge occurs in upland areas with springs, which is most common in the mountainous regions.

As discussed in Section 5.7, Geology and Soils, a static groundwater table in the previous exploratory excavations and during the grading operations was not encountered during the geotechnical investigation. Groundwater seepage was encountered locally in the landslide debris at the time of excavation. It is not uncommon for groundwater seepage conditions to develop where none previously existed due to the permeability characteristics of the geologic units encountered on site. During the rainy season, perched water conditions are likely to develop within the drainage area may require special consideration during grading operations. Groundwater elevations are dependent on seasonal precipitation, irrigation, and land use, among other factors, and vary as a result.

Groundwater Quality

The Otay Hydrographic Unit contains groundwater that is rated generally poor to very poor due to high levels of total dissolved solids. According to the Otay Ranch GDP Program EIR, the groundwater in the project area contains sodium-calcium chloride, and samples from both Poggi Canyon to the north and Otay Valley to the south exceed federal secondary drinking water standards. This situation is caused, in part, from the higher salt concentrations in imported water

used for irrigation. Water containing dissolved salts entrapped at the time the sedimentary rocks were deposited also contributes to the groundwater composition and quality.

Hydromodification Analysis

The March 2011 Final Hydromodification Management Plan (HMP), which was prepared for the County of San Diego, exempts the Otay River from hydromodification criteria (County of San Diego 2011). The combination of low gradients, significant peak attenuation, and wide floodplain areas, similar to those found in the Otay River, translate to a low potential for channel erosion. Proposed outlets into the Otay River are, therefore, exempt from hydromodification requirements.

Flooding

Per the Flood Insurance Rate Map (FIRM) No. 06073C2178, the Village Two project area lies outside the FEMA floodplain boundary.

5.6.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), would determine the significance of a water quality and hydrology impact. Impacts to water quality and hydrology would be significant if the proposed project would:

A. Violate any water quality standards or waste discharge requirements, including City of Chula Vista Engineering Standards for storm water flows and volumes.

B. Substantially deplete 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 amount of surface runoff in a manner which would result in flooding on- or off-site.

E. Create or contribute runoff water, 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 flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

H. Place structures within a 100-year flood hazard area which would impede or redirect flood flows.

I. Be inconsistent with General Plan, GDP or other objectives and policies regarding water quality thereby resulting in a significant physical impact.

J. 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.

K. Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

L. 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.

5.6.3 Impacts

5.6.3.1 2006 EIR Impacts Conclusions

The following conclusions related to water quality and hydrology as described in the 2006 EIR are applicable to the proposed project, specifically Village Two:

The SPA Plan, including Village Two, would convert an undeveloped site to an urban landscape with multiple land uses. In doing so, impermeable surfaces would be introduced to the SPA Plan area, as well as new pollutant sources, such as automobiles and household products. Impermeable surfaces would decrease the amount of infiltration occurring Village Two and would lead to increased runoff rates and the potential for pollutants to be introduced to water sources. Therefore, the proposed SPA Plan, including Village Two, would potentially contribute to significant water quality impacts. Drainage at the site would be altered to direct stormwater runoff into the municipal storm drain system. However, implementation of the mitigation measures provided in the 2006 EIR would reduce impacts to surface water hydrology and water quality below a level of significance. No impacts to groundwater quality or quantity are anticipated.

5.6.3.2 Proposed Project Impact Analysis

A. Violate any water quality standards or waste discharge requirements, including City of Chula Vista Engineering Standards for storm water flows and volumes.

As stated in the hydrology reports prepared by Hunsaker and Associates, prior to discharge from the site, all developed site runoff would receive full water quality treatment in accordance with

the most current City of Chula Vista Storm Water Manual standards applicable at the time of final engineering. All runoff conveyed in the proposed storm drain systems would be treated in compliance with Regional Water Quality Control Board (RWQCB) regulations and National Pollutant Discharge Elimination System (NPDES) criteria prior to discharging to natural watercourses. California RWQCB Order No. R9-2007-0001 dated January 24, 2007, sets the waste discharge requirements for discharges of urban runoff from municipal storm separate drainage systems draining the watersheds of San Diego County. Prior to project-related construction, a site-specific Storm Water Pollution Prevention Plan (SWPPP) would be prepared in accordance with the SWRCB Order No. 99-08-DWQ NPDES General Permit No. CAS00002 (General Construction Permit) and the modifications to the General Construction Permit Order No. 2001- 046, adopted by the SWRCB. As such, the proposed project would be designed to comply with any water quality standards or waste discharge requirements. Therefore, in accordance with the analysis and recommendations provided in the 2006 EIR and the hydrology reports for the proposed project, impacts would be less than significant.

B. Substantially deplete 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).

As noted in the Update Geotechnical Report prepared by Geocon, Inc. (located in Appendix G), the previously encountered groundwater table was not observed while conducting the geotechnical investigation, however groundwater seepage was observed near landslide debris. Development of the approved SPA Plan, as well as the proposed project, would ultimately result in a decrease in pervious surfaces and increase of surface runoff, resulting in reduced percolation and groundwater recharge. However, as discussed in Thresholds (C) and (D) below, the general drainage pattern of the site that ultimately flows into the Otay River would remain the same. The Otay River Valley is the principal aquifer within the Otay Valley parcel and would receive additional runoff due to project buildout. Therefore, 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.

As discussed above, the Village Two site is largely undeveloped with portions of the northern area developed or undergoing development. Upon buildout of the current SPA Plan, as well as the proposed project, the amount of pervious surfaces would decrease and surface run off would generally increase. Village Two was also analyzed fully as part of the Master Drainage Study for Otay Ranch Village 2, 3, & 4 prepared by Hunsaker & Associates in 2005. As such, full buildout

of the current SPA Plan for Village Two as it relates to changes in drainage patterns has been analyzed with recommendations and mitigation provided to alleviate substantial impacts to the existing drainage pattern. The additional units and changes in land use zoning that encompasses the proposed project would adhere to mitigation measures and recommendations provided for the current SPA Plan, as well as additional recommendations found in the proposed project's hydrology reports, in order to reduce impacts to existing drainage pattern. Such recommendations and design features include mimicking existing conditions where grading is proposed for the intent that manufactured slopes follow existing drainage and implementing low impact development (LID) and Best Management Practices (BMPs), such as bioretention basins, to control for erosion and other water quality issues. As discussed above in existing conditions, natural drainage flows into Poggi Canyon to the north and Wolf Canyon to the south, terminating at the Otay River that empties into San Diego Bay; these general drainage flows would still remain upon development of the proposed project. Due to previous analysis conducted for Village Two and adherence to provided recommendations in respective hydrology reports, impacts to the existing drainage pattern with respect to erosion 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 amount of surface runoff in a manner which would result in flooding on or off site.

As described in response to Threshold (C), landform grading proposed within Village Two would be incorporated to mimic existing conditions on these sites where the proposed grading ties into or daylights with the existing terrain. It is intended that the stormwater from the manufactured slopes would sheet flow and follow the existing drainage patterns. In addition, LID based BMPs are proposed Village Two, which include conservation of natural areas, minimizing impervious footprint, minimizing directly connected impervious areas, minimizing soil compaction in landscaped areas, soil amendments, and protection of slopes, channels and erosion control, which would help reduce the rate and amount of stormwater runoff.

For the reasons described above, and with implementation of the proposed BMPs, the proposed project would not substantially alter the existing drainage pattern of the project area in a manner which would result in flooding on or off site. Therefore, impacts would be less than significant.

E. Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

As described in response to Threshold (C) the proposed project would involve the replacement of existing permeable surfaces and exposed soils, which would substantially increase the amount of

impervious surface area within the project area. Refer to the included hydrology reports found in Appendix F for specific details about changes in runoff flow rates resulting from the proposed project. Site-generated surface water runoff would be directed from the project area to drainage facilities and bioretention basins. However, the proposed project includes the development of stormwater drainage facilities to meet the need created by the impervious developments of the proposed project.

As described in response to Threshold (A) the proposed project will provide stormwater drainage facilities, while complying with all federal, state and local laws and ordinances. Prior to project-related construction, a site-specific SWPPP would be prepared in accordance with the SWRCB Order No. 99-08-DWQ NPDES General Permit No. CAS00002 (General Construction Permit) and the modifications to the General Construction Permit Order No. 2001- 046, adopted by the SWRCB. All runoff conveyed in the proposed storm drain systems would be treated in compliance with RWQCB regulations and NPDES criteria prior to discharging to natural watercourses.

Conceptually, the storm drain system and layout would be designed to address peak flows as well as to integrate water quality features needed to comply with the City of Chula Vista SUSMP requirements for water quality. The proposed storm drain system would be designed to prevent the co-mingling of treated flows with untreated runoff. The northern portion of Village Two would drain into existing storm drain facilities located within Poggi Canyon. Runoff from the newly proposed R-8C zone would flow into a bioretention basin in Poggi Canyon. The main storm drain outlet for the western portion of Village Two flows into Poggi Canyon detention basin that includes a water quality treatment for runoff. The southern portion of Village Two would either flow into a detention basin before draining into Wolf Canyon or flow directly into Otay River. The proposed project would utilize existing drainage facilities and include construction of new facilities to ensure that the increase in runoff upon development of Village Two is met with adequate capacity and would not contribute to substantial pollution. Such facilities include storm drains, detention basins, cleanouts, inlets, headwalls, energy dissipating measures, treatment filters, and bioretention basins.

The runoff produced from the project will be subject to the implementation of a variety of BMPs. Proposed LID BMPs include conservation of natural areas, minimizing impervious footprint, minimizing directly connected impervious areas to area drains, minimizing soil compaction in landscaped areas, soil amendments, and protection of slopes, channels and erosion control. Source Control BMPs include designing outdoor material storage areas to reduce pollution, designing trash storage areas to reduce pollution introduction, Integrated Pest Management (IPM) principles, efficient irrigation systems and landscape design, stormwater conveyance systems stenciling and signage, efficiently designed loading dock areas, maintenance of sidewalks and parking lots. Additional BMPs applicable to individual priority development

project categories would be implemented regarding the following projects: roads, residential driveways and guest parking, surface parking lots, steep hillside landscaping.

The combination of the proposed construction and permanent BMPs for Village Two would reduce, to the maximum extent practicable, the expected pollutants and would not adversely impact the beneficial uses of the receiving waters.

For the reasons described above, and with implementation of the proposed BMPs, the proposed project would not substantially create runoff which would exceed the capacity of planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, impacts would be less than significant.

F. Otherwise, substantially degrade water quality.

As described in responses, the combination of the proposed construction and permanent BMPs, for the proposed project would reduce, to the maximum extent practicable, the expected pollutants and would not adversely impact the beneficial uses of the receiving waters.

The runoff produced from the project would be subject to the implementation of a variety of BMPs. Proposed LID BMPs include conservation of natural areas, minimizing impervious footprint, minimizing directly connected impervious areas to area drains, minimizing soil compaction in landscaped areas, soil amendments, and protection of slopes, channels and erosion control. Source Control BMPs include designing outdoor material storage areas to reduce pollution, designing trash storage areas to reduce pollution introduction, IPM principles, efficient irrigation systems and landscape design, stormwater conveyance systems stenciling signage, efficiently designed loading dock areas, maintenance of sidewalks and parking lots. Additional BMPs applicable to individual priority development project categories would be implemented regarding the following projects: roads, residential driveways and guest parking, surface parking lots, steep hillside landscaping. Implementation of these BMPs would prevent the degradation of water quality and therefore would result in the reduction of impacts to be less than significant.

G. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

Per the Flood Insurance Rate Map No. 06073C2178, the site lies outside the FEMA floodplain boundary. Therefore, no impacts would occur.

H. Place structures within a 100-year flood hazard area which would impede or redirect flood flows.

The proposed project would not place any structures within a 100-year flood hazard area which would impede or redirect flows as the project area is not located in a FEMA floodplain boundary. Therefore, no impacts would result.

I. Be inconsistent with General Plan, GDP or other objectives and policies regarding water quality thereby resulting in a significant physical impact.

City of Chula Vista General Plan

Since the time of the completion and certification of the 2006 EIR, the Chula Vista General Plan has been comprehensively updated from the previous 1989 version to the current 2005 version, or Chula Vista Vision 2020. The proposed project would promote the policies and goals of the General Plan and GDP including: increase water and wastewater efficiency, use, re-use, and generation; protect and improve water quality within Otay Ranch; control stormwater flows and conveyance; and require on-site detention basins to prevent downstream overload. The following objectives associated with water quality and hydrology are included in the General Plan:

- **Objective PFS 2:** Increase efficiencies in water use, wastewater generation and its re-use, and handling of storm water runoff throughout the city through use of alternative technologies.
- **Objective E 2:** Protect and improve water quality within surface water bodies and groundwater resources within and downstream of Chula Vista.
- **Objective E 15:** Minimize the risk of injury and property damage associated with flood hazards.

The project proposes an increase in density, and to support that increase, would also include an additional elementary school, parkland, and CPFs. While specific land use patterns would be altered from the currently approved SPA Plan, the change in density would not interfere with the primary policies and goals of Village Two. As discussed under Threshold E, the hydrology reports outline the drainage infrastructure required for detention of storm runoff and sediment control, including incorporation of energy dissipaters to minimize potential erosion. Additionally, as discussed under Threshold E, the hydrology reports outline the proposed water quality BMPs including low impact development to encourage the use of natural channels that simulate natural drainage ways. Implementation of the project would not disrupt any natural water bodies. Overall, the proposed project would be consistent with the objectives outlined in the General Plan and impacts would be less than significant.

Otay Ranch GDP

The following goals associated with drainage and water quality are provided in the Otay Ranch GDP:

- **Goal:** Provide protection to the Otay Ranch project area and surrounding communities from fire, flooding and geologic hazards.
- **Goal:** Ensure that water quality within the Otay Ranch project area is not compromised.
- **Goal:** Promote public safety and provide public protection from fire, flooding, seismic disturbances, geologic phenomena and manmade hazards in order to preserve life, health and property; continue government functions and public order; maintain municipal services; and rapidly resolve emergencies and return the community normalcy and public tranquility.

The Chula Vista Development Storm Water Manual requires the project to meet site-specific performance standards, site management requirements, seasonal requirements, limitation of grading, and potential advanced treatment for any identified sedimentation. The proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding since the project is not located within a FEMA floodplain. The proposed project would be consistent with applicable Otay Ranch GDP policies and impacts would be less than significant.

J. 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.

As discussed in response to thresholds (H) and (G), the proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding since the project is not located within a FEMA floodplain. Although the project area is located downstream of the Savage Dam, it is outside of the dam inundation zone and an Emergency Action Plan is in place for this dam. Therefore, the proposed project would result in less than significant impacts related to flooding.

K. Inundation by seiche, tsunami, or mudflow.

Given the project area's elevation about the Otay Reservoir, potential seiches affecting the project area due to a breach or overtopping of the damn structure is considered negligible. The State of California Tsunami Inundation Map for Emergency Planning (CGS 2009) does not show the project area within a tsunami inundation zone. The project area is approximately six miles from the Pacific Coast. Risk associated with tsunamis is considered to be negligible. As discussed in Section 5.7, Geology and Soils, grading would provide stabilization of any

possible loose soils on site, and mudflows or other forms of landslides would be mitigated. Therefore, impacts would be less than significant.

L. 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.

The proposed project involves the construction of new stormwater drainage facilities. The potential environmental effects of these facilities are analyzed under each of the resource topic presented in Chapter 5 of this EIR and mitigation measures are provided to reduce potential impacts. Therefore impacts would be less than significant.

5.6.4 Level of Significance Prior to Mitigation

The proposed project would be in compliance with all applicable federal, state, and local rules, and regulations regarding water quality and hydrology. In addition, implementation of BMPs described above would further ensure that potential impacts associated with water quality and hydrology would remain less than significant.

5.6.5 Mitigation Measures

The applicable mitigation measures from the 2006 EIR shall be required of the proposed project and will be included in the proposed project MMRP. Through incorporation of recommendations provided in the hydrology reports prepared by Hunsaker and Associates discussed above, impacts were found to be less than significant and no mitigation measures are required.

5.6.6 Level of Significance After Mitigation

As described above, the proposed project would not result in any significant impacts to hydrology or water quality and no mitigation measures are proposed. The proposed project would be in compliance with all applicable federal, state, and local rules, and regulations regarding water quality and hydrology. In addition, implementation of BMPs described above would further ensure that potential impacts associated with water quality and hydrology would remain less than significant.

5.6.7 Change in Results of the 2006 EIR Analysis

Implementation of the proposed project would change the conclusions reached by the analysis contained in the 2006 EIR with respect to water quality and hydrology issues. In addition, it would increase the severity of impacts because the development of neighborhood R-8C would result in new impermeable surfaces not previously analyzed in the 2006 EIR. However, with incorporation of recommendations provided in the hydrology reports, no new impacts are identified and no new mitigation is required.

5.7 GEOLOGY AND SOILS

This section describes the existing geology and soils setting of the proposed project, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures as necessary to reduce or avoid significant impacts.

This section tiers from the 2006 Environmental Impact Report (EIR) (City of Chula Vista 2006). The analysis concluded that all potentially significant impacts related to geology and soils would be reduced to a less than significant level upon implementation of various proposed mitigation measures outlined in the 2006 EIR. The analysis and discussion of geology and soils contained in the 2006 Otay Ranch Villages Two, Three, and a Portion of Village Four SPA Plan Final EIR are incorporated by reference. The analysis is also based on the Update Geotechnical Report for Otay Ranch Village Two SPA Plan Amendment by Geocon and dated February 10, 2014, as well as a Landslide Consultation letter prepared by Geocon on April 25, 2014. The geotechnical investigation updated the applicable information in the previously certified 2006 EIR and supporting geotechnical reports. The geotechnical report and supplemental landslide letter are provided in Appendix G of the EIR.

5.7.1 Existing Conditions

5.7.1.1 Regulatory Framework

Federal Level

International Building Code

The International Building Code (IBC) is a model building code developed by the International Code Council that provides the basis for the California Building Code (CBC). The purpose of the IBC is to provide minimum standards for building construction to ensure public safety, health, and welfare. Prior to the creation of the IBC, several different building codes were used; however, by the year 2000, the IBC had replaced these previous codes. The IBC is updated every 3 years.

Occupational Safety and Health Administration Regulations

Excavation and trenching are among the most hazardous construction activities. The Occupational Safety and Health Administration (OSHA) Excavation and Trenching standard, Title 29 of the Code of Federal Regulations (CFR), Part 1926.650, covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

State Level

California Geologic Survey

The California Geologic Survey (CGS) provides guidance with regard to seismic hazards. The CGS's Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California (1997), provides guidance for evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigation.

California Building Code

The 2013 CBC, which went into effect January 1, 2014, with portions of the energy regulations going into effect on July 1, 2014, is a model building code developed by the International Code Council that sets rules specifying the minimum acceptable level of safety for constructed objects such as buildings in the United States. In addition, the CBC contains necessary amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake and other types of loads for inclusion in building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure, and any appurtenances connected or attached to such buildings or structures, throughout California.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (California Public Resources Code (PRC), Sections 2621–2630) regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. The Act helps define areas where fault rupture is most likely to occur. The act groups faults into categories of active, potentially active and inactive. Historic and Holocene age faults are considered active. Late Quaternary and Quaternary age faults are considered potentially active and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be sufficiently active and well defined by detailed site-specific geologic explorations in order to determine whether building setbacks should be established. Cities and counties affected by the zones must regulate certain development projects within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (PRC, Sections 2690–2699.6) addresses earthquake hazards from non-surface fault rupture, including liquefaction, landslides, strong ground

shaking, or other earthquake and geologic hazards. The Seismic Hazards Mapping Act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

Local Level

City of Chula Vista General Plan

Individual project development proposed on property under City of Chula Vista (City) jurisdiction is required through similar IBC and CBC requirements to comply with Objective E 14 and its three associated policies (E 14.1, E 14.2, and E 14.3) contained in the adopted General Plan. Implementation of this objective and policies are intended to reduce potential impacts associated with geological hazards and public safety.

5.7.1.2 Existing Setting

Geologic Setting

The project site is located in the coastal plain of the Peninsular Ranges province of southern California. The Peninsular Ranges is a geologic and geomorphic province that extends from the Imperial Valley to the Pacific Ocean and from the Transverse Ranges to the north and into Baja California to the south. The coastal plain of San Diego County is underlain by a thick sequence of relatively undisturbed and non-conformable sedimentary rocks that range in age from Upper Cretaceous through the Pleistocene with intermittent deposition. Geomorphically, the coastal plain is characterized by a stair-stepped series of marine terraces, which are younger to the west and have been dissected by west flowing rivers that drain the Peninsular Ranges to the east. The coastal plain is a relatively stable block that is dissected by relatively few faults consisting of the potentially active La Nacion Fault Zone and the active Rose Canyon Fault Zone. The Peninsular Ranges are also dissected by the Elsinore Fault Zone that is associated with and sub-parallel to the San Andreas Fault Zone, which is the plate boundary between the Pacific and North American Plates.

The project site is located on the eastern portion of the coastal plain. Marine sedimentary units make up the geologic units encountered on the site and consist of a Quaternary-age Terrace Deposits, Pliocene- and Pleistocene-age San Diego Formation, and the Tertiary age Otay Formation. The Terrace Deposits cap the top of the highest ridges on the site and consist of reddish brown silty sandstone. The San Diego Formation unconformably underlies the Terrace Deposits and consists of yellowish brown, silty sandstone. The Otay Formation unconformably underlies the San Diego Formation and typically consists of three lithostratagraphic members composed of a basal conglomerate member, a middle gritstone member, and an upper

sandstone/siltstone/claystone member with a maximum reported regional thickness of roughly 400 feet. The upper two members of the Otay Formation are present on the site. In addition, bentonitic claystone and siltstone layers are common within the upper member typically deposited as highly consolidated volcanic ash deposits. The thickness of the Otay Formation is in excess of 350 feet on the project site.

Geologic Materials

Five surficial soil types and three geologic are present on the site. The surficial units consist of previously placed fill, topsoil, alluvium, colluvium, and landslide debris. Formational units include Quaternary-age Terrace deposit, Pliocene and Pleistocene-age San Diego Formation, and the Tertiary-age Otay Formation. The formational and surficial units are discussed below in order of increasing age. A geologic map of the project site can be found in Appendix G of this EIR.

Previously Placed Fill

Compacted fill associated with five previous phases of grading is present in numerous areas within the eastern portion of the project site. In general, previously placed fill consists of sand, silt, and clay derived from on-site excavations. The fill was placed during the filling of previous canyon drainages, buttress fill areas, and within undercut pad and street areas. These fill units are considered suitable for support and development of proposed improvements.

Topsoil

Topsoil is present as a thin veneer overlying formational material across the ungraded portions of the site. The topsoil has an average thickness of approximately 3 feet and is characterized as soft to stiff and loose to medium dense, dry to damp, dark brown, sandy clay to clayey sand. The clayey portion of the topsoil is typically expansive and compressible. Removal of the topsoil would be necessary in areas to support fill or structures.

Alluvium

Alluvium is stream-deposited material found in the natural canyon drainages and generally varies in thickness dependent upon the size of the canyon. The alluvium consists of firm to stiff, dry to moist, light to dark brown, sandy clay and loose to medium dense, damp to moist, silty to clayey sand. The thickness of alluvium can be more than 15 feet thick in the larger canyon drainages. Due to the relatively unconsolidated nature of the alluvial deposits, remedial grading would be necessary in order to receive fill or structures.

Colluvium

Colluvium derived from formational materials at higher elevations is present on the side slopes of natural canyons and the upper portions of the canyon drainages. The colluvium consists of stiff to hard, dry to moist, light to dark brown, sandy clay and loose to medium dense clayey to silty sand. The thickness of colluvium generally ranges from approximately two to six feet, but can be considerably thicker within the landslide debris. Removal of the colluvium is required in areas that will support fill or structures.

Landslide Debris

Five areas of landslide debris exist within the site. Four slide areas are located in the western portion of the property and one within the southwest corner of the eastern portion. The eastern landslide is about 600 feet wide, 400 feet long, and varies from about 16 to 55 feet in thickness. On the western portion, a landslide is located in the northern portion of Village Two adjacent Olympic Parkway that is 350 feet wide, 300, feet long, and about 50 feet thick. The last three landslides are located in the southern-central portion of Village Two. The southwestern landslide is approximately 650 feet wide, 500 feet long, and 50 feet thick. The south-central landslide is approximately 650 feet wide, 500 feet long, and 50 feet thick. The southeastern landslide is approximately 900 feet wide, 550 feet long, and 90 feet thick. The landslide debris varies from a few feet thick at the toes of the landslide to as much as 90 feet thick. The base of the slide mass is typically coincident with a bentonitic claystone bed. The landslides generally consist of a loose, upper portion, typically 10 to 15 feet thick, a graben zone of variable thickness typically backfilled with colluvium, a medium dense to dense core zone composed of tightly fractured Otay Formation, and a landslide toe composed of loose debris. Seepage conditions were encountered in several of the borings excavated into landslide debris. Landslide debris would either be completely or partially removed during future grading depending on proposed finish grade configurations and adjacent property constraints.

The upper portions of landslide debris, colluvium, and landslide toe debris are potentially compressible and would require remedial grading in the form of removal and compaction within areas of proposed development. The medium dense to dense landslide core zone is suitable for the support of compacted fill and can be left in-place. Three landslides are proposed to be removed during remedial grading and two landslides would have a partial removal. Several planned cut slopes are underlain by landslide debris and slope buttresses or stabilization fills would be necessary.

Terrace Deposits

Quaternary-age Terrace Deposits, formerly mapped as Lindavista Formation, unconformably overlie the San Diego Formation on the mesa tops generally above the approximate elevation of

450 to 470 mean sea level (MSL). Sediments generally associated with this formation consist of cobble-gravel-sand mixtures with locally cemented zones and sandy to clayey siltstones. The granular soil of the Terrace Deposits typically exhibits adequate shear strength and low expansive potential in either an undisturbed or properly compacted condition. The Terrace Deposits are generally suitable for the support of compacted fill and structural loads.

San Diego Formation

The Tertiary-age San Diego Formation overlies the Otay Formation and typically consists of yellowish to olive brown, massively bedded to locally cross-bedded, fine- to coarse-grained sandstones with some cemented gravel lenses. The San Diego Formation in the Chula Vista area overlies the upper member of the Otay Formation and underlies the Terrace Deposits. Cohesionless, friable sand lenses can also occur within the San Diego Formation and may require remedial grading measures if encountered in proposed cut slopes or at finish-pad grade during grading operations. In general, the sediments of the San Diego Formation exhibit adequate shear strength and "very low" to "medium" expansion characteristics in either an undisturbed or properly compacted condition. The San Diego Formation is suitable for the support of compacted fill and structural loads. Oversize material may be generated in this unit during grading because of matrix cementation.

Otay Formation

The Tertiary-age (upper Oligocene) Otay Formation underlies the site on canyon slopes or underlying the younger geologic formations and surficial soil at depth. The Otay Formation consists of dense, silty, fine- to coarse-grained sandstone, clayey and sandy siltstone, and silty claystone with continuous and discontinuous interbeds of highly expansive bentonitic claystone. The coarse-grained portions of the Otay Formation typically possess a "very low" to "low" expansion potential and adequate shear strength. The siltstone and claystone portions of the formation can exhibit a "medium" to "very high" expansion potential. With the exception of the bentonitic claystone, the Otay Formation is suitable for the support of compacted fill and structural loads.

Laterally extensive beds of bentonite claystone exist throughout the site with a variable thickness of less than one foot to a maximum of nine feet. These bentonite layers have been mapped as underlying the majority of Otay Ranch and its occurrence is well documented in the geologic literature. The bentonitic claystone beds consist of very expansive clays, which typically exhibit low shear strength. As previously mentioned, the bentonite claystone layers contain the failure surfaces of the landslides encountered at the site. Down-hole observations within several large-diameter borings indicate the presence of remolded clay seams along gently dipping bedding planes within the bentonitic claystone layers. These "bedding plane

shear" features are common in these layers and are interpreted to be primarily due to compressional and tensional forces created during tectonic deformation that resulted in large-scale gentle folding in the formational units. An "intraformational landslide" feature was observed within the Otay Formation underlying the eastern slopes of the Heritage Road alignment, within the slopes along the northern side of Santa Victoria Road and along the slopes on the northern margin of the site. The "intraformational landslide" deposits are generally medium dense to dense and possess low compressibility characteristics. This feature was observed to contain sheared claystone beds with shallow to moderate dip orientations which may contribute to slope instability if exposed in cut slopes.

Several discontinuous interbeds of bentonitic claystone also exist within the upper portion of the Otay Formation and the location of these layers is difficult to predict. The bentonitic claystone would require special consideration with respect to placement and mixing as fill, undercutting of pad and street subgrade, and buttress slope stability. Discontinuous claystone layers encountered during grading should be evaluated in the field on an individual basis.

The lower portion (middle member) of the Otay Formation consists of dense, tan, gravelly, fine- to coarse-grained sandstone that is locally well cemented. This unit has been informally named the "gritstone" unit on the excavation logs in the geotechnical report. This member is generally found stratigraphically below bentonitic claystone layer and extends to the lowest elevations explored during our subsurface investigation. Excavations and slopes constructed in the "gritstone" portions of the Otay Formation are expected to be relatively stable and typically have a "very low" to "low" expansion potential.

Geologic Structure

Bedding attitudes observed within formational materials encountered during the investigation are nearly horizontal to slightly dipping toward the southwest. The regional dip of sedimentary units in area is generally one to five degrees toward the southwest. The granular portions of the formational units are typically massive with bedding not discernible. Sheared claystone beds within the "intraformational landslide" areas of the Otay Formation have dips generally between 10 and 20 degrees toward the west or north. The "intraformational landslide" unit has been incorporated into the Otay Formation for the purposes of this geotechnical study and report. Shear zones create a possibility for slope instability and, where encountered during grading, should be evaluated for the necessity of remedial grading. High-angle contacts between formational units are not uncommon; however, it is concluded in the geotechnical report that adverse geologic structure does not present a significant geologic hazard to the proposed development of the site if the recommendations of the geotechnical report are incorporated into design and construction.

Groundwater

A static groundwater table in the previous exploratory excavations and during the grading operations was not encountered during the geotechnical investigation. Groundwater seepage was encountered locally in the landslide debris at the time of excavation. It is not uncommon for groundwater seepage conditions to develop where none previously existed due to the permeability characteristics of the geologic units encountered on-site. During the rainy season, perched water conditions are likely to develop within the drainage area may require special consideration during grading operations. Groundwater elevations are dependent on seasonal precipitation, irrigation, and land use, among other factors, and vary as a result.

Geologic Hazards

Earthquakes

The Newport–Inglewood and Rose Canyon Fault Zones, located approximately nine miles northwest of Village Two. Newport–Inglewood and Rose Canyon Fault Zones are the nearest known active faults and are the dominant source of potential ground motion. Earthquakes that might occur on the Newport–Inglewood and Rose Canyon Fault Zones or other faults within the southern California and northern Baja California area are potential generators of significant ground motion at the project site. Figure 5.7-1 illustrates major regional faults surrounding the project area. The estimated maximum earthquake magnitude and peak ground acceleration for the Newport–Inglewood Fault are 7.5 and 0.30 g, respectively. Table 5.7-1 lists the estimated maximum earthquake magnitude for the most dominant faults in relation to the project site.

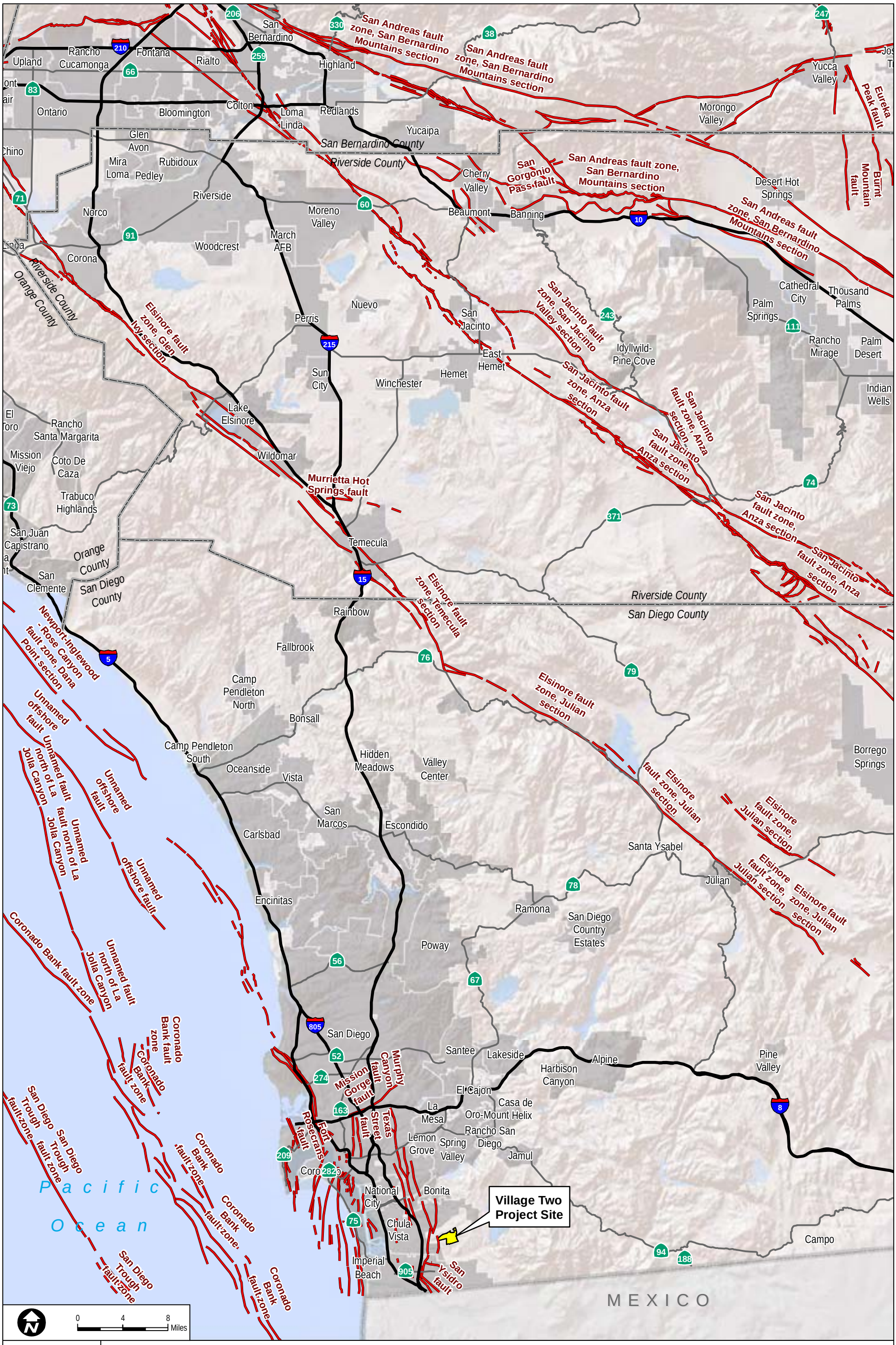
Table 5.7-1
Principal Active Faults near Village Two

Fault Name	Distance From Project Site (miles)	Maximum Earthquake Magnitude (M_{max})
Newport–Inglewood	9	7.5
Rose Canyon	9	6.9
Coronado Bank	18	7.4
Palos Verdes Connected	18	7.7
Elsinore	41	7.9
Earthquake Valley	45	6.8

Source: Geocon 2014b.

Liquefaction

Liquefaction typically occurs when a site is located in a zone with seismic activity, on-site soils are cohesionless/silt or clay with low plasticity, static groundwater is encountered within 50 feet of the surface, and soil relative densities are less than about 70%. If the four previous criteria are met, a seismic event could result in a rapid pore-water pressure increase from the earthquake-generated ground accelerations. Seismically induced settlement may occur whether the potential for liquefaction exists or not.



DUDEK

SOURCE: USGS

FIGURE 5.7-1

Southern California Major Faults

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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Expansive Soil

The formational units would likely possess a "very low" to "medium" expansion potential. Localized areas of the formational materials do possess a "high" expansion potential. However, the bentonitic claystone and siltstone possesses a "high" to "very high" expansive potential. The colluvium, topsoil, and alluvium would contain a "medium" to "high" expansion. It is expected that proposed grading would expose bentonitic claystone and siltstone beds within cut slopes and buttress fills would be required to stabilize these slopes.

Landslides

Five areas of landslide deposits exist at the site and can be found on the geologic map provided in Appendix G. The potential for future landsliding adversely affecting the proposed project is low, provided that recommendations presented in this EIR are followed.

Compressible Soils

As described above compressible soils are found in portions of topsoil, upper portions of landslide debris, and landslide toe debris.

5.7.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), will determine the significance of potential geology and soil impacts. Impacts to geology and soils would be significant if the proposed project would:

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).
    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. Be inconsistent with General Plan geotechnical policies thereby resulting in a significant physical impact.

5.7.3 Impacts

5.7.3.1 2006 EIR Impacts Conclusion

The following conclusions related to geology and soils as described in the 2006 EIR as amended are applicable to the proposed project, specifically Village Two:

Significant impacts to geology and soils could result from project development on compressible and expansive soils. Additionally, the current conceptual design would require mass grading above portions of the tunnel that contains the San Diego waterline, including excavation of formational soils and the placement of fill soils. A potentially significant impact could result from the grading above portions of the existing City of San Diego waterline. Implementation of mitigation measures would reduce or avoid significant impacts. Impacts resulting from the grading above portions of the waterline would be eliminated if the waterline were relocated.

Potential impacts resulting from geologic hazards would be reduced below a level of significance through project design measures, including compliance with the requirements of the governing jurisdictions, building codes (e.g., Title 24 of the California Code of Regulations, and the Uniform Building Code (UBC)), and standard practices of the Association of Structural Engineers of California.

The mitigation measures provided in the 2006 EIR would reduce significant impacts to geology and soils from development of the SPA Plan. The potential for liquefaction to occur at the site would be reduced to less than significant levels once the colluvium and alluvium deposits are removed and replaced with compacted fill. The potential for settlement and differential movement associated with compressible and expansive soils, respectively, would be reduced to below a level of significance upon removal and replacement with compacted fill soils.

All mitigation measures as provided in the 2006 EIR are still relevant and would be implemented and included as part of the Mitigation Monitoring and Reporting Program for the project. Additional mitigation identified as part of this environmental review that were not previously identified in the 2006 EIR as amended are provided in Section 5.7.5 below.

5.7.3.2 Proposed Project Impact Analysis

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).

The Newport–Inglewood and Rose Canyon Fault Zones are located approximately nine miles northwest of Village Two. Newport–Inglewood and Rose Canyon Fault Zones are the nearest known active faults and are the dominant source of potential ground motion. According to the project geotechnical reports, the project site is not located on any known active, potentially active, or inactive fault traces. An active fault is defined by the CGS as a fault showing evidence for activity within the last 11,000 years. The project site is not located within a State of California Earthquake Special Study Zone or Alquist-Priolo Zone.

Surface ground cracking related to shaking from distant events is not considered a significant hazard, although lurching or cracking of the ground surface as a result of nearby seismic events is possible. Components of the proposed project would be constructed in accordance with the City's Grading Ordinance, current seismic design specifications, current CBC standards, and other regulatory requirements, which would reduce the potential for risks related to seismic events. Therefore, since development would be in compliance with applicable regulatory requirements, impacts associated with the rupture of a known earthquake fault would be less than significant.

ii. Strong seismic ground shaking.

Earthquakes that might occur on the Newport–Inglewood and Rose Canyon Fault Zones or other faults within the southern California and northern Baja California area are potential generators of significant ground motion at the site. As previously discussed, the Newport–Inglewood and Rose Canyon Fault Zones are located approximately nine miles northwest of the project site. Newport–Inglewood and Rose Canyon Fault Zones are the nearest known active faults and are the dominant source of potential ground motion. In the event of a major earthquake on any of the active faults within the southern California and northern Baja California region, the project site, as with other sites in the general vicinity, could be subject to moderate to severe ground shaking. However, components of the proposed project would be constructed in accordance with the City's Grading Ordinance, current seismic design specifications, current CBC standards, and other regulatory requirements, which would reduce

the potential for risks related to seismic events. Therefore, impacts associated with strong seismic ground shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction.

The potential for liquefaction and seismically induced settlement occurring within the Village Two proposed project site is considered to be very low due to the dense nature of the formational materials and absence of a permanent groundwater table in the upper 50 feet. Seismically induced settlement may occur whether the potential for liquefaction exists or not. Although there is potential for seismic-related ground failure to occur, compliance with the City's Grading Ordinance, current seismic design specifications, current CBC standards, and other regulatory requirements, impacts associated with seismic-related ground failure, including liquefaction would be less than significant.

iv. Landslides.

According to the geotechnical investigation, five areas of landslide deposits exist within Village Two. The landslide debris was observed to be composed of a mixture of bentonitic claystone bed, colluvium, and fractured Otay Formation fragments. It is expected that remedial grading consisting of the complete or partial removal of landslide debris would be sufficient in reducing a future hazard related to landslides. The medium dense to dense landslide core zones of the two southeastern landslide areas are suitable for the support of compacted fill and can be left in place during remedial grading. The southwestern and northern landslides should be removed and replaced with properly compacted fill during future grading operations. Additionally, the supplemental landslide letter notes that the potentially for future landslides adversely affecting the proposed project is low, provided that recommendations found in the geotechnical investigation are followed. Therefore, compliance with the City's Grading Ordinance, current seismic design specifications, current CBC standards, and other regulatory requirements, impacts related to landslides are considered to be less than significant.

B. Result in substantial soil erosion or the loss of topsoil.

Construction Impacts

Excavation and ground-disturbing activities during construction of the proposed project could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. Adequate drainage on the project site is critical in reducing potential soil erosion or the loss of topsoil. The project site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2010 CBC 1804.3 or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into swales or other

controlled drainage devices. Roof and pavement drainage should be directed into conduits that carry runoff away from the proposed structure.

In addition, prior to project-related construction, a site-specific stormwater pollution prevention plan (SWPPP) would be prepared in accordance with the State Water Resources Control Board (SWRCB) Order No. 2009-0008-DWQ NPDES General Permit No. CAS00002 (Construction General Permit), amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ. For coverage by the Construction General Permit, the project applicant is required to submit to the SWRCB a Notice of Intent (NOI) and develop a SWPPP describing best management practices (BMPs) to be used during and after construction to prevent discharge of sediment and other pollutants in storm water runoff from the project site. The BMPs would provide erosion and sedimentation control through measures such as silt fences, fiber rolls, gravel bags, temporary desilting basins, velocity check dams, temporary ditches or swales, storm water inlet protection, and soil stabilization measures such as erosion control mats, tackifier, hydroseeding, etc. Steep hillside areas disturbed by project development shall be landscaped with deep rooted, drought tolerant and/or native plant species selected for erosion control, satisfactory to the City of Chula Vista. Earth-disturbing activities associated with construction would be temporary and with compliance with the General Construction Permit and BMPs outlined in the SWPPP, impacts related to soil erosion and the loss of topsoil would be less than significant.

Operational Impacts

The combination of low gradients, significant peak attenuation, and wide floodplain areas, similar to those found in the Otay River, translate to a low potential for channel erosion. Consequently, the Otay River system is exempt from hydromodification requirements (County of San Diego 2011). Regardless, the hydromodification analyses for Village Two support the determination that development of the village would not result in an increase in the potential for erosion when compared to existing conditions. Lastly, BMPs are proposed for the village, which include conservation of natural areas, minimizing impervious footprint, minimizing directly connected impervious areas, minimizing soil compaction in landscaped areas, soil amendments, and protection of slopes, channels and erosion control, which would help reduce any potential erosion. With the implementation of BMPs and proposed drainage facilities outlined in Section 5.6, Water Quality and Hydrology, impacts related to soil erosion and the loss of topsoil 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.

As previously discussed, according to the geotechnical investigation, the surficial soil within the project site consisting of topsoil, colluvium, alluvium, and the compressible portions of the landslide debris are not considered suitable for the support of the proposed project development and would be considered potentially significant. With remedial grading consisting of the removal, moisture conditioning, and compaction of these soils, as included within mitigation measure MM-GEO-1, future hazards related to unstable soils and landslides would be reduced to less than significant.

Also as previously discussed, the proposed project is not located on any known active, potentially active, or inactive fault traces, although cracking or lateral spreading of the ground surface as a result of nearby seismic events is possible. Surface ground cracking or lateral spreading related to shaking from distant events is not considered a significant hazard because the potential for liquefaction and seismically induced settlement occurring within the project area is considered to be very low due to the dense nature of the formational materials and the lack of a permanent groundwater table in the upper 50 feet.

In general, according to the geotechnical investigation, while the project site currently exists with potentially hazardous expansive and compressible soils, no soil or geologic conditions would preclude the continued development, including the proposed project, within Village Two. Compliance with the City's Grading Ordinance, current seismic design specifications, current CBC standards, and other regulatory requirements, in addition to implementation of project design features and BMPs, and following recommendations of the geotechnical investigation, which are included within mitigation measure MM-GEO-1 below, would ensure that the proposed project would have less than significant impacts associated with geologic hazards.

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.

Expansive soils contain minerals, such as clay, that are capable of absorbing water and expanding, and losing water and shrinking. The repetitive stress of a swell/shrink cycle on a foundation can cause severe damage to buildings and structures. A majority of the on-site materials possess a "very low" to "medium" expansion potential. The expansion potential of the bentonite claystone and surficial soil ranges from "high" to "very high" expansion potential. Recommendations found in the geotechnical report are intended to reduce the potential for cracking of slabs due to expansive soils. These recommendations, found in MM-GEO-1, include additional geotechnical report updates for individual areas within the proposed project. With the incorporation of MM-GEO-1 and provided that recommendations within individual geotechnical report updates are followed, impacts would be less than significant.

E. Be inconsistent with General Plan geotechnical policies thereby resulting in a significant physical impact.

City of Chula General Plan

Since the time of the completion and certification of the 2006 EIR, the Chula Vista General Plan has been comprehensively updated from the previous 1989 version to the current 2005 version, or Chula Vista Vision 2020. The proposed project would promote the policies and goals of the General Plan including: minimize injury and damage associate with geologic hazards through engineering analysis and design; require site-specific geotechnical investigations; promote public safety; and prevent development on lands subject to potential geologic hazards. The following objective is outlined in the General Plan relevant to geology and soils:

- **Objective E 14:** Minimize the risk of injury, loss of life, and property damage associated with geologic hazards.

Development of the proposed project would be consistent with the most recent CBC standards and other regulatory requirements to protect against injury, loss of life, and major property damage to the maximum extent feasible. The project proposes an increase in density, and to support that increase, would also include an additional elementary school, parkland, and CPFs. While specific land use patterns would be altered from the currently approved SPA Plan, the change in density would not interfere with the primary policies and goals of Village Two. The proposed project would be consistent with objectives outlined in the General Plan and impacts would be less than significant.

Otay Ranch General Development Plan

The following goals are outlined in the Otay Ranch General Development Plan (GDP) in order to minimize potential impacts, to the extent feasible, damage or loss due to geologically hazardous areas:

- **Goal:** Promote public safety and provide public protection from fire, flooding, seismic disturbances, geologic phenomena and manmade hazards in order to preserve life, health and property; continue government functions and public order; maintain municipal services; and rapidly resolve emergencies and return the community normalcy and public tranquility.
- **Goal:** Minimize soil loss due to development.
- **Goal:** Reduce impacts to environmentally sensitive and potential geologically hazardous areas associated with steep slopes.

The project includes Preliminary Geotechnical Investigations and Update Geotechnical Reports for Village Two which identify potential geologic hazards and proposed mitigation to reduce the risk of injury, loss of life, and property damage. Development of the proposed project would be consistent with the most recent CBC standards and other regulatory requirements including with the Chula Vista Grading Ordinance, current seismic design specifications of the Structural Engineering Association of California. Compliance with the geotechnical investigation recommendations and other regulatory requirements would ensure consistency with the General Plan and Otay Ranch GDP. Therefore, impacts would be less than significant.

5.7.4 Level of Significance Prior to Mitigation

Prior to mitigation the proposed project would have potentially significant impacts associated with expansive and compressible soils.

5.7.5 Mitigation Measures

The following mitigation measure was developed from recommendations provided in the Update Geotechnical Report prepared by Geocon for the proposed project:

MM-GEO-1 Prior to the issuance of the grading permit, the applicant(s) shall verify that the applicable recommendations of the Update Geotechnical Report: Otay Ranch Village 2 SPA Plan Amendment prepared by Geocon, Inc. on February 10, 2014, have been incorporated into the project design and construction documents to the satisfaction of the City Engineer.

Recommendations include, but are not limited to:

1. Evaluation of soil expansion potential once final grade is achieved.
2. During grading, compressible soils shall be removed and replaced with compacted fill.
3. Site drainage and moisture protection measures such as provisions for underground utilities, landscaping, and maintaining adequate site drainage to prevent soil movement.
4. Additional geotechnical report updates as development of Village Two continues in order to assess proposed grading for each neighborhood.

5.7.6 Level of Significance After Mitigation

The mitigation measures listed in Section 5.7.5 would reduce potential impacts associated with geology and soils, to a less than significant level.

5.7.7 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would not increase the severity of impacts discussed in the 2006 EIR. The conclusions of this EIR and the 2006 EIR differ in that the proposed project would include the relocation of the City of San Diego waterline, thereby avoiding potential impacts identified in the 2006 EIR. New impacts related to geology and soils are identified due to the provision of an update geotechnical report and new mitigation is required.

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5.8 PUBLIC SERVICES

This section describes the existing setting related to public services that would serve the proposed project and evaluates potential impacts to public services due to implementation of the proposed project. Fire protection and emergency medical services are addressed in Subsection 5.8.1; police services are addressed in Subsection 5.8.2; schools in Subsection 5.8.3; parks, recreation, and open space in Subsection 5.8.4; and libraries in Subsection 5.8.5. The discussions found in the following sections are based on information provided by the local service providers, findings from other approved planning documents, and technical reports related to the provision of public services.

This section tiers from the 2006 Environmental Impact Report (EIR) (City of Chula Vista 2006). The 2006 EIR addressed the potential environmental effects of the development of Villages Two, Three, and portion of Four. The analysis and discussion of public services contained in the 2006 EIR is incorporated by reference and available for public inspection upon request to the City.

In August 1989, the Chula Vista City Council adopted Ordinance No. 2320 establishing a Development Impact Fee (DIF) to pay for various public facilities within the city. The facilities are required to support future development within the city, and the fee schedule has been adopted in accordance with Government Code Section 66000. The proposed project would be subject to the payment of the fee at the rate in effect at the time building permits are issued.

5.8.1 Fire Protection and Emergency Medical Services

5.8.1.1 Regulatory Framework

Local Level

City of Chula Vista General Plan

The 2005 Chula Vista General Plan recognizes that fire protection and emergency services will need to expand as the City's population grows. The Public Facilities and Services Element includes objectives to maintain sufficient levels of fire protection and emergency medical service to protect public safety and property (Objective PFS 5) and provide adequate fire protection services to newly developing and redeveloping areas of the city (objective PFS 6). Additional GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects demonstrated to be out of compliance with applicable threshold standards for fire and emergency medical services (City of Chula Vista 2005).

The General Plan identifies the current and planned fire station locations in Otay Ranch. Fire Station No. 7, located at 1640 Santa Venetia Street, is the closest existing station to Village Two.

Otay Ranch General Development Plan

The purpose of the fire protection and emergency medical facility section of the Otay Ranch General Development Plan (GDP) is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of these facilities. As stated therein, the goal is to provide protection to the Otay Ranch area and surrounding communities from loss of life and medical emergencies. The 1993 GDP, last amended in 2006, states that four new fire stations are necessary to serve the Otay Ranch area at build-out. In order to meet ongoing demand, Fire Station No. 7 was developed in Otay Ranch Village Two to serve Otay Ranch. The Otay Ranch GDP shows a fire station location within the Eastern Urban Center (EUC). Fire Station No. 10 is sited to meet project growth within the Otay Ranch, including buildout of the EUC and other surrounding villages. Fire Station No. 10 has not yet been built. The remaining two fire stations needed to serve the buildout of the Otay Ranch GDP area have not yet been planned by the Chula Vista Fire Department (CVFD). The following GDP goal, objective, and policies pertain to fire and emergency medical services (City of Chula Vista 2013):

Goal

- Provide protection to the Otay Ranch project area and surrounding communities from the loss of life and property due to fires and medical emergencies.

Objective

- Provide sufficient fire and emergency services facilities to respond to calls within the Otay Ranch urban communities: within a 7-minute response time in 85% of the cases.

Policies

- Otay Ranch Sectional Planning Area (SPA) plans shall include Emergency Disaster Plans to become operative during periods of major emergency.
- Otay Ranch shall participate in cooperative agreements with urban and rural emergency services providers.
- Incorporate the Otay Ranch Project Area into existing regional disaster preparedness programs.
- Otay Ranch shall site fire and emergency services facilities consistent with the following factors: (a) Ability to meet travel/response time policies; (b) Proximity to a pool of volunteer firefighters for service within the unincorporated areas, when appropriate; (c) Ability of the site to support the appropriate facility to serve current and future development in the intended service area; (d) Distances from other fire stations, including those operated by neighboring districts; (e) Safe access to roadways in emergency responses; (f) Special needs for fire suppression, and emergency services, including

needs created by recreation areas and industrial land uses; (g) avoid close proximity to fault traces; and (h) Ability to meet any adopted local community facility level standard, if appropriate.

- Consideration shall be given to shared law enforcement and fire service facilities such as public safety "storefronts" within village centers, training rooms and equipment storage.
- Otay Ranch shall evaluate the provision of fire suppression sprinkler systems for residential development within the project area as part of SPA plans.
- Fire protection and emergency services facilities shall be available or will be available concurrent with need.
- In areas lacking local public structural fire protection and within the sphere of influence of a fire protection agency, approval of Otay Ranch discretionary applications shall be conditioned on the annexation to that agency.
- Otay Ranch shall cooperate in the development of a strategy to address emergency medical service facilities and responsibilities in areas lacking a local provider of these services.
- Otay Ranch shall work with affected fire protection agencies to cooperatively develop guidelines for appropriate water provision requirements necessary for fire protection in ground water dependent areas.
- Otay Ranch shall participate in fire mitigation fee or development impact fee programs to enable fire protection agencies to meet the facility and equipment needs generated by Otay Ranch.

Fire Facility, Equipment, and Deployment Master Plan

The existing Chula Vista Fire Facility, Equipment Master Plan (FMP) dated 2012, focuses on fire protection services deployment. Deployment is measured by three different indicators: distribution, concentration, and reliability. The FMP recommends three more fire stations to meet expected growth within the City. It also concluded that current staffing should be increased to provide a higher level of efficiency of service.

Chula Vista Municipal Code

Section 19.80.030 of the Chula Vista Municipal Code (CVMC) Chapter 19.80 (Controlled Residential Development) is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for fire and other public services. The preparation of a PFFP is required in conjunction with the preparation of each SPA Plan to ensure that development is consistent with the overall goals and policies of the

General Plan and would not degrade public services. Similarly, CVMC Section 19.09 (Growth Management) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040B specifically requires that "properly equipped and staffed fire and medical shall respond to calls throughout the City within seven minutes in 80% of the cases." Section 19.09 also requires a PFFP (City of Chula Vista 2013b).

Fire Protection Plan

A Fire Protection Plan (FPP) has been prepared for Village Two. Fuel modification zones have been incorporated into the proposed Village Two development areas adjacent to natural open space. These fuel modification zones are consistent with the requirements of the Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan (City of Chula Vista 2003a) and Otay Ranch Phase 2 Resource Management Plan (RMP; City of Chula Vista and County of San Diego 2002). No fuel modification activities will occur within Otay Ranch Preserve/MSCP Preserve areas. Graded landscaped slope areas will be maintained pursuant to FPP requirements and will be outside of the Preserve. Streets and hard surface and irrigated landscaped areas may be included in the Brush Management Zone, in accordance with specific requirements of the FPP.

5.8.1.2 Existing Setting

Fire Protection and Emergency Services

Fire protection and emergency services for the City of Chula Vista are provided by the CVFD. The CVFD currently employs 138 people, including firefighters and administrative staff. There are currently nine fire stations in the City of Chula Vista, serving a population of approximately 223,423 people and an area covering over 52 square miles. According to the *2013 Growth Management Oversight Commission (GMOC) Annual Report*, the CVFD received approximately 11,132 calls for service in Fiscal Year (FY) 2012 (City of Chula Vista 2013e) Of these calls, 76.4%, were responded to within a response time of 7 minutes during FY 2012. The current GMOC threshold standard for emergency fire response is 7 minutes or less in 80% of calls. The CVFD did not meet the GMOC threshold standard in FY 2012.

Table 5.8-1 lists the locations and service areas of the nine fire stations serving the City of Chula Vista. Table 5.8-2 summarizes CVFD staffing. The proposed project is located within the service area of Fire Station No. 7, which is located at 1640 Santa Venetia in Otay Ranch Village Two, immediately adjacent to the proposed project. CVFD Fire Station No. 7 serves the communities of Otay Ranch, the Village of Heritage, Heritage Hills, and the Village of Countryside (City of Chula Vista 2013d). A total of 24 firefighters, which includes three Battalion Chiefs, operate out of Fire Station No. 7 (City of Chula Vista 2013a), which is equipped with one fire engine and one fire truck. Fire Station No. 7 is also the battalion headquarters for the eastern part of the City.

During a typical 24-hour shift, there are 36 line firefighters and two Battalion Chiefs on constant duty spread among the City's nine fire stations. Each station has a captain, engineer and one firefighter. Fire Station No. 7 is the Battalion Headquarters for the eastern part of the city (CVFD, personal communication with Justin Gipson 2013).

Table 5.8-1
City of Chula Vista Fire Station Facilities

Location	Service Area	Apparatus
Fire Station 1 447 F Street Chula Vista, CA 91910	Downtown, Bay Front, Northwest City, Interstate 5 (I-5), I-54, and I-805/North	Truck 51 Engine 51 Battalion 51
Fire Station 2 80 East J Street Chula Vista, CA 91910	Central City, I-805/Central, Hilltop, Country Club	Engine 52
Fire Station 3 1410 Brandywine Ave. Chula Vista, CA 91911	Sunbow, I-805 South, Woodlawn Park, East/Main Street	USAR 53 USAR 53 Tender/Trailer
Fire Station 4 850 Paseo Ranchero Chula Vista, CA 91910	Rancho Del Rey, Bonita Long Canyon, Southwestern College	Engine 54
Fire Station 5 391 Oxford Street Chula Vista, CA 91911	Montgomery, Harborside, Otay, I-5 South, Southwest City, West/Main Street	Engine 55
Fire Station 6 605 Mt. Miguel Road Chula Vista, CA 91914	East Lake, Rolling Hills Ranch, San Miguel Ranch	Engine 56 Brush 52
Station 7 1640 Santa Venetia Chula Vista, CA 91913	Otay Ranch, Village of Heritage, Heritage Hills, Village of Countryside	Engine 57 Truck 57 Battalion 52
Station 8 1180 Woods Drive Chula Vista, 91914	East Lake, Rolling Hills Ranch, San Miguel Ranch, Tour De Elegance, The Woods	Engine 58
Station 9 266 E Oneida Chula Vista, 91911	Sunbow, I-805 South, Woodlawn Park, East/Main Street	Engine 59

Source: City of Chula Vista 2013d; http://www.chulavistaca.gov/City_Services/Public_Safety/Fire_Department/Stations/Default.asp

Table 5.8-2
Chula Vista Fire Department Staffing

Position	Number of Employees
Administrative Secretary	1
Battalion Chief	6
Deputy Fire Chief	3
EMS Nurse Coordinator	1
Facility & Supply Specialist	1

Table 5.8-2
Chula Vista Fire Department Staffing

Position	Number of Employees
Fire Battalion Chief	6
Fire Captain	35
Fire Chief	1
Fire Division Chief	1
Fire Engineer	34
Fire Inspector I/II	6
Fire Inspector/Prevention Engineer	1
Firefighter	42
GIS Specialist	1
Office Specialist	1
Principal Management Analyst	1
Public Safety Analyst	1
Secretary	1
Senior Administrative Secretary	1
Senior Fire Inspector/Investigator	1
Total	**138**

Source: City of Chula Vista 2013a; CVFD, personal communication with Justin Gipson 2013

The CVFD currently has mutual aid agreements with Bonita-Sunnyside, Imperial Beach, National City, San Diego, and San Diego County.

According to the GMOC 2013 report, emergency response times were not met during FY 2012. The Fire Department responded to 76.4% of emergency calls within 7 minutes, compared with the 80% requirement in the threshold standard. The Fire Department currently fails to meet the threshold standards established for response time, but is taking measures to address the situation. The report recommends that City Council implement effective measures that will ensure that the threshold standard will be met.

Emergency Medical Services

Emergency medical services for the City of Chula Vista are contracted to the American Medical Response (AMR). There are 4 AMR units that provide paramedics with emergency medical training to the City of Chula Vista exclusively. Currently two full-time units are stationed within the city limits and are dedicated to Chula Vista, while two other full-time units are shared with other cities (City of Chula Vista 2013d).

The Chula Vista Fire Department is also providing an Advance Life Support (ALS) program to provide residents with the most appropriate emergency medical care in a timely manner. Stations

5, 6, 7, 8, and 9 began providing ALS services in July 2013 with full program implementation across the department in the coming years.

5.8.1.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), will determine the significance of fire protection and emergency medical services impact. Impacts to fire and emergency medical services would be significant if the proposed project would:

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services.

B. The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on fire protection services if it would:

   i. Reduce the ability of properly equipped and staffed fire and medical units to respond to calls throughout the City within 7 minutes in 80% of the cases.

C. Be inconsistent with General Plan, GDP, and other objectives and policies regarding fire protection and emergency medical services thereby resulting in a significant physical impact.

5.8.1.4 Impacts

5.8.1.4.1 2006 EIR Impacts Conclusions

The 2006 EIR made the following conclusions related to fire protection and emergency services for the Village Two portion of the SPA Plan:

The Chula Vista Fire Department did not meet the threshold standard for response time for the City, including the Otay Ranch community, at the time of the 2006 EIR's certification. However, as population growth in the service area warrants, fire stations would be constructed within Village Nine of the Otay Valley parcel and within Village Thirteen of the Proctor Valley parcel. These stations would help ensure adequate service within the requirements of the GMOC threshold standards to the Otay Ranch region of the City of Chula Vista. Impacts to fire and emergency medical services would be significant if construction of these facilities does not coincide with the project's anticipated population growth and increased demand for services. Payment of Public Facilities Development Impact (PFDIF) would ensure potential impacts fall to a level below significance.

All mitigation measures as provided in the 2006 EIR as amended are still relevant and would be implemented and included as part of the Mitigation Monitoring and Reporting Program for the project.

5.8.1.4.2 Proposed Project Impact Analysis

A. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services?

The proposed project would result in an increase in demand for fire and emergency medical services due to the additional development proposed within Village Two, which would require fire protection and emergency services. CVFD would provide fire services for the proposed project. Fire Station No. 7 is located adjacent to Village Two, and is the closest fire station to the proposed project. Given the proximity of the proposed project to Fire Station No. 7, the proposed project does not propose any new fire protection or emergency medical service facilities; however, additional facilities may be required to meet the demands of the proposed project.

The City is currently processing an update to the FMP which proposes additional fire stations in the EUC, Village Eight West Town Center, and Bayfront locations. Overall phasing of future development projects would determine when these additional fire stations are constructed. As specified in MM-5.13.6-2 of the 2006 EIR, the City is required to monitor CVFD's responses to emergency fire and medical calls on an annual basis to determine need for additional services and facilities.

The construction of new fire stations would be supported on a fair share basis by future development, including the proposed project, through payment of the City's PFDIF Program. The PFDIF addresses a project's proportional impact on capital facilities, such as structures and equipment, associated with fire protection. It does not address the impacts associated with operations and maintenance for those facilities, and it is the City's policy to use public funds such as property taxes, sales taxes, and fees generated by the project to cover the incremental costs associated with providing fire services. The project applicant would be required to pay the City's PFDIF (per MM-5.13.6-1 of the 2006 EIR), and development within the project would be subject to future taxes and fees adopted by the city to cover fire protection services. Therefore, impacts would be less than significant.

B. The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on fire protection services if it would:

i. Reduce the ability of properly equipped and staffed fire and medical units to respond to calls throughout the City within 7 minutes in 80% of the cases.

The CVFD did not meet the GMOC Fire and Emergency Medical Services threshold standard of responding to 80% of calls within 7 minutes in FY 2012. According to the 2013 GMOC Annual Report, the CVFD responded to 76.4% of the calls within 7 minutes in FY 2013. Buildout of the proposed project would result in a residential population increase of approximately 5,061 people, contributing to a total population of approximately 14,726 people within Village Two. The proposed increase in population in Village Two would result in an increased demand for fire and emergency medical services, which could also increase response times.

As described previously, an FPP has been prepared for Village Two, as required by Article 86 of the California Fire Code. In addition, the draft FMP proposes the construction, staffing, and equipping of two additional fire stations in East Chula Vista, as described above. Overall phasing of future development would determine when additional fire stations are constructed. The construction of new fire stations would be supported on a fair share basis by the proposed project through payment of the City's PFDIF. The project's payment of PFDIF fees (per MM-5.13.6-1 of the 2006 EIR), implementation of the Village Two FPP, and compliance with existing city codes, policies, and regulations would ensure that the GMOC threshold standard is achieved. Therefore, impacts would be less than significant.

C. Would the project be inconsistent with General Plan, GDP, and other objectives and policies regarding fire protection and emergency medical services thereby resulting in a significant physical impact?

City of Chula Vista General Plan

The 2006 EIR relied on the 1989 version of the General Plan. It has since been comprehensively updated in 2005. The 2005 Chula Vista General Plan recognizes that fire protection and emergency services will need to expand as the City's population grows. The Public Facilities and Services Element includes objectives to maintain sufficient levels of fire protection and emergency medical service to protect public safety and property and provide adequate fire protection services to newly developing and redeveloping areas of the city. The proposed project would promote the policies and goals of the General Plan including: support the provision of new fire stations; ensure development is phased with adequate fire protection services; require adequate emergency access in new development; and maintain

sufficient levels of fire protection and emergency medical services. The following objectives are identified in the General Plan relevant to fire protection and emergency medical services:

- **Objective PFS 5:** Maintain sufficient levels of fire protection, emergency medical service and police services to protect public safety and property.
- **Objective PFS 6:** Provide adequate fire and police protection services to newly developing and redeveloping areas of the City.
- **Objective PFS 8:** Develop pre-disaster programs to ensure swift and efficient response to emergencies and disasters.

The General Plan identifies the current and planned fire station locations in Otay Ranch. Fire Station No. 7, located at 1640 Santa Venetia Street, is the closest existing station to Village Two. The project proposes an increase in density, and to support that increase, would also include an additional elementary school, parkland, and CPFs. While specific land use patterns would be altered from the currently approved SPA Plan, the change in density would not interfere with the primary policies and goals of Village Two, the SPA Plan, and General Plan . As described previously, the proposed project would promote public safety and provide public protection from fire through implementation and compliance with the Village Two FPP and the City's policies and regulations. The FPP and other regulations include guidelines and requirements for fuel modification, emergency access, and other means to ensure public safety. The proposed project is also required to pay the City's PFDIF (per MM-5.13.6-1 of the 2006 EIR) which would help subsidize future development of public services and infrastructure, including fire facilities. Overall, the proposed project would be consistent with the objectives identified in the General Plan associated with fire protection and emergency medical services; impacts would be less than significant.

Otay Ranch GDP

The purpose of the fire protection and emergency medical facility section of the Otay Ranch GDP is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of these facilities. As stated therein, the goal is to provide protection to the Otay Ranch area and surrounding communities from loss of life and medical emergencies. The 1993 GDP, last amended in 2006, states that four new fire stations are necessary to serve the Otay Ranch area at build-out. The following goals are included in the Otay Ranch GDP in order to provide adequate public safety and protection from fires:

- **Goal**: Provide protection to the Otay Ranch project area and surrounding communities from the loss of life and property due to fires and medical emergencies.

- **Goal:** Promote public safety and provide public protection from fire, flooding, seismic disturbances, geologic phenomena and manmade hazards in order to:
    - Preserve Life, Health and Property;
    - Continue Government Functions and Public Order;
    - Maintain Municipal Services; and
    - Rapidly Resolve Emergencies and Return the Community Normalcy and Public Tranquility.

In order to meet ongoing demand, Fire Station No. 7 was developed in Otay Ranch Village Two to serve Otay Ranch. The Otay Ranch GDP shows a fire station location within the EUC. Fire Station No. 10 is sited to meet project growth within the Otay Ranch, including buildout of the EUC and other surrounding villages. Fire Station No. 10 has not yet been built. The remaining two fire stations needed to serve the buildout of the Otay Ranch GDP area have not yet been planned by the CVFD. The proposed project would promote public safety and provide public protection from fire through implementation and compliance with the FPPs and City of Chula Vista codes, policies and regulations. The proposed project would therefore be consistent with the applicable goals related to fire protection and emergency medical services in the Otay Ranch GDP. Impacts associated with the proposed project would be less than significant.

5.8.1.5 Level of Significance Prior to Mitigation

The proposed project would have less than significant impacts on fire and emergency medical services.

5.8.1.6 Mitigation Measures

No further mitigation is required beyond what is provided in the 2006 EIR.

5.8.1.7 Level of Significance After Mitigation

Impacts to fire and emergency medical services and facilities as a result of the project would remain less than significant.

5.8.1.8 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts discussed in the 2006 EIR as a result of an increase in demand for fire protection services. However, it would not change the conclusions reached by the analysis of the 2006 EIR. No new impacts are identified and no new mitigation is required.

5.8.2 Police Services

5.8.2.1 Regulatory Framework

Local Level

City of Chula Vista General Plan

The Chula Vista General Plan recognizes that police services will need to expand as the city's population grows. The Public Facilities and Services Element of the General Plan includes objectives to maintain sufficient levels of police service to protect public safety and property (Objective PFS 5) and to provide adequate police protection services to newly developing and redeveloping areas of the city (Objective PFS 6). Additionally, Growth Management Objective GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects demonstrated to be out of compliance with applicable threshold standards for police services (City of Chula Vista 2005).

Otay Ranch General Development Plan

The purpose of the Law Enforcement Facilities section of the Otay Ranch GDP is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of law enforcement facilitates. The goal is prevent the occurrence of crime and protect life, and property. As stated in the Otay Ranch GDP, one police station, located in the EUC is necessary to serve the Otay Ranch project area at build-out (City of Chula Vista 2013f).

Chula Vista Municipal Code

Section 19.80.030 of CVMC Chapter 19.80 (Controlled Residential Development) (City of Chula Vista 2013b) is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for police protection. The preparation of PFFPs is required in conjunction with the preparation of SPA Plans to ensure that the development of the proposed project is consistent with the overall goals and policies of the General Plan and would not degrade public services. Similarly, CVMC Section 19.09 (Growth Management) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040A specifies a threshold standard requiring that properly equipped police units must respond to 81% of Priority One emergency calls within 7 minutes and maintain an average response time of 5.5 minutes or less. Priority One calls include felony crimes in progress, life-threatening situations, and injury to property. For Priority Two urgent calls, the police units must respond to 57% of the calls within 7 minutes with an average response time to all Priority Two calls within 7.5 minutes or less. Priority Two calls include misdemeanor crimes in progress, non–life-threatening situations, possible injury to

property, and emergency public services such as traffic signal failure Finally, Section 19.09 requires PFFPs (City of Chula Vista 2013b).

5.8.2.2 Existing Setting

Police protection for the Otay Ranch area is provided by the Chula Vista Police Department (CVPD) from its existing police facility located at 315 Fourth Avenue in downtown Chula Vista. The CVPD is currently authorized for 224 sworn officers and 85 civilian employees (City of Chula Vista 2013g). The proposed project site is within Patrol Beat 24. At least one patrol car serves each beat in the city 24 hours a day. As the City continues to grow and the demand for police services increases, the CVPD regularly evaluates beat structure. Patrol officers respond to calls citywide, and the beat strength does not include traffic units, school resource officers, roving patrol officers, and patrol sergeants who would service the proposed project site as needed. In addition the CVPD participates in regional mutual aid agreements. The CVPD opened a new community storefront facility located at 2015 Birch Road of the Otay Ranch Town Center in Chula Vista in early 2011.

The GMOC 2013 Annual Report reported that the Police Department responded to 78.4% of Priority One emergency calls within 7 minutes and maintained an average response time for Priority One calls of 5 minutes 1 second during FY 2012. This did not meet the GMOC threshold standard requiring properly equipped and staffed police units to respond to 81% of Priority One emergency calls within 7 minutes with an average response time of 5 minutes 30 seconds, resulting in non-compliance with the Priority One threshold for the first time since FY 2004-2005. The 2013 GMOC recommends that the Police Chief receive support to increase staff to budget levels and effectively manage work schedules in order to improve response times.

During the same period addressed in the 2013 GMOC Annual Report, the CVPD responded to 41.9% of Priority Two urgent calls within 7 minutes and maintained an average response time for Priority Two calls of 11 minutes 54 seconds. This did not meet the GMOC threshold standard that requires properly equipped and staffed police units to respond to 57% of Priority Two calls within 7 minutes with an average response time of 7 minutes and 30 seconds for the 15th consecutive year. The 2013 GMOC notes that the Priority Two threshold itself is part of the non-compliance issue and is part of an amendment process for the Growth Management Ordinance (GMO). As previously stated, it is recommended that the Police Chief receive support to increase staff to budget levels and effectively manage work schedules in order to improve response times (City of Chula Vista 2013e).

5.8.2.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of police service impact. Impacts to police services would be significant if the proposed project would:

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services.

B. The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on police services if it would:

   i. Exceed the City's threshold standards to respond to Priority One emergency calls throughout the City (within 7 minutes in 81% of the cases and an average response time to all Priority One calls of 5.5 minutes or less).

   ii. Exceed the City's threshold standards to respond to Priority Two urgent calls throughout the City (within 7 minutes in 57% of cases and an average response time to all Priority Two calls of 7.5 minutes or less).

C. Be inconsistent with General Plan objectives and policies regarding police protection thereby resulting in a significant physical impact.

5.8.2.4 Impact Analysis

5.8.2.4.1 2006 EIR Impacts Conclusions

The 2006 EIR made the following conclusions related to police services for the Village Two portion of the SPA Plan:

Development of the SPA Plan, including Village Two would result in a significant impact to law enforcement because of the predicted increase in calls for service and the additional travel time required to respond to these calls. However, implementation of the identified mitigation measures provided in the 2006 EIR, including payment of PFDIF, would reduce impacts to a level below significance.

All mitigation measures as provided in the 2006 EIR as amended are still relevant and would be implemented and included as part of the Mitigation Monitoring and Reporting Program for the project.

5.8.2.4.2 Proposed Project Impact Analysis

A. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services?

At buildout, the proposed project would result in an incremental increase in the local demand for police services. Development of the proposed project and anticipated population growth combined with other potential development projects in the surrounding area, would increase demands for additional police personnel, support staff, related equipment, and police facilities. However, the increased demand that would occur with development of the proposed project would be a small portion of the anticipated area-wide increased demand associated with overall population growth and other development projects within the project area. Although the development of the proposed project would not independently impact existing police services, the City of Chula Vista recognizes that new residential and non-residential development is expected to continue to increase in the future. Future development would generate additional residents and employees, which would result in increased service calls and increased demand for police protection personnel and facilities. The GDP has stated that one police facility constructed in the EUC would adequately serve the Otay Ranch area, including the proposed project, at buildout. Additionally, the community storefront located in the Otay Ranch Town Center would provide police protection services to the area.

The City's PFDIF, described previously, would help cover the cost of new or expanding public facilities within the city, including police facilities. The proposed project would be subject to the payment of the fee at the rate in effect at the time building permits are issued. Although additional law enforcement staff and facilities are recommended to adequately support the proposed project at buildout, the project would be required to pay the PFDIF, which would be used exclusively for future facility improvements necessary to ensure that the development contributes its fair share of the cost of police facilities and equipment determined to be necessary to adequately accommodate new development in the City. The project's payment of PFDIF fees (per MM-5.13.5-1 of the 2006 EIR) would ensure that police facilities are properly funded by the proposed development. Therefore, impacts would be considered less than significant.

B. The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on police services if it would:

ii. Exceed the City's Threshold standards to respond to Priority One emergency calls throughout the City (within seven minutes and 81% of the cases and an average response time to all Priority One calls of 5.5 minutes of less).

iii. Exceed the City's threshold standards to respond to Priority Two urgent calls throughout the City (within seven minutes in 57% of cases and an average response time to all Priority Two calls of 7.5 minutes or less).

The Chula Vista Police Department (CVPD) was not compliant with both Priority One and Priority Two thresholds during FY 2012. Development of the proposed project would increase the demand for police services as a result of increased population and development density. Subsequently, the proposed project would contribute to an increase in average response times due to a potential increase in the frequency of police calls. Although population is only one factor of many that generate demand for police services, it is the best estimate for the project's need for police services currently available. To estimate the calls for service for different land use types, the CVPD uses local or regional per acre (or per unit) averages for similar properties or areas.

The central police station located at 315 Fourth Avenue is sufficient to meet the law enforcement needs associated with the proposed project because patrol offers respond to calls for service from the field rather than a fixed station. The GDP states that one police station located in the EUC would adequately provide police protection services to the Otay Ranch Area and SPA Plans must consider this station when planning for any substations. Storefronts, such as the facility located in the Otay Ranch Town Center, can serve as outlets for multiple public services including additional police protection services.

Implementation of the project would require the collection of PFDIF. The PFDIF addresses the project's proportional impact on capital facilities, such as structures and equipment, associated with police protection. It does not address the impact associated with operations and maintenance for those facilities. Public funds such as property taxes, sales taxes, and fees generated by the project would be used to cover the incremental costs associated with providing police services. The PFFP for the proposed project will include a fiscal impact analysis to determine the revenues and costs expected to be generated by the development. Net revenues will be used to finance costs associated with operations and maintenance associated with the public services required to serve the project.

According to the 2013 GMOC report, both thresholds were not met for a variety of reasons. The non-compliance with the Priority One threshold was attributed to the chronically

understaffed Community Patrol Division. GMOC notes that increasing staff to budget levels would help improve response times to Priority One calls. Similarly, the 2013 GMOC report states that, according to CVPD, the staff of the Community Patrol division must substantially increase in order to meet the Priority Two threshold. As stated previously, however, the Priority Two threshold is currently undergoing changes to better reflect proper response times. While the proposed project would be required to pay PFDIFs, the fees would be exclusively utilized for expanding facilities, not operation and staffing of such facilities.

The project's payment of PFDIF fees (per MM-5.13.5-1 of the 2006 EIR), continued monitoring of CVPD responses times per GMOC thresholds (per MM-5.13.5-2 of the 2006 EIR), and compliance with existing city codes, policies, and regulations would ensure that the GMOC threshold standard is achieved. Therefore, impacts would be less than significant.

C. Would the project be inconsistent with General Plan objectives and policies regarding police protection thereby resulting in a significant physical impact?

City of Chula Vista General Plan

The Chula Vista General Plan recognizes that police services will need to expand as the city's population grows. The Public Facilities and Services Element of the General Plan includes objectives to maintain sufficient levels of police service to protect public safety and property and to provide adequate police protection services to newly developing and redeveloping areas of the city. As described previously, the General Plan has been updated since the time of completion and certification of the 2006 EIR, which relied on the 1989 version of the General Plan. It has since been comprehensively updated in 2005. The proposed project would promote the policies and goals of the General Plan including: maintain sufficient levels of police protection services; provide adequate law enforcement staff; provide adequate police protection to newly developing areas; concurrent construction of public services and new development; protection of life and property and prevention of crime; and site law enforcement facilities in appropriate locations. The following objectives are identified in the General Plan associated with police protection:

- **Objective PFS 5:** Maintain sufficient levels of fire protection, emergency medical service and police services to protect public safety and property.
- **Objective PFS 6** Provide adequate fire and police protection services to newly developing and redeveloping areas of the City.

The project proposes an increase in density, and to support that increase, would also include an additional elementary school, parkland, and CPFs. While specific land use patterns would be altered from the currently approved SPA Plan, the change in density would not interfere with the

primary policies and goals of Village Two, the SPA Plan, and the General Plan. The project would provide adequate access for police vehicles and other emergency services. The project PFFP analyzes the required police services necessary to serve the project and identifies when these services would be required and the appropriate funding mechanism(s) to ensure that facilities, equipment and personnel are operational prior to or concurrent with need. As described above, the proposed project would promote public safety through implementation and compliance with the City's policies and regulations. The proposed project is also required to pay the City's PFDIF (per MM-5.13.5-1 of the 2006 EIR) which would help subsidize future development of public services and infrastructure, including police facilities. Continued monitoring and reassessment of the police GMOC thresholds (per MM-5.13.5-2 of the 2006 EIR) would also ensure police protection services. Overall, the proposed project is consistent with the objectives identified in the General Plan and impacts would be less than significant.

Otay Ranch General Development Plan

The purpose of the Law Enforcement Facilities section of the Otay Ranch GDP is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of law enforcement facilitates. The goal is prevent the occurrence of crime and protect life, and property. As stated in the Otay Ranch GDP, one police station, located in the EUC is necessary to serve the Otay Ranch project area at build-out (City of Chula Vista 2013f). The following goals are identified in the Otay Ranch GDP relevant to police protection:

- **Goal:** Prevent injury, loss of life and damage to property resulting from crime occurrence through the provision of justice facilities
- **Goals:** Prevent injury, loss of life and damage to property by having adequate justice facilities to serve Otay Ranch residents.
- **Goal:** Protection of life and property and prevention of crime occurrence.

Implementation of the project would require the collection of PFDIF. The PFDIF addresses the project's proportional impact on capital facilities, such as structures and equipment, associated with police protection. It does not address the impact associated with operations and maintenance for those facilities. Public funds such as property taxes, sales taxes, and fees generated by the project would be used to cover the incremental costs associated with providing police services. The project does not propose any justice facilities; however, the design of Village Two fosters community interaction and awareness that deters criminal activity. CPTED design measures include "eyes on the street" orientation of commercial, mixed use and residential uses toward the street and placement of parks and pathways as focal points in the community. The proposed project would be consistent with all applicable police protection policies found in the Otay Ranch GDP. The Otay Ranch GDP objectives and policies

related to police protection are consistent with those in the City's General Plan. Therefore the proposed project would also be consistent with the Otay Ranch GDP. Impacts associated with the proposed project would be less than significant.

5.8.2.5 Level of Significance Prior to Mitigation

The proposed project would have less than significant impacts on police protection services.

5.8.2.6 Mitigation Measures

No further mitigation is required beyond what is provided in the 2006 EIR.

5.8.2.7 Level of Significance After Mitigation

Impacts to police protection services and facilities as a result of the project would remain less than significant.

5.8.2.8 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts discussed in the 2006 EIR as a result of an increase in demand for police protection services. However, it would not change the conclusions reached by the analysis of the 2006 EIR. No new impacts are identified and no new mitigation is required.

5.8.3 Schools

5.8.3.1 Regulatory Framework

State Level

California Senate Bill 50

Two public school districts provide primary and secondary school facilities and services within the City of Chula Vista: The Chula Vista Elementary School District (CVESD) (kindergarten through sixth grade) and the Sweetwater Union High School District (SUHSD) (seventh through twelfth grade). Senate Bill 50, enacted in 1998, allows school districts to levy a fee, charge, dedication, or other requirement against any development project within its boundaries for the purpose of funding the construction or reconstruction of school facilities. Pursuant to Government Code Section 65996, the payment of these fees by a developer serves to fully mitigate all potential project impacts on school facilities to less than significant levels.

Local Level

City of Chula Vista General Plan

The General Plan recognizes that demand for school facilities will continue to increase as the City's population grows and states that it is the intent of the City to facilitate the efforts of the districts to provide school services. The Public Facilities and Services Element includes objectives to efficiently locate and design school facilities (Objective PFS 10) (City of Chula Vista 2005).

Otay Ranch General Development Plan

The purpose of the School Facility Section of the GDP is to establish goals, objectives, policies, and processing requirements to ensure the timely provision of local school facilities. As stated therein, the goals of the GDP with respect to school facilities is to provide high quality K-12 educational facilities for Otay Ranch residents by coordinated planning of school facilities with the appropriate school district and to coordinate the planning of adult educational facilities with the appropriate district. In addition, the GDP states that buildout of the Otay Ranch GDP would generate a demand for 13 elementary schools, two middle schools, and two high schools.

The GDP also includes a list of criteria for siting schools within the individual villages. The siting criteria address site size, location in proximity to residential development and parks and accessibility to all modes of transportation including pedestrian, bicycle and vehicular traffic, topographic and soils considerations, proximity to high-level noise generators, accessibility to utilities and services, and distance to Brown Field. The GDP notes that while it is unlikely that every site can meet all the criteria, each site should meet most of the listed criteria (City of Chula Vista 2013f).

Chula Vista Municipal Code

Section 19.80.030 of CVMC Chapter 19.80 (Controlled Residential Development) is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for schools and other public services. The PFFP prepared in conjunction with the preparation of a SPA Plan for a project is intended to ensure development of the project is consistent with the overall goals and policies of the General Plan and would not degrade public services. Similarly, Section 19.09 (Growth Management) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040.C specifies a threshold standard requiring that the City annually provide the two local school districts with a 12- to 18-month development forecast and requests an evaluation from the districts of their ability to accommodate the forecast and continuing growth. The districts must address the following (City of Chula Vista 2013b):

1. Amount of current capacity now used or committed
2. Ability to absorb forecasted growth in affected facilities

3. Evaluation of funding and site availability for projected new facilities
4. Other relevant information the district(s) desire(s) to communicate to the City and Growth Management Oversight Commission (GMOC).

The growth forecast and school district response letters are delivered to the GMOC for inclusion in its review. Section 19.09 also requires a PFFP and the demonstration that public services, including schools meet the GMOC quality of life threshold standards. The analysis of school services provided in this section, along with the PFFP to ensure funding for any needed expansion of services, ensure that schools will be provided commensurate with development and demand.

5.8.3.2 Existing Setting

The CVESD, established in 1892, is the largest kindergarten through sixth grade (grades K–6) school district in California, and serves approximately 29,200 students in 45 elementary schools (including charter schools) with 2,542 employees (both certified and classified) districtwide (CVESD 2013a). Kindergarten through third-grade classrooms have an average class size of 25 students or less (CVESD 2013a). The newest K–6 school in Otay Ranch Village Eleven (Enrique S. Camarena Elementary School) opened in July 2013. According to the 2013 GMOC report, with the addition of this school, the CVESD expects to have adequate facilities to house all projected students for up to 5 years. An additional 10.3-acre elementary school is currently planned within Village Two as part of the approved SPA Plan. The Village Two elementary school was expected to commence construction in 2011; however, construction has not yet begun and no construction update is available. Founded in 1920, the Sweetwater Unified High School District (SUHSD) serves more than 42,000 students in middle and high school (grades 7–12) and more than 32,000 adult learners at 32 campuses (Sweetwater Union High School District 2012). Several middle and high schools are planned or have been recently opened in the area. Olympian High School was opened in 2006 within Village Seven of Otay Ranch, and has a capacity of 2,600 students. According to the 2013 GMOC report, a middle school and high school may need to be constructed at Hunte Parkway and Eastlake Parkway in order to meet any significant increases in development. Figure 5.8-1 illustrates the existing and future public school locations.

There are six CVESD elementary schools serving Otay Ranch students. These include Heritage Elementary, McMillin Elementary, HedenKamp Elementary, Veterans Elementary, Wolf Canyon Elementary and Camerena Elementary. Secondary schools serving Otay Ranch include Otay Ranch High School, Olympian High School, Rancho del Rey Middle School, and EastLake Middle School. Enrollment and capacity in these schools are shown in Table 5.8-3.

Table 5.8-3
Project Area Schools

School	Enrollment	Capacity
Heritage Elementary	915	863
McMillin Elementary	851	845

Table 5.8-3
Project Area Schools

School	Enrollment	Capacity
Hedenkamp Elementary	1,078	1,045
Veterans Elementary	887	850
Wolf Canyon Elementary	655	849
Camarena Elementary	945	900
Otay Ranch High School	2,560	2,538
Olympian High School	2,175	2,117
Rancho del Rey Middle School	1,669	1,675
EastLake Middle School	1,740	1,590

Source: CVESD 2013b; Personal communication with individual schools 2013; SUHSD, personal communication with Paul Woods 2013

5.8.3.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a school facility impact. Impacts to schools would be significant if the proposed project would:

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for educational facilities services.

B. According to the Otay Ranch GDP, impacts would be significant if the proposed SPA Plan would locate schools:

   i. In areas where disturbing factors such as traffic hazards, airports, or other incompatible land uses are present

   ii. In areas where they are not integrated into the system of alternative transportation corridors, such as bike lanes, riding and hiking trails, and mass transit

   iii. Where private elementary and secondary schools are not spaced far enough from public schools and each other to prevent a concentration of school impacts

   iv. Without at least 10 usable acres for an elementary school

   v. Without a central location to residential development

   vi. Adjacent to a street or road which cannot safely accommodate bike, foot, and vehicular traffic

   vii. In areas not adjacent to parks, thereby discouraging joint field and recreation facility uses

viii. At an unsafe distance from contaminants or toxins in the soil or groundwater from landfills, fuel tanks, agricultural areas, power lines, utility easements, and so on

ix. Inside of floodplains; on unstable soils; or near fault lines

C. Be inconsistent with General Plan, GDP, and other objectives and policies regarding school services thereby resulting in a significant physical impact.

5.8.3.4 Impacts

5.8.3.4.1 2006 EIR Impacts Conclusions

The 2006 EIR made the following conclusions related to schools for the Village Two portion of the SPA Plan:

Implementation of the SPA Plan, including Village Two would result in significant impacts to schools due to the substantial increase in educational services demand. Planning of school facilities construction with development of the SPA Plan area as well as payment of development fees would reduce impacts to less than significant.

All mitigation measures as provided in the 2006 EIR as amended are still relevant and would be implemented and included as part of the Mitigation Monitoring and Reporting Program for the project.

5.8.3.4.2 Proposed Project Impact Analysis

A. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for educational facilities services?

The proposed project's increase in residential development would generate additional students in the project site. Student generation for the proposed project is provided in Table 5.8-4.

Table 5.8-4
Student Generation for the Proposed Project

		Student Generation Rate			Students Generated by Proposed Project		
	Units	*Elementary School*	*Middle School*	*High School*	*Elementary School*	*Middle School*	*High School*
SF	311	0.4114	0.0936*	0.1939*	128	29	60
MF	1,251	0.2091	0.0810	0.1171	262	101	147
Project Total	**1,562**				**390**	**130**	**207**

Source: SUHSD, personal communication with Paul Woods 2013
* Multiple generation rates were provided for single-family units. For the purposes of being conservative, the larger rate is used.

Elementary Schools

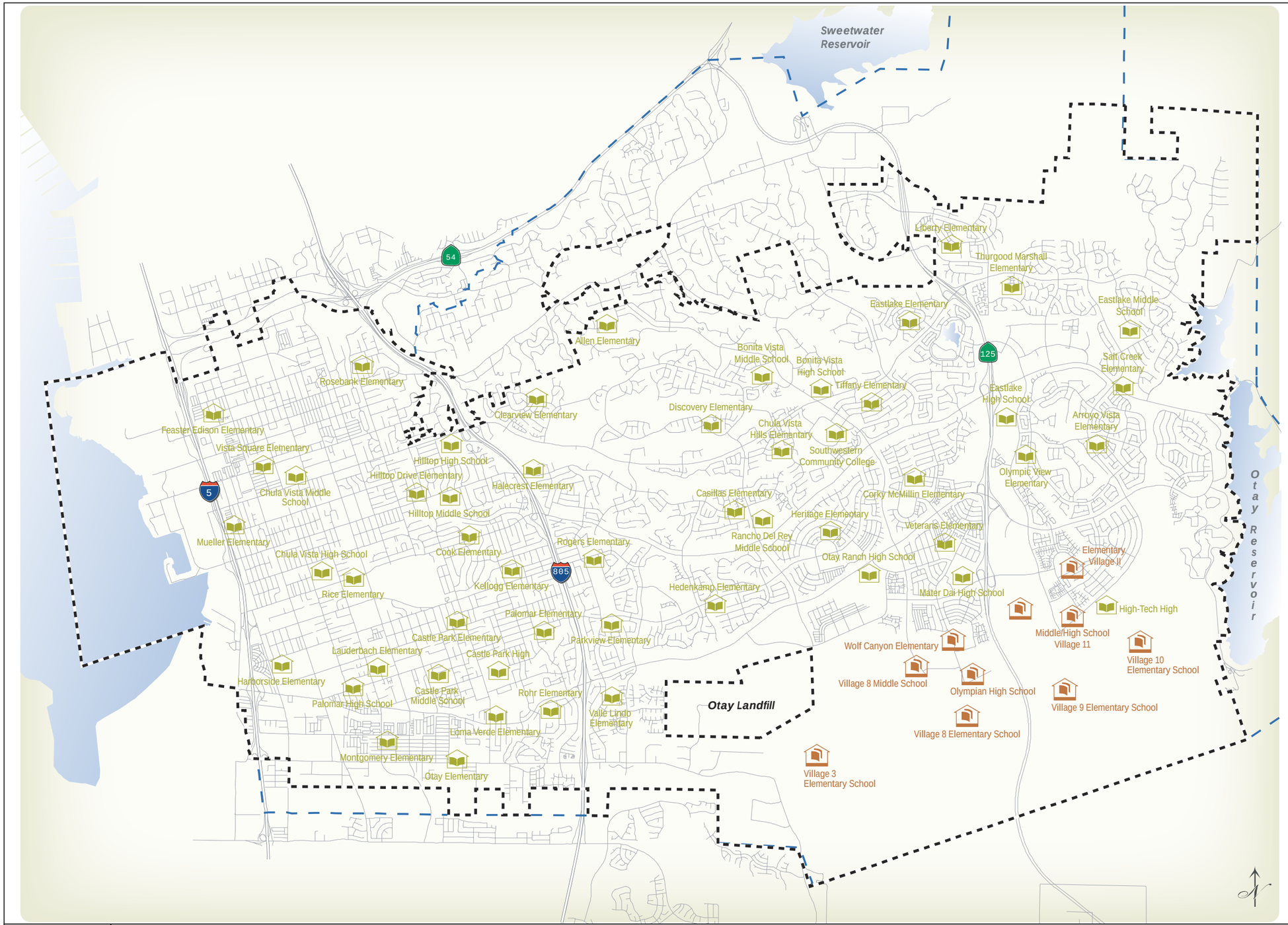
Buildout of the proposed project's 1,562 residential units would generate approximately 390 elementary school students, as shown in Table 5.8-4. To provide for future elementary school demand, the proposed project includes one elementary school site within Village Two that would be reserved for acquisition by CVESD. The construction schedule for the school would be determined by CVESD. A previously approved elementary school site, which is not part of the proposed project, is also located within Village Two. Students in the project site would be accommodated in neighboring CVESD elementary schools at the discretion of the school district until the new schools are constructed. This could result in temporary impacts on neighboring schools.

Middle Schools

According to SUHSD, the proposed project is within the attendance boundary of Rancho Del Rey Middle School. Buildout of the proposed project would generate approximately 130 middle school students, as shown in Table 5.8-4. While there are no middle school sites designated in the proposed project, a 21-acre middle school site has been designated within Village Eight West that is planned to serve up to 1,000 students, and a 25.6-acre middle/high school site has been designated within Village Eleven. These middle schools are anticipated to be adequate to serve buildout of the proposed project. The school sites would be reserved for acquisition by SUHSD. Construction timing of the school would be determined by the district. Until such time that the school would be completed, students residing within the project site would attend schools in neighboring villages as determined by the school district. This could result in temporary impacts on neighboring schools.

High Schools

The proposed project would generate approximately 207 high school students, as shown in Table 5.8-4. According to SUHSD, students residing in the project site would be in the attendance boundaries of Otay Ranch High and Olympian High. While there are is no high school site designated within the proposed project, a 25.6-acre middle/high school site has been designated within Otay Ranch Village Eleven. This new high school would be adequate to serve buildout of the proposed project. Until such time that another high school would be completed, the project would result in temporary impacts on Olympian and Otay Ranch High Schools.



LEGEND

- Existing Schools
- Future Schools
- City Boundary
- Sphere of Influence Boundary

As of January 2010

DUDEK

SOURCE: CITY OF CHULA VISTA 2010

FIGURE 5.8-1

Existing and Future Public School Locations

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Although the proposed project would result in an increase in student generation and the timing of future schools in the project area is not yet determined, the project would be required to pay all required school mitigation fees or enter into an agreement to help finance needed facilities per MM-5.13.7-1 and 2 of the 2006 EIR. In addition, all school impacts are mitigated, as a matter of law, by payment of school fees (Government Code §65996 *et seq.*). Therefore, impacts would be less than significant.

B. According to the Otay Ranch GDP, impacts would be significant if the proposed SPA Plan would locate schools:

- **i. In areas where disturbing factors such as traffic hazards, airports, or other incompatible land uses are present**
- **ii. In areas where they are not integrated into the system of alternative transportation corridors, such as bike lanes, riding and hiking trails, and mass transit**
- **iii. Where private elementary and secondary schools are not spaced far enough from public schools and each other to prevent a concentration of school impacts**
- **iv. Without at least 10 usable acres for an elementary school**
- **v. Without a central location to residential development**
- **vi. Adjacent to a street or road which cannot safely accommodate bike, foot, and vehicular traffic**
- **vii. In areas not adjacent to parks, thereby discouraging joint field and recreation facility uses**
- **viii. At an unsafe distance from contaminants or toxins in the soil or groundwater from landfills, fuel tanks, agricultural areas, power lines, utility easements, and so on**
- **ix. Inside of floodplains; on unstable soils; or near fault lines.**

To meet elementary school requirements the Otay Ranch GDP provides for the siting of one elementary school in each village. A 9.5-acre elementary school site is proposed as part of the project, contributing to the already approved and separate 10.3-acre elementary school site within Village Two. These two elementary school sites would be located in the village core adjacent to the neighborhood parklands to facilitate joint use opportunities. The sites would be reserved for acquisition by CVESD, as provided in the Village Two PFFP.

The nearest airport to the project site is the Brown Field Municipal Airport, which is located approximately 2.5 miles south of the project site. As discussed in Section 5.4, Noise, Village Two lies outside the significant noise contours of Brown Field. Additionally, the project site is not within the flight activity zones, which are the areas adjacent to the ends of the runway that are associated with the greatest risk. Therefore, the location of the proposed school site would not be exposed to disturbing factors from Brown Field.

The proposed circulation plan encourages pedestrian activity and the use of bicycles through the provision of off-street paved paths, bike lanes, a Regional Trail and Village Pathways. The design of all village streets includes sidewalks and landscaping to promote pedestrian circulation throughout the Village Two area. The elementary school sites are located along internal roadways, such as promenade streets and residential collectors, which are low-speed roadways. In addition, traffic calming design features such as intersection bulb-outs, which would slow traffic and improve pedestrian visibility, would be included at key intersections surrounding the school sites. Therefore, the roadways that would surround the school sites would be separated from the schools by pedestrian facilities and would include traffic calming measures and/or low speed limits to minimize traffic hazards surrounding the schools.

As discussed above, bike lanes and pedestrian facilities would be provided on the streets surrounding the elementary school sites, including the off-street Village Pathway. In addition, the school sites are within walking distance of proposed transit stops. As such, the proposed multi-modal transportation network would support the future elementary schools and adjacent traffic would safely accommodate bicycle, pedestrian and vehicular traffic. Vehicular traffic generated by the proposed school sites is addressed in Section 5.2, Transportation, Circulation, and Access.

No private schools are proposed as part of the project, and it is unknown if, and in what location, future private schools may be built. However, a proposed private school would not be permitted close to an incompatible land use such as a public school. The proposed elementary school sites are located adjacent to neighborhood parks and with a quarter of a mile of most village residents.

The proposed project includes 9.5 acres designated for a new elementary school. Although this proposed school site would not adhere to the GDP standard of at least 10 acres for an elementary school site, Village Two also includes an approved 10.3-acre elementary school site. Therefore, the proposed 9.5-acre school would supplement the already-approved school and provide additional elementary school capacity in Village Two.

The proposed elementary school sites must comply with state and CVESD standards regarding health and safety issues, including the potential for toxins in the soil. As discussed

in Section 5.14, Hazards and Risk of Upset, of the 2006 EIR, potentially contaminated soils may exist due to past agricultural use and the Otay Ranch Operations Center in the eastern portion of Village Two. However, additional testing resulted in finding potentially hazardous chemical concentrations to be below levels of significance. The proposed school site is not located within a floodplain or on an unstable fault line that could result in significant geologic hazards. The entire project site, including the school site is located in seismically active southern California and all applicable design and construction requirements would be implemented to create the safest, seismically sound school facilities possible. Conformance with all mitigation measures in Section 5.7, Geology and Soils, would reduce any potentially significant impacts associated with the location and construction of school facilities as related to geologic hazards.

In addition, all school impacts are mitigated, as a matter of law, by payment of school fees (Government Code §65996 *et seq.*). Thus the proposed project would have less than significant impacts.

C. Would the project be inconsistent with General Plan, GDP, and other objectives and policies regarding school services thereby resulting in a significant physical impact?

City of Chula Vista General Plan

As described previously, the General Plan has been updated since the time of completion and certification of the 2006 EIR, which relied on the 1989 version of the General Plan. The proposed project would promote the policies and goals of the General Plan including: develop schools that cultivate and educate people of all ages; efficient locate and design school facilities; plan proposed compatible land uses adjacent to schools; site industrial land uses to minimize impacts to schools; and provide high quality K-12 educational facilities to Otay Ranch Residents. The General Plan recognizes that demand for school facilities will continue to increase as the City's population grows and states that it is the intent of the City to facilitate the efforts of the districts to provide school services. The Public Facilities and Services Element includes objectives to efficiently locate and design school facilities. The following objectives associated with school facilities are provided in the General Plan:

- **Objective PFS 9:** Develop schools that cultivate and educate people of all ages, that meet the needs of the workforce and that serve as community centers.
- **Objective PFS 10:** Efficiently locate and design school facilities.

The project proposes an increase in density, and to support that increase, would also include an additional elementary school, parkland, and CPFs. While specific land use patterns would be altered from the currently approved SPA Plan, the change in density would not interfere with the

primary policies and goals of Village Two, the SPA Plan, and the General Plan. The project provides an additional elementary school site for a total of two elementary school sites within Village Two. In addition, the project PFFP analyzes existing school capacity, the additional demands for school facilities generated by the proposed project and establish the timing of the provision of school facilities as well as a funding source. The proposed second elementary school would be sited immediately adjacent to residential and parkland uses, outside the landfill buffer zone and away from industrial land uses. Mitigation measures provided in Section 5.4, Noise, would ensure the schools and surrounding land uses are not adversely affected by noise. While the proposed project does not plan for middle or high schools, new schools are planned within adjacent Otay Ranch villages. The proposed project would be consistent with the applicable objectives in the General Plan and impacts would be less than significant.

Otay Ranch GDP

The purpose of the School Facility Section of the Otay Ranch GDP is to establish goals, objectives, policies, and processing requirements to ensure the timely provision of local school facilities. As stated therein, the goals of the Otay Ranch GDP with respect to school facilities is to provide high quality K-12 educational facilities for Otay Ranch residents by coordinated planning of school facilities with the appropriate school district and to coordinate the planning of adult educational facilities with the appropriate district. The Otay Ranch GDP also includes a list of criteria for siting schools within the individual villages. The siting criteria address site size, location in proximity to residential development and parks and accessibility to all modes of transportation including pedestrian, bicycle and vehicular traffic, topographic and soils considerations, proximity to high-level noise generators, accessibility to utilities and services, and distance to Brown Field. In addition, the Otay Ranch GDP states that buildout of the Otay Ranch GDP would generate a demand for 13 elementary schools, two middle schools, and two high schools. The following goals are identified in the Otay Ranch GDP relevant to school facilities:

- **Goal:** Provide adequate child care facilities and services to serve the Otay Ranch project area.
- **Goal:** Provide high quality, K-12 educational facilities for Otay Ranch residents by coordinated planning of school facilities with the appropriate school district.

As previously discussed, the project provides an additional elementary school site for a total of two elementary school sites within Village Two. In addition, the project PFFP analyzes existing school capacity, the additional demands for school facilities generated by the proposed project and establish the timing of the provision of school facilities as well as a funding source. The proposed second elementary school would be sited immediately adjacent to residential and parkland uses, outside the landfill buffer zone and away from industrial land uses. The Otay

Ranch GDP goals related to school facilities are consistent with those in the City's General Plan. Therefore the proposed project would also be consistent with the Otay Ranch GDP. Impacts associated with the proposed project would be less than significant.

5.8.3.5 Level of Significance Prior to Mitigation

The proposed project would have less than significant impacts associated with school facilities.

5.8.3.6 Mitigation Measures

No further mitigation is required beyond what is provided in the 2006 EIR.

5.8.3.7 Level of Significance After Mitigation

Impacts to schools would remain less than significant.

5.8.3.8 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts discussed in the 2006 EIR as a result of an increase in demand for schools. However, it would not change the conclusions reached by the analysis of the 2006 EIR. No new impacts are identified and no new mitigation is required.

5.8.4 Parks, Recreation, and Open Space

5.8.4.1 Regulatory Framework

Local Level

City of Chula Vista General Plan

The goals of the General Plan are to provide and maintain infrastructure and public services and improve sustainability of the city's natural resources are established in the Public Facilities and Services and Environmental Elements of the General Plan. The Public Facilities and Services Element contains objectives to provide new facilities for residents of new development (Objective PFS 15). The Environmental Element of the General Plan establishes the policy framework for improving sustainability through the responsible stewardship of the city's natural and cultural resources (Policy E.1.1), including the preservation of open space and development of connecting trails. Additionally, Growth Management Objective GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects demonstrated to be out of compliance with applicable threshold standards for fire and emergency medical services (City of Chula Vista 2005).

City of Chula Vista Municipal Code

The City of Chula Vista park dedication policies and requirements are contained in CVMC, Section 17.10, Parkland Dedication Ordinance (PLDO), which establishes requirements for parklands and public facilities, including regulations for the dedication of land and development improvements for park and recreation purposes (CVMC Section 17.10.010); determination of park and recreation requirements (CVMC Section 17.10.020); area to be dedicated (CVMC Section 17.10.040); specifications for park improvements (CVMC Section 17.10,050); criteria for area to be dedicated (CVMC Section 17.10.060); procedures for in lieu fees for land dedication and/or park development improvements (CVMC Section 17.10.070); and other regulations regarding park development and collection and distribution of fees. PLDO requires the dedication of three acres of parkland per 1,000 people or a combination of land dedication, in-lieu fees, or park development improvements to be offered at the time of final map or in the case of a residential development that is not required to submit a final map, at the time of the first building permit application (City of Chula Vista 2013b).

Section 19.80.030 of CVMC Chapter 19.80 (Controlled Residential Development) is intended to ensure that development would not degrade existing public services and facilities below acceptable standards for parks and other public services. The preparation of PFFPs is required in conjunction with SPA Plans for the proposed project to ensure that development is consistent with the overall goals and policies of the General Plan and wouldn't degrade public services. Similarly, CVMC Section 19.09 (Growth Management) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. CVMC Section 19.09.040E specifies a threshold standard of "three acres of neighborhood and community parkland with appropriate facilities per 1,000 residents east of I-805." This section also requires a PFFP (City of Chula Vista 2013b).

City of Chula Vista Greenbelt Master Plan

The City of Chula Vista Greenbelt Master Plan provides guidance and continuity for planning open space and constructing and maintaining the Greenway Trail. The Greenbelt Master Plan addresses existing and potential trail locations, trail and staging area development standards, maintenance responsibilities and a system of trails and open space that serve as a unifying element in linking other trails within the central areas of the city. The Village Greenway segment has been added to the Greenbelt Master Plan as a major trail linkage identified in the GDP. According to the City of Chula Vista Greenbelt Maintenance Map (Figure 19 within the Greenbelt Master Plan), Village Two would include connections to a regional trail system that would ultimately connect to the Greenbelt Trail (City of Chula Vista 2003b). The Village Greenway is intended to connect active and passive users and provide them with the opportunity to stop and enjoy an enhanced open space paseo. Figure 5.8-2 illustrates the City of Chula Vista's greenbelts, open space, and network trails.

LEGEND

- Greenbelt/ Open Space
- Multi-Purpose Trail
- City Boundary
- Sphere of Influence Boundary

As of January 2010

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SOURCE: CITY OF CHULA VISTA 2010

FIGURE 5.8-2
Greenbelts, Open Space, and Network Trails

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City of Chula Parks and Recreation Master Plan

The City of Chula Vista Parks and Recreation Master Plan, adopted by City Council in 2002, describes a comprehensive parks and recreation system that services the community at large through the delivery of a variety of park sites containing a variety of recreational experiences. The City is currently in the process of updating the 2002 Parks and Recreation Master Plan in response to the 2005 General Plan update. A draft Park and Recreation Master Plan Update was released for public review in 2010. The Draft Park and Recreation Master Plan Update 2010 identifies a range of passive and active park elements to serve the residents of the proposed project. The Plan further describes that parkland obligations are to be met in eastern Chula Vista through a "combination of the dedication of land and or payment of in lieu fees and/or credits for construction of facilities consistent with CVMC Section 17.10" (City of Chula Vista 2010). As stated in the document, each park within the system is viewed in the context of the whole park system to insure that it functions properly in providing a balance of recreational opportunities. The document describes existing and future park sites and as such identifies parks within the Otay Ranch area, including the proposed project.

City of Chula Vista Bikeway Master Plan

The Chula Vista Bikeway Master Plan, originally adopted in 1996 and updated in 2005 and more recently in 2011, identifies existing and proposed bikeway facilities throughout the City. Bicycle systems adjacent to the City are also identified for the purpose of evaluating opportunities for connections to the regional network. The plan supports the integration of land use planning with transportation planning in order to take into account future land use and population projections and as a means to provide bicycle facilities to help decrease auto dependence. The plan also supports integrated planning efforts as a means to promote opportunities for exercise and recreation, highlighting the interconnection of bikeways with area parks.

SPA Parks Master Plan

This SPA Park Master Plans strives for consistency with the Otay Ranch GDP and the current proposed plans and policies of the Parks and Recreation Department. The SPA Park Master Plans identify the proposed types, quantities and location of the facilities provided at each park site in the SPA Plan areas. In addition to identifying specific facility needs and requirements, the goal of the SPA Park Master Plans is to describe the elements necessary to ensure a rich variety of recreational opportunities, while satisfying identified recreation needs.

5.8.4.2 Existing Setting

The Chula Vista park system contains 57 public parks and recreation facility sites, including 9 community parks totaling 226 acres, 282 acres of neighborhood parks, 12 acres of urban and

mini parks, 1 3.4-acre special purpose park, 4 community centers, 1 senior center, 4 gymnasiums, and 2 swimming pools totaling approximately 530 acres (City of Chula Vista 2010). Existing parks and recreational facilities are shown on Figure 5.8-3. The city currently meets the Growth Management Program's threshold standard of three acres of neighborhood and community parkland per 1,000 residents in east Chula Vista. The 2013 GMOC Annual Report noted that while the eastern portion of Chula Vista is in compliance with the parkland ratio, potential non-compliance is projected to occur by the end of the year, dropping the parkland ratio to 2.96 acres per thousand residents (City of Chula Vista 2013e).

The nearest existing neighborhood parks to the project area include Heritage Park and Community Center, Harvest Park, Santa Cora Park, and All Seasons Park. Public parks in the city are open to all area citizens. Neighborhood parks generally serve a local adjacent or nearby residential neighborhood, while community parks serve the broader community and provide a greater range of services. Regional and County parks and the Otay Ranch Preserve are also located in eastern Chula Vista and adjacent San Diego County. As of 2004, Chula Vista had over 9,433 undeveloped acres of regional parks, including significant portions of the Sweetwater and Otay River Valleys and the Otay Reservoirs (City of Chula Vista 2005). These facilities are described below:

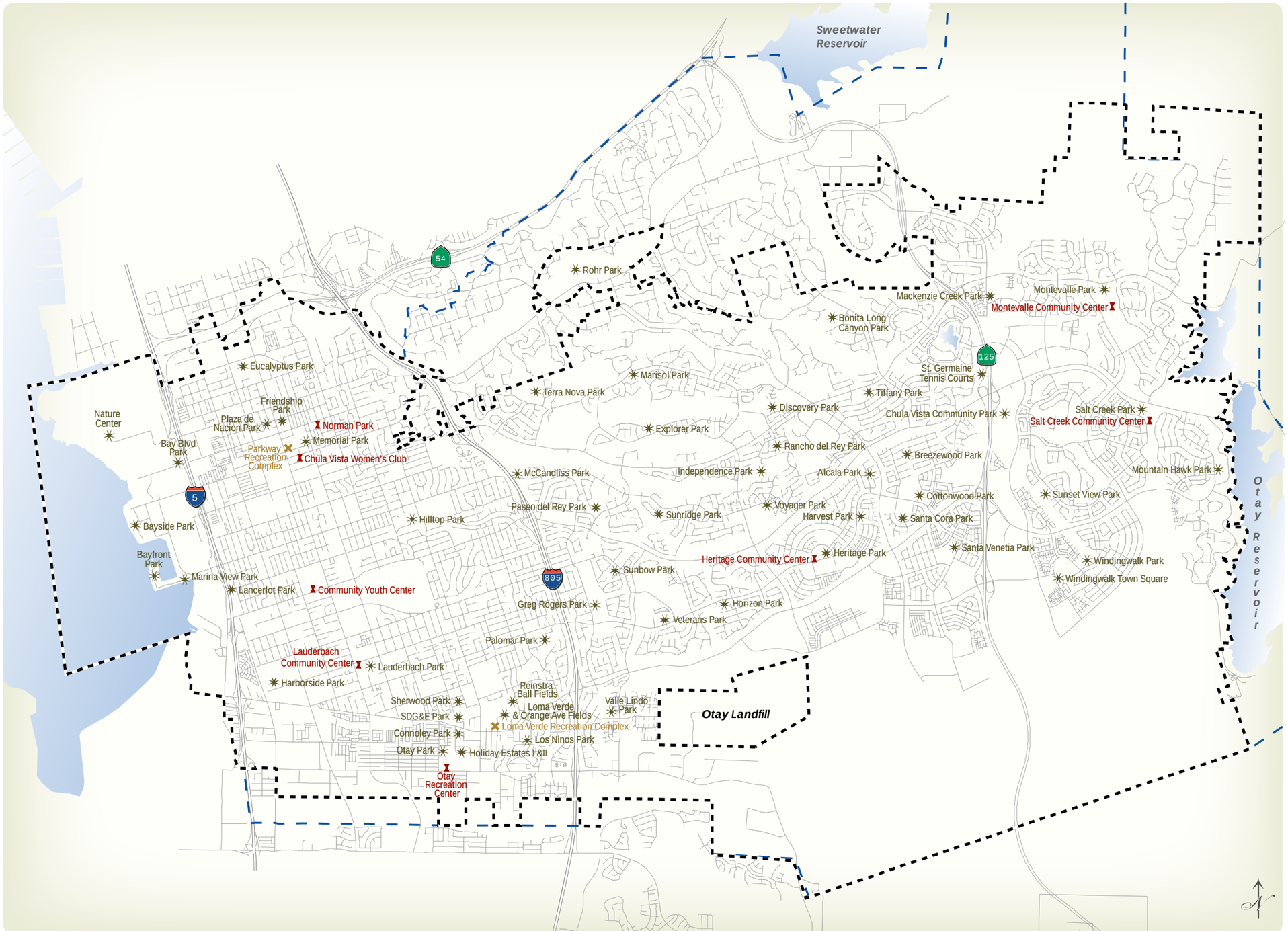
Neighborhood Parks

Heritage Park and Community Center, 1381 E. Palomar Street. This park contains approximately 10.1 acres and includes an amphitheater, barbecue grills, basketball courts, a duck pond, the Heritage Park Community Center, green open space, picnic areas, play equipment, gazebos, a skateboard park, a soccer field, and a walking trail.

Harvest Park, 1150 E. Palomar Street. This park contains approximately 6.8 acres and includes barbeque grills, open green space, picnic areas, play equipment, gazebos, a walking trail, and a soccer field.

Santa Cora Park, 1365 Santa Cora. This park encompasses approximately 5.7 acres and includes barbeque grills, basketball court, open green space, a picnic area, play equipment, and tennis courts.

All Seasons Park, 1825 Magdalena Avenue. This park encompasses 7.5 acres and includes barbeque grills, basketballs courts, open green space, picnic areas, play equipment, a gazebo, and a soccer field.



LEGEND

Existing

- Parks
- Community Centers
- Recreation Complex

- City Boundary
- Sphere of Influence Boundary

As of January 2010

DUDEK

SOURCE: CITY OF CHULA VISTA 2010

FIGURE 5.8-3

Existing Public Park and Recreation Facilities

Otay Ranch Village Two Comprehensive SPA Plan Amendment Supplemental EIR

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Regional and County Parks and Otay Ranch Preserve

Otay Valley Regional Park. This park is bisected by the SR-125. The Otay Valley Regional Park will ultimately encompass 8,000 acres passing through the jurisdictions of the County of San Diego and cities of San Diego and Chula Vista. The regional park is located in the Multiple Habitat Planning Area of the city of San Diego and the preserve management area of the city of Chula Vista under each MSCP Subarea Plan and represents one of the major open spaces within southern San Diego County.

Otay Lakes County Park. This park is operated by the County of San Diego Department of Parks and Recreation. The approximately 78-acre park, which provides picnicking, playground, hiking trails, and a native plant/demonstration garden, will ultimately be the eastern gateway/staging area for the Otay Valley Regional Park.

Otay Ranch Preserve. This preserve will contain approximately 11,375-acres, all of which will be included in the MSCP subregional preserve. To date, approximately 3,000 acres of the Otay Ranch Preserve has been dedicated to Chula Vista and the County of San Diego. For every acre approved for development in Otay Ranch, 1.188 acres is dedicated to the Otay Ranch Preserve. The land developers contributing to this preserve have established a financing program to ensure funds are available to pay for the active management of the entire preserve system in perpetuity. The preserve's dedicated conservation lands will connect large areas of open space through a series of wildlife corridors, including connections between large, regional open spaces, such as Otay Reservoir and San Miguel Mountain.

Projected Park and Recreation Needs – Year 2030

Under the General Plan forecast assumptions for 2030, the need for additional park and recreation facilities will continue. Future anticipated inventory of parkland, resulting from new residential development is anticipated to meet a majority of facility needs, along with quasi-public sites (schools). A portion of the 2030 demand for organized, practice/ informal baseball fields, tot lots/playgrounds, tennis courts, indoor basketball courts, and swimming pools is anticipated to be unmet, thereby requiring continued reliance on private facilities to meet a portion of overall need.

5.8.4.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a parks and recreation impact. Impacts to parks, recreation, and open space would be significant if the proposed project would:

A. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

B. Include recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

C. The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on parks and recreation services if it would:

   i. Fail to meet the City's threshold standard of three acres of neighborhood and community parkland per 1,000 residents.

D. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding parks thereby resulting in a significant physical impact.

5.8.4.4 Impacts

5.8.4.4.1 2006 EIR Impacts Analysis

The 2006 EIR made the following conclusions related to parks, recreation, and open space for the Village Two portion of the SPA Plan:

Implementation of the SPA Plan, including Village Two would result in significant impacts to parks and recreation facilities due to the substantial increase in demand from population growth. Planning of park and recreation facilities construction to coincide with development of the SPA Plan area as well as payment of development fees would reduce impacts to less than significant.

All mitigation measures as provided in the 2006 EIR as amended are still relevant and would be implemented and included as part of the Mitigation Monitoring and Reporting Program for the project.

5.8.4.4.2 Proposed Project Impact Analysis

A. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The proposed project would result in an increase in population above what was previously approved in the 2006 EIR, which would subsequently increase the use of existing neighborhood and regional parks. However, new development in the City is required to provide public parkland, improved to City standards and dedicated to the City. Parkland dedication requirements are specified in CVMC Section 17.10.040 of the Chula Vista Municipal Code. The PLDO requires three acres of neighborhood and community park per 1,000 residents. Further, the PLDO specifies parkland requirements of 460 square feet of parkland per single family unit and 341 square feet of parkland per multi-family unit.

Utilizing the PLDO parkland calculation rates, the proposed project would be obligated to provide 12.2 acres of parkland. As stated in Section 4.4.1 of this EIR, the proposed project would include 10.8 acres of parkland. While the proposed project, in and of itself, would not

meet the PLDO requirements, parkland obligations should be analyzed as a whole within Village Two. Village Two is currently obligated to provide 58.7 acres of parkland. [1] With the addition of the proposed project obligation, Village Two as a whole would be required to provide a total of 70.9 acres of parkland. As stated in Section 4.4.1 of this EIR, the total proposed parkland within Village Two is 69.5 acres, which would result in a parkland deficit of 1.4 acres. Therefore, there is a potentially significant impact related to parkland provision, and mitigation is required. With the incorporation of mitigation measure MM-PUB-1 below, the proposed project would comply with the PLDO and impacts would be reduced to a less than significant level.

Village Two also includes approximately 200.2 acres of open space and provides key trail segments which would ultimately connect to the Chula Vista Greenbelt Trail through Wolf Canyon. The Otay Ranch GDP has an open space requirement of 12 acres per 1,000 persons. As discussed in Section 5.11 of this EIR, the SPA Plan population coefficient of 3.24 persons per dwelling unit was used in order to remain conservative when calculating projected population inducement from the proposed project. Therefore, the GDP requires 176.7 acres of open space for all of Village Two including the proposed project, which is exceeded through the provision of 200.2 acres of open space. In addition to dedicating land for park development, the proposed project would either pay the improvement portion of the PLDO in-lieu fee or develop turn-key park facilities. The project would also be required to pay the recreation portion of the PFDIF which provides for development of major recreational facilities, including community centers and aquatic facilities per MM-5.13.9-1 of the 2006 EIR.

Additionally, in concert with the PLDO, the City of Chula Vista Parks and Recreation Master Plan (PRMP) recognizes the practice of aggregating park acreage obligations from various development areas to create and site community parks (typically 30 acres and larger in size). The PRMP establishes goals for the creation of a comprehensive parks and recreation system that meets the needs of the public by effectively distributing park types and associated recreation facilities and programs throughout the city. Consistent with the PRMP, the Village Four Community Park, 44.6 acres (40.4 acres of this park has already been dedicated as parkland, the remaining 4.6 acres is currently under City of San Diego ownership for the waterline) of which would exist within Village Two, represents the aggregation of park obligation from Village Two.

Compliance with the PLDO and Otay Ranch GDP would ensure that impacts associated with parks and recreational facilities as a result of project implementation would be reduced. While the proposed project in and of itself, and Village Two as a whole, do not meet the parkland

[1] The parkland obligation for Village Two accounts for the following obligations: Original Village Two Approval (24.2 acres), Original Village Two deficit (1.1 acres), Obligation from SPA One (31.6 acres), and the JPB 197-Unit Amendment (1.8 acres).

demand requirements, incorporation of MM-PUB-1 would ensure compliance with the PLDO. Therefore, impacts would be less than significant.

B. Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

As previously discussed, the proposed project includes 10.8 acres of parkland. Because this parkland is part of the development of the proposed project, the environmental effects are analyzed throughout this EIR. Additionally, the 58.7acres of parkland included in the original SPA Plan for Village Two, Three, and a Portion of Village Four, were fully analyzed in the 2006 EIR. Therefore, mitigation measures provided in this EIR and the 2006 EIR would reduce potential adverse environmental effects associated with the construction of recreational facilities to a less than significant level.

C. The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on parks and recreation services if it would:

i. Fail to meet the City's growth management threshold standard for parks and recreation of three acres of neighborhood and community parkland per 1,000.

As discussed under Threshold A, the 10.8 acres of parkland included in the proposed project and Village Two as a whole would not meet the parkland requirements. However, incorporation of MM-PUB-1 would ensure compliance with parkland requirements. Therefore, impacts would be less than significant.

D. Would the project be inconsistent with General Plan, GDP or other relevant objectives and policies regarding parks thereby resulting in a significant physical impact?

Chula Vista General Plan

As described previously, the General Plan has been updated since the time of completion and certification of the 2006 EIR, which relied on the 1989 version of the General Plan. The project proposes an increase in density, and to support that increase, would also include an additional elementary school, parkland, and CPFs. While specific land use patterns would be altered from the currently approved SPA Plan, the change in density would not interfere with the primary policies and goals of Village Two, the SPA Plan, and the General Plan. The proposed project would promote the policies and goals of the General Plan including: provide new park and recreation facilities for future residents; locate and design parks in accordance with the Chula Vista PRMP and PLDO; develop active and passive recreational uses within portions of the Otay

Valley Regional Park; improve the City's open space and trail network; provide diverse recreational opportunities within Otay Ranch; maximize conservation and joint-uses; and co-locate parks and recreational facilities with other compatible public land uses.

- **Objective PFS 15:** Provide new park and recreation facilities for future residents of new development, city-wide.
- **Objective PFS 16:** Develop active and passive recreational uses within portions of the Otay Valley Regional Park located within the City of Chula Vista, in accordance with the MSCP.
- **Objective PFS 18:** Allow the appropriate joint-use of school and park facilities.
- **Objective E 11:** Improve Chula Vista's open space and trails network, including the provision of additional internal connections between the various elements of the network.

As discussed under Threshold A and C, the proposed project would potentially result in a parkland provision deficit of approximately 1.4 acres. However, incorporation of MM-PUB-1 would ensure compliance with parkland requirements. The project would also dedicate and improve parkland consistent with the Chula Vista PRMP and the PLDO. The preserve in Wolf Canyon analyzed and discussed in the 2006 EIR would not be altered by the proposed project and would include contributions to the Chula Vista Greenbelt Trail. Parks and schools are planned adjacent uses as part of the proposed land use pattern under the project. As described above, provision of a PFFP and payment of PDIF (per MM-5.13.9-1 of the 2006 EIR) would further ensure adequate and concurrent development of parks with the proposed project. Therefore, the proposed project would be compliant with the General Plan and impacts would be less than significant.

Otay Ranch GDP

The following goal is identified in the Otay Ranch GDP in order to ensure that an adequate amount of open space and recreational acreage is provided for the future residents:

- **Goal:** Provide diverse park and recreational opportunities within Otay Ranch which meet the recreational, conservation, preservation, cultural and aesthetic needs of project residents of all ages and physical abilities.

Parks and open space amenities include six neighborhood parks (P-1 through P-6), pedestrian and bicycle facilities, and private recreation sites. Additionally, Village Two would accommodate Preserve land and open space totaling approximately 200 acres. As described above, The project would dedicate and improve parkland consistent with the Chula Vista PRMP and the PLDO. The preserve in Wolf Canyon analyzed and discussed in the 2006 EIR would not be altered by the proposed project and would include contributions to the Chula

Vista Greenbelt Trail. Parks and schools are planned adjacent uses as part of the proposed land use pattern under the project. Provision of a PFFP and payment of PDIF (per MM-5.13.9-1 of the 2006 EIR) would further ensure adequate and concurrent development of parks with the proposed project. Therefore, the proposed project would be compliant with the Otay Ranch GDP and impacts would be less than significant.

Chula Vista Greenbelt Master Plan

As discussed in the 2006 EIR, Village Two, including the proposed project, would include a trails system, such as regional and village trails, village greenway, pathways adjacent to streets, which would ultimately connect into the Greenbelt Trail. Connection to the Greenbelt Trail would be achieved via a regional/community trail along Heritage Road, traveling through Village Two and Three. An internal Village Two pathway would travel along Santa Victoria Road and would connect the eastern portions of Village Two to regional/community trail along Heritage Road. A village greenway would connect to the Chula Vista Greenbelt Trail and is conceptually planned to be located within the shared community park in Village Four.

The project would be consistent with the Greenbelt Master Plan goal to establish a greenbelt system that would visually reinforce the character of the community and integrate cultural resources to ensure public access through an active and passive recreation park system with trails connecting each segment, to accommodate a wide range and number of users, to offer a variety of active and passive recreation experiences, to provide disabled access and to provide other amenities that enhance the greenbelt system.

The proposed project would be part of Village Two. As such, plans, policies and other requirements that have been prepared for Village Two would also apply to the proposed project. Therefore, the proposed project would be consistent with the applicable Greenbelt Master Plan policies and would have a less than significant impact with respect to the city growth management threshold standards.

Chula Vista Parks and Recreation Master Plan

The Chula Vista Parks and Recreation Master Plan identifies a range of passive and active park elements to serve the residents within the project. The existing plan, which was prepared in 2002 and is based on the 1993 GPD, lists park facilities within the project. The project would be generally consistent with the PRMP park siting guidelines. The 2010 draft of the updated PRMP also lists park facilities within the project area. The proposed project includes park and recreation facilities distributed throughout Village Two, including the community park connected with Village Four.

The proposed project is part of Village Two. As such, plans, policies and other requirements that have been prepared for Village Two would also apply to the proposed project. The project would be generally consistent with the Parks and Recreation Master Plan through implementation of the SPA Plan and would have a less than significant impact with respect to the City's PLDO threshold standards.

The proposed project, due to being part of Village Two, would be consistent with the applicable policies in the General Plan. The Otay Ranch GDP objectives and policies related to parks, recreation, and open space facilities are consistent with those in the City's General Plan. The project would be consistent with the Chula Vista Greenbelt Master Plan. In addition, the project would be generally consistent with the Parks and Recreation Master Plan. Therefore, impacts associated with the proposed project would be less than significant.

5.8.4.5 Level of Significance Prior to Mitigation

The proposed project would have potentially significant impacts related to parkland provision requirements.

5.8.4.6 Mitigation Measures

In addition to the mitigation provided in the 2006 EIR, the following mitigation measure is provided:

MM-PUB-1 Prior to the approval of the first final map(s), or prior to the approval of building permit(s), the applicant shall pay the City of Chula Vista in-lieu fee for land dedication and/or park development improvements, or dedicate additional parkland, pursuant to City of Chula Vista Municipal Code Section 17.10.070 and in accordance with the Public Facilities Financing Plan for the SPA Plan for the final 180 dwelling units to be constructed.

5.8.4.7 Level of Significance After Mitigation

Impacts to parks, recreation, and open space facilities would be less than significant.

5.8.4.8 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts discussed in the 2006 EIR as a result of an increase in demand for parks and recreation services. However, it would not change the conclusions reached by the analysis of the 2006 EIR. New impacts are identified and new mitigation is required.

5.8.5 Library

5.8.5.1 Regulatory Framework

Local Level

City of Chula Vista General Plan

The 2005 Chula Vista General Plan recognizes that demand for library facilities will continue to increase as the city's population grows in the eastern areas of the city through new development, and that location is the most important reason residents choose to utilize a particular public library. The General Plan Public Facilities and Services Element includes objectives for the city to provide a library system of facilities and programs that meets the needs of Chula Vista residents of all ages (Objective PFS 11) and to efficiently locate and design library facilities (Objective PFS 12). Additionally, Growth Management Objective GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects demonstrated to be out of compliance with applicable threshold standards for library services (City of Chula Vista 2005).

Otay Ranch General Development Plan

The purpose of the Library Facility section of the GDP is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of library facilities. The GDP goal is to provide sufficient libraries to meet the information and education needs of Otay Ranch residents. In addition, the GDP states that a library facility in the EUC is necessary to serve the Otay Ranch at build-out, and would serve as a main library for all residents of Otay Ranch. The GDP also states that expansion of other libraries may be necessary (City of Chula Vista 2013f).

City of Chula Vista Library Strategic Plan

The purpose of the Chula Vista Public Library Strategic Facilities Plan is to identify ways to improve library service delivery to the community, particularly to residents of eastern Chula Vista. The plan determined that the additional needed library square footage can be developed as multiple smaller branches, or as one large library (City of Chula Vista 2011). Because the library's operating budget has been significantly reduced and capital funding is not currently available, the facilities plan does not determine which option would be implemented. The options will be evaluated when capital and operating funds become available. Additional measures such as mall outlets, book vending machines, a bookmobile, and service partnerships are identified as possible interim measures. An additional interim measure is the mall branch at Otay Ranch Town Center, which opened in April 2012.

Chula Vista Municipal Code

Section 19.80.030 of CVMC Chapter 19.80 (Controlled Residential Growth) is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for libraries and other public services. The preparation of PFFPs are required in conjunction with the preparation of the SPA Plans for the project to ensure that the development of the project is consistent with the overall goals and policies of the General Plan and would not degrade public services. Similarly, Section 19.09 (Growth Management) of the CVMC provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040D specifies a threshold standard requiring "500 square feet (gross) of adequately equipped and staffed library facility per 1,000 population. The City of Chula Vista shall construct 60,000 gross square feet of additional library space, over the June 30, 2000, gross square feet total, in the area east of I-805 by buildout." The analysis of library services provided in this section, along with the PFFPs are intended to ensure funding for any needed expansion of services, while also ensuring that library services will be provided commensurate with development and demand (City of Chula Vista 2013b).

5.8.5.2 Existing Setting

The City of Chula Vista operates three library facilities: the Civic Center Branch Library, the South Chula Vista Branch Library and, Otay Ranch Branch Library (City of Chula Vista 2013c). The Civic Center Branch Library is located at 365 F Street, approximately five miles from Village Two and is the largest library facility within the city, consisting of a two-story, 55,000-square-foot building. It also has a 152-seat auditorium and a 26-seat conference room and serves as a multi-use facilities including storage for the Heritage Museum and limited exhibition space (City of Chula Vista 2011). The South Chula Vista Branch Library is located at 389 Orange Avenue, approximately four miles from Village Two and consists of approximately 37,000 square feet. This branch has two conference rooms seating approximately 25 and 50 each, three small study rooms for groups of two or more that may be reserved on site and the Rosemary Lane Galleria which acts as an exhibition space for local artists (City of Chula Vista 2011). The Otay Ranch Branch Library is located at 2015 Birch Road in the Otay Ranch Town Center, within one mile from Village Two and consists of approximately 3,400 square feet and one small study room.

In addition to the existing libraries described above, the current Library Strategic Facilities Plan calls for construction of the Rancho del Rey library, which would be approximately 30,000 square feet in size located at the intersection of East H Street and Paseo Ranchero, approximately 1.6 miles from the project. However, the Rancho del Rey Library has been delayed indefinitely due to budget constraints (City of Chula Vista 2011).

The GMOC threshold standard for libraries is 500 square feet of library space per 1,000 residents. According to the 2013 GMOC Annual Report, the current service ratio for FY 2012 was 369 square feet for every 1,000 residents, but increased to 383 square feet per 1,000 residents as a result of opening the Otay Ranch Town Center Branch Library in April 2012 (City of Chula Vista 2013e). Therefore, the city does not currently meet the GMOC threshold for libraries.

5.8.5.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a library impact. Impacts to library services would be significant if the proposed project would:

A. Result in substantial adverse physical impact associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for library services.

B. The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on library services if it would:

   i. Fail to meet the City's threshold standard of 500 gross square feet of library space, adequately equipped and staffed, per 1,000 population.

C. Be inconsistent with General Plan, GDP or other objectives and policies regarding library services thereby resulting in a significant physical impact.

5.8.5.4 Impacts

5.8.5.4.1 2006 EIR Impacts Conclusions

The 2006 EIR made the following conclusions related to libraries for the Village Two portion of the SPA Plan:

Implementation of the SPA Plan, including Village Two would result in significant impacts to library facilities due to the substantial increase in demand from population growth. Planning of library facilities construction to coincide with development of the SPA Plan area as well as payment of PFDIF would reduce impacts to less than significant.

All mitigation measures as provided in the 2006 EIR as amended are still relevant and would be implemented and included as part of the Mitigation Monitoring and Reporting Program for the project.

5.8.5.4.2 Proposed Project Impact Analysis

A. Would the project result in substantial adverse physical impact associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for library services?

The proposed project would result in increased demand for libraries and may have the potential to require the construction of new or expanded library facilities. The Chula Vista Library Master Plan establishes a standard of 500 square feet of adequately equipped and staffed library facilities per 1,000 residents. The proposed project would generate demand for approximately 2,531 square feet of additional library facilities within the city. This would contribute to an increase in demand for all of Village Two resulting in a total demand of approximately 7,363 square feet of library facilities. Although the proposed project does not specifically include the development of a library, future library facilities would be funded in part by payment of the PFDIF. Compliance the Otay Ranch GDP and payment of the PFDIF would ensure that impacts associated with library facilities would a less than significant.

B. The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on library services if it would:

i. Fail to meet the City's threshold standard of 500 gross square feet of library space, adequately equipped and staffed, per 1,000 population.

The proposed project would generate demand for approximately 2,531 square feet of additional library facilities within the city contributing to a total demand of 7,363 square feet of library facilities for all of Village Two. As discussed above, the city does not currently meet the GMOC threshold standard of 500 square feet of library facilities for every 1,000 residents. A library is proposed in the EUC that would serve the proposed project. Construction of the Rancho del Rey and proposed EUC libraries would result in a total of 60,000 gross square of additional library space, which would accommodate the increase population resulting from development of the proposed project and maintain acceptable service ratios.

Implementation of the proposed project would require payment of City's PFDIF per MM-5.13.8-1 of the 2006 EIR. The PFDIF does not address the impact associated with operations and maintenance for those facilities. The library portion of the PFDIF program assumes construction of facilities sufficient to meet the service standard of 500 square feet of library space per 1,000 population. The PFDIF funds are expended on a number of projects, but for the most part are being reserved for planned facilities in eastern Chula Vista. These funds on account will be combined with the fees to be collected from future development, including the proposed project.

According to the Strategic Facilities Plan, these funds are anticipated to fully offset the cost of new library construction to meet the 500 square feet of library space per 1,000 population service threshold (City of Chula Vista 2011). Therefore, payment of the PFDIF would represent the project's fair share contribution to meet the City threshold standard for library space, and impacts would be less than significant.

C. Would the project be inconsistent with General Plan, GDP or other objectives and policies regarding library services thereby resulting in a significant physical impact?

City of Chula Vista General Plan

As described previously, the General Plan has been updated since the time of completion and certification of the 2006 EIR, which relied on the 1989 version of the General Plan. The 2005 Chula Vista General Plan recognizes that demand for library facilities will continue to increase as the city's population grows in the eastern areas of the city through new development, and that location is the most important reason residents choose to utilize a particular public library. The General Plan Public Facilities and Services Element includes objectives for the city to provide a library system of facilities and programs that meets the needs of Chula Vista residents of all ages and to efficiently locate and design library facilities. The proposed project would promote the policies and goals of the General Plan including: coordinate with the City to provide adequate library facilities to meet the need of new development; construct public facilities concurrently with new development; and properly finance libraries to benefit all residents of Otay Ranch. The following objectives associated with library facilities are identified in the General Plan:

- **Objective PFS 11:** Provide a library system of facilities and programs that meets the needs of Chula Vista residents of all ages.
- **Objective PFS 11:** Efficiently locate and design library facilities.
- **Objective GM 1:** Concurrent public facilities and services.
- **Objective GM 3:** Create and preserve vital neighborhoods.

The Chula Vista Public Library Strategic Facilities Plan does not identify any library facilities within the project area. As discussed above under Threshold A, no libraries are specifically planned for the project. Therefore, the proposed project would not conflict with the library facilities plan. The project would pay its fair share of the cost to develop library facilities through participation in the City's PFDIF program (per MM-5.13.8-1 of the 2006 EIR). The project's PFFP analyzes the demand for library space in the City and demonstrate how the project complies with the Growth Management Threshold for library facilities. The proposed project would be consistent with the applicable policies in the General Plan. Impacts would be less than significant.

Otay Ranch GDP

The purpose of the Library Facility section of the GDP is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of library facilities. The GDP goal is to provide sufficient libraries to meet the information and education needs of Otay Ranch residents. In addition, the GDP states that a library facility in the EUC is necessary to serve the Otay Ranch at build-out, and would serve as a main library for all residents of Otay Ranch. The GDP also states that expansion of other libraries may be necessary (City of Chula Vista 2013f). The following goal is identified in the Otay Ranch GDP relevant to library facilities:

- **Goal:** Sufficient libraries to meet the information and education needs of Otay Ranch residents.

There is no proposed library as part of the proposed project. However, the demand for library facilities generated by the build-out of the proposed project will be satisfied through participation in the City's PFDIF as identified in the PFFPs. The project's PFFP analyzes the demand for library space in the City and demonstrate how the project complies with the Growth Management Threshold for library facilities. The Otay Ranch GDP objectives and policies related to library facilities are consistent with those in the City's General Plan. Therefore the proposed project would also be consistent with the Otay Ranch GDP. Impacts associated with the proposed project would be less than significant.

5.8.5.5 Level of Significance Prior to Mitigation

Impacts to library facilities would be less than significant.

5.8.5.6 Mitigation Measures

No further mitigation is required beyond what is provided in the 2006 EIR.

5.8.5.7 Level of Significance After Mitigation

Library service impacts related to implementation of the proposed project would remain less than significant.

5.8.5.8 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts discussed in the 2006 EIR as a result of an increase in demand for library services. However, it would not change the conclusions reached by the analysis of the 2006 EIR. No new impacts are identified and no new mitigation is required.

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5.9 UTILITIES

This section of the Environmental Impact Report (EIR) evaluates potential impacts on utilities resulting from the proposed project. The discussions found in the following sections are based on information provided by the local service providers, findings from other approved planning documents, and technical reports related to the provision of utilities.

This section tiers from the 2006 EIR (City of Chula Vista 2006). The 2006 EIR addressed the Village 2, 3, and portion of 4 development's potential environmental effects. The analysis and discussion of utilities issues contained in the 2006 EIR as amended is incorporated by reference and available for public inspection upon request to the City.

All mitigation measures as provided in the 2006 EIR are still relevant and would be implemented and included as part of the Mitigation Monitoring and Reporting Program (MMRP) for the project. Additional mitigation identified as part of this environmental review that were not previously identified in the 2006 EIR are provided in Sections 5.9.1.5, 5.9.2.5, 5.9.3.5, and 5.9.4.5 below.

5.9.1 Water

The following discussion of water impacts is based on the 2010 Urban Water Management Plan (UWMP) adopted by the Otay Water District (OWD) and other relevant agencies, as well as the Village 2 Comprehensive SPA Amendment Water System Evaluation prepared by Dexter Wilson (Dexter Wilson 2013) and Otay Ranch Village 2 WSA – Notes and Clarifications prepared by Atkins (Atkins 2014), included as Appendix H, Part I of this EIR. Water demand for the proposed project has changed slightly since adoption of the 2010 UWMP based on the proposed development plan, and these changes are analyzed in this section. This section addresses potential impacts on water supply and water distribution infrastructure needed to serve the proposed project. This analysis estimates water demand for the proposed project and compares this demand to existing and planned water supply sources and facilities.

5.9.1.1 Existing Conditions

5.9.1.1.1 Regulatory Framework

State Level

Urban Water Management Planning Act

In 1983, the Legislature enacted the Urban Water Management Planning Act (UWMP Act; California Water Code, Sections 10610–10656), which requires specified urban water suppliers

within the state to prepare an UWMP and update it every five years. State and local agencies and the public frequently use UWMPs to determine if agencies are planning adequately to reliably meet water demands in various service areas. As such, UWMPs serve as an important element in documenting water supply availability and reliability for purposes of compliance with state laws, Senate Bills 610 and 221, which link water supply sufficiency to large land-use development project approvals. Urban water suppliers also must prepare UWMPs, pursuant to the UWMP Act, in order to be eligible for state funding and drought assistance.

The UWMP provides information on water usage, water supply sources, and water reliability planning within a specified water agency service area. It also may provide implementation schedules to meet projected demands over the planning horizon; a description of opportunities for new development of desalinated water; groundwater information (where groundwater is identified as an existing or planned water source); description of water quality over the planning horizon; and identification of water management tools that maximize local resources and minimize imported water supplies. Additionally, the UWMP evaluates the reliability of water supplies within the specified service area. This includes a water supply reliability assessment, water shortage contingency plan, and development of a plan in case of an interruption of water supplies.

The Metropolitan Water District (MWD), San Diego County Water Authority (SDCWA) and OWD all play a role in supplying water to Chula Vista. All of these agencies have prepared and updated UWMPs in accordance with the UWMP Act.

Senate Bills 610 and 221

On January 1, 2002, SB 610 took effect. SB 610, which was codified in the Water Code beginning with Section 10910, requires the preparation of a water supply assessment (WSA) for projects within cities and counties that propose to construct 500 or more residential units or the equivalent. SB 610 stipulates that when environmental review of certain development projects is required, the water agency that is to serve the development must complete the WSA to evaluate water supplies that are or will be available during normal, single-dry, and multiple-dry years during a 20-year projection to meet existing and planned future demands, including the demand associated with a proposed project.

Senate Bill 221, enacted in 2001 and codified in the Water Code, requires a city, county or local agency to include a condition to any tentative subdivision map that a sufficient water supply shall be available to serve the subdivision. The term “sufficient water supply” is defined as the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection that would meet the proposed subdivision project’s’ projected water demand, in addition to existing and planned future water uses, including

agricultural and industrial uses, within the specified service area. SB 221 further requires any verification of "projected" water supplies to be based on entitlement contracts, capital outlay programs and regulatory permits and approvals.

Memorandum of Understanding Regarding Urban Water Conservation in California

The OWD is signatory to the Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California, which created the California Urban Water Conservation Council in 1991 in an effort to reduce California's long-term water demands. Water conservation programs are developed and implemented to reduce the demand on available supply, which is vital to the optimal utilization of a region's water supply resources.

As one of the first signatories to the MOU, OWD has made implementation of best management practices (BMP) for water conservation the cornerstone of its conservation programs and a key element in its water resource management strategy. As a member of the SDCWA, OWD also benefits from regional programs performed on behalf of its member agencies. The BMPs implemented by OWD and the regional BMPs implemented by SDCWA are addressed in the OWD 2010 UWMP.

As a signatory to the MOU, OWD is required to submit biannual reports that detail the implementation of current water conservation practices. The OWD voluntarily agreed to implement the fourteen water conservation BMPs beginning in 1992. The OWD submits its report to the California Urban Water Conservation Council every two years, and the OWD BMP reports are included in the OWD 2010 UWMP.

Regional and Local Level

Urban Water Management Plans

The UWMP Act requires that each urban water supplier providing water for municipal purposes, either to more than 3,000 customers, or more than 3,000 acre-feet of water annually, must prepare, adopt, and update an UWMP at least once every five years on or before December 31, in years ending in five and zero. This applies to MWD, SDCWA, and its member agencies, including OWD, that serve unincorporated San Diego County. The intent of an UWMP is to present information on water supply, water usage/demand, recycled water, and water use efficiency programs in a respective water district's service area. The UWMP also serves as a valuable resource for planners and policy makers over a 25-year time frame.

The UWMP process ensures that water supplies are being planned to meet future growth. UWMPs are developed to manage the uncertainties and variability of multiple supply sources and demands over the long term. Water agencies and districts update their demand and supply

estimates based on the most recent San Diego Association of Governments (SANDAG) forecast approximately every 5 years to coincide with preparation of their UWMPs. The most current supply and demand projections are contained in the 2010 UWMPs of MWD, SDCWA, and OWD (MWD 2010a; SDCWA 2011). SDCWA member districts rely on the UWMPs and Integrated Resources Plans (IRPs) of MWD (MWD 2010b) and the Regional Water Facilities Master Plan of SDCWA to document supplies available to meet projected demands.

Normal year, single-dry year, and multiple-dry year 2010 UWMP supply and demand assessments for MWD, SDCWA, and OWD are intended to describe the water supply reliability and vulnerability to seasonal or climatic conditions. Normal water years are considered to be years that experience average rainfall for the respective district. Single-dry water years are considered one year drought events. Multiple-dry water years refer to a series of below average rainfall for particular areas (i.e., multiple drought year conditions). Projections for multiple-dry years are made in five year increments.

In the 2010 UWMPs, MWD, SDCWA, and all SDCWA member agencies, including OWD, that serve unincorporated San Diego County have determined that adequate water supplies would be available to serve existing service areas under normal year, single dry year, and multiple dry year conditions through the year 2035. In addition, the next update for the SDCWA's UWMP in 2015 will include the proposed project.

City of Chula Vista General Plan

The Chula Vista General Plan recognizes that, in order to ensure adequate water service, water supplies and facilities need to be maintained and expanded in response to the City's projected population growth. The General Plan includes objectives and policies in the Public Facilities and Services Element that require development to plan for careful use of natural and man-made resources and services, and maximize opportunities for conservation while minimizing waste (Objective LUT 62); and increase efficiencies in water use through use of alternative technologies (Objective PFS 2). Additionally, the Housing Element includes Objective H 2 to promote efficient use and reuse of water through adopted standards and public education to conserve limited resources and reduce long-term operational costs of housing. Growth Management Objective GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects demonstrated to be out of compliance with applicable threshold standards for water service.

In 2005, the City of Chula Vista updated its General Plan and certified the related EIR for the General Plan Update (GPU). In 2013, the City certified a Supplemental EIR, and approved a General Plan Amendment/General Development Plan Amendment (GPA/ GDPA). Both the 2005 GPU EIR and the 2013 GPA/GDPA Supplemental EIR assessed, at the General Plan level,

water demands and long-term water supply availability and reliability. In the two General Plan environmental documents, the City concluded that a long-term water supply could not be guaranteed; and, therefore, increases in water demand projected in the General Plan and later Amendment would result in a significant unavoidable impact.

The result of the City's findings is that large-scale proposed development projects within the City must conduct a project-level water supply/demand analysis, accompanied by the required SB 610/SB 221 water supply assessment/verification. Based on this project-level water supply/demand analysis and associated project EIR, the City will then reassess its General Plan-level water supply findings and determinations based on the record before it.

Chula Vista Landscape Water Conservation Ordinance

In response to the new State Water Conservation in Landscaping Act (AB 1881), which required cities and counties to adopt landscape water conservation ordinances by January 1, 2010, the City of Chula adopted the Landscape Water Conservation Ordinance (CVMC, Section 20.12) in 2009. This ordinance requires that any new or rehabilitated landscapes be designed using a water budget, to help encourage outdoor water conservation. As a part of the City's permitting process, some projects will be required to complete either a Landscape Documentation Package or a WaterSmart Checklist. In general, the Landscape Documentation Package will be prepared for larger projects that involve installing or changing an existing landscape, while the WaterSmart Checklist is designed for smaller projects. The size of the "landscape area" will determine which of these documents will be required. The landscape area is measured in square feet, and it is an area with outdoor plants, turf and other vegetation that uses water, including any water features either in an area with vegetation or that stand alone (City of Chula Vista 2013a).

Chula Vista Residential Graywater Stub-out Ordinance

This ordinance requires that all new detached single-family dwelling units and duplexes include a single-source clothes washer graywater outlet and an outside stub-out to allow future installation of a clothes washer graywater irrigation system that complies with Section 1602.1.1 of the 2013 California Plumbing Code (City of Chula Vista 2013d). Such requirements may be modified, waived, or fulfilled by an alternative method based on building and site constraints to the satisfaction of the Building Official (City of Chula Vista 2013d).

Otay Water District Growth Management Oversight Commission Questionnaire

The City's Growth Management Oversight Commission (GMOC) annually distributes questionnaires to relevant city departments and public facility and service agencies to monitor the status of threshold standards compliance. When the questionnaires are completed, the GMOC reviews them and deliberates issues of compliance. The GMOC also

evaluates the appropriateness of the threshold standards, whether they should be amended, and whether any new threshold standards should be considered (City of Chula Vista 2013b). Prepared by OWD in support of the 2012 GMOC Annual Report, the OWD completed GMOC Questionnaire responded to the issue of whether existing water systems are available to serve projected growth for Chula Vista, and identified OWD's capital improvement programs required to serve the forecasted water demands. The OWD also identified a list of capital improvement projects (CIPs) that would need to be implemented in order to meet projected demand. The OWD concluded that the near-term water supply outlook remains "unsettled," while the city's long-term growth should be assured of a reliable water supply. The water supply is considered unsettled because water supply agencies throughout California continue to face climatological, environmental, legal and other challenges that impact water supply sources. However, challenges such as these are expected to always be present, and OWD intends to have sufficient, reliable supplies to serve demands.

City of Chula Vista Growth Management Program

The Chula Vista Growth Management Program goal for water supply is to ensure that adequate supplies of quality water (appropriate for intended uses) are available to Chula Vista. The Growth Management Program has two objectives regarding water supply and distribution: (1) ensure that adequate storage, treatment and transmission facilities are constructed concurrently with planned growth; and (2) ensure that water quality standards are not jeopardized during growth and construction. The growth management threshold standard for water supply and distribution states:

1. The applicant will request and deliver to the City a service availability letter from the water district for each project.
2. The City shall provide annually to the SDCWA, the Sweetwater Authority and the Otay Municipal Water District a 12- to 18-month development forecast and request an evaluation of their ability to accommodate the forecast and projected growth. The districts' replies should address the following:
    a. Water availability to the city and planning area, considering both short and long term perspectives;
    b. Amount of current capacity, including storage capacity, now used or committed;
    c. Ability of affected facilities to absorb forecast growth;
    d. Evaluation of funding and site availability for projected new facilities; and
    e. Other relevant information the district(s) desire(s) to communicate to the City and the GMOC. The growth forecast and water district response letters must be provided to the GMOC for inclusion in its review.

The Chula Vista Growth Management Ordinance (CVMC, Section 19.09.050C) requires a Water Conservation Plan (WCP) to be submitted with all SPA Plans. In accordance with the Growth Management Program, a WCP must provide an analysis of the water usage requirements of the project. Chula Vista's multi-faceted Growth Management Program is comprised of and executed through several documents and related regulatory programs, and includes a systematic application of land use regulation and policies, facility and service threshold standards, environmental review, financing mechanisms, and monitoring and enforcement functions. All are designed to ensure that development occurs only when necessary public facilities and services exist, or are provided concurrent with the demands of new development, so that quality of life can be maintained or enhanced (City of Chula Vista 2013c).

5.9.1.1.2 Existing Water Services

Water service to the proposed project would be provided by OWD. OWD purchases water from SDCWA, which in turn imports water from MWD. The existing and projected water supply and demand for each agency are described below, and are based on approved planning documents.

Regional and Local Water Supply

a. Metropolitan Water District

MWD supplies water to approximately 18.7 million people in a 5,200-square-mile service area that includes portions of Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego Counties. SDCWA is one of MWD's 26 member agencies. Supply and demand projections for MWD are included in its 2010 Regional UWMP, adopted in November 2010. MWD's long-term strategy for a sustainable water supply is also outlined in the MWD IRP (2010), which was updated October 12, 2010. The MWD IRP is updated approximately every 5 years, was first adopted in 1996 and last updated in October 2010. MWD's IRP identifies a mix of resources (imported and local) that will provide 100% reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, SWP supplies, Colorado River supplies, groundwater banking, and water transfers through the year 2035. SDCWA, one of 26 member agencies of MWD, is the largest agency in terms of delivery, purchasing approximately 25% of MWD's water. MWD gets its water from two sources. The first source is the Colorado River, which is connected to MWD's six-county service area through a 242-mile aqueduct. The aqueduct system is known as the Central Valley Project (CVP), which is operated by the U.S. Bureau of Reclamation. The second source is water from northern California, which supplies water through a series of dams, aqueducts, pipelines, and other facilities known as the State Water Project (SWP), which is operated by the Department of Water Resources (DWR).

From the Colorado River Aqueduct (CRA), MWD is apportioned 550,000 acre-feet of water per year (af/yr). Despite this low apportionment, MWD was able to transport up to 1.2 million af through the CRA in past years by relying on unused apportionments from Arizona, Nevada, and California agricultural agencies. However, because MWD's firm water supply from the CRA is only 550,000 af, that is the number planning agencies must rely on for development purposes. To supplement this supply, MWD has several existing programs and programs being developed in cooperation with other agencies.

From the SWP, MWD is contractually entitled to receive 1,911,000 acre-feet of water; however, the level of SWP supply development, state and federal environmental regulations, and other factors have restricted and, in some cases, reduced the actual amount of available SWP water. As a result of these and other limitations, MWD estimates that actual SWP supplies will be 0.6 million acre-feet in a dry year and 411,000 acre-feet during critically dry years.

In November 2010, MWD adopted its 2010 Regional UWMP, which is an update to its prior 2005 Regional UWMP. In the 2010 UWMP, MWD evaluated water supply reliability, over a 20-year period, for average, single-dry, and multiple-dry years within its service area. To complete its most recent water supply reliability assessment, MWD developed estimates of total retail demands for the region, factoring in the impacts of conservation. After estimating demands, the water reliability analysis identified current supplies and supplies under development to meet projected demands. MWD's reliability assessment showed that MWD can maintain reliable water supplies to meet projected demands through the year 2035. MWD also identified a planning buffer supply intended to protect against the risks associated with implementation of local and imported water supply projects and programs, and for the risk that future demands could be higher than projected. MWD's planning buffer identifies an additional increment of water that potentially could be developed when needed and if other supplies are not fully implemented as planned. As part of the implementation of the planning buffer, MWD periodically evaluates water supply development, supply conditions, and projected demands to ensure that the region is not under or over developing supplies. Managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate water supplies to meet long-term future demands.

Appendix A-3 to the MWD 2010 Regional UWMP contains detailed justifications for the sources of supply projected to meet water demands in the region, including Colorado River Aqueduct deliveries (Colorado River supplies) and SWP California Aqueduct deliveries, which is available for public inspection upon request to the City and incorporated by reference.

b. San Diego County Water Authority

The SDCWA service area covers approximately 951,000 acres and encompasses the western third of San Diego County. SDCWA has 24 member agencies, 15 of which provide water to

unincorporated areas of San Diego County. SDCWA is responsible for ensuring a safe and reliable water supply to support the region's economy and quality of life for over three million residents. Because of the County's semi-arid climate and limited local water supplies, SDCWA imports between 70% and 95% of the water used in the San Diego region from MWD. In 2008, MWD provided 71% of the San Diego region's water supply. Most of this water is obtained from the Colorado River and SWP through a system of pipes, aqueducts, and associated facilities. Historically, SDCWA has relied on imported water supplies purchased from MWD to meet the needs of its member agencies. SDCWA is the largest MWD member agency in terms of deliveries, purchasing approximately 25% of MWD's water.

Both MWD and SDCWA provide water supplies to their member agencies in order to meet projected water demand based upon regional population forecasts. SANDAG is responsible for providing and updating land use planning and demographic forecasts for San Diego County. MWD and SDCWA update their water demand and supply estimates based on the most recent SANDAG forecasts approximately every five years to coincide with preparation of the their respective UWMPs.

Since adopting the 2005 UWMP, SDCWA and its member agencies have made considerable progress in conserving and diversifying its supplies. The SDCWA 2010 UWMP reports that the San Diego region has reduced water usage over 50,000 acre-feet per year (af/yr) average over the last three years. In addition, conserved agricultural transfer water from the Imperial Valley began flowing to the San Diego region. This source provided 70,000 af in 2010 and will provide 200,000 af/yr by 2021. This additional water supply is the result of SDCWA entering into the Quantification Settlement Agreement (QSA) with other water agencies in October 2003. The QSA resolved long-standing disputes regarding Colorado River water use among agencies, and established a water budget for the agricultural agencies. This resolution permitted the implementation of several water conservation and transfer agreements, including the SDCWA/Imperial Irrigation District (IID) transfer agreement. Transfers from IID began in late 2003 with the signing of the QSA.

In June 2011, the SDCWA adopted its 2010 UWMP, updating the previously adopted 2005 UWMP. Sections 4, 5, and 6 of SDCWA's 2010 UWMP contain documentation of SDCWA's existing and planned water supplies, including MWD supplies (imported Colorado River water and SWP water), SDCWA supplies, and local member agency supplies (surface water reservoirs, water recycling, groundwater, and groundwater recovery). SDCWA supplies include (1) IID water transfer supplies; (2) supplies from conservation projects to line the All-American Canal and the Coachella Canal, located in Imperial and Coachella Valleys; and (3) development of a seawater desalination facility at the Encina Power Plant in Carlsbad, which is anticipated to produce 56,000 af/yr of water supplies. Additionally, since 1980, approximately 5 to 30% of member agency water has come from

local sources, primarily from surface water reservoirs. Recycled water and groundwater recovery projects are growing in importance in the region, and water conservation efforts have made SDCWA member agencies less dependent on imported water.

Section 9 of SDCWA's 2010 UWMP evaluates water supply reliability in average, single dry, and multiple dry years within its service area. Based on SDCWA's water supply reliability assessment, SDCWA concluded that water supplies would be sufficient to meet existing and projected demands through 2035.

In addition, in the 2008 Strategic Plan and the 2008 Business Plan, SDCWA's Board of Directors has provided clear direction to SDCWA to continue to increase the reliability of the water supply to meet the San Diego region's demands, and to ensure cost effective, environmentally sensitive, and safe delivery of those supplies. Since adoption of its earlier 2005 UWMP, SDCWA has adopted policies and programs in the areas of supply reliability, system infrastructure, finance, and outreach to help accomplish its mission to provide a safe and reliable water supply to its member agencies serving the San Diego region. SDCWA's long-term commitment also involves diversifying the region's water supplies portfolio, reducing the region's reliance on imported water, and optimizing facilities to provide the flexibility needed to respond to the region's ever-changing water needs. To prepare the San Diego region for potential water shortages, in March 2008, the SDCWA released a Model Drought Response Ordinance to its member agencies. The Model Drought Response Ordinance has identified four drought response levels that contain water-use restrictions to help achieve demand reduction during water shortages. Member agencies used the SDCWA's model to update their own ordinances to help provide consistency throughout the region on response levels and water use restrictions that may be taken to reduce water demand.

Based on the imported and member agency local water sources discussed above, SDCWA estimates that it, along with member agency local sources, will be able to supply 647,284 af of water in 2015. Therefore, according to the MWD and SDCWA 2010 UWMPs, there is available water to meet all of the region's anticipated demand, including development of Village Two SPA Amendment, in average/normal and dry water years, as shown in Tables 5.9-1, 5.9-2, and 5.9-3.

Table 5.9-1
Average/Normal Water Year Supply and Demand Assessment (af/yr)

Local Supplies	2015	2020	2025	2030	2035
Surface Water	48,206	47,940	47,878	47,542	47,289
Water Recycling	38,660	43,728	46,603	48,278	49,998
Groundwater	11,710	11,100	12,100	12,840	12,840
Groundwater Recovery	10,320	15,520	15,520	15,520	15,520
Seawater Desalinization	0	56,000	56,000	56,000	56,000

Table 5.9-1
Average/Normal Water Year Supply and Demand Assessment (af/yr)

Local Supplies	2015	2020	2025	2030	2035
Imported Supplies					
IID Water Transfer	100,000	190,000	200,000	200,000	200,000
Supply from MWD	358,189	230,601	259,694	293,239	323,838
Coachella Canal and All American Canal Lining Projects	80,200	80,200	80,200	80,200	80,200
Total Projected Supplies	**647,285**	**675,089**	**717,995**	**753,619**	**785,685**
Total Estimated Demands[1]	**647,285**	**675,089**	**717,995**	**753,619**	**785,685**
Difference	**0**	**0**	**0**	**0**	**0**

[1] With Conservation.
Source: SDCWA 2010 UWMP

Table 5.9-2
Single Dry Water Year Supply and Demand Assessment (af/yr)

Local Supplies	2015	2020	2025	2030	2035
Surface Water	17,932	17,932	17,932	17,932	17,932
Water Recycling	38,660	43,728	46,603	48,278	49,998
Groundwater	9,977	9,977	9,977	9,977	9,977
Groundwater Recovery	10,320	15,520	15,520	15,520	15,520
Seawater Desalinization	0	56,000	56,000	56,000	56,000
Imported Supplies					
IID Water Transfer	100,000	190,000	200,000	200,000	200,000
Supply from MWD	430,431	305,101	338,501	376,023	409,389
Coachella Canal and All American Canal Lining Projects	80,200	80,200	80,200	80,200	80,200
Total Projected Supplies	**687,520**	**718,458**	**764,733**	**803,930**	**839,016**
Total Estimated Demands[1]	**687,520**	**718,458**	**764,733**	**803,930**	**839,016**
Difference	**0**	**0**	**0**	**0**	**0**

Source: SDCWA 2010 UWMP
[1] With Conservation.

Table 5.9-3
Multiple Dry Year Supply and Demand Assessment (af/yr)

Scenario	Near Term			Long Term		
	2012	*2013*	*2014*	*2031*	*2032*	*2033*
Multiple Dry Years						
Demands	658,381	679,509	711,241	811,421	842,947	882,795
Supply	597,557	623,817	634,817	811,241	821,016	829,874
Potential Surplus or (Shortage)[1]	(60,824)	(55,692)	(76,678)	0	(21,931)	(52,921)

Source: SDCWA 2010 UWMP
[1] Potential shortages would be offset through conservation actions as described in the Water Conservation Plan (Dexter Wilson 2013).

Integrated Regional Water Management Plan

The Integrated Regional Water Management (IRWM) plan and associated program were developed under the cooperation of the SDCWA, City of San Diego and County of San Diego to devise a long-term strategy for water supply reliability, improving water quality, and protecting natural resources reliant on San Diego regional watersheds. The Statewide IRWM Program is supported by bond funding provided by the California Department of Water Resources (DWR) to fund grants for projects that improve water resources management. The San Diego IRWM Program began in 2005 as an interdisciplinary effort by water retailers, wastewater agencies, stormwater and flood managers, watershed groups, the business community, tribes, agriculture, and non-profit stakeholders to improve water resources planning in the San Diego IRWM Region. In 2007, San Diego published its first IRWM Plan and received $25 million from DWR to support 19 high-priority water management projects. In 2011, San Diego obtained another $8 million to support 11 more important projects and $1 million to fund a comprehensive update of the 2007 IRWM Plan. The 2013 updated to the 2007 plan was adopted by the San Diego Board of Supervisors on October 9, 2013. Like the 2007 IRWM Plan, the 2013 IRWM Plan provides a mechanism for: 1) coordinating, refining and integrating existing planning efforts within a comprehensive, regional context; 2) identifying specific regional and watershed-based priorities for implementation projects; and 3) providing funding support for the plans, programs, projects and priorities of existing agencies and stakeholders. The program was recently approved for Proposition 84 funding to proceed with the 2014 update (SDIRWMP 2014).

Regional Water Facilities Optimization and Master Plan Update

The Water Authority's Regional Water Facilities Optimization and Master Plan Update is a comprehensive evaluation of infrastructure requirements needed to meet SDCWA's mission of providing a safe and reliable water supply to its member agencies. The master plan includes recommendations on new pipelines, treatment plants, and storage facilities, as well as improvements to existing facilities, needed to assure SDCWA's mission is achieved in a cost-effective manner through a 2035 planning horizon.

The 2013 Master Plan Update has been a region-wide planning effort incorporating projections for future water demands and water supplies from the 2010 UWMP. Both the UWMP and the 2013 Master Plan Update use a scenario planning approach to assess supply and demand. This approach evaluates potential risks to supply reliability and stress-tests the ability of SDCWA's existing aqueduct system and local drinking water treatment plants to meet future operating conditions. As the San Diego region continues to grow, the 2013 Master Plan Update has considered infrastructure alternatives that include development of new local supplies or increased imported supply reliance to close any projected gaps between future demands and supplies.

Preparation of the 2013 Master Plan Update followed the same planning principles as SDCWA's earlier 2003 document, and helps define the SDCWA's capital improvement program (SDCWA 2014).

c. Otay Water District

OWD would supply potable water to the proposed project. OWD provides water services to southern El Cajon, La Mesa, Rancho San Diego, Jamul, Spring Valley, Bonita, eastern Chula Vista, the EastLake community, Otay Ranch, and Otay Mesa along the U.S./Mexico International Border. OWD covers 137 square miles and has approximately 38,870 meter connections. OWD has approximately 450 miles of pipelines, 21 pump stations, and 37 reservoirs with a total storage capacity of 190 million gallons. OWD provides 90% of its water service to residential land uses and 10% to commercial, industrial, and other land uses. Average daily consumption is 40,324 acre feet. OWD maintains five major systems to supply and deliver water, which includes Hillsdale, La Presa, Central and Otay Mesa. OWD also operates the Ralph W. Chapman Water Recycling Facility.

Once water is made available by SDCWA, it is transferred across San Diego County in two aqueducts containing five large-diameter pipelines. The First Aqueduct includes Pipelines 1 and 2, and the Second Aqueduct includes Pipelines 3, 4 and 5. OWD maintains several connections to Pipeline 4, which delivers filtered water from the MWD filtration plant at Lake Skinner in Riverside County. In addition, OWD has a connection to the La Mesa-Sweetwater Extension Pipeline, which delivers filtered water from the R.M. Levy Water Treatment Plant, which is owned and operated by the Helix Water District. However, this connection currently supplies water to the north portion of OWD only. Furthermore, OWD maintains a connection to the City of San Diego's water system in Telegraph Canyon Road, and has an agreement that allows it to receive water from the Lower Otay Filtration Plant.

On June 1, 2011, OWD's Board of Directors adopted the updated OWD 2010 UWMP. Sections 2, 3, and 4 of the 2010 UWMP provide an overview of OWD's service area, its current water supply sources, supply reliability, water demands, measures to reduce water demand, and planned water supply projects and programs. Section 5 contains OWD's water service reliability assessment. This section states that the level of reliability is based on the documentation in the UWMP's prepared by MWD and SDCWA and that these agencies have determined that they will be able to meet potable water demands through 2035, during normal and dry year conditions. According to the 2010 UWMP, OWD currently relies on MWD and SDCWA for its potable supply, and OWD has worked with these agencies to prepare consistent demand projections for OWD's service area.

d. Water Supply Challenges

As discussed in the 2010 UWMPs, multiple events have occurred that have the potential to affect and reduce southern California's water supply. The Colorado River has experienced drought conditions for eight of the last nine years. Additionally, the SWP in northern California experienced three years (2006-2008) of drought conditions, which substantially depleted storage in reservoirs throughout the SWP system, including San Diego County. After a record dry spring that dramatically curtailed snow runoff from the Sierra Nevada Mountains, Governor Schwarzenegger declared an official statewide drought on June 4, 2008. In January 2014, Governor Jerry Brown declared another statewide drought emergency.

In addition to extreme drought conditions, in August 2007, a U.S. District Court decision was issued to protect the endangered Delta smelt (fish). This federal court ruling set operational limits on pumping in the Sacramento-San Joaquin Bay Delta from December 2007 to June 2008 to protect the Delta smelt. Since the SDCWA and its member agencies import water from MWD, their water supply was impacted by this federal court ruling. On June 4, 2009, the National Oceanic and Atmospheric Administration National Marine Fisheries Service issued a biological opinion intended to protect spring- and winter-run Chinook salmon, Central Valley steelhead, green sturgeon, and Southern Resident killer whales. This action placed additional restrictions on SWP operations.

In the spring 2010, the federal court granted a preliminary injunction against the federal government's implementation of pumping restrictions under the salmon biological opinion, finding that the government had not properly taken into account the impact the restrictions would have on people in the Central Valley and had not justified the need for imposing the harshest restrictions within the range stated in the biological opinion. On December 14, 2010, the federal court issued a decision (in the Delta smelt consolidated lawsuits), invalidating the federal government's biological opinions on the Delta smelt and lessening the resulting restrictions on water supply to the state and federal water contractors. The federal court decision was appealed, and the 9th Circuit Court of Appeals panel ruled that the 2008 biological opinion was largely valid and its findings, including flow restrictions, will be upheld. Additionally, another lawsuit has been filed by environmentalist organizations, challenging the federal government's decision not to list the longfin smelt as endangered. This litigation may lead to more restrictions on pumping to protect the longfin smelt, which may erase any gains in water supply resulting from the District Court's December 2010 decision.

In November 2009, the state Legislature passed a package of bills that established in state policy the co-equal goals of water supply reliability and environmental restoration in the Delta. The bills also provided a governance structure for the Delta and required preparation of a Delta Plan to guide the process of achieving the co-equal goals and outline a plan to

restore listed species. As a result, the Final Delta Plan was unanimously adopted by the Delta Stewardship Council on May 16, 2013, and its 14 regulatory policies were approved by the Office of Administrative Law. The Delta Plan became effective with enforceable regulations on September 1, 2013. In addition, the legislation authorized the preparation of the Bay Delta Conservation Plan process, which is intended to further facilitate the co-equal goals of enhanced water reliability and restoration of the Delta.

Moreover, in February 2014 the U.S. Bureau of Reclamation shut down initial water allocation for most contractors of the Central Valley Project which includes 22 reservoirs and had a combined storage of 11 million acre-feet. The Central Valley Project has long-term contracts with more than 250 contractors in 29 counties. In April 2014, the Bureau of Reclamation announced it would increase allocations due to increases in precipitation; however, water allocations will continue to be restricted during the course of the drought. On April 8, 2014, the Bureau, in conjunction with the state Department of Water Resources, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife, and the State Water Resources Control Board released the *Central Valley Project and State Water Project Drought Operations Plan and Operational Forecast* to plan for water supply issues for the year 2014 (California Department of Water Resources 2014).

Climate change due to global warming also creates uncertainties that may significantly affect California's water resources over the long-term. Since 2008, the SDCWA's business plan has included its Climate Change and Sustainability Program, which advocates for improved modeling to provide precipitation data on a local and regional scale, encourages focused scientific research on climate change to identify the impacts on the region's water supply, and partners with other water utilities to incorporate the impacts of climate change on water supply planning and the development of decision support tools.

In summary, water agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water supply conditions, such as court rulings regarding listed fish species and the recent drought impacting the western states. Challenges such as these essentially always will be present. The regional water supply agencies, MWD and SDCWA, along with OWD, nevertheless, fully intend to have sufficient, reliable supplies to serve demands.

e. Existing Water System

The proposed project would be served by the Central Service Area of OWD. This OWD area is supplied water from Connection Nos. 10 and 12 to the SDCWA aqueduct, which fills 624 Zone reservoirs. Water is then distributed within the 624 Zone and pumped to the 711 Zone storage

and distribution systems. The existing potable water facilities located in the vicinity of the project are described below.

624 Zone

The 624 Zone has three existing storage reservoirs. The 624-2 Reservoir is located adjacent to the SDCWA aqueduct between Otay Lakes Road and East H Street, has a capacity of 8.0 million gallons, and is supplied by Connection No. 10 to the SDCWA aqueduct. The 624-1 and 624-3 Reservoirs are supplied by Connection No. 12, and have a capacity of 12.4 million gallons and 30 million gallons, respectively. The 624-1 Reservoir is located adjacent to the eastern boundary of Otay Ranch Village Five and is located along EastLake Parkway, just north of Olympic Parkway (Dexter Wilson 2014a).

711 Zone

There is currently one pump station in the 711 Zone, referred to as the Central Area Pump Station, that is located at the 624-1 Reservoir site adjacent to the eastern boundary of Otay Ranch Village Five. This station pumps water from the 624 Zone system into the 711 Zone distribution system and into two existing 711 Zone reservoirs located in the EastLake Greens development. The 711 Zone Pump Station currently has five pumps (one standby), each rated for 4,000 gallons per minute (gpm), which results in a firm station capacity of 16,000 gpm.

There are three existing reservoirs in the 711 Zone. Two reservoirs are located at the same site within the EastLake Greens development, and have capacities of 2.8 and 2.2 million gallons for a total of 5.0 million gallons. A 16.0 million gallon reservoir, Reservoir 711-3, was constructed north of the Rolling Hills Ranch project. With construction of this reservoir, OWD has sufficient storage within the 711 Zone to meet the demands from projected development in this zone.

The major 711 Zone pipelines in the vicinity of the project area include a 20-inch line in EastLake Parkway, a 16-inch line in Hunte Parkway, and 12-inch lines in La Media Road and Magdalena Avenue (Dexter Wilson 2014a).

The backbone of the on-site water infrastructure system for Village Two has been installed since the initial project approval as analyzed under the 2006 EIR as amended. The existing system has been determined to be adequate to support the proposed project (Dexter Wilson 2013).

5.9.1.2 Thresholds of Significance

The following criteria, based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) and City of Chula Vista standards, will determine the significance of the proposed project's

water supply impacts. Impacts to water supply services would be significant if the proposed project would:

A. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

B. Have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.

C. According to the City's Growth Management Ordinance (Chapter 19.09), impacts to potable water would be significant if the proposed project would exceed City threshold standards which seek to ensure that adequate supplies of quality water, appropriate for intended uses, are available. The standards require the following actions:

   i. The applicant must request and deliver to the City service availability letters from the appropriate water district for each project;

   ii. The applicant is required to submit a Water Conservation Plan along with the SPA Plan application; and

   iii. The project plans shall ensure an adequate supply of water on a long-term basis prior to the development of each Otay Ranch SPA.

D. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding water supply thereby resulting in a significant physical impact.

5.9.1.3 Impact Analysis

5.9.1.3.1 2006 EIR Impacts Conclusions

The following conclusions related to potable water as described in the 2006 EIR are applicable to the proposed project, specifically Village Two:

The SPA Plan, including Village Two, would result in an incremental increase in water consumption and place additional demands on water storage and pumping facilities. The impact to water storage and pumping facilities would be significant if construction of facilities does not coincide with the anticipated growth associated with the SPA Plan. However, the increase in demand for water would not have a significant impact on the ability of OWD to provide service to the SPA Plan area.

The water service availability report provided for the 2006 EIR as amended indicated that the increase in water demand would be consistent with the projected water demand included in the previous OWD 2000 UWMP and the WRMP. The same finding can also be made under the previous OWD 2005 UWMP. The report relied on water supply forecasts based on the projected potable water demands supplied with imported water received from SDCWA.

However, as discussed above, the SDCWA relies in part on the IID water transfer and other agreements that are being challenged in court. As a result, the assumption that the IID water transfer and other agreements would be available is questionable due to litigation uncertainty, and it is possible that the identified water supplies may not be available as anticipated, despite the urban water management planning conducted by MWD, SDCWA, and OWD. If the litigation were to invalidate identified and available water supplies, a significant water supply impact would result.

Implementation of the mitigation measures provided in the 2006 EIR would reduce the SPA Plan's impact on potable water, but not to below a level of significance, as for reasons discussed above.

5.9.1.3.2 Proposed Project Impact Analysis

A. Would the project require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

OWD would provide water service to the proposed project. The projected water demands for Village Two were evaluated in the November 2010 Water Resources Master Plan (WRMP) Amendment prepared for the Otay Water District (Dexter Wilson 2013). Table 5.9-4 summarizes the projected water demands from the 2010 WRMP. Table 5.9-5 summarizes the projected water demands based on the current development plan. Table 5.9-6 provides a comparison between the November 2010 WRMP and current projections.

Table 5.9-4
OWD November 2010 WRMP -- Village Two Water Demand Summary

Description	Potable Water Demand, gdp
624 Zone	147,967
711 Zone	838,479
Total	**986,446**

Source: Dexter Wilson 2013

Table 5.9-5
Village Two SPA Amendment -- Projected Water Demands

Description	Potable Water Demand, gdp
624 Zone	179,992
711 Zone	1,274,263
Total	**1,454,255**

Source: Dexter Wilson 2013

Table 5.9-6
Village Two Water Demand Summary

Pressure Zone	Projected Demand, GPD		Demand Increase	
	2010 WRMP	*Current Proposed*	*GPD*	*AFY*
624 Zone	147,967	179,992	32,025	36
711 Zone	838,479	1,274,263	435,784	488
Total	**986,446**	**1,454,255**	**467,809**	**524**

Source: Dexter Wilson 2013
Notes: GDP = General Development Plan
AFY = acre-feet per year

As shown, the projected water demand is increased by 467,809 gallons per day (gdp) or 524 ac-ft/yr in the current scenario as compared to the 2010 WRMP. As stated previously, the backbone of the on-site water infrastructure system has already been installed since the approval of the project as analyzed in the 2006 EIR. The existing on-site water infrastructure system has been determined to be adequate to support the proposed project. Additionally, mitigation measure 5.13.1-1 from the 2006 EIR has required a final Subarea Master Plan to be prepared prior to the approval of the first final map for development occurring within Village Two.

Moreover, as shown, the projected water demand for the proposed project is higher than what was estimated in the OWD WRMP. This information was provided to OWD for use in regional water supply planning and has been provided as the basis for a Water Supply Assessment and Verification (WSAV) report that was approved by OWD (OWD 2014). Additionally, OWD has issued a "will serve" letter dated January 28, 2014 confirming that adequate water supplies will be available to serve the proposed project (OWD 2014). Per OWD's will serve letter, OWD has approved the required Water Demand Study (Dexter Wilson 2013) and Water Supply Assessment and Verification report on November 6, 2013. As stated in the will serve letter, the developer will be required to annex parcel 644-310-02-00 into an improvement district, and will be required to submit improvement plans or applicable construction changes to existing improvement plans for OWD approval and extend the water mains to front all properties in question. If service laterals do not exist for the project, the applicant would be required to pay to have OWD install them prior to OWD providing water service to the area. Moreover, no changes to the existing Village Two water infrastructure system would be required as a result of the proposed development plan (Dexter Wilson 2013).

Additionally, as provided in the Otay Ranch Village 2 WSA - Notes and Clarifications Letter prepared by Atkins (Atkins 2014), which is included as part of Appendix H of this EIR, the WSAV report relied in part on an "accelerated forecasted growth" demand increment

discussed in the 2010 UWMP, which accounts for land use development occurring at an accelerated rate that is not yet included in jurisdictional planning documents. The tables found in the Notes and Clarifications Letter show that the accelerated forecasted growth demand increment would not be oversubscribed in normal, dry year, and multiple dry years as a result of the proposed project.

Therefore, impacts would be considered less than significant.

B. Would the project have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements?

As stated previously, OWD would provide water service to the proposed project. In accordance with Senate Bills 610 and 221, OWD prepared a WSAV report for the proposed project and the WSAV was approved in November 2013 (OWD 2014). The WSAV report describes the current and long-range storage capacity and confirms that OWD will be able to absorb the project's forecasted growth. The WSAV provides documentation of entitlements and contracts, and a financial analysis of OWD's maintenance and future water supplies including water supplies that are or will be available during normal, single-dry and multiple-dry water years during a 20-year projection to meet existing demands, expected demands associated with the proposed project and reasonably foreseeable planned future water demands served by OWD. The WSAV incorporates by reference the UWMPs and other water resources planning documents of the OWD, SDCWA and MWD. The WSAV report and Notes and Clarifications Letter confirms that adequate long-term water supply will be available to the proposed project and other existing and reasonably foreseeable planned development in the OWD service area (OWD 2014 and Atkins 2014). Therefore, impacts associated with water supply would be less than significant.

The projected water demand for the proposed project is summarized in Tables 5.9-5 and 5.9-6. Additional details, such as the projected water demand for each land use within Village Two, is available in the project-specific Water System Evaluation (Dexter Wilson 2013). As shown in Table 5.9-6, the projected water demand is increased by 467,809 gdp or 524 ac-ft/yr in the current scenario as compared to the 2010 WRMP.

As previously discussed, OWD currently relies on the SDCWA for its water supply, which relies on MWD for 70% to 95% of its water supply. Therefore, the water supply overview relied on the MWD, SDCWA and OWD 2010 UWMPs, all of which are available for public inspection upon request to the City, and incorporated by reference.

Additionally, the Chula Vista Landscape Water Conservation Ordinance calls for greater water conservation efforts and more efficient use of water in landscaping. The SPA Plans require landscaping to comply with this ordinance, and the ordinance requirements have been

incorporated into the project WCPs included in the SPA Plans. The proposed project would promote water conservation through the use of low water use irrigation infrastructure and the installation of evapotranspiration controls. Section 27.05 of the OWD Code of Ordinances also requires the implementation of water conservation BMPs for new development, including installation of high efficiency water fixtures and appliances and use of low water plants and smart irrigation controllers for landscaping. The OWD requirements have been incorporated into the project Water Conservation Plan. The proposed project is also required to contribute to the development of alternative water supply projects through payment of the New Water Supply Fee adopted by the OWD in May 2010. The potential water supply projects, such as the Rosarito Ocean Desalination Facility, are in response to regional water supply issues and are in various stages of the planning process.

In the WSAV for the proposed project, OWD acknowledges the ever-present challenge of balancing water supply with demand and the inherent need to possess a flexible and adaptable water supply implementation strategy that can be relied upon during normal and dry weather conditions. OWD further states that the responsible regional water supply agencies have and will continue to adapt their resource plans and strategies to meet climate, environmental, and legal challenges so that they may continue to provide water supplies to their service areas. The regional water suppliers along with OWD fully intend to maintain sufficient reliable supplies through the 20-year planning horizon under normal, single, and multiple dry year conditions to meet projected demands of the proposed project, along with existing and other planned development projects within the OWD service area.

Moreover, as discussed previously, SDCWA's long-term commitment also involves diversifying the region's water supplies portfolio, reducing the region's reliance on imported water, and optimizing facilities to provide the flexibility needed to respond to the region's ever-changing water needs. To prepare the San Diego region for potential water shortages, in March 2008, the SDCWA released a Model Drought Response Ordinance to its member agencies. The Model Drought Response Ordinance has identified four drought response levels that contain water-use restrictions to help achieve demand reduction during water shortages. Member agencies used the SDCWA's model to update their own ordinances to help provide consistency throughout the region on response levels and water use restrictions that may be taken to reduce water demand.

In summary, based on the WSAV and will serve letter from OWD that was prepared for the proposed project (OWD 2014), and the UWMPs of MWD, SDCWA, and OWD, there are sufficient existing and planned water supplies to meet projected water demands of the proposed project and other existing and planned development projects within the OWD service area over the next 20-year planning horizon in normal and in single and multiple dry years. Additionally, the Otay Ranch Village 2 WSA - Notes and Clarifications Letter prepared by Atkins further provides data showing that the proposed project would have adequate water supply in normal,

single dry year, and multiple dry year scenarios (Atkins 2014). Accordingly, despite ever-present water supply challenges, OWD and the regional water agencies (MWD and SDCWA) have determined that sufficient water supplies are, or will be, available to serve the proposed project, in combination with existing and other planned development within the OWD service area. Based on the water agency documentation, project impacts on water supplies — both short and long term — are considered less than significant.

C. Exceed City threshold standards which seeks to ensure availability of adequate supplies of quality water, appropriate for intended uses. The standards require the applicant to request and deliver to the City service availability letters from the appropriate water district for each project; to submit a Water Conservation Plan along with the SPA Plan application; and such project plans must ensure an adequate supply of water on a long-term basis prior to the development of each Otay Ranch SPA Plan.

As required by the City, service availability letters shall be submitted to the City prior to issuance of each building permit as identified in mitigation measure 5.13.1-2 of the 2006 EIR. This requirement is incorporated into the project's Mitigation Monitoring and Reporting Program. Individual developers would be required to obtain service availability letters prior to construction within the proposed project. In addition, the SPA Plan includes a WCP to address water use during project construction and operation. The WCP provides an analysis of water usage requirements of the project, an overview of mandated water conservation measures, a detailed plan of proposed measures for water conservation, use of recycled water, other means of reducing per capita water consumption from the proposed project, and a program to monitor compliance. The mandatory measures identified in the SPA Plan WCP for residences are as follows:

1. Insulate hot water pipes with 1-inch walled pipe insulation, separate hot and cold water piping.
2. Set the maximum service pressure to 60 pounds per square inch to reduce any leakage present and prevent excessive flow of water from all appliances and fixtures.
3. Install water-efficient dishwashers.
4. Install dual-flush toilets within the project.
5. Comply with the Chula Vista Landscape Water Conservation Ordinance to reduce outdoor water use. This will include selection of a more drought tolerant plant selection, including less turf area as well as installation of water efficient irrigation systems.

The mandatory measures identified in the WCP for non-residential land uses are as follows:

1. Insulate hot water pipes with 1-inch walled pipe insulation.
2. Comply with Division 5.3 of the California Green Building Standards Code in effect at the time of plan submittal.
3. Install pressure-reducing valves.

The proposed project also would incorporate appliance efficiency regulations required by the state of California (CCR Title 20). These include maximum flow rates for all new showerheads, lavatory faucets, sink faucets, metering faucets in public restrooms, tub spout diverters, residential and commercial water closets, and flushometer valves. Also, under the project SPA Plan WCP, the proposed project would use recycled water in all common landscaped areas, in compliance with the recycled water requirements of the Chula Vista Landscape Manual and OWD ordinance. The use of recycled water would not reduce the irrigation demand for landscaping, but would reduce potable water demand. As the SPA Plan and project under the SPA Plan would implement project WCPs, it would be consistent with this threshold requirement.

Finally, as discussed in the response to Threshold B, the WSAV prepared by the OWD describes current and long-range storage capacity and will ensure that the OWD will be able to absorb the forecasted growth of the proposed project. The WSAV also provides documentation of entitlements and contracts, and a financial analysis of OWD's maintenance and future water supplies. The WSAV report confirms that adequate long-term water supply will be available to serve the proposed project in conjunction with other existing and reasonably probable projected development within the OWD service area. The WSAV was approved by OWD as stated in their will serve letter committing water service to the proposed project (OWD 2014). Impacts would be less than significant.

D. Would the project be inconsistent with General Plan, GDP or other relevant objectives and policies regarding water supply thereby resulting in a significant physical impact?

City of Chula Vista General Plan

The proposed project is consistent with the General Plan objectives related to water supply because the project includes a Water Conservation Plan that addresses State, federal, and local water conservation requirements, as well as on-site water conservation measures and estimated savings. The Chula Vista General Plan recognizes that, in order to ensure adequate water service, water supplies and facilities need to be maintained and expanded in response to the City's

projected population growth. The following objectives are identified in the General Plan associated with water supply:

- **Objective LUT 62:** Require development to consider and plan for careful use of natural and man-made resources and services and maximize opportunities for conservation while minimizing waste.
- **Objective PFS 2:** Increase efficiencies in water use, wastewater generation and its re-use, and handling of storm water runoff throughout the city through use of alternative technologies.
- **Objective E 3:** Minimize the impacts of growth and development on water resources through the efficient use and conservation of water by residents, businesses, and city government.
- **Objective H 2:** Promote efficient use of water and energy through adopted standards and incentive-based policies to conserve limited resources and reduce long-term operational costs of housing.

In 2005, the City of Chula Vista updated its General Plan and certified the related EIR for the GPU. In 2013, the City certified a Supplemental EIR, and approved a GPA/ GDPA. Both the 2005 GPU EIR and the 2013 GPA/GDPA Supplemental EIR assessed, at the General Plan level, water demands and long-term water supply availability and reliability. In the two General Plan environmental documents, the City concluded that a long-term water supply could not be guaranteed; and, therefore, increases in water demand projected in the General Plan and later Amendment would result in a significant unavoidable impact.

The result of the City's findings is that large-scale proposed development projects within the City must conduct a project-level water supply/demand analysis, accompanied by the required SB 610/SB 221 water supply assessment/verification. Based on this project-level water supply/demand analysis and associated project EIR, the City will then reassess its General Plan-level water supply findings and determinations based on the record before it. As such, a WSAV report was prepared by OWD for the proposed project. Future builders within the project area will be required to demonstrate water service availability through the building permit process. Moreover, water use efficiency measures are incorporated into the WCPs and SPA Plans to ensure long-term conservation of potable water supply.

Growth Management Ordinance

Lastly, the Growth Management Ordinance contains a threshold standard to ensure that the supply of water for existing and future residents is available at a level and quality necessary for

its intended use. The following objectives associated with water supply were identified in the Growth Management Ordinance.

- **Objective GM 1:** Concurrent public facilities and services.
- **Objective GM 3**: Create and preserve vital neighborhoods.

As discussed above, a WSAV was prepared for the project and approved by OWD (OWD 2014). The WSAV ensures that adequate water would be available to serve the proposed project. Should conditions change, the General Plan includes policies that require detailed forecasting of water demands, updating of threshold standards and monitoring of development activities to impose limits on the rate of development to ensure water is available commensurate with need.

Otay Ranch GDP

The Otay Ranch GDP identifies a number of goals and objectives with the are in place to ensure an adequate supply of water on a long-term basis, and to promote water conservation and increased efficiencies. The following goals are identified in the Otay Ranch GDP relevant to water supply:

- **Goal:** Ensure an adequate supply of water for build-out of the entire Otay Ranch project area; design the Otay Ranch project area to maximize water conservation.
- **Goal:** Conserve water during and after construction of Otay Ranch.

As previously discussed, the WSAV prepared by the OWD describes current and long-range storage capacity and ensures that the OWD will be able to absorb the forecasted growth of the proposed project. The WSAV provides documentation of entitlements and contracts, and a financial analysis of OWD's maintenance and future water supplies. The WSAV report confirms that adequate long-term water supply will be available to serve the proposed project in conjunction with other existing and reasonably probable projected development within the OWD service area and was approved by OWD in November 2013 (OWD 2014).

Therefore, the project would be consistent with applicable General Plan and Otay Ranch GDP objectives and goals related to water supply. Impacts would be less than significant.

5.9.1.4 Level of Significance Prior to Mitigation

The increase in demand for water would not have a significant impact on the ability of OWD to provide service to the proposed project. No significant impacts related to water facilities would occur as a result of the proposed project.

5.9.1.5 Mitigation Measures

No additional mitigation beyond that identified in the 2006 EIR would be required.

5.9.1.6 Level of Significance After Mitigation

No additional mitigation beyond that identified in the 2006 EIR would be required and impacts would be less than significant.

5.9.1.7 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts discussed in the 2006 EIR as a result of an increase in demand for water. However, it would not change the conclusions reached by the analysis of the 2006 EIR. No new impacts are identified and no new mitigation is required.

5.9.2 Recycled Water

5.9.2.1 Existing Conditions

Historically, the only source of OWD recycled water has been the Ralph W. Chapman Water Recycling Facility. This facility currently has a rated capacity of 1.3 million gallons per day (mgd) with a maximum production of approximately 1.1 mgd and could be expanded to an ultimate capacity of 2.50 mgd. Typically, summer demands exceed the 1.1 mgd plant capacity. The District has the capability to supplement the recycled water supply with the potable 980 Zone water system, which has facilities in the area. The South Bay Water Treatment Plant has an ultimate rated capacity of 15 mgd and OWD obtained capacity rights to 8.0 mgd of recycled water. This additional source of recycled water will allow OWD to meet existing and future recycled water demands. The OWD has master planned a series of pump stations, reservoirs, and transmission lines to integrate this source of water into the existing recycled water system.

Storage of the effluent from the Ralph W. Chapman facility is provided by two ponds in the District's Recycled Use Area. The storage ponds have a high water line of approximately 944 feet and 927 feet, respectively, and provide the storage and supply for the 927 Zone distribution system. The 680 Zone distribution system has been supplied by pressure reducing off the 927 Zone system, but ultimately will be supplied by the South Bay Water Reclamation Plant. Conveyance facilities to convey water from the South Bay Treatment Plant to the use areas, including the 680 Zone use areas, are currently being implemented. A 12-inch 680 Zone pipeline has been constructed in Hunte Parkway along the southern boundary of Village Eleven, and an 8-inch 927 Zone pipeline has been constructed in EastLake Parkway to Hunte Parkway (Dexter Wilson 2014a).

5.9.2.2 Thresholds of Significance

The following significance criteria, some of which are included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a recycled water impact. Impacts to recycled water would be significant if the proposed project would:

A. Require or result in the construction of new recycled water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

B. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding recycled water thereby resulting in a significant physical impact.

5.9.2.3 Impacts

5.9.2.3.1 2006 EIR Impacts Conclusions

The following conclusions related to recycled water as described in the 2006 EIR are applicable to the proposed project, specifically Village Two:

The SPA Plan, including Village Two, would result in an incremental increase in the use of recycled water and place additional demands on water storage and pumping facilities. The increase in use of recycled water has been planned for by the OWD and would not have a significant impact. However, the impact to recycled water storage and distribution facilities would be significant if construction of new facilities does not coincide with the development phasing of the proposed SPA Plan outlines in the project's PFFP. Implementation of the mitigation measures provided in the 2006 EIR would reduce impacts to recycled water to a level below significance.

5.9.2.3.2 Proposed Project Impact Analysis

A. Would the project require or result in the construction of new recycled water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

As stated previously, the backbone of the on-site water infrastructure system has already been installed since the approval of the project as analyzed in the 2006 EIR. The existing on-site water infrastructure system, including recycled water facilities, has been determined to be adequate to support the proposed project. Additionally, mitigation measures 5.13.2-1 and 5.13.2-2 from the 2006 EIR would be implemented as part of the proposed project which include preparation of a final SAMP and requirements related to payment of fees and phasing in the approved Public Facilities Financing Plan (PFFP). These mitigation measures would further reduce impacts related to recycled water infrastructure development and would be included in the MMRP for the project. Impacts would be less than significant.

B. Would the project be inconsistent with General Plan, GDP or other relevant objectives and policies regarding recycled thereby resulting in a significant physical impact?

City of Chula Vista General Plan

The General Plan outlines policies associated with recycled water that are in place to promote the use of low waster demand landscaping and to facilitate the continued use recycled water in new developments. The following policies are identified in the General Plan:

- **Policy E 3.2** Promote the use of low water demand landscaping and drought tolerant plant materials in both existing and new development.
- **Policy E 3.3** Where safe and feasible, promote and facilitate the continued use of recycled water in new developments, and explore opportunities for the use of recycled water in redevelopment projects.

The SPA Plans include Water Conservation Plans, as required by the Otay Ranch GDP and City Growth Management Ordinance. The Water Conservation Plans identify measures to conserve water, including water efficient appliances, water-wise plant palettes, limited turf areas and "smart irrigation" systems. In addition, the proposed project will comply with the Chula Vista Landscape Water Conservation Ordinance (CVMC Section 20.12). Please refer to the Water Conservation Plans for a full listing of water conserving project design features. The proposed project also incorporates the use of recycled water wherever possible to further reduce use of potable water.

Otay Ranch GDP

The Otay Ranch GDP identifies the following goal related to reclaimed and recycled water within the Otay Ranch region:

- **Goal:** Provide a healthful and sanitary sewerage collection and disposal system for the residents of Otay Ranch and the region, including a system designed and constructed to accommodate the use of reclaimed water.

As previously discussed, the proposed project includes a Water Conservation Plan, as required by the Otay Ranch GDP and City Growth Management Ordinance. The Water Conservation Plans identify measures to conserve water, including water efficient appliances, water-wise plant palettes, limited turf areas and "smart irrigation" systems. The proposed project is consistent with the General Plan and Otay Ranch GDP objectives and policies related to recycled water because the proposed project includes a Water Conservation Plan that requires the use of water efficient landscaping and recycled water for irrigation. Impacts related to plan consistency would be less than significant.

5.9.2.4 Level of Significance Prior to Mitigation

The increase in demand for recycled water would not have a significant impact on the ability of OWD to provide service to the proposed project. No significant impacts related to recycled water facilities would occur as a result of the proposed project.

5.9.2.5 Mitigation Measures

No additional mitigation beyond that identified in the 2006 EIR would be required.

5.9.2.6 Level of Significance After Mitigation

No additional mitigation beyond that identified in the 2006 EIR would be required and impacts would be less than significant.

5.9.2.7 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts discussed in the 2006 EIR as a result of an increase in demand for recycled water. However, it would not change the conclusions reached by the analysis of the 2006 EIR. No new impacts are identified and no new mitigation is required.

5.9.3 Sewer

This section of the EIR addresses potential impacts on sewer service and infrastructure resulting from the proposed project. This analysis also describes the proposed sewer facilities that are part of the project. The information in this section is based on the Sewer System Evaluation for the Baldwin and Sons Village 2 SPA Amendment, which contains the hydraulic analysis of the Salt Creek Interceptor prepared by Atkins on March 4, 2014, (Dexter Wilson 2014b) included as Appendix H, Part II to this EIR.

5.9.3.1 Existing Conditions

5.9.3.1.1 Regulatory Framework

Local Level

City of Chula Vista General Plan

The City of Chula Vista General Plan recognizes that to ensure adequate and reliable sewer service and facilities, services need to be maintained and expanded to accommodate growth in the City's population. The Chula Vista General Plan includes objectives and policies in the

Public Facilities and Services Element that increase efficiencies in wastewater generation and its reuse through use of alternative technologies (Objective PFS 2). Additionally, Growth Management Objective GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects that are not in compliance with applicable threshold standards for wastewater service.

City of Chula Vista Wastewater Master Plan

Adopted in May 2005, the City of Chula Vista Wastewater Master Plan evaluates the capacity of the City's sewer system, assessing the condition of existing pump station facilities, developing a capital improvement plan (CIP) for rehabilitation and expansion of the collection system and recommending a revised capacity charge (City of Chula Vista 2005a). The 20-year CIP includes the recommended system improvements to address existing and projected demand at build-out of the City. Future City flow estimates, based on 2005 growth projections, indicate that the City would eventually exceed its existing share in the City of San Diego Metropolitan Wastewater District (Metro) system. Currently, the City of Chula Vista has treatment capacity rights of 20.864 mgd in the Metro sewer system. As such, the wastewater generation analysis presented in the Wastewater Master Plan is intended to be used by the City to establish a basis for acquiring future Metro treatment capacity to allow for implementation of the Chula Vista General Plan, as adopted in 2005 and amended in 2012. The city's sewage capacity was not exceeded in 2010 and the 2013 GMOC Annual Report concluded the city would not exceed its sewage capacity in the next 10 years.

The Wastewater Master Plan also presents the methodology and findings of the sewer capacity evaluation, including summaries of hydraulic computer model analyses used to present findings of existing pump station assessments and recommended facility improvements. Sewer system design standards are based on the City's Subdivision Manual, Section 3-300, in which wastewater unit generation rates for use in design of sewer improvements are provided. Recommended wastewater unit generation rates for use in design of sewer improvements are shown in Table 5.9-7.

Table 5.9-7
Recommended Sewer Design Unit Generation Rates

Land Use	Unit Generation Rate (gpd)
Residential (R-1 and R-2)	265 per dwelling unit
Residential (R-3 and MHP)	199 per dwelling unit
Commercial/Industrial/Institutional	2,500 per acre
Parks	500 per acre
Elementary School	15 per capita
Junior High and High School	20 per capita

Source: City of Chula Vista 2005a.

Chula Vista Municipal Code Growth Ordinance

Chula Vista Municipal Code Section 19.80.030 (Controlled Residential Development) is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for sewer and other public services and utilities. Preparation of a Public Facilities Financing Plan (PFFP) is required in conjunction with each SPA Plan to ensure that development is consistent with the overall goals and policies of the General Plan and would not degrade existing public services. Similarly, Chula Vista Municipal Code, Section 19.09 (Growth Management) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. The Growth Management Oversight Commission (GMOC) is responsible for annually reviewing the growth management program. Information provided to the Growth Management Oversight Committee (GMOC) must include:

- Amount of current capacity now used or committed;
- Ability of affected facilities to absorb forecast growth;
- Evaluation of funding and site availability for projected new facilities;
- Other relevant information.

Chula Vista Municipal Code, Section 19.09.040G, requires "that sewage flows and volumes shall not exceed City engineering standards as set forth in the subdivision manual." In addition, the City must annually provide Metro with a 12- to 18-month development forecast and request confirmation that the projection is within the City's purchased capacity rights and an evaluation of Metro's ability to accommodate the forecast and continuing growth.

Chula Vista Municipal Code Section 19.09 also requires a PFFP and the demonstration that utilities, such as sewer systems, meet the GMOC quality of life threshold standards. The analysis of sewer services provided in this section, along with the PFFPs, are intended to ensure funding for any needed expansion of sewer facilities and to confirm that wastewater services will be provided commensurate with development and demand.

City Ordinance 2974

To reimburse the City for the cost to construct the Salt Creek Interceptor, all developments that propose connections to this line are required to pay a development impact fee (Ordinance 2974) (City of Chula Vista 2013d).

5.9.3.1.2 Existing Sewer Service

The City of Chula Vista operates and maintains its own sanitary collection system that connects to the Metro sewerage system for treatment and disposal. The Metro sewerage system treats wastewater from the City of San Diego and 15 other cities and districts, including Chula Vista.

The San Diego Metropolitan Sewer Authority regulates the three wastewater treatment plants: (1) Point Loma Wastewater Treatment Plan; (2) Southbay Water Reclamation Plant; and (3) North City Water Reclamation Plant. Currently, the three combined treatment plants have a maximum permitted treatment capacity of 285 mgd of wastewater for the City of San Diego and 15 other participating agencies. All wastewater within Otay Ranch is conveyed to the South Metro Interceptor system west of Interstate 5. The Salt Creek Interceptor is located in proximity to the project area.

Within the Poggi Canyon Basin, sewer is conveyed to the Poggi Canyon Interceptor at Heritage Road and at Santa Venetia Street. The backbone sewer lines serving these areas have already been installed on the project site.

Treatment Capacity

All sewage generated within the City of Chula Vista is currently conveyed to the City of San Diego Metro Sewer System for treatment and disposal. The Metro sewer system treats wastewater from the City of San Diego and 15 other cities and districts, including Chula Vista. Flows are conveyed to the Point Loma Wastewater Treatment plant, which has a maximum daily treatment capacity of 240 mgd and currently treats approximately 180 mgd.

The City of Chula Vista has treatment capacity rights of 20.864 mgd in the Metro sewer system. According to the GMOC 2013 Annual Report, Chula Vista generated an average flow of 15.935 mgd in fiscal year 2011/2012. According to the Chula Vista Wastewater Master Plan, Chula Vista would require 5.358 mgd of additional treatment capacity to accommodate City growth as projected in 2005. However, growth projections have been revised since the master plan was prepared. The 2005 General Plan was adopted after preparation of the master plan and amended to accommodate increased development in some areas, including Otay Ranch.

The updated Salt Creek Interceptor hydraulic analysis conducted by Atkins in March 2014, included as part of Appendix H, Part II, indicates that increased demand resulting from the proposed project would not result in deficiencies in the Salt Creek Interceptor. The City of Chula Vista is also evaluating construction of a new wastewater treatment plant to meet its future treatment capacity and disposal requirements. The project will be timed to proceed with the City's acquisition of additional treatment capacity, and building permits will only be issued if the City Engineer determines that adequate sewer capacity exists per City of Chula Vista Municipal Code Chapter 19.09, Growth Management (City of Chula Vista 2014).

5.9.3.2 Thresholds of Significance

The following significance criteria, some of which are included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a sewer service impact. Significance criteria A–C are from Appendix G of the CEQA Guidelines. Significance criteria D and E are based on City of Chula Vista standards. Impacts to sewer services would be significant if the proposed project would:

A. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

B. Require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

C. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

D. According to the City's Growth Management Ordinance (chapter 19.09), impacts related to wastewater generation would be significant if the proposed project would generate sewage flows and volumes that exceed City Engineering Standards as set forth in the Subdivision Manual adopted by City Council Resolution Number 11175 on February 12, 1983, as amended in 2012.

E. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding wastewater thereby resulting in a significant physical impact.

5.9.3.3 Impacts

5.9.3.3.1 2006 EIR Impacts Conclusions

The following conclusions related to sewer service as described in the 2006 EIR are applicable to the proposed project, specifically Village Two:

Development of the SPA Plan, including Village Two, would result in an increase in sewage generation. There is sufficient capacity in the Poggi Canyon and Wolf Canyon/Salt Creek Interceptors to accommodate the proposed SPA Plan. However, the southerly portion of Village Two cannot be developed until completion of the Heritage Road sewer line and connection to the Wolf Canyon/Salt Creek Interceptor. With implementation of the mitigation measures provided in the 2006 EIR, significant impacts to sewer services would be reduced to a level below significance.

5.9.3.3.2 Proposed Project Impact Analysis

A. Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Sewer service for the proposed project would be provided by the City of Chula Vista. The proposed project is located within the Salt Creek Sewer basin. The Salt Creek Interceptor was designed, sized and constructed to serve regional development in the Otay Ranch area and is located south of the project site.

To evaluate the impacts resulting from the proposed project, an estimate of projected sewage flows was conducted by Dexter Wilson Engineering, Inc.. The capacity of the Salt Creek Interceptor was analyzed, and findings were provided in a memorandum prepared by Atkins in March 2014 and included in the Dexter Wilson sewer analysis (Dexter Wilson 2014b). Only neighborhoods within Village Two that included changes from the previously approved project were analyzed as shown in Table 5.9-8. Table 5.9-9 provides a summary of projected flows. As shown, development of the proposed project including cumulative projects considered in the sewage flow analysis, would increase Poggi Canyon flows by 248,730 gpd, and Wolf Canyon flows by 128,315 gpd.

Table 5.9-8
Village Two SPA Amendment -- Sewer Flow Projections

Description	Total Sewage Flow	EDUs
Approved Land Use Plan		
Poggi Canyon	277,865	1,049
Wolf Basin	279,520	1,055
Total	**557,385**	**2,103**
Proposed Project		
Poggi Canyon	454,975	1,717
Wolf Basin	360,665	1,361
Other Projects		
Poggi Canyon	71,620	270
Wolf Basin	47,170	178
Total Poggi Canyon (Proposed Project + Other Projects)	**526,595**	**1,987**
Total Wolf Basin (Proposed Project + Other Projects)	**407,835**	**1,539**

Source: Dexter Wilson 2014b

Table 5.9-9
Sewer Flow Summary

Description	Poggi Canyon		Wolf Canyon	
	Average Flow, gpd	*EDUs*	*Average Flow, gpd*	*EDUs*
Approved Plan	277,865	1,049	279,520	1,055
Proposed Project	526,595	1,987	407,835	1,539
Net Increase	**248,730**	**938**	**128,315**	**484**

Source: Dexter Wilson 2014b

As previously discussed, the backbone sewer lines for the proposed project site have already been installed. These lines were evaluated under a cumulative project scenario including other projects occurring within the proposed project vicinity (Dexter Wilson 2014b). It was determined that no upgrades to the existing sewer lines anticipated to serve the proposed project would be required. The sewer lines to be installed within the Wolf Canyon Basin have yet to be designed. The design and sizing of these lines would take into account the additional increase in density as proposed under the proposed project.

The availability of the Poggi Canyon Interceptor was evaluated under the cumulative project condition. Data on the Poggi Canyon Interceptor was obtained from the April 2009 Poggi Canyon Basin Gravity Sewer Development Impact Fee Update (Dexter Wilson 2014b). Data from the Development Impact Fee Update report includes existing permitted EDUs in the basin as well as committed EDUs based on previous project approvals. Two reaches already identified for future replacement were determined as being over capacity and one additional reach was determined to be slightly over capacity. These reaches are provided in Exhibit A of Appendix H, Part II.

The availability in the Salt Creek Interceptor was analyzed under baseline and cumulative conditions in a November 2010 report by PBS&J. This analysis was updated by Atkins in a memorandum dated March 4, 2014 to include additional flows resulting from the proposed project. The updated analysis is provided in Appendix H, Part II and concludes that these additional flows do not result in capacity deficiencies in the Salt Creek Interceptor (Dexter Wilson 2014b).

As previously described, Chula Vista Municipal Code, Section 19.09.040G, requires "that sewage flows and volumes shall not exceed City engineering standards as set forth in the subdivision manual." The City must annually provide Metro with a 12- to 18-month development forecast and request confirmation that the projection is within the City's purchased capacity rights and an evaluation of Metro's ability to accommodate the forecast and continuing growth.

Chula Vista Municipal Code Section 19.09 also requires a PFFP and the demonstration that utilities, such as sewer systems, meet the GMOC quality of life threshold standards. The analysis of sewer services provided in this section, along with the PFFPs, are intended to ensure funding for any needed expansion of sewer facilities and to confirm that wastewater services will be provided commensurate with development and demand.

Pursuant to the City's municipal code, prior to issuance of each building permit, the applicant or designee shall pay the Salt Creek Development Impact Fee and Poggi Canyon Development Impact Fee at the rate in effect at the time of building permit issuance. This requirement is included as mitigation measures MM-UTIL-1 and MM-UTIL-2. Additionally, the proposed project would be required to provide evidence that sufficient sewer capacity is available prior to building permit issuance, as stated in mitigation measures MM-UTIL-3 (see Section 5.9.2.5). With incorporation of mitigation measures 5.13.3-1 through 5.13.3-3 from the 2006 EIR, and proposed project mitigation measure MM-UTIL-1 and MM-UTIL-2, impacts would be reduced to a level that is less than significant.

B. Would the project require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

The proposed project on-site backbone sewer infrastructure system has already been installed, and would be adequate to support the proposed project. However, as described in response (A) above, two off-site reaches within Poggi Canyon Basin already identified for future replacement were determined to be over capacity and one additional reach was determined to be slightly over capacity as discussed in the April 2009 Poggi Canyon Basin Gravity Sewer Development Impact Fee Update (Dexter Wilson 2014b). These reaches are provided in Exhibit A of Appendix H, Part II. Upon approval of the proposed project, the Poggi Canyon Basin Gravity Sewer Development Impact Fee would need to be updated to reflect the additional units and additional improvements as identified in the project-specific sewer evaluation included as Appendix H, Part II (Dexter Wilson 2014b). This requirement is included as mitigation measures MM-UTIL-2 (see Section 5.9.2.5). With incorporation of mitigation measures 5.13.3-1 through 5.13.3-3 from the 2006 EIR, and proposed project mitigation measure MM-UTIL-2, impacts would be reduced to a level that is less than significant.

C. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

As described previously, the proposed project would be served by either the City of San Diego Metro System for sewage treatment at the Point Loma Wastewater Treatment Plant, or a new wastewater treatment plant currently under evaluation by the City of Chula Vista. The Point Loma Wastewater Treatment Plant complies with all wastewater treatment requirements of the

San Diego Regional Water Quality Control Board. If the City of Chula Vista constructs a new wastewater treatment plant, it would be designed and constructed to comply with all wastewater treatment requirements of the San Diego Regional Water Quality Control Board. Therefore, the proposed project would not exceed wastewater treatment requirements of the San Diego Regional Water Quality Control Board and impacts would be less than significant.

D. Generate sewage flows and volumes that exceed City Engineering Standards as set forth in the Subdivision Manual adopted by City Council Resolution Number 11175 on February 12, 1983, as amended in 2012?

As described in response (A) above, the backbone sewer infrastructure for the proposed project has already been installed and projected flows from the proposed project were calculated. Proposed sewer facility improvements necessary to serve the proposed project were determined adequate to support the proposed project by Dexter Wilson Engineering Inc. and the results of the sewer evaluation are provided in Appendix H, Part II of the EIR. The design of the existing and proposed facilities is based on the design criteria found in the City's Subdivision Manual. Since the proposed facilities would be sized to accommodate projected flows based on the City's Subdivision Manual, the proposed project would not generate flows and volumes that exceed the City Engineering Standards in the Subdivision Manual. Additionally, the proposed project would be timed to proceed with the City's acquisition of additional treatment capacity, and building permits would only be issued if the City Engineer determines that adequate sewer capacity exists. Therefore, impacts would be less than significant.

E. Would the project be inconsistent with General Plan, GDP or other relevant objectives and policies regarding wastewater thereby resulting in a significant physical impact?

City of Chula Vista General Plan

The City of Chula Vista General Plan recognizes that to ensure adequate and reliable sewer service and facilities, services need to be maintained and expanded to accommodate growth in the City's population. The Chula Vista General Plan includes objectives and policies in the Public Facilities and Services Element that increase efficiencies in wastewater generation and its reuse through use of alternative technologies. Additionally, Growth Management Objectives encourage withholding discretionary approvals and subsequent building permits from projects that are not in compliance with applicable threshold standards for wastewater service. The following objectives are identified in the General Plan related to sewer service and facilities:

- **Objective PFS 1:** Ensure adequate and reliable water, sewer, and drainage service and facilities.

- **Objective PFS 2:** Increase efficiencies in water use, wastewater generation and its re-use and handling of stormwater runoff throughout the city through the use of alternative technologies.
- **Objective PFS 4:** Provide long-term wastewater treatment capacity to meet the needs of existing and new development in Chula Vista.

The proposed project is consistent with the General Plan objectives related to sewer service because the proposed project will be timed to proceed with the City's acquisition of additional treatment capacity and building permits will be issued only if the City Engineer has determined that adequate sewer capacity exists per City of Chula Vista Municipal Code Chapter 19.09, Growth Management (City of Chula Vista 2014). In addition, the proposed project includes the construction of additional on- and off-site sewer facilities to ensure adequate services for the proposed project and, the backbone of the project sewer infrastructure system has already been installed. The PFFP for the project identifies the appropriate funding mechanisms to support the City's provision of public services, including a future expansion of waste water treatment capacity. The PFFP analyzes the public facilities and services required to implement the project. Therefore, the proposed project would be consistent with applicable General Plan and objectives and, and impacts related to plan consistency would be less than significant.

Otay Ranch GDP

The Otay Ranch GDP identifies the following goals related to sewerage collection and disposal systems in order to ensure a healthy and sanitary environment, and to encourage utilization of reclaimed water:

- **Goal:** Design a sewerage system which will produce reclaimed water. Ensure a water distribution system will be designed and constructed to use reclaimed water. Construction of a "dual system" of water supply will be required for all development where reclaimed water is used.
- **Goal:** Provide a healthful and sanitary sewerage collection and disposal system for the residents of Otay Ranch and the region, including a system designed and constructed to accommodate the use of reclaimed water.

The proposed project includes the construction of additional on- and off-site sewer facilities to ensure adequate services for the proposed project and, the backbone of the project sewer infrastructure system has already been installed. Project development would be consistent with the growth anticipated and would not result in a determination by the City of Chula Vista or San Diego Metropolitan Sewer Authority that it has inadequate capacity to serve the project's demand in addition to the providers' existing commitments. The PFFP for the project identifies the appropriate funding mechanisms to support the City's provision of public services, including

a future expansion of waste water treatment capacity. The PFFP analyzes the public facilities and services required to implement the project. The PFFP identifies what facilities and services will be required, establishes thresholds to ensure those services and facilities are provided and identifies financing mechanisms to pay for the facilities and services. Compliance with the PFFP for the project will ensure public facilities are provided concurrent with development.

Furthermore, the General Plan and Otay Ranch GDP policies require that the City provide adequate wastewater conveyance and treatment services to meet established service standards and give the City Council the discretion to withhold building permits if the standards are not met. Therefore, as demonstrated above, the proposed project would be consistent with applicable Otay Ranch GDP goals, and impacts related to plan consistency would be less than significant.

5.9.3.4 Level of Significance Prior to Mitigation

Adequate Wastewater Utilities

The proposed project would be timed to proceed with the City's acquisition of additional treatment capacity. Building permits would be issued only if the City Engineer has determined that adequate sewer capacity exists. No development within the project area would occur in the absence of adequate treatment capacity. Therefore, the proposed project would have a less than significant impact on committed or future wastewater treatment capacity; nonetheless, mitigation is recommended below to ensure adequate wastewater facilities.

New Wastewater Treatment Facilities

The proposed project on-site backbone sewer infrastructure system is currently installed, and would be adequate to support the proposed project. However, as described in (A) above, two off-site reaches within Poggi Canyon Basin already identified for future replacement were determined as being over capacity and one additional reach was determined to be slightly over capacity as discussed in the April 2009 Poggi Canyon Basin Gravity Sewer Development Impact Fee Update (Dexter Wilson 2014b). Upon approval of the proposed project, the Poggi Canyon Basin Gravity Sewer Development Impact Fee would need to be updated to reflect the additional units and additional improvement as identified in the project-specific sewer evaluation (Dexter Wilson 2014b).

Exceedance of Wastewater Treatment Requirements

If new wastewater treatment plant facilities are required, wastewater disposal from those facilities would be required to comply with all wastewater treatment requirements of the San Diego Regional Water Quality Control Board; therefore, there would be no project exceedance of wastewater treatment requirements.

Consistency with City Engineering Standards

No impact related to consistency with City engineering standards has been identified should the proposed project be implemented.

Consistency with City Wastewater Policies

No impact related to consistency with City wastewater policies has been identified should the proposed project be implemented.

5.9.3.5 Mitigation Measures

In addition to mitigation measures 5.13.3-1 through 5.13.3-3 from the 2006 EIR, the following mitigation measures would be implemented as part of the proposed project:

MM-UTIL-1 **Salt Creek Development Impact Fee**. Prior to issuance of each building permit, the applicant or designee shall pay the Salt Creek Development Impact Fee at the rate in effect at the time of building permit issuance and corresponding to the sewer basin that the building will permanently sewer to, unless stated otherwise in a development agreement that has been approved by the City Council.

MM-UTIL-2 **Poggi Canyon Development Impact Fee.** Prior to issuance of each building permit, the applicant or designee shall pay the Poggi Canyon Development Impact Fee at the rate in effect at the time of building permit issuance and corresponding to the sewer basin that the building will permanently sewer to, unless stated otherwise in a development agreement that has been approved by the City Council.

MM-UTIL-3 **Density Transfer Technical Report**. Prior to design review approval in accordance with the Intensity Transfer provision in the Village Two SPA Plan, the applicant or designee shall provide an update to the Overview of Sewer Service for Otay Ranch University Village Two (Dexter Wilson 2014b) with each proposed project requesting an intensity transfer. The technical study shall demonstrate to the satisfaction of the City Engineer that adequate on-site wastewater infrastructure will be available to support the transfer. The transfer of residential density shall be limited by the ability of the on-site sewerage facilities to accommodate flows. Building permits would be issued only if the City Engineer has determined that adequate sewer capacity exists.

5.9.3.6 Level of Significance After Mitigation

With implementation of mitigation measures 5.13.3-1 through 5.13.3-3 from the 2006 EIR, and project-specific mitigation measures UTIL-1, UTIL-2, and UTIL-3 impacts relate to sewer service would be less than significant.

5.9.3.7 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts discussed in the 2006 EIR as a result of an increase in wastewater generation. The proposed project would be required to pay development impact fees to ensure adequate sewer service is provided to the proposed increase in demand. New impacts are identified and new mitigation is required.

5.9.4 Solid Waste Disposal

This section describes solid waste disposal for the project area and addresses the adequacy of existing facilities to accommodate for solid waste disposal associated with the proposed project.

5.9.4.1 Existing Conditions

5.9.4.1.1 Regulatory Framework

Federal Level

Integrated Waste Management Act of 1989 (AB 341)

The Integrated Waste Management Act of 1989 requires each city, county, and regional agency to develop a source reduction and recycling element of an integrated waste management plan that includes source reduction, recycling, and composting components. A minimum of a 50% diversion rate of all solid waste from landfill disposal or transformation by January 1, 2000 was required and met. The current policy goal of the State is no less that 75% of solid waste generated be source reduced, recycled, or composted by the year 2020.

State Level

Title 14: Natural Resources-Division 7

Title 24 of the California Code of Regulations regarding Natural Resources sets minimum standards for solid waste handling and disposal, including specific regulations regarding waste tire storage and disposal, hazardous waste disposal facilities, construction and demolition and inert debris transfer/processing, construction and demolition waste and inert debris disposal, transfer/processing operations and facilities, siting and design, operation standards, record keeping, and additional operating requirements for facilities. Additional guidance and requirements for compostable materials handling operations and facilities, asbestos handling and disposal, resource conservation programs, farm and ranch solid waste cleanup and abatement, used oil recycling program, electronic waste recovery and recycling, solid waste cleanup among others are also addressed in Title 14.

Title 27: Environmental Protection –Division 2, Solid Waste

Title 27 of the California Code of Regulations regarding Environmental Protection and Solid Waste set the criteria for all waste management units, facilities, and disposal sites including regulations of the CIWMB and SWRCB., Waste classification, siting, construction standards, water quality monitoring and response programs, operating criteria, daily and immediate cover, handling and equipment, controls, gas monitoring and control, closure and post-closure standards, and financial assurances are all aspects covered in Title 27.

Local Level

Construction and Demolition Debris Recycling Ordinance (CVMC 8.25.095)

Effective July 1, 2008, construction and demolition projects are required to divert their debris from landfill disposal in the City of Chula Vista; 100% of inert materials (i.e., concrete, rock, landscape debris) and a minimum of 50% of all other materials (i.e., Cabinets, carpet, drywall, etc.) shall be recycled and or reused from certain 'covered' projects. Covered projects are those with an approved Waste Management Report and submitted performance deposit. The Construction and Demolition Debris (C&DD) Recycling Ordinance is designed as a means of achieving compliance with California Green Building Standards Code (Title 24, Part II, Sections 4.408 and 5.408).

Otay Ranch General Development Plan

The Otay Ranch General Development Plan outlines integrated solid waste management facilities as solutions to impacting the current waste management system through diversion and waste reductions. In order to meet state mandated goals set forth in AB 341, the GDP requires the simultaneous implementation of multiple systems including: curbside recycling, neighborhood recycling/drop-off centers, a materials recovery facility, composting facilities, a household hazardous waste facility, and landfill utilization.

City of Chula Vista General Plan

The 2005 Chula Vista General Plan recognizes that the Otay Landfill is anticipated to reach capacity within the next 15 years, requiring closure of the facility. The General Plan forecasts that the future solid waste disposal needs of the City may require the creation of a regional transfer station, where solid waste from individual collection routes would be transferred into large trucks for disposal. As such, the policies are regional in nature and do not specifically address individual developments.

5.9.4.1.2 Existing Services

The City of Chula Vista's Public Works Department and Environmental Services Division oversees waste management in the City for residences and businesses in accordance with the goals and policies of the adopted General Plan and State Statues (AB 341). Republic Services (formerly known as Allied Waste Management) current serves the City of Chula Vista as the sole solid waste and recycling service provider for residential, commercial and industrial customers. The City disposes of solid waste, yard waste, and C&DD at the Otay Landfill, which is anticipated to close in 2028. The City is currently working on further waste diversion plans, in addition to the C&DD Ordinance to help extend the lifespan of the Otay Landfill; the Sycamore Canyon Landfill will be utilized as the City's primary landfill once the Otay Landfill closes. The mixed debris that are required to be recycled per the C&DD Ordinance are processed at one of two C&D facilities in San Diego: the Otay Landfill run by Republic Services and EDCO's C&D facility in Lemon Grove. Both of these C&D facilities are open to the public, as neighboring cities have similar ordinances and solid waste requirements.

In addition, the Environmental Services Division offers bulky item collection, composting, construction and demolition debris, electronic waste, hazardous waste, reuse, sharps waste disposal, special services, universal waste and yard waste programs and services. The City of Chula Vista runs its own household hazardous waste (HHW) program and collection facility to help manage the hazardous waste disposal throughout the City. The hazardous waste disposal facility is part of the City's effort to divert household toxics and hazardous waste from their landfill facilities. Residential composting is encouraged by the City through the availability of composting education and subsidized compost bins. The City is currently working on a food waste pilot program, in efforts to divert up to approximately 25% of the solid waste stream (organics) from their landfills.

Chula Vista's CLEAN business program promotes businesses which implement solid waste reduction measures and practices, as well as energy conservation, water conservation and pollution prevention measures. The City of Chula Vista's Environmental Services Division also manages special events solid waste disposal with the implementation of the Special Events Recycling and Solid Waste Management Plan.

5.9.4.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a solid waste impact. Impacts to solid waste disposal would be significant if the proposed project would:

A. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

B. Not comply with federal, state, and local statutes and regulations relating to solid waste.

5.9.4.3 Impacts

5.9.4.3.1 2006 EIR Impacts Conclusions

The following conclusions related to solid waste as described in the 2006 EIR are applicable to the proposed project, specifically Village Two:

The 2006 EIR found that no significant impacts to solid waste would occur as a result of the SPA Plan, including Village Two. No mitigation measures were required or provided for this issue area.

5.9.4.3.2 Proposed Project Impact Analysis

A. Would the project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?

The residential and commercial solid waste generated by the proposed project would be disposed of at the Otay Landfill. Currently, the Otay Landfill accepts an average daily rate of disposal of 5,004 tons, with a permitted maximum disposal rate of 5,830 tons per day. Total permitted capacity at the Otay Landfill is approximately 62.4 million cubic yards and the landfill has a remaining capacity of 53%, or 33.1 million cubic yards. Based on the maximum permitted disposal rate, the Otay Landfill is expected to cease operations in February 2028. The 2005 General Plan Update EIR (City of Chula Vista 2005b) concluded that there is sufficient capacity within the Otay Landfill to accommodate projected solid waste generation anticipated under the General Plan Update. Village Two was originally determined to generate 28.20 tons of solid waste per day in the 2006 EIR.

Table 5.9-10 shows solid waste generation by land use as a result of the proposed project as included in the project-specific Global Climate Change Evaluation prepared by Scientific Resources Associated (see Appendix I).

Table 5.9-10
Proposed Project Solid Waste Generation

Land Use	Estimated Solid Waste Generation Per Year (tons/yr)
Single Family Residential	364.49
Condo/Townhouse	575.46
Commercial	31.5
Office	20.83
Light Industrial	92.23
Elementary School	120.45
City Park	0.65
Total	**1,205.61**

Source: SRA 2014

As shown in Table 5.9-10, the proposed project would generate approximately 1,206 tons of solid waste per year or 6,608 pounds per day[1]. The acceptance rate would fall below the maximum permitted disposal rate; the Otay Landfill would have sufficient capacity to accommodate the proposed project.

Additionally, under the current franchise agreement between the City of Chula Vista and Republic Services, solid waste would be disposed of at the Sycamore Landfill once the Otay Landfill meets its permitted capacity and terminates solid waste services (City of Chula Vista 2012). The Sycamore Landfill has a remaining capacity of 47,388,428 cubic yards and projected cease operation date of December 2031 (CALRecycle 2014). As such, solid waste service would continue following closure of the Otay Landfill and permitted capacity would be available to accommodate the proposed project. Impacts would be less than significant.

B. Would the project not comply with federal, state, and local statues and regulations relating to solid waste?

Local Enforcement Agency

Chula Vista relies upon the County of San Diego's Solid Waste Local Enforcement Agency (LEA) to permit and regulate solid waste facilities (City of Chula Vista 2005a). As of March 2013, the Otay Landfill and Sycamore Canyon Landfill were not placed on the State of California's Inventory of Facilities Violating State Minimum Standards. The Otay Landfill, and subsequently the Sycamore Landfill which would serve the proposed project, are permitted by and consistent with requirements set forth by the California Integrated Waste Management Board.

City of Chula Vista General Plan

The City of Chula Vista's Office of City Manager, Special Operations Division complies with state and federal requirements through the development and the implementation of goals and policies in the Public Facilities and Services and the Environmental Elements of the General Plan. General Plan policies support and provide for city-wide recycling programs, including educational programs; source reduction programs; the control of litter and solid waste associated with special events; and collection of household hazards materials. The 2005 Chula Vista General Plan recognizes that the Otay Landfill is anticipated to reach capacity within the next 15 years, requiring closure of the facility. The General Plan objective, provided below, is regional in nature and does not specifically address individual developments.

- **Objective E 8:** Minimize the amount of solid waste generated within the General Plan area that requires landfill disposal.

[1] Tons per day = 1,206 tons per year x 2000 lbs/365 days per year

The proposed project is consistent with this Objective. The proposed project will comply with the requirement to divert 50% of all waste from landfills. The proposed project also includes an Integrated Solid Waste Management Plan, consistent with the requirement of the Otay Ranch GDP, which describes how solid waste services will be provided. Please refer to these documents for further details. The waste collection procedures and programs would be required to comply with the municipal requirements for recycling and collection of solid waste, including provision for litter control for public events. Therefore, the project would be consistent with all applicable statutes and regulations, and would have a less than significant impact with respect to solid waste collection and management.

Otay Ranch General Development Plan

The Otay Ranch General Development Plan (GDP) outlines integrated solid waste management facilities as solutions to impacting the current waste management system through diversion and waste reductions. In order to meet state mandated goals set forth in AB 341, the Otay Ranch GDP requires the simultaneous implementation of multiple systems including: curbside recycling, neighborhood recycling/drop-off centers, a materials recovery facility, composting facilities, a household hazardous waste facility, and landfill utilization. The following goal is outlined in the Otay Ranch GDP related to solid waste:

- **Goal:** Provide solid waste facilities and services which emphasize recycling of reusable materials and disposal of remaining solid waste so that the potential adverse impacts to public health are minimized.

During construction, solid waste disposal and recycling of materials will adhere to best management practices and City standards outlined in the Recycling and Solid Waste Planning Guide. The proposed project is consistent with this Objective. The proposed project will comply with the requirement to divert 50% of all waste from landfills. The proposed project also includes an Integrated Solid Waste Management Plan, consistent with the requirement of the Otay Ranch GDP, which describes how solid waste services will be provided. Waste collection for the proposed land uses would be provided by the City of Chula Vista under its contract agreement with Republic Services. The waste collection procedures and programs would be required to comply with the municipal requirements for recycling and collection of solid waste, including provision for litter control for public events. Therefore, the project would be consistent with all applicable statutes and regulations, and would have a less than significant impact with respect to solid waste collection and management.

5.9.4.4 Level of Significance Prior to Mitigation

As described above, the proposed project would not result in any significant impacts associated with solid waste.

5.9.4.5 Mitigation Measures

Since the proposed project would not result in any significant impacts associated with solid waste, no mitigation would be required.

5.9.4.6 Level of Significance After Mitigation

The proposed project would not require mitigation and impacts would remain below a level of significance.

5.9.4.7 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts discussed in the 2006 EIR as a result of an increase in solid waste generation. However, it would not change the conclusions reached by the analysis of the 2006 EIR. No new impacts are identified and no new mitigation is required.

5.9.5 Energy

5.9.5.1 Existing Conditions

5.9.5.1.1 Regulatory Framework

State Level

The State of California has implemented several important energy conservation policies applicable to state facilities since 2004. These policies include:

- ***Executive Order S-12-04:*** This order requests the participation of all state agencies under the authority of the Governor and other entities not under the direct authority of the Governor (including CSU) to institute energy conservation measures that will reduce energy consumption. Additionally the order requests that all state agencies review and assess energy conservation policies currently in place and expand those measures to all applicable facilities (State of California 2004a).
- ***Executive Order S-20-04:*** **T**his order requires the state to commit to "aggressive" action to reduce state building energy usage by retrofitting, building, and operating energy and resource efficient buildings, and by taking all cost-effective measures described in the Green Building Action Plan for facilities owned, funded, or leased by the state. Executive Order S-20-04 requests that the CSU system participate in the effort to reduce energy usage (State of California 2004b).
- ***State Executive Order S-3-05:*** This order directs the state to reduce greenhouse gas (GHG) emissions, which are linked to energy efficiency (State of California 2005).

Contained within Executive Order S-20-04, the State of California Green Building Action Plan includes the following directives for the operation of future state buildings:

- All state-owned buildings will reduce the volume of energy purchased from the grid, with a goal to reduce energy consumption by at least 20% by 2015 (as compared to a 2003 baseline), by undertaking all cost-effective operation and efficiency measures, as well as on-site renewable energy technologies. Alternatively, buildings that already have taken significant efficiency actions must achieve a minimum efficiency benchmark to be established by the California Energy Commission.
- All occupied state-owned buildings, beginning no later than July 2005 and completed by 2007, shall be benchmarked for energy efficiency, using guidelines established by the California Energy Commission. Building managers of low-rated buildings shall prepare a plan to undertake cost-effective efficiency retrofit projects.
- All state buildings over 50,000 square feet shall be retro-commissioned, and then re-commissioned on a recurring 5-year cycle, or whenever major energy consuming systems or controls are replaced. This will assure that energy and resource consuming equipment is installed and operated at optimal efficiency.
- All state agencies that purchase or operate electrical equipment (such as computers, printers, copiers, refrigerators, and unit conditioners) shall ensure each is Energy Star-rated, where cost effective, and that procurement goals and operating practices minimize energy and resource use and impacts (State of California 2004b).

California Code of Regulations Title 20 and Title 24

New buildings and major renovations constructed in California are required to comply with the standards contained in Title 20, Energy Building Regulations, and Title 24, Building Energy Efficiency Standards. The standards are updated periodically to allow consideration and possible incorporation of new energy-efficiency technologies and methods. The Energy Commission adopted the 2008 changes to the Building Energy Efficiency Standards for a number of compelling reasons (CEC 2012):

- To provide California with an adequate, reasonably priced, and environmentally sound supply of energy.
- To respond to AB 32, the Global Warming Solutions Act of 2006, that mandates that California must reduce its GHG emissions to 1990 levels by 2020.
- To pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs.

- To act on the findings of California's Integrated Energy Policy Report that Standards are the most cost effective means to achieve energy efficiency, expects the Building Energy Efficiency Standards to continue to be upgraded over time to reduce electricity and peak demand, and recognizes the role of the Standards in reducing energy related to meeting California's water needs and in reducing GHG emissions.
- To meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of state building codes.
- To meet the Executive Order in the Green Building Initiative to improve the energy efficiency of non-residential buildings through aggressive standards.

Title 20 contains standards ranging from power plant procedures and siting to energy-efficiency standards for appliances to ensure that reliable energy sources are provided and diversified through energy efficiency and renewable energy resources.

Title 24 contains energy efficiency standards for residential and non-residential buildings based on a state mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the energy impact of the building envelope such as windows, doors, skylights, wall/ floor/ ceiling assemblies, attics, and roofs. The 2008 version of Title 24 includes standards that achieve a minimum 15% improvement in energy efficiency over the previous 2005 Title 24 standards. The California Energy Commission has adopted the 2013 standards which improve upon the 2008 Title 24 standards. The 2013 standards will be implemented beginning July 1, 2014.

California Long-Term Energy Efficiency Strategic Plan

This Long Term Energy Efficiency Strategic Plan, originally developed in 2008, was developed through a collaborative process involving the California Public Utilities Commission's (CPUC) regulated utilities and a broad range of stakeholder groups. The plan sets forth a roadmap for energy efficiency in California through the year 2020 and beyond. It articulates a long-term vision and goals for each economic sector and identifies specific near-term, mid-term and long-term strategies to assist in achieving those goals. Elements of the plan include numerous policy and program strategies for energy efficiency achievement, net-zero goals for residential and new construction for commercial development. An updated to the plan was conducted in January 2011.

Energy Upgrade California

Energy Upgrade California is combined effort under the California Energy Commission and the CPUC to increase energy efficiency throughout the state and educate the public on energy policy,

energy efficiency incentives and credits, and the state's energy goals, as well as where to find assistance for achieving energy incentives and credits.

Regional Level

SDG&E 20-Year Resource Plan

In April 2003, San Diego Gas & Electric (SDG&E) filed its 20-year resource plan with the CPUC to outline its resource portfolio to meet future demand. SDG&E's 20-year resource plan offers an analytical basis for the CPUC to use in meeting two related objectives, which together will guide SDG&E in discharging its responsibility to provide safe, reliable electric supply to customers through use of energy efficiency, demand response, renewable and conventional supply technologies. These objectives are (1) to provide policy guidance on a number of issues that will guide future development and procurement of SDG&E's long-term supply and demand resource portfolio and ensure grid reliability and (2) to identify the likely resource gap that will exist over the planning horizon along with the range of possible variations, with particular emphasis and detail for each of the next 5 years as directed by the CPUC.

Resource gaps that would not be filled by energy conservation and demand response alternatives were planned to be filled by additional transmissions lines from generating systems outside of SDG&E territory, including renewable energy facilities. SDG&E's 2012 energy mix was comprised of roughly 19% renewable, 63% natural gas, 1% nuclear, 2% coal, and 15% unspecified resources (SDG&E 2013).

Local Level

City of Chula Vista Climate Action Planning

Since 2000, Chula Vista has been implementing a series of policies and plans to address climate change issues and its impacts on the City, including the original Carbon Dioxide Reduction Plan (2000). Over the past several years, the original climate action planning effort has been revised to incorporate new climate mitigation as adopted in April 2008, and adaptation measures as adopted in May 2011, to strengthen the City's climate action efforts and to facilitate the numerous community co-benefits such as utility savings, better air quality, reduced traffic congestion, local economic development, and improved quality of life. Based on available funding, staff has been implementing the 18 climate-related actions and their 57 associated components. Plans and policies supporting the City's climate action planning efforts were developed through a collaborative process through Climate Change Working Groups made up of local community stakeholders, and these planning efforts produced the City's Increased Energy Efficiency Ordinance, Green Building Standards, Solar Ready program, and the Residential Graywater Stub-out Ordinance.

City of Chula Vista 2008 State Energy Code (Title 24)

The Chula Vista City Council has adopted the 2008 State Energy Code (Title 24) with an amendment requiring an increased energy efficiency standard. This amendment went into effect on February 26, 2010, as Section 15.26.030 of the Municipal Code. As required by this amendment, all building permits applied for and submitted on or after this date are subject to these increased energy efficiency standards. The increase in energy efficiency is a percentage above the 2008 Energy Code and is dependent on climate zone and type of development proposed. The designation is as follows:

- New residential and nonresidential projects that fall within climate zone 7 must be at least 15% more energy efficient than the 2008 Energy Code. Climate zone 7 encompasses the majority of the City Of Chula Vista (City of Chula Vista 2010).
- New low-rise residential projects (three-stories or less) that fall within climate zone 10 must be at least 20% more energy efficient than the 2008 Energy Code. New non-residential, high-rise residential or hotel/motel projects that fall within climate zone 10 must be at least 15% more energy efficient than the 2008 Energy Code. Climate zone 10 encompasses the easternmost portion of the City of Chula Vista (City of Chula Vista 2010).

City of Chula Vista Climate Change Working Group – Implementation Plans

The City's Climate Change Working Group is a collaborative effort amongst City residents, community members, businesses, organizations and others who assist in the development of climate-related programs and policies for the City. In 2008, the CCWG reviewed over 90 carbon reduction measures and ultimately chose seven measures to recommend to City Council. The measures, which were designed to reduce or "mitigate" climate change impacts by reducing greenhouse gas emissions within Chula Vista to 20% below 1990 levels, are currently being implemented by multiple City departments. Measures developed include installing alternative energy improvements and implementing energy efficiency upgrades on structures by incentivizing property owners and adopting a City-wide green building program.

Chula Vista Climate Adaptation Strategies – Implementation Plans

The Climate Adaptation Strategies – Implementation Plans document developed by the Climate Change Working Group includes eleven strategies to adapt Chula Vista to the potential impacts of global climate change, including energy supply. The strategies to reduce energy demand include cool paving, shade trees, and cool roofs. For each strategy, the plans outline specific implementation components, critical steps, costs, and timelines. In order to limit the necessary staffing and funding required to implement the strategies, the plans were also designed to build upon existing municipal efforts rather than create new, stand-alone

policies or programs. Initial implementation of all eleven strategies is intended to be phased in over a three year period from plan adoption.

Chula Vista Green Building Standards

The City of Chula Vista amended the City Municipal Code Ordinance 15.12 pertaining to green building practices to include residential and non-residential remodels and additions. The Code contains Residential Mandatory Measures and Non-Residential Mandatory Measures, and also provides Voluntary Measures that can be used by developers to improve energy efficiency and reduce environmental impacts through design and construction.

San Diego Regional Energy Efficiency Plan/City of Chula Vista Energy Strategy and Action Plan

The San Diego Regional Energy Plan provided policy and program recommendations to achieve energy sustainability and security. The San Diego Regional Energy office worked with SANDAG to update the plan with Energy 2030, the San Diego Regional Energy Strategy (SANDAG 2009). The Regional Energy Strategy is intended to create a vision of how energy will be produced and consumed in the San Diego region in 2030. It also provides an integrated approach to meeting energy needs and ensures that an adequate supply and distribution of electricity, natural gas and transportation fuels is available.

The City has adopted an energy plan to address long-term energy issues and to protect its residents from unreliable energy supply and volatile prices. The plan, called the Chula Vista Energy Strategy and Action Plan, addresses demand side management, energy efficient and renewable energy outreach programs for businesses and residents, energy acquisition, power generation, and distributed energy resources and legislative actions.

City of Chula Vista Solar Ready Ordinances

CVMC, Section 15.28.015, solar water heater pre-plumbing, and Section 15.24.065, photovoltaic pre-wiring requirements, are referred to as the Solar Ready ordinances. Section 15.28.015 requires all new residential units to include plumbing specifically designed to allow the later installation of a system which utilizes solar energy as the primary means of heating domestic potable water. Section 15.24.065 requires all new residential units to include electrical conduit specifically designed to allow the later installation of a photovoltaic system which utilizes solar energy as a means to provide electricity.

City of Chula Vista General Plan

The Chula Vista General Plan recognizes that to ensure adequate and reliable energy service, efficient energy efforts throughout the city and transitioning to non-fossil fuel alternatives will help to extend limited supplies, reduce the need for expensive new regional power

generators and transmission lines, and contribute to Chula Vista's economic sustainability and regional competitiveness. The General Plan includes objectives in the Public Facilities and Services Element to ensure adequate energy supplies throughout Chula Vista and integrate sensible and efficient electrical and natural gas facilities into the natural and developed environment. The following objectives are outlined in the General Plan:

- **Objective E 7:** Promote energy conservation through the efficient use of energy and through the development of local, non-fossil fuel-based renewable sources of energy.
- **Objective H 2**: Promote efficient use of water and energy through adopted standards and incentive-based policies to conserve limited resources and reduce long-term operational costs of housing.

The proposed project would be subject to the California Green Building Standards and the Chula Vista Green Building and Increased Energy Efficiency ordinances of the city municipal code. This includes complying with the requirement to be 15% more energy efficient than Title 24, pre-plumbing for PV/solar panels, use of energy efficient appliances and siting of buildings to be oriented towards the sun and wind.

Otay Ranch General Development Plan

Part II, Chapter 10 establishes goals, objectives, and policies to ensure the conservation of significant portions of Otay Ranch's natural environment. Overall, these goals, objectives and policies prevent the wasteful exploitation, destruction, or neglect of resources and encourage the preservation enhancement and management of sensitive resources. Specifically, Section E addresses the overall goal of establishing Otay Ranch as a "showcase" for the efficient utilization of energy resources and the use of renewable energy resources.

- **Goal:** Reduce the use of non-renewable energy resources within Otay Ranch below per capita non-renewable energy consumption in San Diego County.
- **Goal:** Provide land use patterns and project features which result in the conservation of non-renewable energy resources.

The proposed project would reduce the reliance for project residents to utilize the automobile, thereby minimizing automobile trips and miles traveled. Encourage the provision of regional mass transit facilities within the Otay Ranch. Additionally the Otay Ranch GDP requires all Sectional Planning Area (SPA) Plans to prepare a Non-Renewable Energy Conservation Plan. This Plan identifies measures to reduce the use of non-renewable energy resources through, but not limited to, transportation, building design and use, lighting, recycling, and alternative energy sources which would further reduce energy use within the SPA and under the proposed project.

5.9.5.1.2 Existing Setting

Electricity

Electricity is provided by SDG&E, who is the owner and operator of electricity transmission, distribution, and natural gas distribution infrastructure in the county. Power generation and power use are not linked geographically. In other words, power generated within the city is not dedicated to users in the city. Electricity generated is fed into the statewide grid and is generally available to any users statewide.

In 2010, California used over 272,300 gigawatt-hours of electricity (CEC 2011). Electricity use in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building.

Because of the state's energy efficiency standards and efficiency and conservation programs, California's per capita electricity use has remained stable for more than 30 years while the national average has steadily increased. Of California's electricity generation, the majority is from natural gas (50%), hydroelectric power production (20%), and nuclear power plants (17%). Other sources include coal-fired power plants and other renewable energy sources, such as solar panels. California also imports electricity from out of state (U.S. Department of Energy 2012).

Natural Gas

Natural gas imported into southern California originates from any of a series of major supply basins located from Canada to Texas. Although the San Diego region has access to all of these basins by interstate pipeline, the final delivery into the SDG&E system is dependent on only one gas pipeline. Several liquefied natural gas plants are proposed in Mexico, which would provide an additional source of natural gas to southern California.

In 2010, California used approximately 2.3 trillion cubic feet of natural gas (U.S. Department of Energy 2012). California is the second largest natural gas consumer in the United States, representing more than 10% of national natural gas consumption. In 2010, residential and commercial uses accounted for 33% of the state's natural gas demand. Large consumers such as electricity generators and the industrial sector accounted for about 63% of demand. Vehicle fuel amounted to 1% of natural gas usage in the state. California remains heavily dependent on natural gas to generate electricity, which accounted for more than 30% of natural gas demand in 2010 (U.S. Department of Energy 2012).

The California Energy Commission's 2011 Integrated Energy Policy Report forecasts that natural gas consumption by end users (excluding electricity generation) is expected to grow by up to 89% annually through 2020 (CEC 2011).

Mobile Uses

Roughly half of the energy Californians consume is for transportation. In 2007, Californians consumed an estimated 20 billion gallons of gasoline and diesel fuel on the state's roadways, an increase of nearly 50% over the last 20 years. Nearly 26 million registered vehicles operating in California produce about 40% of the state's GHG emissions (CEC 2011).

5.9.5.2 Thresholds of Significance

Energy conservation and impacts are addressed in Appendix F of the CEQA Guidelines (14 CCR 15000 et seq.), however formal significance thresholds are not provided. The following significance criteria, from City of Chula Vista standards, will determine the significance of an energy impact. Impacts to gas and electric service would be significant if the proposed project would:

A. Increase the demand of energy resources to exceed the City's available supply or cause a need for new and expanded facilities the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times or other performance objectives.

5.9.5.3 Impacts

5.9.5.3.1 2006 EIR Impacts Conclusions

The following conclusions related to energy as described in the 2006 EIR are applicable to the proposed project, specifically Village Two:

The 2006 EIR determined that no significant impact would occur to gas and electric services as a result of the SPA Plan, including Village Two. The SPA Plan was included in regional growth and energy demand forecasts. No mitigation was required or provided for this issue area.

5.9.5.3.2 Proposed Project Impact Analysis

A. Would the project increase the demand of energy resources to exceed the City's available supply or cause a need for new and expanded facilities the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times or other performance objectives?

Electricity

Gas and Electric service are provided by SDG&E, who is the owner and operator of electricity transmission, distribution, and natural gas distribution infrastructure in the County. Annual electricity use for the proposed project was based upon estimated generation rates for land uses in the SDG&E service area as discussed in the project's Global Climate Change Evaluation included as Appendix I in this EIR (SRA 2014). The proposed project would use approximately 4,604,440 kilowatt-hours (kWh) of electricity per year at full buildout as shown in Table 5.9-11.

Table 5.9-11
Proposed Project Electricity Demand

Land Use	Estimated Electricity Demand Per Year (kW/hrs)
Single Family Residential	1,554,025
Multi-Family Residential	3,048,685
Mixed-Use Commercial	341
CPF	237
Elementary School	333
Light Industrial	819
Neighborhood Park	0
Total	**4,604,440**

Source: SRA 2014

Statewide emission reduction measures proposed in the California Air Resources Board's *Climate Change Proposed Scoping Plan: A Framework for Change* (CARB 2008) include several measures aimed at reducing GHG emissions associated with electricity use (refer to Section 5.10, Global Climate Change, and Appendix I). In order to partially offset these increased energy needs, the project has incorporated sustainable features into the project design to reduce its electricity use, including water conservation measures identified in the project's Water Conservation Plan, which would also serve to reduce the amount of electricity needed to supply water to the project site because energy consumption is embodied in the acquisition, treatment and distribution of water resources; therefore, less water consumption yields less energy consumption.

Additionally, as described above, the Otay Ranch GDP requires all SPA plans to prepare a Non-Renewable Energy Conservation Plan. This Plan identifies measures to reduce the use of non-renewable energy resources through, but not limited to, transportation, building design and use, lighting, recycling, and alternative energy sources which would further reduce energy use within the SPA and under the proposed project.

Moreover, the proposed project would be required to comply with Section 15.26.030 of the City's Municipal Code, which requires that new residential projects that fall within climate zone

7 be at least 15% more energy efficient than the 2008 Energy Code. As such, building design would employ energy efficient measures beyond that required by the Energy Code. Development would also be required to comply with the Chula Vista Solar Ready ordinances, which would encourage the use of solar energy.

The California Green Building Standards, on which the City's Green Building Standards Ordinance of 2009 is based, includes measures for reducing overall energy consumption through water conservation, electricity and natural gas conservation, and building design. Included in these standards is a mandate for 20% less water use than currently required by the state plumbing code. The City's Landscape Water Conservation Ordinance would further reduce water consumption and associated electricity use through the use of drought-tolerant landscaping and water-efficient irrigation systems.

Natural Gas

As stated in the project's Global Climate Change Evaluation included as Appendix I of this EIR, the CalEEMod model was used to estimate project emissions from area sources, which include natural gas combustion. Table 5.9-12 shows the project's natural gas consumption as assumed in the CalEEMod model.

Table 5.9-12
Proposed Project Natural Gas Consumption

Land Use	Estimated Natural Gas Consumption Per Year (cu.ft/yr)
Single Family Residential	100,162
Multi-Family Residential	143,552
Mixed-Use Commercial	1,067
CPF	1,818
Elementary School	6,789
Light Industrial	14,886
Neighborhood Park	0
Total	**268,274**

Source: SRA 2014

Statewide emission reduction measures proposed in CARB's *Scoping Plan* (CARB 2008) include measures aimed at reducing GHG emissions associated with natural gas use (refer to Section 5.10 and Appendix I). Additionally, as described above, the Otay Ranch GDP requires all SPA Plans to prepare a Non-Renewable Energy Conservation Plan. This Plan identifies measures to reduce the use of non-renewable energy resources through, but not limited to, transportation, building design and use, lighting, recycling, and alternative energy sources which would further reduce energy use, including that derived from natural gas, within the SPA and under the proposed project.

Moreover, the proposed project would be required to comply with Section 15.26.030 of the City's Municipal Code, which requires that new residential projects that fall within climate zone 7 be at least 15% more energy efficient than the 2008 Energy Code. As such, building design would employ energy efficient measures beyond that required by the Energy Code including those related to natural gas consumption. In addition to maintaining consistency with these goals, policies and adhering to state and local energy efficiency standards, some recommendations made by the Climate Change Working Group's Adaptation Strategies have been incorporated into the SPA Plan.. Therefore, no significant impacts would occur due to the increased demand on installation of gas and electric infrastructure and supply to serve the proposed project.

5.9.5.4 Level of Significance Prior to Mitigation

No significant impacts would occur as a result of the proposed project related to energy demand. Impacts would be less than significant.

5.9.5.5 Mitigation Measures

Impacts related to energy demand were found to be less than significant, and no previous mitigation was identified in the 2006 EIR related to energy use.

5.9.5.6 Level of Significance After Mitigation

No significant impacts would occur as a result of the proposed project related to energy demand. Impacts would be less than significant.

5.9.5.7 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would increase the severity of impacts discussed in the 2006 EIR as a result of an increase in demand for electricity. However, it would not change the conclusions reached by the analysis of the 2006 EIR. No new impacts are identified and no new mitigation is required.

5.10 GLOBAL CLIMATE CHANGE

This section of the EIR describes the existing setting related to global climate change and evaluates the potential for greenhouse gas (GHG) emission impacts due to implementation of the proposed project. The discussion found in this section is based on the Global Climate Change Evaluation for the Otay Ranch Village Two Comprehensive Specific Plan Amendment (GHG report), prepared by Scientific Resources Associated (SRA) in February 2014 (SRA 2014). The complete report is contained in Appendix I.

This section tiers from the Otay Ranch Villages Two, Three, and a Portion of Village Four Sectional Planning Area (SPA) Plan Final Environmental Impact Report (2006 EIR) (City of Chula Vista 2006). The 2006 EIR addressed the Village Two, Three, and portion of Four development's potential environmental effects and is incorporated by reference. At the time the 2006 EIR was drafted and certified, climate change was not an environmental issue area to be analyzed under CEQA. As such, climate change and the environmental effects of greenhouse gases were not addressed in the 2006 EIR. While this section cannot directly tier from any section of the 2006 EIR, relevant analysis is utilized.

5.10.1 Existing Conditions

5.10.1.1 Regulatory Framework

Federal Level

Massachusetts vs. EPA. On April 2, 2007, in Massachusetts v. EPA, 549 U.S. 497, the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act (CAA). The court held that the Administrator of the U.S. Environmental Protection Agency (U.S. EPA) must determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the Administrator was reminded by the court to follow the language of Section 202(a) of the CAA.

In response to the Supreme Court's ruling, on December 7, 2009, the Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the CAA:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the endangerment finding.
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the cause or contribute finding.

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the CAA.

Energy Independence and Security Act. On December 19, 2007, President Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the Act accomplishes the following, which would aid in the reduction of national GHG emissions:

Increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.

Sets a target of 35 miles per gallon for the combined fleet of cars and light trucks by Model Year 2020, and directs the National Highway Traffic Safety Administration to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.

Prescribes or revises standards affecting regional efficiency for heating and cooling products, and establishes procedures for new or amended standards for energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

EPA and NHTSA Joint Final Rule for Vehicle Standards. On April 1, 2010, the U.S. EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a joint final rule to establish a national program consisting of new standards for light-duty vehicles model years 2012 through 2016. The joint rule was intended to reduce GHG emissions and improve fuel economy. EPA finalized the first-ever national GHG emissions standards under the CAA, and NHTSA finalized Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act (EPA 2010). The adopted standards require new passenger cars, light-duty trucks, and medium-duty passenger vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile in model year 2016, equivalent to 35.5 mpg if the automotive industry were to meet this CO_2 level all through fuel economy improvements. The CAFE standards for passenger cars and light trucks would be phased in between 2012 and 2016, with the final standards equivalent to 37.8 mpg for passenger cars and 28.8 mpg for light trucks, resulting in an estimated combined average of 34.1 mpg. Together, these standards would cut greenhouse gas emissions by an estimated 960 million metric tons (MMT) and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (EPA 2011).

In 2012, the U.S. EPA and NHTSA extended these standards, by adopting standards that would further increase fuel economy to the equivalent of 54.5 mpg for cars and light-duty trucks by model year 2025 (77 Fed. Reg. 62624-63200).

State Level

Title 24. Title 24 of the California Code of Regulations was established in 1978, and serves to enhance and regulate California's building standards.

Part 6 of Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The most recent amendments, referred to as the 2013 standards, will be effective on January 1, 2014. The 2013 standards will use 25% less energy for lighting, heating, cooling, ventilation, and water heating than the 2008 standards. Additionally, the standards will save 200 million gallons of water per year and avoid 170,500 tons of GHG emissions per year (CEC 2012).

Title 24 also includes Part 11, known as California's Green Building Standards (CalGreen). The CalGreen standards took effect in January 2011, and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings, as well as schools and hospitals. The mandatory standards require:

1. Twenty percent mandatory reduction in indoor water use.
2. Fifty percent of construction and demolition waste must be diverted from landfills.
3. Mandatory inspections of energy systems to ensure optimal working efficiency.
4. Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring and particle boards.

The CalGreen standards also provide for voluntary efficiency measures that are provided at two separate tiers and implemented per the discretion of local agencies and applicants. CalGreen's Tier 1 standards call for a 15% improvement in energy requirements; more strict water conservation; 65% diversion of construction and demolition waste; 10% recycled content in building materials; 20% permeable paving; 20% cement reduction; and, cool/solar reflective roofs. CalGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements; more strict water conservation; 75% diversion of construction and demolition waste; 15% recycled content in building materials; 30% permeable paving; 30% cement reduction; and, cool/solar reflective roofs.

Assembly Bill (AB) 1493. In a response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 required the California Air Resources Board (CARB) to set GHG emission standards for

passenger vehicles, light-duty trucks, and other vehicles determined to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set the GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

Before these regulations could go into effect, the U.S. EPA had to grant California a waiver under the federal CAA, which ordinarily pre-empts state regulation of motor vehicle emission standards. The waiver was granted on June 30, 2009. Subsequently, on March 29, 2010, the CARB Executive Officer approved revisions to the motor vehicle GHG standards to harmonize the state program with the national program for 2012 to 2016 model years (see "EPA and NHTSA Joint Final Rule for Vehicle Standards" above). The revised regulations became effective on April 1, 2010.

Senate Bill (SB) 1078. Approved by Governor Gray Davis in September 2002, SB 1078 established the Renewal Portfolio Standard program, which originally required an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% and 33% of their power from renewable sources by 2010 and 2020, respectively (see discussions of SB 107, Executive Orders S-14-08 and S-21-09, and SB X1 2 below.)

Executive Order S-3-05. In June 2005, Governor Arnold Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals:

1. GHG emissions should be reduced to 2000 levels by 2010.
2. GHG emissions should be reduced to 1990 levels by 2020.
3. GHG emissions should be reduced to 80% below 1990 levels by 2050.

This order also directed the Secretary of the California Environmental Protection Agency to coordinate the efforts of various agencies to collectively and efficiently reduce GHGs. As a result, representatives from several state agencies were convened to establish the Climate Action Team. Since its establishment, the Climate Action Team has issued a number of reports to the governor and the legislature that are intended to help the State of California identify programs to reduce GHG emissions and prepare for the effects of climate change through adaptation (CAT 2006; CAT 2010; CAT 2013).

SB 107. Approved by Governor Schwarzenegger on September 26, 2006, SB 107 (Simitian) required investor-owned utilities, such as Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric, to generate 20% of their electricity from renewable sources by 2010. Previously, state law required that this target be achieved by 2017 (see SB 1078).

AB 32. In furtherance of the goals established in Executive Order S-3-05, the legislature enacted AB 32 (Núñez and Pavley), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed into law on September 27, 2006. The GHG emissions limit established by AB 32 is equivalent to California's 1990 emission levels, which are to be achieved by 2020 (Health and Safety Code, Section 38550). And, as required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMT CO_2e.

CARB is responsible for developing the programs and requirements necessary to achieve the goals of AB 32, and must coordinate with other state agencies when necessary to achieve the necessary emission reductions. Therefore, pursuant to AB 32, CARB adopted regulations requiring the reporting and verification of statewide GHG emissions. This program is used to monitor and enforce compliance with the established standards. CARB also has adopted, and continues to develop, rules and regulations intended to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 also authorized CARB to adopt a market-based compliance mechanism (i.e., cap-and-trade program) to meet the specified requirements.

On December 11, 2008, CARB approved the Climate Change Proposed Scoping Plan: A Framework for Change (Scoping Plan; CARB 2008) to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program.

The key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33%.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions.

- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (LCFS).
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California's long term commitment to AB 32 implementation.

In addition to outlining the reduction strategies needed to achieve the mandate of AB 32, the Scoping Plan contains an estimate of the GHG emissions (i.e., 596 MMT per year) that would result in 2020 if no action was taken by the State of California to regulate GHG emissions. The Scoping Plan refers to this emissions estimate as the business-as-usual scenario. Based on this estimate, CARB found that California's GHG emissions must be reduced by about 29% (or 169 MMT) from the 2020 business-as-usual scenario in order to return to 1990 levels (i.e., 427 MMT per year), in accordance with AB 32 (CARB 2008).

CARB is required to update its Scoping Plan at least once every five years (Health and Safety Code, Section 38561(h). Accordingly, in October 2013, CARB released the discussion draft of its first update to the Scoping Plan (CARB 2013). In that discussion draft, CARB reports that California is on track to meet the goals of AB 32.

Executive Order S-1-07. Issued on January 18, 2007, Executive Order S-1-07 sets a declining LCFS for GHG emissions measured in CO_2-equivalent gram per unit of fuel energy sold in California. The target of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered.

CARB adopted the implementing LCFS regulation in April 2009, which is expected to increase the production of biofuels, including those from alternative sources such as algae, wood, and agricultural waste. In addition, the LCFS is anticipated to drive the availability of plug-in hybrid, battery electric, and fuel-cell power motor vehicles, such that 20% of the fuel used in motor vehicles will be replaced with alternative fuels by 2020.

SB 97. In August 2007, the legislature enacted SB 97 (Dutton), which directed the Governor's Office of Planning and Research (OPR) and the Natural Resources Agency to develop amendments to the CEQA Guidelines for GHG emissions.

On June 19, 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents (OPR 2008). The advisory indicated that a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities, should be identified and estimated. The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures that are necessary to reduce GHG emissions to a less than significant level. In making these recommendations, OPR noted that the global nature of climate change warrants investigation of a statewide threshold of significance for GHG emissions; however, as no such threshold has been established by an appropriate state agency (e.g., CARB), the assessment of significance remains subject to the judgment and discretion of individual lead agencies.

On April 13, 2009, OPR submitted to the Natural Resources Agency its proposed amendments to the state CEQA Guidelines relating to GHG emissions. On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting the proposed amendments. The Natural Resources Agency adopted CEQA Guidelines amendments on December 30, 2009, and transmitted them to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative law completed its review and filed the amendments with the secretary of state. The amendments became effective on March 18, 2010.

The amended guidelines establish several new CEQA requirements concerning the analysis of GHGs, including the following:

- Requiring a lead agency to "make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project" (Section 15064(a)).
- Providing a lead agency with the discretion to determine whether to use quantitative or qualitative analysis or performance standards to determine the significance of greenhouse gas emissions resulting from a particular project (Section 15064.4(a)).
- Requiring a lead agency to consider the following factors when assessing the significant impacts from greenhouse gas emissions on the environment:
    - The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
    - Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
    - 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 (Section 15064.4(b)).

- Allowing lead agencies to consider feasible means of mitigating the significant effects of greenhouse gas emissions, including reductions in emissions through the implementation of project features or off-site measures, including offsets that are not otherwise required (Section 15126.4(c)).

The amended guidelines also establish two new guidance questions regarding GHG emissions in the Environmental Checklist set forth in CEQA Guidelines Appendix G:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The adopted amendments do not establish a quantitative GHG emissions threshold, and instead allow a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts.[1] When adopting these amendments, the Natural Resources Agency also acknowledged that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions.[2]

SB 375. In August 2008, the legislature passed and on September 30, 2008, former governor Arnold Schwarzenegger signed SB 375 (Steinberg), which addresses GHG emissions associated with the transportation section through regional transportation and sustainability plans.

SB 375 requires CARB to assign regional GHG reduction targets for the automobile and light truck sector for 2020 and 2035 to specified geographic regions throughout California. The targets are required to consider the emission reductions associated with vehicle emission standards (see SB 1493), the composition of fuels (see Executive Order S-1-07), and other CARB-approved measures to reduce GHG emissions. Regional metropolitan planning organizations, such as the San Diego Association of Governments (SANDAG), are then responsible for preparing a Sustainable Communities Strategy within the Regional Transportation Plan, the goal of which is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the

1 "The CEQA Guidelines do not establish thresholds of significance for other potential environmental impacts, and SB 97 did not authorize the development of a statewide threshold as part of this CEQA Guidelines update. Rather, the proposed amendments recognize a lead agency's existing authority to develop, adopt and apply their own thresholds of significance or those developed by other agencies or experts" (CNRA 2009, p. 84).

2 "A project's compliance with regulations or requirements implementing AB 32 or other laws and policies is not irrelevant. Section 15064.4(b)(3) would allow a lead agency to consider compliance with requirements and regulations in the determination of significance of a project's greenhouse gas emissions" (CNRA 2009, p. 100).

GHG reduction targets. If a Sustainable Communities Strategy is unable to achieve the GHG reduction target, a metropolitan planning organization must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

On September 23, 2010, CARB adopted the SB 375 targets. The targets for the SANDAG region are a 7% reduction in emissions per capita by 2020 and a 13% reduction by 2035. In 2011, the SANDAG Board of Directors adopted a Sustainable Communities Strategy designed to facilitate the achievement of CARB's targets. However, in 2012, a San Diego County Superior Court judge found that SANDAG did not comply with CEQA when adopting its Sustainable Communities Strategy, and the case currently is pending before the Fourth District Court of Appeal.

SB 375 also provides incentives for streamlining CEQA requirements by substantially reducing the requirements for "transit priority projects," as specified in SB 375, and eliminating the analysis of the impacts of certain residential projects on global warming and the growth-inducing impacts of those projects when the projects are consistent with the Sustainable Communities Strategy or Alternative Planning Strategy.

Million Solar Roofs Program. This program was created in 2006 and includes the California Public Utility Commission's (CPUC's) California Solar Initiative and California Energy Commission's (CEC) New Solar Homes Partnership. It requires publicly owned utilities to adopt, implement and finance solar incentive programs to lower the cost of solar systems and help achieve the goal of installing 3,000 megawatts of new solar capacity by 2020.

Executive Order S-13-08. Governor Schwarzenegger issued Executive Order S-13-08 on November 14, 2008 in an effort to hasten California's response to the impacts of global climate change, particularly sea level rise. The order directs state agencies to take specified actions to assess and plan for such impacts.

For example, the order directed the Natural Resources Agency, in cooperation with the California Department of Water Resources, CEC, California's coastal management agencies, and the Ocean Protection Council to request that the National Academy of Sciences to prepare a Sea Level Rise Assessment Report by December 1, 2010. The Ocean Protection Council, California Department of Water Resources, and CEC, in cooperation with other state agencies also were required to conduct a public workshop to gather information relevant to the Sea Level Rise Assessment Report. Further, the Business, Transportation, and Housing Agency was ordered to assess the vulnerability of the state's transportation systems to sea level rise within 90 days of the order. And, OPR and the Natural Resources Agency were required to provide land use planning guidance related to sea level rise and other climate change impacts.

The order also required other state agencies to develop climate change adaptation strategies by June 9, 2009, and outline manners by which the agencies can respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years. A discussion draft adaptation strategies report was released in August 2009, and the final adaption strategies report was issued in December 2009. To assess the state's vulnerability, the report summarized key climate change impacts to the state for the following areas: public health, ocean and coastal resources, water supply and flood protection, agriculture, forestry, biodiversity and habitat, and transportation and energy infrastructure. The report then recommended strategies and specific responsibilities related to water supply, planning and land use, public health, fire protection, and energy conservation.

The Natural Resources Agency currently is working on preparing an update to the 2009 adaptation strategies report, which is referred to as the Safeguarding California: Preparing for Climate Risks report. The Natural Resources Agency plans to release a draft iteration of the updated report by the close of the 2013 calendar year (CNRA 2013).

Executive Order S-14-08. On November 17, 2008, Governor Schwarzenegger issued Executive Order S-14-08. This order focused on the contribution of renewable energy sources to meet the electrical needs of California, while reducing the GHG emissions from the electrical sector. The order requires that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020. Furthermore, the order directs state agencies to take appropriate actions to facilitate reaching this target.

Executive Order S-21-09. On September 15, 2009, Governor Schwarzenegger issued Executive Order S-21-09, which directed CARB to adopt a regulation consistent with the goal of Executive Order S-14-08 by July 31, 2010. CARB was further directed to work with the CPUC and CEC to ensure that the regulation built upon the existing renewable standard and was applicable to investor-owned utilities, publicly owned utilities, direct access providers, and community choice providers.

On September 23, 2010, CARB adopted regulations to implement a "Renewable Electricity Standard," which would achieve the goal of the executive order with the following intermediate and final goals: 20% for 2012–2014; 24% for 2015–2017; 28% for 2018–2019; 33% for 2020 and beyond. Under the regulation, wind; solar; geothermal; small hydroelectric; biomass; ocean wave, thermal, and tidal; landfill and digester gas; and biodiesel would be considered sources of renewable energy. The regulation applies to investor-owned utilities and public (municipal) utilities.

SB X1 2. On April 12, 2011, Governor Jerry Brown signed SB X1 2, which expanded California's renewable energy program by establishing a goal of 20% of the total electricity sold to retail customers in California per year, by December 31, 2013, and 33% by December 31,

2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current and that meets other specified requirements with respect to its location. In addition to the retail sellers covered by SB 107, SB X1 2 added local publicly owned electric utilities to the renewable energy program.

The CPUC is responsible for enforcement of the renewable portfolio program as to all retail sellers, while the CEC and CARB will enforce the requirements relative to for local publicly owned electric utilities.

Local Level

City of Chula Vista

City of Chula Vista Climate Action Planning

Since 2000, Chula Vista has been implementing a series of policies and plans to address climate change issues and its impacts on the City, including the original Carbon Dioxide Reduction Plan (2000). Over the past several years, the original climate action planning effort has been revised to incorporate new climate mitigation as adopted in April 2008, and adaptation measures as adopted in May 2011, to strengthen the City's climate action efforts and to facilitate the numerous community co-benefits such as utility savings, better air quality, reduced traffic congestion, local economic development, and improved quality of life. Based on available funding, staff has been implementing the 18 climate-related actions and their 57 associated components. Plans and policies supporting the City's climate action planning efforts were developed through a collaborative process through Climate Change Working Groups made up of local community stakeholders, and these planning efforts produced the City's Increased Energy Efficiency Ordinance, Green Building Standards, Solar Ready program, and the Residential Graywater Stub-out Ordinance. See below for additional information on these individual components of the City's climate action planning portfolio.

ICLEI Cities for Climate Protection

In 1992, the City of Chula Vista participated in the Cities for Climate Protection Program, which was aimed at developing municipal action plans for the reduction of GHGs. This program was sponsored and developed by the International Council of Environmental Initiatives (ICLEI) and the United Nations Environment Program in response to the United Nations Framework Convention on Climate Change, while recognizing that all local planning and development has direct consequences on energy consumption and cities exercise key powers over urban

infrastructure, including neighborhood design, and over transportation infrastructure such as roads, streets, pedestrian areas, bicycle lanes and public transport.

Chula Vista Carbon Dioxide (CO_2) Reduction Plan

Each participant in the ICLEI program was to create local policy measures to ensure multiple benefits to the City and at the same time identify a carbon reduction goal through the implementation of those measures. The carbon reduction goal was to fit within the realm of international climate treaty reduction goals.

In its Carbon Dioxide Reduction Plan, developed in 1996 and officially adopted in 2000, Chula Vista committed to lowering its carbon dioxide emissions by diversifying its transportation system and using energy more efficiently in all sectors. To focus efforts in this direction, Chula Vista adopted the international carbon dioxide reduction goal of returning to pre-1990 levels by 2010. In order to achieve this goal, eight actions were identified, which when fully implemented, were anticipated to save 100,000 tons of carbon dioxide each year.

As a result of the 2005 GHG Emissions Inventory Report, in May 2007, staff reported to City Council that citywide GHG emissions had increased by 35% (mainly due to residential growth) from 1990 to 2005, while emissions on a per capita basis and from municipal operations decreased by 17% and 18%, respectively. The City Council directed staff to convene a climate change working group to develop recommendations to reduce the community's GHGs in order to meet the City's 2010 GHG emissions reduction targets.

Climate Change Working Group

The Climate Change Working Group, which is composed of residents, businesses, and community organization representatives, helps the City in developing climate-related programs and policies. In 2008, the group reviewed over 90 carbon reduction measures and ultimately chose seven measures to recommend for adoption to the City Council, which the council subsequently adopted. The measures were designed to reduce or mitigate climate change impacts by reducing GHG emissions within Chula Vista to 20% below 1990 levels, in keeping with its Carbon Dioxide Reduction Plan and United Nations Framework Convention on Climate Change goals.

In October 2009, the City Council directed the group to evaluate how the City could adapt to potential climate change impacts. The group met throughout 2011 to develop recommendations based on the City's vulnerabilities and risks to climate change. In May 2011, the group adopted the Climate Adaptation Strategies – Implementation Plans, described below.

Chula Vista Climate Adaptation Strategies – Implementation Plans

The Climate Adaptation Strategies – Implementation Plans document developed by the Climate Change Working Group includes eleven strategies to facilitate Chula Vista's adaptation to the potential impacts of global climate change related to energy and water supply, public health, wildfires, ecosystem management, coastal infrastructure, and local economy sectors. The strategies include cool paving, shade trees, cool roofs, local water supply and reuse, stormwater pollution prevention and reuse, education and wildfires, extreme heat plans, open space management, wetlands preservation, sea level rise and land development codes, and green economy. For each strategy, the plans outline specific implementation components, critical steps, costs, and timelines. In order to limit the necessary staffing and funding required to implement the strategies, the plans were also designed to build upon existing municipal efforts rather than create new, stand-alone policies or programs. Initial implementation of all eleven strategies is intended to be phased in over a three year period from plan adoption.

Chula Vista Climate Protection Measures

On July 10, 2008, the City Council adopted implementation plans for seven climate protection measures to reduce GHG emissions to 20% below 1990 levels by 2012. The implementation plans outline the detailed strategy for initiating, funding, and tracking the following measures:

1. **Clean Vehicle Replacement Policy for City Fleet.** When city fleet vehicles are retired, they will be replaced through the purchase or lease of alternative fuel or hybrid substitutes. In addition, the city fleet will begin to pursue installing new fuel tanks to allow heavy-duty vehicles to convert to biodiesel fuel immediately.
2. **Clean Vehicle Replacement Policy for City-Contracted Fleets.** As contracts for city-contracted fleet services (such as transit buses, trash haulers and street sweeper trucks) are renewed, the city will encourage contractors to replace their vehicles with alternative fuel or hybrid substitutes through the contract bid process. In addition, the city will pursue implementing two hydrogen vehicle demonstration projects.
3. **Business Energy Assessments.** Although not mandatory, businesses will be encouraged to participate in a no cost energy assessment of their facilities to help identify opportunities for them to reduce monthly energy costs. The business assessment will be integrated into the existing business licensing process and codified through a new municipal ordinance.
4. **Green Building Standard.** Chula Vista will implement a citywide, mandatory green building standard for new construction and major renovations. The new standard will have three main components: 1) a minimum energy efficiency (carbon equivalent) requirement of 15% above the 2005 Title 24, 2) the early adoption of the new California Green Building Standards for all residential and commercial projects, and 3) a carbon offset fee available for projects not meeting the 15% above Title 24 threshold.

5. **Solar and Energy Efficiency Conversion Program.** The city will create a community program to provide residents and businesses a streamlined, cost effective opportunity to implement energy efficiency improvements and to install solar/renewable energy systems on their properties. The city will develop a funding mechanism to allow program participants to voluntarily choose to place the improvement costs on their property's tax rolls, thereby avoiding large upfront capital costs. In addition, the program will promote vocational training, local manufacturing, and retail sales opportunities for environmental products and services. To help stimulate the private-sector renewable market and lower the cost for installing renewable energy systems on new homes, the city will require all new residential buildings to include pre-wiring and pre-plumbing for solar photovoltaic and solar hot water systems, respectively.
6. **Smart Growth Around Trolley Stations.** The city will continue to implement the smart growth design principles, which promote mixed-use and walkable and transit-friendly development, particularly in and around the E, H, and Palomar trolley stations. These principles were emphasized in the revised Chula Vista General Plan and the Urban Core Specific Plan. In particular, the city will initiate site planning, design studies and specific area plan development to further support smart growth development that complements GHG reductions.
7. **Turf Lawn Conversion Program.** The city will create a community program to provide residents and businesses a streamlined, cost-effective opportunity to replace their turf lawns with water-saving landscaping and irrigation systems. Some municipal turf lawn areas (such as medians, fire stations and non-recreational park areas) will also be converted to act as public demonstration sites and to reduce monthly water costs. The city will establish the model for water-wise landscaping for new development through an update of the Chula Vista Municipal Landscape Ordinance and WCP guidelines.

A report released in November 2013 provides an update on the City's progress towards the goal of reducing GHG emissions to 20% below 1990 levels by 2012. While per capita GHG emissions were calculated to be 33% below 1990 levels, overall emissions have increased by 8% since 2005, and in order to reach the initial goal, the City will have to reduce its GHG emissions by more than 359,322 MT CO_2e (City of Chula Vista 2013). The report notes that municipal GHG emissions were 41% lower than 1990 levels in 2012, with community GHG emissions largely sourced from the transportation and energy sectors (City of Chula Vista 2013).

Chula Vista Green Building Standards

Consistent with measure 4 of the Chula Vista Climate Protection Measures, the City Council adopted the Green Building Standards (GBS) Ordinance (Ordinance No. 3140) on October 6, 2009, which became effective November 5, 2009. The GBS ordinance includes standards for

energy efficiency, pollutant controls, interior moisture control, improved indoor air quality and exhaust, indoor water conservation, stormwater management, and construction waste reduction and recycling.

Building permit applications are required to indicate on project construction plans and specifications the GBS measures that comply with the ordinance. Prior to final building approval or issuance of a certificate of occupancy, the Building Official reviews the information submitted by the applicant and determines whether the applicant has constructed the project in accordance with the permitted plans and documents, and whether the plans are in compliance with the GBS.

Chula Vista Increased Energy Efficiency Standards

On January 26, 2010, the City Council adopted the Increased Energy Efficiency Standards Ordinance (Ordinance No. 3149). This ordinance became effective February 26, 2010 as Section 15.26 of the municipal code. Permit applications are required to comply with these energy efficiency standards.

CVMC Section 15.26.030 requires permit applications to comply with increased energy efficiency standards that achieve 15 to 20% greater efficiency than the requirements of the Title 24 2008 standards, depending on climate zone. The city falls within two climate zones, Zone 7 and Zone 10. The proposed project is within Zone 7. For Zone 7, the code requires:

- All new low-rise residential building or additions, remodels or alterations to existing low-rise residential buildings where the additions, remodels or alterations are greater than 1,000 square feet of conditional floor area, shall use at least 15% less energy than the 2008 Title 24 Building Energy Efficiency Standards allow; and
- All new non-residential, high-rise residential or hotel/motel buildings, or additions, remodels or alterations to existing non-residential, high-rise residential or hotel/motel buildings where the additions, remodels or alterations are greater than 10,000 square feet of conditioned floor area, shall use at least 15% less energy than the 2008 Title 24 Building Energy Efficiency Standards.

No city building permit shall be issued unless the permit application demonstrates to the Building Official compliance with the requirements of Section 15.26.030. Compliance is to be demonstrated based on a performance approach, using a CEC-approved energy compliance software program, as specified in the Title 24 2008 Building Energy Efficiency Standards.

Chula Vista Residential Graywater Stub-out Ordinance

CVMC Section 15.28.020 requires all new single-family dwellings and duplexes to include a single-source clothes washer graywater outlet and an outside stub-out to allow the later

installation of a clothes washer graywater irrigation system that complies with the requirements of Section 1602.1.1 of the 2013 California Plumbing Code. The outlet and stub-out are to be installed in accordance with the Chula Vista Clothes Washer Graywater Pre-Plumbing and Stub-Out for New Residential Construction or an equivalent alternate method and/or material approved by the Building Official.

City of Chula Vista Mandatory Construction and Demolition Debris Recycling Ordinance

Section 8.25.095 of the CVMC requires that 90% of inert materials and a minimum of 50% of all other materials be recycled and/or reused from certain covered projects. Covered projects include:

- Any project requiring a permit for demolition or construction, which has a project valuation of $20,000 or more
- Housing subdivision construction or demolition and/or any sequenced development will be considered a project in its entirety and not a series of individual projects
- Individually built single-family homes
- All city projects.

Covered projects must submit a waste management plan to the Chula Vista Public Works Department, Environmental Services Division, which must be reviewed and approved prior to the issuance of a demolition or building permit. The waste management plan will indicate how the applicant will recycle and/or reuse 90% of inert materials and at least 50% of the remaining construction and demolition debris generated from the project.

5.10.1.2 Existing Setting

Global climate change (GCC) refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns, precipitation and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), which are known as greenhouse gases (GHGs). These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere. Gases that trap heat in the atmosphere are often called greenhouse gases, analogous to a greenhouse. GHGs are emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth's temperature. Without these natural GHGs, the Earth's temperature would be about 61º Fahrenheit cooler (California Environmental Protection Agency 2006). Emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere.

GHGs have been at the center of a widely contested political, economic, and scientific debate surrounding GCC. Although the conceptual existence of GCC is generally accepted, the extent to which GHGs contribute to it remains a source of debate. The State of California has been at the forefront of developing solutions to address GCC. GCC refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. GCC may result from natural factors, natural processes, and/or human activities that change the composition of the atmosphere and alter the surface and features of land.

Global climate change attributable to anthropogenic (human) emissions of GHGs (mainly CO_2, CH_4 and N_2O) is currently one of the most important and widely debated scientific, economic and political issues in the United States. Historical records indicate that global climate changes have occurred in the past due to natural phenomena (such as during previous ice ages). Some data indicate that the current global conditions differ from past climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The IPCC concluded that a stabilization of GHGs at 400 to 450 ppm CO_2 equivalent concentration is required to keep global mean warming below 3.6º Fahrenheit (2º Celsius), which is assumed to be necessary to avoid dangerous climate change (SRA 2014).

State law defines greenhouse gases as any of the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (California Health and Safety Code Section 38505(g).) CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity.

Sources and Global Warming Potentials of GHG

The State of California GHG Inventory performed by the CARB, compiled statewide anthropogenic GHG emissions and sinks. It includes estimates for CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs. The current inventory covers the years 1990 to 2008, and is summarized in Table 5.10-1. Data sources used to calculate this GHG inventory include California and federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the IPCC. The 1990 emissions level is the sum total of sources and sinks from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories in the inventory. These sectors include: Agriculture; Commercial; Electricity Generation; Forestry; Industrial; Residential; and Transportation.

Table 5.10-1
GHG Sources in California

Source Category	Total 1990 Emmisions (MMT CO_2e)	Percent of Total 1990 Emissions	Total 2008 Emissions (MMT CO_2e)	Percent of Total 2008 Emissions
Agriculture	23.4	5%	28.06	6%
Commercial	14.4	3%	14.68	3%
Electricity generation	110.6	26%	116.35	35%
Forestry (excluding sinks)	0.2	<1%	0.19	<1%
Industrial	103.0	24%	92.66	20%
Residential	29.7	7%	28.45	6%
Transportation	150.7	35%	174.99	37%
Recycling and Waste			6.71	1%
High GWP Gases			15.65	3%
Forestry Sinks	(6.7)		(3.98)	

Source: SRA 2014

When accounting for GHGs, all types of GHG emissions are expressed in terms of CO_2 equivalents (CO_2e) and are typically quantified in metric tons (MT) or millions of metric tons (MMT).

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas" (USEPA 2006). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main greenhouse gases that have been attributed to human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310.

Human-caused sources of CO_2 include combustion of fossil fuels (coal, oil, natural gas, gasoline and wood). Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. Concentrations of CO_2 have increased in the atmosphere since the industrial revolution.

CH_4 is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure and cattle farming. Human-caused sources of N_2O include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid. Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses.

In addition to the State of California GHG Inventory, a more specific regional GHG inventory was prepared by the University of San Diego School of Law Energy Policy Initiative Center (University of San Diego 2008). This San Diego County Greenhouse Gas Inventory (SDCGHGI)

is a detailed inventory that takes into account the unique characteristics of the region in calculating emissions. The SDCGHGI calculated GHG emissions for 1990, 2006, and projected 2020 emissions. Based on this inventory and the emission projections for the region, the study found that emissions of GHGs must be reduced by 33% below "business as usual" in order for San Diego County to achieve 1990 emission levels by the year 2020. "Business as usual", or forecasted emissions, is defined as the emissions that would occur in the absence of AB 32's mandated reductions. Construction of buildings using Title 24 building standards or the County's 2006 building code would create "business as usual" emissions.

Areas where feasible reductions can occur and the strategies for achieving those reductions are outlined in the SDCGHGI. A summary of the various sectors that contribute GHG emissions in San Diego County for the year 2006 is provided in Table 5.10-2. Total GHGs in San Diego County are estimated at 34 MMT CO_2e.

Table 5.10-2
GHG Sources in San Diego County in 2006

Source Category	GHG Emissions (MMT CO_2e)	% of Total
On-Road Transportation	16	46%
Electricity	9	25%
Natural Gas Consumption	3	9%
Civil Aviation	1.7	5%
Industrial Processes and Products	1.6	5%
Other Fuels/Other	1.1	4%
Off-Road Equipment and Vehicles	1.3	4%
Waste	0.7	2%
Agriculture/Forestry/Land Use	0.7	2%
Rail	0.3	1%
Water-Born Navigation	0.13	0.4%

Source: SRA 2014

Existing Project Site GHG Emissions

The area of the Village Two site that would be developed under the proposed project is currently partially undeveloped and includes disturbed areas, residential units, and small amounts of native vegetation. Natural vegetation and soils temporarily store carbon as part of the terrestrial carbon cycle. Carbon is assimilated into plants and animals as they grow and then dispersed back into the environment when they die. There are two existing sources of carbon storage at the project site: natural vegetation and soils. It is difficult to assess net changes in carbon storage associated with the proposed project, but carbon sequestration rates for native vegetation in the Otay Ranch region are relatively low in comparison to heavily vegetated areas such as forests. For example, according to the U.S. EPA (http://www.epa.gov/sequestration/rates.html), riparian areas are estimated to sequester from 0.1 to 0.3 MT of CO_2e per acre per year in comparison to forests, which are estimated to sequester 0.6 to 2.6 MT of CO_2e per acre per year. Native vegetation in

the Otay Ranch region, which consists mainly of scrub, would be expected to provide a low level of carbon sequestration. The key issue is the balance between the loss of natural vegetation and future carbon storage associated with landscaping. The situation is further complicated by changes in fire regime. Carbon in natural vegetation is likely to be released into the atmosphere through wildfire every 20 to 150 years. Carbon in landscaped areas would be protected from wildfire. The balance between these factors would influence the long-term carbon budget on the site.

The majority of carbon within the site is stored in the soil. Soil carbon accumulates from inputs of plant and animal matter, roots, and other living components of the soil ecosystem (e.g., bacteria, worms, etc.). Soil carbon is lost through biological respiration, erosion, and other forms of disturbance. Overall, soil carbon moves more slowly through the carbon cycle, and it offers greater potential for long-term carbon storage. Field observations suggest that urban soils can sequester relatively large amounts of carbon. Observations from across the United States suggest that warmer and drier climates (such as southern California) may have slightly higher soil organic matter levels when compared to equivalent areas before development.

5.10.2 Thresholds of Significance

The California Air Pollution Control Officers Association (CAPCOA) has indicated that projects that are estimated to emit more than 900 MT of GHGs would be required to conduct a GHG analysis. The 900 metric ton screening threshold for determining when a GHG analysis is required was chosen based on available guidance from CAPCOA's CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act (CAPCOA 2008). The CAPCOA white paper references a 900 metric ton guideline as a conservative threshold for requiring further analysis and mitigation.

Since GCC is a global phenomenon, no direct impact would be identified for an individual land development project. According to City of Chula Vista significance criteria, the following criteria are considered to establish a significance threshold for GCC impacts:

Would the project:

A. Conflict with or obstruct goals or strategies of the California Global Warming Solutions Act of 2006 (AB32) or related Executive Orders.

B. Result in substantially increased exposure of the project from potential adverse effects of global warming identified in the California Global Warming Solutions Act of 2006 (AB32).

As discussed in Section 15064.4 of the CEQA Regulations, the determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of

greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

1. Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or
2. Rely on a qualitative analysis or performance based standards.

A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

1. The extent to which the project may increase or reduce greenhouse gas 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 greenhouse gas 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.

Regarding the first significance criterion established in the CEQA guidelines, to evaluate whether the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

To evaluate impacts based on this criterion, many lead agencies have set a goal to reduce GHG emissions by a certain amount to demonstrate consistency with AB 32. Different agencies and studies estimate different goals for reduction of emissions to achieve 1990 levels by the year 2020, as set forth in AB 32. Other agencies have estimated a reduction of 28% to 29%, based on the ARB's analysis that statewide 2020 "business as usual" GHG emissions would be 596 $MMTCO_2e$, with 1990 emissions of 427 $MMTCO_2e$, for a reduction of 28.35% (SRA 2014). Based on this goal, a significance threshold of 28.35% below

"business as usual" reflects the ARB's Scoping Plan. For other projects, the City of Chula Vista has used a goal of reducing emissions by 20% from BAU levels. However, because this project would be built out after 2020, the threshold of 28.35% was used to reflect additional reductions that would be required after 2020. The Court of Appeal has upheld this approach in a case arising from the City of Chula Vista (*Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* 2011).

According to the ARB, "business as usual" is the projected emissions that would occur in 2020 if no mitigation actions were taken. For the purpose of this analysis, "business as usual" is defined as the conditions that were in place when the original Scoping Plan was developed, prior to any reductions attributable to GHG reduction programs or any other project design features that would reduce emissions of GHGs. For vehicles, therefore, "business as usual" indicates vehicle emissions without implementation of the California Pavley fuel efficiency standards, the LCFS, or the Federal CAFE standard, all of which regulations have been enacted to reduce emissions of GHGs. For energy use (electricity and natural gas), "business as usual" indicates energy use based on the California energy efficiency standards that were in place upon adoption of the Scoping Plan, which were the energy efficiency standards set forth by Title 24 as of 2005. For GHGs water use, "business as usual" indicates water use by the development prior to implementation of any design features designed to improve water efficiency, such as low-flow fixtures and water conservation measures. For electricity use, "business as usual" indicates electricity prior to implementation of the Renewable Portfolio Standard requirements, which require 33% of electricity to be generated by renewable resources (SRA 2014, see Appendix I).

Regarding the second significance criterion established in the CEQA guidelines, to evaluate whether the project would:

- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The project's consistency with applicable plans, policies, and regulations adopted for the purpose of reducing the emissions of greenhouse gases has been evaluated. The project must demonstrate consistency with the City's CO_2 Reduction Plan. The proposed project would prepare an Air Quality Improvement Plan (AQIP). Applicable plans, policies, and regulations that are currently in effect are discussed in Section 5.10.1.1, and the project's consistency with these plans, policies, and regulations is discussed in the analysis in the following section.

5.10.3 Impacts

5.10.3.1 2006 EIR Impacts Conclusions

The 2006 EIR predates the regulatory action and requirement of analyzing climate change and the effects of greenhouse gases on the environment under CEQA. Therefore, these issues were not addressed in the 2006 EIR.

5.10.3.2 Proposed Project Impact Analysis

GHG emissions associated with the additional residential units and amended land uses of the proposed project were estimated separately for four categories of emissions: (1) construction; (2) energy use, including electricity and natural gas usage; (3) water consumption; (4) waste management; and (5) transportation. The analysis includes a baseline estimate assuming 2005 Title 24-compliant buildings, which is considered "business as usual" for the proposed project. Emissions were estimated based on emission factors from the California Climate Action Registry General Reporting Protocol (CCAR 2009). This inventory presents emissions based on "business as usual" assumptions. For "business as usual" conditions, emissions were calculated without implementation of the Pavley standards or LCFS.

A. Conflict with or obstruct goals or strategies of the California Global Warming Solutions Act of 2006 (AB32) or related Executive Orders.

Construction Emissions

Construction GHG emissions include emissions from heavy construction equipment, truck traffic, and worker trips. Emissions were calculated using the CalEEMod Model, Version 2013.2.1. Table 5.10-3 provides a summary of the total GHG emissions associated with construction. The total emissions are estimated at 22,683 MT of CO_2e.

Table 5.10-3
Estimated Construction GHG Emissions (metric tons/year)

Construction Year	CO_2e Emissions
2014	2,049
2015	2,183
2016	2,141
2017	2,084
2018	2,045
2019	2,001
2020	1,956
2021	1,667

Table 5.10-3
Estimated Construction GHG Emissions (metric tons/year)

Construction Year	CO_2e Emissions
2022	1,649
2023	1,638
2024	1,642
2025	1,628
Total Construction Emissions	**22,683**

Source: SRA 2014

Operational Emissions

Energy Use Emissions. As discussed above, energy use generates GHG through emissions from power plants that generate electricity as well as emissions from natural gas usage at the project itself.

"Business as usual" electricity use was estimated based on construction of the proposed project to meet the requirements of Title 24 as of 2005. As discussed previously, based on the latest guidelines and baseline emission calculations for energy efficiency, "business as usual" is considered to be the equivalent of Title 24 as of 2005 because the ARB's baseline inventory and its definition of "business as usual" is based on compliance with Title 24 as of 2005. The Air Resources Board (ARB) prepared its inventory to evaluate the required reduction from "business as usual", which is defined as the baseline with no measures implemented to reduce emissions of GHGs. For building standards, the goal of reducing emissions below "business as usual" within the ARB's Scoping Plan is based on Title 24 as of the ARB's inventory. Thus, the baseline used in this analysis is consistent with the ARB's analysis and goals. Emissions were calculated based on emission factors in the California Climate Action Registry General Reporting Protocol, Version 3.1 (CCAR 2009).

Natural gas use was also estimated based on construction of the proposed project to meet the requirements of Title 24 as of 2005. Emissions were calculated based on emission factors in the California Climate Action Registry General Reporting Protocol, Version 3.1 (CCAR 2009).

Residential electricity use was estimated based on average performance for southern California multi-family residences, according to the 2009 California Statewide Residential Appliance Saturation Survey (SRA 2014, see Appendix I). The energy use figures in this report represent current state-wide average uses, including those that are compliant with 2005 Title 24 standards. The California Statewide Residential Appliance Saturation Survey provided estimated energy use for single family units of 7,605 and multi-family units of 3,709 kWh annually.

In the 2009 California Statewide Residential Appliance Saturation Survey, natural gas usage rates for single-family units were estimated as 421 therms per year, and for multifamily units were reported as 150 therms per year (SRA 2014, see Appendix I). GHG emissions were then calculated based on the emission factors in the California Climate Action Protocol (CCAR 2009) to estimate emissions of GHGs per kWh or MMBTU used per year.

Electricity and natural gas usage for the non-residential uses was estimated based on the *California Commercial End-Use Survey* (CEC 2006) for the land uses (retail, office, light industrial, and school) proposed for the project.

Water. Water use and energy use are often closely linked. The provision of potable water to commercial users consumes large amounts of energy associated with five stages: source and conveyance, treatment, distribution, end use, and wastewater treatment. This inventory estimated that delivered water for the proposed project would have an embodied energy of 0.0127 kWh/gallon.

Water usage was estimated based on the estimated indoor and outdoor water use from the CalEEMod Model, Version 2011.1.1. The total annual water use for the project was estimated at 126,8 million gallons for indoor uses, and 81.1 million gallons for outdoor uses. The embodied energy demand associated with this water use was converted to GHG emissions with the same emission factors used in the CCAP as for purchased electricity.

Solid Waste Management. Solid waste management GHG emissions include emissions from transport and handling of solid waste and emissions associated with landfill gas generation. Emissions of GHGs from solid waste management were based on the CalEEMod Model calculations.

Transportation. Several regulatory initiatives have been passed to reduce emissions from onroad vehicles. For the purpose of calculating "business as usual" emissions associated with vehicles, no credit was taken for implementation of the CAFÉ standards, Pavley standards, or the LCFS.

To calculate emissions associated with vehicle trips generated by the proposed project, the trip generation rates from the Traffic Impact Analysis (Chen Ryan 2013) were used. Impacts were calculated based on buildout trip generation rates, which total 17,800 average daily trips. Under "business as usual" conditions, it was assumed that all trips have the potential to be external trips. Trip lengths were based on defaults in the CalEEMod Model. The EMFAC2011 Model provides estimates of emissions based on a vehicle mix for the entire county. Because the project includes a mix of uses, it was assumed that this vehicle mix was appropriate to represent the trip and distribution of vehicle categories for the project.

The results of the inventory for operational emissions for "business as usual" are presented in Table 5.10-4. These include GHG emissions associated with buildings (natural gas, purchased electricity) and water consumption (energy embodied in potable water). Table 5.10-4 summarizes projected emissions using the methodologies noted above.

Table 5.10-4
Estimated Operational GHG Emissions ("Business as Usual")

Source	Annual Emissions (metric tons/year)		
	CO_2	CH_4	N_20
Electrical Generation	2,302	0.0960	0.0257
Natural Gas Combustion	1,860	0.2068	0.0035
Water Supply	867	0.0362	0.0097
Solid Waste	245	14.46	0.0000
Motor Vehicles	24,176	0.1458	0.8966
Amortized Annual Construction Emissions	756	—	—
Total	**30,206**	**14.9448**	**0.9355**
Global Warming Potential Factor	**1**	**21**	**310**
CO_2E Emissions	30,206	315	290
Total CO_2E Emissions	**30,811**		

Source: SRA 2014

Project Design Features

As discussed, a significance threshold of 28.35% below "business as usual" levels, and a threshold of 3,000 MT of CO_2e, were used to evaluate the project's GHG impacts. Also, provided the project is consistent with applicable plans, programs, and regulations, the project would be consistent with the goals of AB 32.

The proposed project would meet the City of Chula Vista's requirements for an AQIP), which demonstrates its consistency with the City's CO2 Reduction Plan. The City's CO_2 Reduction Plan was adopted in late 2000 and establishes a strategy for the City to reduce energy consumption, promote alternative transportation, and design transit-friendly, walkable communities. See Appendix I for a comprehensive list of project design features that would be implemented as part of the proposed project.

Not all of the GHG-reducing project design features identified in Appendix I are quantifiable due to scientific and methodological limitations regarding GHG savings. No credit was taken for the PDFs identified for which specific GHG emission reductions are not quantifiable; these PDFs were identified in order to provide a broader perspective on the GHG-reducing project design features that would be implemented during build-out.

The CEC estimates that implementation of the Title 24 standards as of 2008 would result in reductions in electricity use of 22.7% for residential dwellings, and 4.9% for non-residential buildings (SRA 2014, see Appendix I). The CEC also estimates that implementation of the Title 24 standards as of 2008 would result in reductions in natural gas use of 10% for residential dwellings and 9.4% for non-residential buildings. In addition, the Applicants have committed to constructing the buildings to meet the CalGREEN Standards of the California Building Code. As listed in the California Green Building Code, Section 503 (California Building Official 2012), a green building should achieve more than a 15% reduction in energy usage when compared with the state's mandatory energy efficiency standards. It is therefore assumed that construction of the buildings in accordance with the Green Building Standards would reduce energy use by an additional 15% (SRA 2014, see Appendix I).

To account for water conservation measures, it was assumed that the project would include low-flow fixtures, and would use water-efficient irrigation and reduce irrigation requirements to the extent possible. These measures were accounted for in the CalEEMod model, and reductions were calculated using the estimated water usage.

Implementation of the Renewable Portfolio Standard (RPS) would affect indirect GHG emissions associated with electricity use for the proposed project because electricity would be purchased from San Diego Gas and Electric. According to the SDCGHGI, implementation of the 20% RPS mandate by 2010, as established by Senate Bill 107, would reduce GHG emissions by 14% from 2006 levels; credit was taken for these GHG savings in this analysis. Of note, no credit was taken for achievement of the 33% RPS established by Executive Order S-21-09 on September 15, 2009, which directs ARB to implement a regulation consistent with the 2020 33% renewable energy target by July 31, 2010. As of September 23, 2010, the ARB has adopted the regulation that implements the 33% renewable energy standard. Implementation of the 33% target by 2020 would reduce GHG emissions by an additional 13% per the SDCGHGI. Thus, implementation of Executive Order S-21-09 would serve to reduce GHG emissions by a total of 27% below 2006 levels. As such, credit was taken for full implementation of the RPS, with a 27% reduction in emissions (SRA 2014, see Appendix I).

Implementation of the new Federal CAFE standards would achieve reductions that are equivalent to those proposed in AB 1493, the Pavley bill. According to the SDCGHGI, implementation of the Pavley standards would reduce emissions from light-duty on-road vehicles by a total of 20% by the year 2020. The LCFS is designed to reduce the carbon content of fuels, therefore reducing GHG emissions even if the amount of fuel consumed is constant. Based on the SDCGHGI, the LCFS would further reduce carbon emissions from fuel use by 10% by the year 2020. As discussed in the introduction, the ARB's emission factors for the fleet for the year 2020 (the target year for GHG reductions) were used to calculate emissions with implementation of state and federal GHG reduction programs for vehicles.

As discussed in CAPCOA's Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010), Measure LUT-3, Increase Diversity of Suburban Developments (Mixed Use) results in a reduction in VMT from 9 to 30%, resulting in a reduction in GHG emissions attributable to vehicles by 9 to 30%.

The CAPCOA reference indicates that Measure LUT-3 in a suburban development would indicate that the suburban project would have at least three of the following on site and/or off site within one-quarter mile: Residential Development, Retail Development, Park, Open Space, or Office. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial locations (and vice versa). The project should minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping. The proposed project meets this requirement by providing a mix of uses, reducing VMT. For the purpose of calculating GHG emissions, taking into account the internal versus external trips, it was assumed that internal trips would be no more than 0.5 mile in length.

In addition to the land use diversity measure, the CAPCOA guidance identifies proximity to transit as GHG reduction Measure LUT-5, Increase Transit Accessibility. The CAPCOA guidance defines transit accessibility as locating a project with high density near transit, which includes a transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly one-quarter mile from stop to edge of development).

The results of the GHG inventory for emissions with implementation of GHG reduction measures are presented in Table 5.10-5.

Table 5.10-5
Estimated Operational GHG Emissions (with Reductions)

Source	Annual Emissions (metric tons/year)		
	CO_2	CH_4	N_20
Electrical Generation	1,104	0.0460	0.0123
Natural Gas Combustion	1,423	0.1583	0.0027
Water Supply	541	0.0226	0.0060
Solid Waste	245	14.46	0.0000
Motor Vehicles	14,707	0.1165	0.7163
Amortized Annual Construction Emissions	756	—	—
Total	**18,776**	**14.8034**	**0.7373**
Global Warming Potential Factor	**1**	**21**	**310**
CO_2E Emissions	18,776	311	229
Total CO_2E Emissions	**19,315**		
Business As Usual CO_2E Emissions	**30,811**		
Reduction	**37.31%**		

Source: SRA 2014

As shown in Table 5.10-5, the proposed project would meet the significance threshold by reducing operational GHG emissions by 37.31%. The emissions would exceed the City of Chula Vista's goal of 20% below "business as usual", and the goal based on the Scoping Plan of reducing emissions by 28.35% below "business as usual". Table 5.10-6 presents a summary of the reductions calculated for each emission category, and the resulting GHG emissions with GHG reductions included.

Table 5.10-6
Summary of GHG Reduction Measures

Transportation Emissions		
Transportation Business As Usual, CO_2E	24,457	
Transportation Reductions due to Statewide Measures		
Measure	*Percent Reduction*	*Emissions Reduction*
Pavley Motor Vehicle Standards	20%	4,891
Low Carbon Fuel Standard	10%	2,446
Reduction for Internal vs. External Trip VMT Reduction	9%	2,189
	Total Reductions	**9,526**
	Net Transportation Emissions	**14,931**
Operational Emissions - Electricity		
Electricity Use Business As Usual, CO_2E	2,312	
Electricity Reductions due to Project Design Features and Statewide Measures		
Measure	*Percent Reduction*	*Emissions Reduction*
Meet Title 24 Standards as of 2008 (compared with Title 24 as of 2005)	22.7% of electricity use for residential uses and 4.9% of electricity use for non-residential uses	525
Meet CalGREEN Electricity Efficiency Standards (15% above Title 24 as of 2008)	15% of electricity use	268
Renewable Portfolio Standard (33% renewables)	27%	410
	Total Reductions	**1,203**
	Net Operational Emissions – Electricity Use	**1,109**
Operational Emissions – Natural Gas		
Natural Gas Use Business As Usual, CO_2E	1,865	
Natural Gas Reductions due to Project Design Features and Statewide Measures		
Measure	*Percent Reduction*	*Emissions Reduction*
Meet Title 24 Standards as of 2008	10% of natural gas use for residential uses, 9.4% of natural gas for non-residential uses	186
Meet CalGREEN Electricity Efficiency Standards (15% above Title 24 as of 2008)	15% of natural gas use	251
	Total Reductions	**437**
	Net Operational Emissions – Natural Gas Use	**1,428**

Table 5.10-6
Summary of GHG Reduction Measures

Operational Emissions – Water Use		
Water Use Business As Usual, CO_2E	871	
Water Reductions due to Project Design Features and Statewide Measures		
Measure	*Percent Reduction*	*Emissions Reduction*
CalEEMod Water Conservation Measures, including low-flow toilets, showers, and sinks, and outdoor water conservation	20% of indoor water use, 6% of outdoor water use	127
Renewable Portfolio Standard (33% renewables)	27% (embodied energy of water)	201
	Total Reductions	**328**
	Net Operational Emissions – Water Use	**543**
	Solid Waste Management – No Reductions Assumed	**548**
	Ammortized Construction Emissions	**756**
	Total Operational Emissions without GHG Reduction Measures	**30,811**
	Total Operational Emissions with GHG Reduction Measures	**19,315**

Source: SRA 2014

With respect to the project's consistency and compliance with AB-32 and related Executive Orders, the proposed project would be consistent with applicable plans, policies, and regulations, including:

- ARB Scoping Plan – to the extent required by law, the proposed project would comply with all applicable regulations adopted by the ARB and other regulatory agencies to implement the Scoping Plan pursuant to AB 32.
- Executive Order S-3-05 – the proposed project, through implementation of project design features and compliance with vehicle standards, would enable achievement of the statewide goal of reducing GHG emissions to 1990 levels by 2020.
- Executive Order S-21-09 – the proposed project would purchase power from San Diego Gas and Electric, which is developing its renewable portfolio standard in accordance with state mandates.
- California Code of Regulations Title 24 – the proposed project would exceed 2008 Title 24 standards by 15%, thereby demonstrating a commitment to the energy efficient design, construction and operation of residential and non-residential structures.
- State Vehicle Standards – vehicles operating within the proposed project would meet Pavley and LCFS standards to the extent required by law.
- Senate Bill 375 – the proposed project is part of a master-planned community that provides a mix of uses serving the community, consistent with the general objectives of SB 375.

- City of Chula Vista CO_2 Reduction Plan – the proposed project would be consistent with applicable policies within the CO_2 Reduction Plan, including the following:
    - Measure 6 – Enhanced Pedestrian Connedtions to Transit
    - Measure 7 – Increased Housing Density near Transit
    - Measure 8 – Site Design with Transit Orientation
    - Measure 9 – Increased Land Use Mix
    - Measure 14 – Energy Efficiency Landscaping
    - Measure 18 – Energy Efficient Buildings
- City of Chula Vista General Plan – the proposed project would be consistent with the following applicable objective identified in the General Plan:
    - **Objective 6:** Improve local air quality by minimizing the production and emission of air pollutants and toxic air contaminants and limit the exposure of people to such pollutants.

The proposed project emissions are attributable to vehicles and area sources, including use of consumer products. Emissions associated with consumer products use would occur regardless of the location of residences, and there are no available mitigation measures that would reduce these emissions to below a level of significance. Emissions associated with vehicles have been reduced in the project through implementation of project design features, including incorporating a mix of uses into the project and access to transit through access to MTS bus routes. The proposed project would meet the City of Chula Vista's requirements for an AQIP, which demonstrates its consistency with the City's CO_2 Reduction Plan. The City's CO_2 Reduction Plan was adopted in late 2000 and establishes a strategy for the City to reduce energy consumption, promote alternative transportation, and design transit-friendly, walkable communities.

- Otay Ranch GDP - the proposed project would be consistent with the following applicable goals identified in the Otay Ranch GDP:
    - **Goal:** Reduce the use of non-renewable energy resources within Otay Ranch below per capita non-renewable energy consumption in San Diego County
    - **Goal:** Minimize fossil fuel emissions by conserving energy.

The proposed project would be consistent with City of Chula Vista Municipal Code Section 15.26.030 by employing energy efficient measures beyond that required by the Energy Code, resulting in a reduction in emissions generated by energy use. Project design features would also help to further reduce GHG emissions. The 2006 EIR did not analyze impacts to climate change.

Comparison of impacts and conclusions with respect to climate change cannot occur in a similar fashion as the other sections of this EIR.

The project would be consistent with the City's CO_2 Reduction Plan. The project would therefore not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The proposed project would therefore be consistent with the goals of AB 32 and the City's requirements, and would not result in a significant impact on GCC.

B. Result in substantially increased exposure of the project from the potential adverse effects of global warming identified in the California Global Warming Solutions Act of 2006 (AB 32).

The proposed project would be subject to climate change impacts caused by GHG emissions as described in detail in Section 5.10.1, Existing Conditions. Although it is difficult to determine scientifically valid impacts from climate change on a localized scale, some regional and global impacts could include, but are not limited to, an increase in sea level; reduced potable water supply from decreased mountain snowpack; an increase in the number of days conducive to ozone formation; variations in weather that include changes to precipitation, ocean salinity, and wind patterns, and more extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones.

Exacerbation of Air Quality Problems

As stated in Section 5.3, Air Quality, the RAQS relies on SANDAG growth projections based on population, vehicle trends, and land use plans developed by the cities and by the county as part of the development of their general plans. If a project proposes development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might conflict with the RAQS and may contribute to a potentially significant cumulative impact on air quality. The proposed project would comply with all applicable rules and regulations that have been adopted as part of the SIP. Because the project is consistent with the goals of the RAQS and SIP, the project would not conflict with or obstruct implementation of the RAQS and SIP. However, the proposed project would require amendments to the City of Chula Vista General Plan, the Otay Ranch General Development Plan, the Specific Plan, and the Otay Ranch Core Master Precise Plan. Accordingly, the project as proposed is not accounted for in the current SIP emissions budget. Consequently, the proposed project is not consistent with Chula Vista's General Plan and is not considered consistent with the growth assumptions in the RAQS and SIP. As such, impacts would be considered significant and unavoidable.

Furthermore, as discussed in Section 5.3, the emissions VOCs and NO_x (precursors of O_3) would exceed operational significance thresholds. As a result, operation of the proposed project would result in significant impacts to air quality. The emissions are attributable to vehicles and area sources, including use of consumer products. Emissions associated with consumer products use would occur regardless of the location of residences, and there are no available mitigation measures that would reduce these emissions to below a level of significance. Emissions associated with vehicles have been reduced in the project through implementation of project design features, including incorporating a mix of uses into the project and access to transit through access to MTS bus routes. Additionally, there is a potential for development of a BRT station adjacent to the project site; however, no reductions have been included to account for this future measure. There are no additional measures that would reduce emissions associated with project operations to below a level of significance. Impacts would, therefore, be significant and unavoidable.

Sea Level Rise

In general, sea level rise is considered the greatest impact of concern relative to climate change. Although there is some uncertainty in the magnitude and timing of sea level rise, the State of California uses projections of sea level rise between 10 and 17 inches (26 to 43 centimeters) in 2050 and between 31 to 69 inches (78 to 176 centimeters) in 2100 (State of California 2010).

According to the Sea Level Rise Adaptation Strategy for the San Diego Bay, the elevation of the average high tide could change by as much as 1.5 meters, or approximately 5 feet (ICLEI and The San Diego Foundation 2012). This study concluded that the maximum amount of sea level rise projected by the State of California could lead to widespread flooding and erosion in low-lying areas, shifting and loss of wildlife habitats, rising water tables, as well as salt water infiltration. In the following decades, the major concern for the San Diego Bay is increased frequency and magnitude of flooding due to waves, storm surge, El Nino events, and very high tides. Around 2050, the Bay would also be more vulnerable to inundation. The most vulnerable environmental sectors in the community are expected to be stormwater management and infrastructure, wastewater collection, shoreline parks and public access, transportation facilities, commercial buildings, as well as wildlife ecosystems (ICLEI and the San Diego Foundation 2012).

The proposed project is located approximately 8 miles from the San Diego Bay; therefore, impacts on the proposed project relative to sea level rise would be considered less than significant.

Reduction in Potable Water Supply

A decrease in potable water supply resulting from climate change could adversely impact the proposed project. However, as discussed in Section 5.9, Utilities, the primary infrastructure for

the proposed project site water system has already been installed and is adequate to support the proposed development. Additionally, a water conservation plan was prepared for the originally approved project as analyzed in the 2006 EIR as amended (City of Chula Vista 2006), which was prepared as part of project approvals. As stated in the Village 2 Comprehensive SPA Amendment Water System Evaluation prepared by Dexter Wilson Engineering, Inc. (Dexter Wilson 2013), the proposed project would include the use of water efficient irrigation systems and installation of evapotranspiration controllers to reduce water consumption. Moreover, a Water Supply Assessment and Verification (WSA&V) report will be prepared by the Otay Water District (OWD) for the proposed project that will describe the current and long-range storage capacity and ensure that OWD would be able to absorb the project's forecasted growth. The WSA&V will also provide documentation of entitlements and contracts, and a financial analysis of OWD's maintenance and future water supplies. The WSA&V report is anticipated to conclude that adequate long-term water supply would be available to the proposed project.

In addition, the Otay Ranch Company Villages Two, Three and PA 18b SPA Water Conservation Plan, was prepared for the proposed project site area by Dexter Wilson Engineering, Inc. as part of the originally approved 2006 EIR. This plan presents water conservation measures that would be incorporated into the planning and design of the proposed project, including the State-mandated water conservation measures and the requirements outlined in the City's Landscape Water Conservation Ordinance (Chapter 20.12). Per the Water Conservation Plan, the project would be designed in compliance with the City's Water Conservation Ordinance (Chapter 20.12).

Since the proposed project would be required to provide service availability letters for each building permit, the SPA plans have incorporated a Water Conservation Plan, and an adequate supply of water on a long-term basis would have to be documented by OWD's WSA&V report prior to development, the proposed project is consistent with the City's Growth Management Ordinance thresholds related to water supply.

Additionally, the Otay Water District, per the California Urban Water Management Planning Act, is required to update their Urban Water Management Plan (UWMP) every 5 years which ensures local and regional water supplies are continually planned to meet future growth and development. The 2010 Otay Water District UWMP was adopted in June 2011 (OWD 2011) and includes information on local and regional water supply, water usage and demand, recycled water use, and water use efficiency programs currently implemented within the district's service area. Section 10.0 of the 2010 UWMP discusses water supply issues associated with climate change and includes Adaptation and Mitigation measures with respect to climate change impacts on water supplies, including diversifying OWD's water supply portfolio to meet growing service area demand (OWD 2011). The 2010 OWD UWMP, along with the 2010 UWMPs for the Metropolitan Water District, San Diego County Water

Authority and all San Diego County Water Authority member agencies, have determined that adequate water supplies would be available to serve existing service areas under normal year, single-dry year, and multiple-dry year conditions through the year 2035.

Therefore, because local and regional water agencies have determined adequate water supplies would be available to support the proposed project, and climate change adaptation and mitigation measures have been included in their long-range water planning efforts, increased exposure of the project from the potential adverse effects of global warming on water supply would be considered less than significant.

Damage to Marine Ecosystems and the Natural Environment

Runoff from the proposed project would ultimately discharge to the San Diego Bay; however, the proposed project would minimize impacts on water quality by incorporating post-construction BMPs into project design, including LID site design, source control, and treatment control. Implementation of the proposed project is subject to site design and source control BMPs, as outlined in Section 3.6.2 of the Development Storm Water Manual. Additionally, even any forecasted changes in rainfall can be accommodated within the proposed drainage systems. Therefore, the proposed project would not result in a significant impact associated with damage to marine ecosystems.

Additionally, as discussed in Section 5.5, Biological Resources, with implementation of the identified mitigation measures, all impacts to biological resources associated with buildout of the proposed project would be reduced to levels below significance, including compliance with the MSCP Subregional Plan. Therefore, the proposed project would not result in a significant impact associated with damage to the natural environment.

Increase in the Incidences of Health Problems

Vector-borne diseases are most likely to increase in areas with high humidity or stagnant, polluted water. Here, the climate of Southern California is predicted to become increasingly drier as a result of global warming, not more humid. Further, the project site is not located adjacent to a stagnant body of water and does not propose any new bodies of water that would be stagnant and attract disease-carrying insects. Therefore, the proposed project would not result in a significant impact associated with vector-borne diseases.

Cases of dehydration, heat stroke/exhaustion, heart attack, stroke and respiratory distress caused by extreme heat are anticipated to increase due to rising temperatures associated with global warming. However, the residences that would be developed by the proposed project would be designed to stay cool and protect residents from rising temperatures. Additionally, the proposed project utilizes narrow street widths to minimize the absorption and radiation

area of pavement, and relies on a street tree program to provide shade. These design features result in a co-benefit of reduced energy demand by providing a heat-resistant community for the residents. Therefore, the project would not result in a significant impact associated with heat-related ailments.

5.10.4 Level of Significance Prior to Mitigation

As described above, the proposed project would not result in a significant impact related to compliance with AB 32. Additionally, the project would not have significant impacts related to increased exposure to the potential adverse effects of global warming. Impacts would be less than significant with implementation of project design features designed to reduce GHG emissions.

5.10.5 Mitigation Measures

Since the proposed project would not result in a significant impact related to increased GHG emissions or compliance with AB 32, no mitigation would be required. Appendix I includes a comprehensive list of project design features that would be implemented to assist with the reduction of operational emissions contributing to ozone formation. No further mitigation would be required.

5.10.6 Level of Significance After Mitigation

Impacts related to increased GHG emissions as a result of project development and compliance with AB 32 would be less than significant without mitigation. Impacts related to GHG emissions would be less than significant.

5.10.7 Change in the Results of the 2006 EIR Analysis

The 2006 EIR did not analyze impacts to climate change. Comparison of impacts and conclusions with respect to climate change cannot occur in a similar fashion as the other sections of this EIR. Due to project design features, no new impacts are identified and no new mitigation is required.

5.11 HOUSING AND POPULATION

This section of the Environmental Impact Report (EIR) discusses the existing population and housing conditions in the City, specifically the City's East Planning Area where the project site is located, and addresses the proposed project's impacts on housing and population growth.

Changes in population, employment, and housing demand are social and economic effects, not environmental effects. According to the California Environmental Quality Act (CEQA), these effects should be considered in an EIR only to the extent that they create adverse impacts on the physical environment. According to Section 15382 of the CEQA Guidelines, "[a]n economic or social change by itself shall not be considered a significant effect on the environment" (14 CCR 15000 et seq.).

This section tiers from the 2006 EIR (City of Chula Vista 2006). The 2006 EIR addressed the Village Two, Three, and portion of Four development's potential environmental effects. The analysis and discussion of population and housing issues contained in the 2006 EIR is incorporated by reference and available for public inspection upon request to the City.

5.11.1 Existing Conditions

5.11.1.1 Regulatory Framework

Regional

San Diego Association of Governments

The San Diego County Association of Governments (SANDAG) Regional Comprehensive Plan (RCP) provides a growth management strategy for the region. In accordance with smart growth principles, the overall goal of the RCP is to strengthen the integration of local and regional land use, transportation, and natural resource planning. As stated in the RCP's Regional Housing Element, new housing should be located within already urbanized communities close to jobs and transit in order "to help conserve open space and rural areas, reinvigorate existing neighborhoods, and lessen long commutes" (SANDAG 2004). In addition to stating the need for applying smart growth strategies in the location and development of new housing, the RCP's Regional Housing Element includes the goal to provide more housing choices in all price ranges. The RCP states that homes need to be affordable to persons of all income levels and accessible to persons of all ages and abilities.

SANDAG estimates future population, housing, land use, and economic growth throughout San Diego County and in individual cities, including Chula Vista. The SANDAG 2050 Regional Growth Forecast Update predicts the following for the San Diego region (shown in

Table 5.11-1): The region as a whole is anticipated to grow by 40% over the 42-year period. Growth rates are similar between the unincorporated and incorporated areas of the county; however, the unincorporated area would experience a slightly higher growth rate compared to the region due to its relatively low existing population. Similar to population forecasts, the incorporated cities account for the largest share of housing and employment growth.

Table 5.11-1
San Diego Regional Population, Housing, and Employment Forecast

Planning Area	Year 2008	Year 2020	Year 2030	Year 2050	Change: 2008 - 2050	
					Numeric	*Percent*
Population						
Incorporated Cities	2,641,567	2,989,710	3,253,171	3,690,223	1,048,656	40%
Unincorporated Area	489,985	545,290	616,829	694,464	204,506	42%
San Diego Region	3,131,552	3,535,000	3,870,000	4,384,687	1,253,315	40%
Housing						
Incorporated Cities	973,772	1,082,057	1,166,925	1,306,200	332,428	34%
Unincorporated Area	166,882	180,431	202,882	222,890	56,008	34%
San Diego Region	1,140,654	1,262,488	1,369,807	1,529,090	388,436	34%
Employment						
Incorporated Cities	1,363,816	1,470,559	1,591,683	1,810,961	447,145	33%
Unincorporated Area	137,264	149,056	160,947	192,077	54,813	40%
San Diego Region	1,501,080	1,619,615	1,752,630	2,003,038	501,958	33%

Source: SANDAG 2010a, 2010b.

SANDAG's 2050 Regional Growth Forecast update predicts the following for the City of Chula Vista (see Table 5.11-2): Population and housing are expected to increase in a manner relatively similar to the San Diego Region; however, the City is expected to experience a slightly higher growth rate. Unlike the San Diego Region, the City is expected to experience a dramatic increase in employment opportunities compared to the San Diego Region.

Table 5.11-2
City of Chula Vista Population, Housing, and Employment Forecast

Planning Area	Year 2008	Year 2020	Year 2030	Year 2050	Increase	% Change
Population						
City of Chula Vista	230,397	267,427	289,044	330,381	99,984	43%
Housing						
City of Chula Vista	77,484	88,185	94,858	107,011	29,527	38%
Employment						
City of Chula Vista	70,230	82,146	101,001	121,555	51,325	73%

Source: SANDAG 2010c.

SANDAG is currently in the process of updating the 2050 Regional Growth Forecast, which will merge the planning efforts behind the development of the RCP and the Regional Transportation Plan, to be known as San Diego Forward. San Diego Forward and associated growth forecasts are scheduled to be adopted in July 2015.

Regional Housing Needs Assessment

Based on a methodology that weighs a number of factors (i.e., projected population growth, employment, commute patterns, and available sites), SANDAG determined quantifiable needs for housing units in the region according to various income categories. In its final Regional Housing Needs Assessment figures, SANDAG allocated 12,861 housing units to the Chula Vista area for the 2010–2020 Housing Element Cycle, including 5,648 housing units for very low- and low-income households (SANDAG 2011). Since January 1, 2010, Chula Vista has produced a total of 1,546 new units, including 155 low- and very low-income housing units. The City anticipated that its remaining development capacity would exceed the Regional Housing Needs Assessment for Chula Vista. The City of Chula Vista anticipates that much of the new construction will result from building out the master-planned communities in the East Planning Area, such as Otay Ranch, infill development, and mixed-use development.

Local

Chula Vista General Plan

The City of Chula Vista General Plan divides the City into four planning areas: (1) the Southwest Planning Area, (2) the Northwest Planning Area, (3) the East Planning Area, and (4) the Bayfront Planning Area (City of Chula Vista 2005).

Under the General Plan's Land Use and Transportation Element, population for Chula Vista is projected to increase by 101,600 persons, from 222,300 in 2004 to 323,900 in 2030 (City of Chula Vista 2005). Projected growth in the City's five planning areas is summarized in Table 5.11-3. The General Plan's projected population exceeds the SANDAG 2050 Regional Forecast for the year 2030 by 34,922. As shown in Table 5.11-3, the General Plan anticipates the population in the incorporated portion of the East Planning Area to increase by 58,990 persons, from 98,710 in 2004 to 157,700 in 2030.

Table 5.11-3
Chula Vista Projected Population in 2030

Planning Area	Year 2004	Year 2030	Increase
Bayfront	0	2,500	2,500
Southwest	53,560	61,900	8,340

Table 5.11-3
Chula Vista Projected Population in 2030

Planning Area	Year 2004	Year 2030	Increase
Northwest	56,930	74,800	17,870
East (incorporated area)	98,710	157,700	58,990
East (unincorporated area)	13,100	27,000	13,900
Total	**222,300**	**323,900**	**101,600**

Source: City of Chula Vista 2005

The Chula Vista General Plan also incorporates a Housing Element (adopted April 23, 2013, City of Chula Vista 2013a) that identifies strategies to expand housing opportunities for the City's various economic segments. Under the Housing Element, the provision of new housing opportunities within mixed use areas and at higher density levels, particularly transit focus areas, is encouraged. A primary issue of the Housing Element is the shortfall of housing, particularly affordable housing, in Chula Vista and the region. To address this issue, the Housing Element requires residential developments with 50 or more dwelling units provide 10% of total units for low- and moderate-income households, with at least half of those (5%) designated for low-income households.

Otay Ranch General Development Plan

The Otay Ranch General Development Plan (GDP) established a 5-year objective that requires each village to proportionately assist the City to meet or exceed its 5-year regional allocation as described in the Chula Vista Housing Element. The Otay Ranch GDP requires that prior to or concurrent with the approval of a Special Planning Area (SPA) plan, a housing plan shall be approved that addresses the type and location of housing to be provided pursuant to the regional share allocation. The Otay Ranch GDP establishes a maximum residential buildout for all villages and planning areas within Otay Ranch. The maximum Otay Ranch GDP buildout within Village Two is as follows (City of Chula Vista 2013b):

- A maximum of 986 single-family residential units
- A maximum of 1,800 multi-family residential units
- Build-out population of approximately 7,898

In order to remain conservative in estimates, a household coefficient of 3.24 persons per household (CDF 2013) is used for the analysis presented in this EIR.

Otay Ranch Villages Two, Three, and a Portion of Village Four SPA Plan

The SPA Plan is a document that refines and implements the lands use plans, goals, and objectives set forth by the Otay Ranch GDP. The SPA Plan for Villages Two, Three, and a portion of Village Four as it currently exists, plans for a total of 2,983 residential units within Village Two, resulting in a planned population of 9,575. As stated above, a conservative population coefficient of 3.24 persons per household is utilized for analysis in this EIR.

5.11.1.2 Existing Setting

The project area has been used primarily for agricultural purposes. Construction is generally occurring on portions of Village Two not included in the proposed project (i.e., not under Baldwin & Sons ownership and/or not undergoing a proposed land use change) per the current SPA Plan. Select completed residential development within Village Two is already inhabited.

5.11.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a housing and population impact. Impacts to housing and population would be significant if the proposed project would:

A. Induce substantial population growth in an area, either directly (i.e., by proposing new homes and businesses) or indirectly (i.e., through extension of roads or other infrastructure).

B. Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

C. Be inconsistent with General Plan, GDP, and other objectives and policies regarding housing and population thereby resulting in a significant physical impact.

5.11.3 Impacts

5.13.3.1 2006 EIR Impacts Conclusions

The following conclusions related to housing and population as described in the 2006 EIR are applicable to the proposed project, specifically Village Two:

The Otay Ranch GDP planned for the development of the Village Two area as well as corresponding services and infrastructure to support the community. Village Two would not displace substantial numbers of existing housing or people necessitating the construction of replacement housing elsewhere. Therefore, no significant impacts on the environment would result.

5.13.3.2 Proposed Project Impact Analysis

The following impact analysis is based on the overall unit counts (including the residential units not affected by the proposed project) within the proposed land use plans for Village Two. As described in Chapter 4, Project Description, the proposed project would add 1,562 residential units to portions of Village Two under Baldwin & Sons ownership. In addition, up to 130,000 square feet of commercial and mixed-use commercial would be located on MU-2, MU-3, and C-1 combined. To account for the increase in residential units, the proposed project would also include an additional 9.5-acre elementary school, 108 acres of parkland, and 7.2 acres of community purpose facilities (CPF).

A. Induce substantial population growth in an area, either directly (i.e., by proposing new homes and businesses) or indirectly (i.e., through extension of roads or other infrastructure).

As described in Section 5.11.1.1, the City of Chula Vista General Plan has planned for the population of the entire city to grow by 101,600 persons between 2004 and 2030.

The project proposes 1,562 additional residential units, resulting in a new proposed total of 4,545 residential units within Village Two. The proposed project would directly contribute to population growth in the area through the development of these dwelling units, which include a mix of single family and multi-family units. Based on the household coefficient of 3.24 persons per residential unit (CDF 2013), the proposed project is expected to generate a buildout population of 5,061 contributing to a total of 14,726 within Village Two, as shown in Table 5.11-4.

Table 5.11-4
Estimated Residential Buildout per GDP – Planned vs. Proposed

Area	Total GDP Planned Units	Approximate GDP Planned Population*	Total Proposed Units	Approximate Proposed Population	Δ Total Units	Δ Approximate Population*
Proposed Project**	1,873	6,069	3,435	11,129	1,562	5,061
Village Two (Total)**	2,983	9,665	4,545	14,726	1,562	5,061

* Population estimates per City of Chula Vista household coefficient of 3.24 persons per residential unit.
** Proposed Project includes residential units under Baldwin & Sons ownership, Village Two (total) includes Baldwin & Sons and all other residential units within Village Two

As described in Section 5.11.1.1, through previous Otay Ranch GDP and SPA planning efforts, the project area was allocated a total of 2,983 residential units, resulting in a planned population increase of 11,129 persons. As shown in Table 5.11-4, the proposed project includes an additional 1,562 residential units above the planned 2,983 residential units, and this increase

would result in population growth that exceeds the growth planned for the project area by 5,061 persons. The proposed project would exceed the planned population growth; however, with adoption of the proposed General Plan, Otay Ranch GDP, SPA Plan, and CMPP amendments, implementation of the proposed project would not exceed anticipated population growth. The amendments would ensure the consistency of the proposed project.

Additionally, the proposed project would be in compliance with the City of Chula Vista Growth Management Ordinance (GMO), Growth Management Oversight Commission (GMOC), and established "quality of life" threshold standards. The GMO requires public facilities finance plans (PFFPs), air quality improvement plans, and water conservation plans for every SPA plan. A PFFP is required in conjunction with the preparation of a SPA plan to ensure that development of the proposed project is consistent with the overall goals and policies of the General Plan and would not degrade public services. The PFFP provides a complete description of all public facilities included within the boundaries of the plan as defined by the Development Services Director, including phasing and financing of infrastructure. The proposed project must also prepare a fiscal impact report and provide funding for periods when City expenditures, for the development, would exceed projected revenues.

The proposed project would be subject to the payment of a Development Impact Fee (DIF), which would help cover the cost of new or expanded public facilities. The DIF amount is determined through evaluation of the need for new public service facilities as it relates to the level of service demanded by new development, which varies in proportion to the equivalent dwelling units generated by a specific land use. Traffic impacts as a result of the additional population growth would be mitigated partially through the payment of Transportation Development Impact Fees (TDIFs). Roadway expansion and improvement projects would be funded by TDIFs, the Highway Bridge Program, and other miscellaneous transportation grants. Payment of DIFs and TDIFs would further reduce the impact of population growth.

Therefore, although the proposed project would result in substantial population growth, the General Plan, Otay Ranch GDP, SPA Plan, and Otay Ranch CMPP amendments, compliance with the GMOC and related thresholds, preparation of a PFFP, payment of DIFs and TDIFs would ensure that the proposed project would have less than significant impacts associated with population growth.

B. Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

Construction has generally begun on portions of Village Two not affected by the proposed project. As some residential units have been fully developed, residents have also begun inhabiting the completed units within Village Two. The proposed project's additional

residential units, elementary school, parkland, and CPFs are planned to not encroach upon any existing housing or population. As such, the proposed project would not displace any existing households or people, or necessitate the construction of replacement housing elsewhere. Pursuant to state law, the Chula Vista General Plan Housing Element addresses the housing needs of the community. Consistent with those needs, the Housing Element identifies objectives, policies and related action programs pertaining to the provision of affordable housing. The proposed project would be subject to the requirements of the General Plan Housing Element and Chula Vista Affordable Housing Program, which requires SPA plans and tentative maps to provide a minimum of 10% of the total residential units as low- and moderate-income housing. The SPA Plans include an affordable housing plan to meet this requirement. High-density housing in the village cores and accessory second units, allowed throughout the site, provide opportunities for affordable housing. Therefore, the proposed project would have no impacts associated with displacement of households or people.

C. Be inconsistent with General Plan, GDP, and other objectives and policies regarding housing and population thereby resulting in a significant physical impact.

The proposed project includes 1,562 homes resulting in a total of 4,545 homes within Village Two, which would help the City meet its share of San Diego County's Year 2050 housing needs projected by SANDAG. This includes a variety of housing types from high-density multi-family to single-family detached. The project is part of Otay Ranch Villages which includes common design features, such as mixed-use village cores and pedestrian oriented development. Within these village cores, retail/commercial/office uses would be permitted which may provide a variety of goods and services. Possible future transit stops in each of the Village cores to provide access to transportation for village residents.

City of Chula Vista General Plan

Since the time of the completion and certification of the 2006 EIR, the Chula Vista General Plan has been comprehensively updated from the previous 1989 version to the current 2005 version, or Chula Vista Vision 2020. The project proposes an increase in density, and to support that increase, would also include an additional elementary school, parkland, and CPFs. While specific land use patterns would be altered from the currently approved SPA Plan, the change in density would not interfere with the primary policies and goals of Village Two, the SPA Plan, and by extension the GDP and General Plan. The proposed project would promote the objectives of the General Plan including: providing a wide range of housing choices by location, price, and type; balance of communities; support efforts to increase homeownership; development of housing with easy access to goods, services,

transportation, and recreation; and pedestrian oriented land use. The following objectives are outlined in the General Plan:

- **Objective H 5:** Encourage the provision of a wide range of housing choices by location, type of unit, and price level, in particular the establishment of permanent affordable housing for low-and moderate-income households.
- **Objective H 6:** Promote the development of a variety of housing choices, coupled with appropriate services, to meet the needs of special population groups, including the homeless, those "at-risk" of becoming homeless, persons with physical and/or development disabilities, emancipated foster youth, students, athletes at the Olympic Training Center, single-parent households, farm workers and seniors.
- **Objective H 7:** Facilitate the creation, maintenance, preservation, and conservation of affordable housing for lower and moderate-income households through comprehensive planning documents and processes, and the provision of financial assistance and other incentives.
- **Objective H 8:** Ensure the availability of housing opportunities to persons regardless of race, color, ancestry, national origin, religion, sex, disability, marital status, and familial status, source of income or sexual orientation.

The proposed project would be subject to the requirements of the General Plan Housing Element and Chula Vista Affordable Housing Program, which requires SPA plans and tentative maps to provide a minimum of 10% of the total residential units as low- and moderate-income housing. The SPA Plans include an affordable housing plan to meet this requirement. High-density housing in the village cores and accessory second units, allowed throughout the site, provide opportunities for affordable housing. Proposed residential land uses within the SPA Plan area include a wide range of densities and formats within multi-family and single-family residential uses which will accommodate a variety of housing types to meet the needs of all potential residents. The variety of housing types would accommodate families, singles, and those with special housing needs, including the handicapped and the elderly. The project is required to meet all California handicap accessibility requirements. Fair housing practices would be employed in the sale, rental, and advertising of all units. Therefore, the proposed project would be consistent with the objectives included in the General Plan Housing Element and impacts would be less than significant.

Otay Ranch GDP

The Otay Ranch GDP established a 5-year objective that requires each village to proportionately assist the City to meet or exceed its 5-year regional allocation as described in the Chula Vista Housing Element. The Otay Ranch GDP requires that prior to or concurrent with the approval of

a Special Planning Area (SPA) plan, a housing plan shall be approved that addresses the type and location of housing to be provided pursuant to the regional share allocation. Relevant policies associated with this objective include the following goals:

- **Goal:** Organize land uses based upon the village/town center concept to produce a cohesive, pedestrian friendly community. Encourage non-vehicular trips and foster interaction amongst residents.
- **Goal:** Create a balanced community exemplified by the provision of a diverse range of housing styles, tenancy types and prices.
- **Goal:** The provision of sufficient housing opportunities for persons of all economic, ethnic, religious and age groups, as well as those with special needs such as the handicapped, elderly, single-parent families, and the homeless.

The Otay Ranch GDP requires preparation of an Affirmative Fair Marketing Plan which describes outreach efforts and lending practices to attract prospective homebuyers and/or tenants in the proposed housing marketing area, regardless of gender, age, race, religion, handicap or economic status, will be prepared prior to construction and sales. The SPA Plan provides a wide variety of housing types, including affordable housing. Proposed housing includes apartments, townhomes, condominiums, attached housing, small lot single-family, and conventional lot single-family residential. The SPA Plans include an Affordable Housing Plan to ensure that ten percent of units in the SPA would be affordable units. Therefore, the proposed project would be consistent with the goals included in the Otay Ranch GDP and impacts would be less than significant.

5.11.4 Level of Significance Prior to Mitigation

The proposed project would exceed the maximum residential buildout anticipated in the Otay Ranch GDP along with the General Plan's East Planning Area, SPA Plan for Village Two, Three and portion of Village Four, and the Otay Ranch CMPP, all of which are based on the GDP. However, the project includes amendments to the Chula Vista General Plan, adopted Otay Ranch GDP, SPA Plan, and CMPP. The proposed amendments would permit the proposed project's estimated buildout population, and result in land uses consistent with the overall purpose of the General Plan and Otay Ranch GDP. In addition to the General Plan, Otay Ranch GDP, SPA Plan, and CMMP amendments, the proposed project would comply with the GMOC and related thresholds, prepare a PFFP, pay DIFs and TDIFs, which would ensure that the proposed project would have a less than significant impact associated with population growth.

The proposed project would not displace any existing households or people, or necessitate the construction of replacement housing elsewhere. Therefore, the proposed project would have no impact associated with displacement of households or people.

The proposed project is consistent with the policies of the General Plan and GDP regarding housing and population; therefore, the proposed project would result in a less than significant impact in this regard.

5.11.5 Mitigation Measures

Impacts to population and housing would be less than significant as a result of the proposed project; therefore, no mitigation is required.

5.11.6 Level of Significance After Mitigation

Impacts to population and housing would be less than significant; therefore, no mitigation is required.

5.11.7 Change in the Results of the 2006 EIR Analysis

Implementation of the proposed project would not change the conclusions reached by the analysis of the 2006 EIR. While the proposed project would increase dwelling units within Village Two and introduce a larger population than analyzed in the 2006 EIR, impacts would remain less than significant. No new impacts are identified and no new mitigation is required.

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CHAPTER 6
CUMULATIVE IMPACTS

6.1 INTRODUCTION

Although the environmental effects of an individual project may not be significant when that project is considered independently, the combined effects of several projects may be significant when considered collectively. Such impacts are "cumulative impacts." Section 15355 of the California Environmental Quality Act (CEQA) Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines provides guidance for analyzing significant cumulative impacts in an Environmental Impact Report (EIR). According to this section of the CEQA Guidelines, the discussion of cumulative impacts "...need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness." The discussion should also focus only on significant effects resulting from the project's incremental effects and the effects of other projects. According to Section 15130(a)(1), "An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR."

Cumulative impacts can occur from the interactive effects of a single project. For example, the combination of noise and dust generated during construction activities can be additive and can have a greater impact than either noise or dust alone. However, substantial cumulative impacts more often result from the combined effect of past, present, and future projects located in proximity to the project under review. Therefore, it is important for a cumulative impacts analysis to be viewed over time and in conjunction with other related past, present, and reasonably foreseeable future developments whose impacts might compound or interrelate with those of the project under review.

6.2 METHODOLOGY

According to Section 15130(b) of the CEQA Guidelines, cumulative impact analysis may be conducted and presented by either of two methods: (1) a list of past, present, and probable activities producing related or cumulative impacts; or (2) a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document that has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact. Other than air quality, greenhouse gas emissions, noise, and transportation/traffic, the cumulative list approach has been utilized in the cumulative analysis presented in this chapter, as discussed below. Air quality, noise, transportation, and climate change cumulative impacts have been evaluated using the summary of projections method because impacts can only be analyzed on a broad, area-wide scope, and in a cumulative context. Table 6-1 describes the geographic scope of the cumulative impact analyses.

Table 6-1
Geographic Scope of Cumulative Impact Analyses

Topic	Geographic Scope of Cumulative Impact Analyses
Land Use	Incompatibilities with adjacent land uses are generally site specific; therefore, the geographic context for the analysis of cumulative impacts relative to adjacent land use incompatibilities includes the area surrounding the project site. The geographic context for the analysis of cumulative impacts relative to physical division of an established community is generally site specific.
Transportation, Circulation and Access	The cumulative study area associated with traffic and level of service standards, traffic hazards, alternative transportation, and emergency access is the study area for the project-specific traffic impact analysis (Appendix B). Impacts related to aircraft traffic are generally specific and limited to the area within two miles of a specific airport.
Air Quality	The geographic scope of cumulative impact analysis for criteria air pollutants, sensitive receptors, and air quality plans is the San Diego Air Basin. Impacts relative to objectionable odors are limited to the area immediately surrounding the odor source and are not cumulative in nature because the air emissions that cause odors disperse beyond the sources of the odor.
Noise	The area of cumulative impact that would be considered for the noise and vibration cumulative analysis would be only those cumulative projects within the immediate vicinity of Village Two. Exposure to aircraft noise is also a localized impact and the area of cumulative impact that would be considered for aircraft impacts would be only those projects located within two miles of Brown Field.
Biological Resources	The geographic scope of cumulative impact analysis for biological resources includes the Chula Vista MSCP Subarea Plan area.
Water Quality and Hydrology	The geographic context for the analysis of cumulative impacts relative to water quality standards and alteration of drainage patters encompasses the portions of the Otay River watershed directly downstream from the project site. Impacts relative to mudflows, dam inundation, tsunamis, seiches, and flood hazard areas are generally specific to a project site.
Geology and Soils	The geographic context for the analysis of cumulative impacts relative to soil erosion encompasses the Otay River watersheds directly downstream from the project site. Impacts relative to seismic hazards and other geologic/soil conditions (i.e., fault rupture, groundshaking, ground failure, liquefaction/collapse, landslides, lateral spreading, subsidence, and expansive soils) and septic systems are generally site specific.
Public Services	The City of Chula Vista is the geographic scope of cumulative impacts to public services.
Utilities	The City of Chula Vista is the geographic scope of cumulative impacts to utilities.
Climate Change	Due to the nature of assessment of greenhouse gas emissions and the effects of climate change, impacts can currently only be analyzed from a cumulative context; therefore, the geographic scope for the cumulative analysis of greenhouse gas emissions and their effect on climate change is the global atmosphere.
Housing and Population	The City of Chula Vista is the geographic scope of cumulative impacts to housing and population.

6.3 CUMULATIVE PROJECTS

6.3.1 Land Development

Other than air quality, greenhouse gas emissions, noise, and transportation/traffic, cumulative impacts for all other environmental issue areas are based on a list of projects within the proposed project's study area that either have applications submitted or approved, are under construction, or have recently been completed. Based on information provided by the City of Chula Vista, four cumulative projects were considered in this analysis. The cumulative projects identified in the study area are listed in Table 6-2.

Table 6-2
Cumulative Projects

Project #	Name	Location	Description	Status
1	University Villages	Otay Ranch	This Project proposes 6,897 homes and associated village land uses on approximately 755 acres and includes roughly 620 acres of Open Space Preserve for a total Project area of approximately 1,375 acres.	In environmental review
2	Village Eight West	Otay Ranch	621 Single-family dwelling units, 1,429 Multi-family dwelling units, 300,000 square feet of commercial land use, 5.8 acres of community purpose facilities, 31.6 acres dedicated to school property, 27.9 acres of parkland.	Approved
3	Village Nine	Otay Ranch	266 Single-family dwelling units, 3,734 Multi-family dwelling units, 1,500,000 square feet of commercial land use, 5.0 acres of community purpose facilities, 19.8 acres dedicated to school property, 27.5 acres of parkland, 85.0 acres of Industrial/Research Technology Park, and 50.0 acres for future University site.	In environmental review, Draft EIR circulated for public review
4	Otay Ranch Planning Area 12 (PA-12)	Otay Ranch	Zone change on approximately 17.6 acres of land from the current freeway commercial zone to 15.9 acres of residential (High – 18 to 30 dwelling units per acre) and 1.0 acre of public park. Residential units would include a mix of one, two and three bedroom units for a total of 448 units. Commercial space would decrease from the originally proposed PA-12 project from 347,000 square feet to approximately 279,000 square feet. Approximately 554 on-site parking spaces and 136 garage parking spaces would be provided on-site.	In environmental review

6.3.2 Adopted Plans

From a regional approach, the cumulative analysis relies on the Regional Comprehensive Plan, General Development Plan (GDP), and the Chula Vista General Plan, along with other regional planning documents, including the Multiple Species Conservation Program (MSCP) Subarea Plan, and Regional Air Quality Strategy (RAQS) in accordance with CEQA Section 15130(b)(1)(B).

6.4 CUMULATIVE IMPACT ANALYSIS

The discussion below evaluates the potential for the proposed project to contribute to an adverse cumulative impact on the environment. For issues addressed in this Draft EIR, the thresholds used to determine significance are those presented in each of the sections of Chapter 5, Environmental Analysis. For issues in which project impacts were determined to be less than significant during the preliminary environmental review process, the thresholds consist of the questions posed for that respective issue in Appendix G of the CEQA Guidelines. For each resource area, an introductory statement is made regarding what would

amount to a significant cumulative impact in that resource area. Discussion is then presented regarding the potential for the identified cumulative projects to result in such a cumulative impact, followed by discussion of whether the project's contribution to any cumulative impact would be cumulatively considerable.

6.4.1 Land Use

Significant adverse cumulative land use impacts would result from projects that contribute to development that is inconsistent with applicable plans or incompatible with existing or planned uses or planned addition of incompatible uses.

Physical Division of an Established Community and Conflicts with Land Use Plans, Policies, and Regulations

As described in Section 5.1 Land Use, the proposed project would not physically divide an established community or be incompatible with any adjacent or surrounding land uses. The proposed project would also be consistent with the City of Chula Vista General Plan, Otay Ranch GDP, City of Chula Vista Zoning Code, Parkland Dedication Ordinance, Parks and Recreation Master Plan, Otay Valley Regional Park Concept Plan, Airport Land Use Compatibility Plan – Brown Field, Growth Management Ordinance, Tentative Map requirements, and Greenbelt Master Plan. The proposed project would establish transit and pedestrian oriented development by developing higher density housing nearby future transit stops, village pathways that connect to regional trails, and mixed-use development. Additionally, the proposed project's amendments to the GDP and SPA Plan would ensure no conflicts with an adopted plan, policy, or regulation governing land use.

The cumulative projects listed in Table 6-2 would all include similar project features, design standards, and balance of land uses. Additionally, all cumulative projects would be subject to similar criteria as the proposed project, which would ensure compliance with existing applicable land use plans with jurisdiction over the project area. Analysis of individual projects as they are submitted to the City will ensure compatibility with applicable plans and policies. Since all current and future projects would be analyzed for compatibility and compliance with land use regulations, the proposed project would not result in a cumulatively considerable impact.

Conflicts with HCPs or NCCPs

The Chula Vista MSCP Subarea Plan and the Otay Ranch Resource Management Plan (RMP) are the applicable natural resource plans for the project and cumulative projects. The project would not alter the proposed preserved boundary located within Wolf Canyon subject to the local Habitat Conservation Plan (HCP) analyzed as part of the 2006 EIR. No additional impacts would occur as part of the proposed project; therefore, the project will comply with the requirements of

the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP (Phase 1 1993, and Phase 2 2002). Therefore, impacts to applicable habitat conservation plan or natural community habitat conservation plans would be less than significant.

The cumulative projects would be required to demonstrate compliance with the MSCP Subarea Plan and the RMP as part of project approval. Therefore, cumulative land use impacts associated with potential conflicts with HCPs or NCCPs would be less than significant.

6.4.2 Transportation, Circulation, and Access

Cumulative traffic impacts result when multiple projects contribute trips to the same circulation system features. Table 6-3 shows the cumulative trip generation total as a result of the reasonably foreseeable future projects as identified in Table 6-2.

Table 6-3
Cumulative Trip Generation

Project #	Name	Location	Description	Average Daily Trips
1	University Villages	Otay Ranch	1,375 acres, 6,897 residential dwelling units, 40,000 square feet of commercial, population of 22,346. Project would include community purpose facilities, parks, schools, mixed-use development and industrial uses.	77,663
2	Village Eight West	Otay Ranch	621 Single-family dwelling units, 1,429 Multi-family dwelling units, 300,000 square feet of commercial land use, 5.8 acres of community purpose facilities, 31.6 acres dedicated to school property, 27.9 acres of parkland.	26,104
3	Village Nine	Otay Ranch	266 Single-family dwelling units, 3,734 Multi-family dwelling units, 1,500,000 square feet of commercial land use, 5.0 acres of community purpose facilities, 19.8 acres dedicated to school property, 27.5 acres of parkland, 85.0 acres of Industrial/Research Technology Park, and 50.0 acres for future University site.	34,067
4	Village Two (proposed project)	Otay Ranch	Approved: (1) 240 acres total, 1,839 dwelling units, 8.5 acres of Mixed-use commercial land use, 12.5 acres dedicated to commercial land use, 60.7 acres dedicated to industrial, park, and community purpose facilities; (2) 160 acres total, 1,144 dwelling units Proposed: In addition to the approved Village Two project there is currently a proposal to add1,552 residential units, an elementary school, parkland, and CPF facilities. The project may also include additional park and CPF facilities which partially or wholly satisfy the requirements generated by proposed residential and hotel development on the Otay Ranch PA-12 site.	17,800

Table 6-3
Cumulative Trip Generation

Project #	Name	Location	Description	Average Daily Trips
5	Otay Ranch Planning Area 12 (PA-12)	Otay Ranch	Zone change on approximately 17.6 acres of land from the current freeway commercial zone to 15.9 acres of residential (High – 18 to 30 dwelling units per acre) and 1.0 acre of public park. Residential units would include a mix of one, two and three bedroom units for a total of 448 units. Commercial space would decrease from the originally proposed PA-12 project from 347,000 square feet to approximately 279,000 square feet. Approximately 554 on-site parking spaces and 136 garage parking spaces would be provided on-site.	7,191
			Total	**162,825**

The cumulative project trip generation would total 162,825. Due to the increase in vehicle trips generated as a result of the cumulative project condition in 2030, impacts would be considered cumulatively considerable.

A cumulative traffic impact analysis was conducted for this project as part of the Traffic Impact Analysis, which is provided as Appendix B of this Draft EIR. This cumulative analysis estimated cumulative impacts on the studied roadway system (intersections and street segments) and analyzed whether the project's contribution would be significant (or, for purposes of this analysis, cumulatively considerable). The proposed project would be developed over time and would be fully developed by the year 2025. At buildout, the proposed project would generate a total of 17,800 daily trips, including 1,457 AM peak hour trips and 1,734 PM peak hour trips. The projected increase in trips would contribute to cumulatively considerable traffic impacts in years 2015, 2020, 2025, and 2030, as listed below.

Year 2015 Conditions

No cumulative impacts under Year 2015 Conditions.

Year 2020 Conditions

Intersections

- I-805 SB Ramps/Olympic Parkway (CV).

Roadway Segments

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps.

Freeway/State Highways

- I-805, from Market Street to Imperial Avenue;
- I-805, from Imperial Avenue to E Division Street.

Year 2025 Conditions

Intersections

- I-805 SB Ramps/Olympic Parkway;
- La Media Road/Olympic Parkway;
- La Media Road (SB)/Main Street (WB);
- La Media Road (NB)/Main Street (WB);
- La Media Road (SB)/Main Street (EB);
- La Media Road (NB)/Main Street (EB);
- Magdalena Avenue/Main Street.

Roadway Segments

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps;
- Olympic Parkway, between Heritage Road and Santa Venetia Street.

Freeway/State Highways

- I-805, from SR-94 to Market Street;
- I-805, from Market Street to Imperial Avenue;
- I-805, from Imperial Avenue to E Division Street;
- I-805, from Plaza Boulevard to SR-54;
- I-805, from Bonita Road to East H Street.

Year 2030 Conditions

Intersections

- I-805 SB Ramps/Olympic Parkway.

Roadway Segments

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps.

Freeway/State Highway Segments

- I-805, from SR-94 to Market Street;
- I-805, from Market Street to Imperial Avenue;
- I-805, from Imperial Avenue to E Division Street;
- I-805, from Plaza Boulevard to SR-54;
- I-805, from SR-54 to Bonita Road;
- I-805, from Bonita Road to East H Street;
- I-805, from East H Street to Telegraph Canyon Road.

Implementation of mitigation measures identified in Section 5.2 would reduce several impacts to below a level of significance; however, in some cases, no feasible mitigation exists and impacts would remain significant and unavoidable. Mitigation measures that reduce cumulative traffic impacts to a level below significance are:

- **MM-TCA-5 –** *La Media Road/Olympic Parkway* (CV) – Prior to the issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall cause, through the payment of Transportation Development Impact Fees (TDIF), the construction of Main Street, between Heritage Road and La Media Road, as a 6-lane Prime Arterial.

- **MM-TCA-6 –** *La Media Road (SB)/Main Street (WB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (SB)/Main Street (WB).

- **MM-TCA-7 –** *La Media Road (NB)/Main Street (WB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (NB)/Main Street (WB).

- **MM-TCA-8 –** *La Media Road (SB)/Main Street (EB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (SB)/Main Street (EB).

- **MM-TCA-9 –** *La Media Road (NB)/Main Street (EB)* (all-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of La Media Road (NB)/Main Street (EB).

- **MM-TCA-10 –** *Magdalena Avenue/Main Street* (one-way stop controlled) (CV) – Prior to issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay its fair-share towards the cost of signalizing the intersection of Magdalena Avenue/Main Street.

- **MM-TCA-13 –** *Olympic Parkway, between Heritage Road and Santa Venetia Street* (CV) – Prior to the issuance of the final map that contains the 1,311th EDU of the Village Two Comprehensive SPA, the project applicant or its designee shall pay Transportation Development Impact Fees (TDIF) for the construction of Main Street, between Heritage Road and La Media Road, as a 6-lane Prime Arterial, including the construction of Main Street Bridge.

There are no feasible mitigation measures to reduce the remaining cumulative impacts identified above, and in Section 5.2, to a level below significance. Therefore, significant cumulative impacts would occur as a result of the proposed project.

6.4.3 Air Quality

In analyzing cumulative impacts from the proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the San Diego Air Basin (SDAB) is designated as nonattainment for selected air pollutants under the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). If the proposed project does not exceed thresholds and is determined to have less than significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, the project would only be considered to have a significant cumulative impact if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact).

Air Quality Violations

The SDAB has been designated as a federal nonattainment area for O_3, and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions associated with construction generally result in near-field impacts. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the

SDAB. As discussed previously, the emissions of all criteria pollutants would not exceed the applicable significance threshold levels during construction. As a result, construction of the proposed project would not result in a cumulatively considerable contribution to regional O_3, PM_{10}, and $PM_{2.5}$ concentrations. However, if any cumulative project is constructed during the same time period, emissions of criteria pollutants would combine to further exacerbate the violations and may result in a significant air quality impact. Construction of the proposed project would be short-term and construction activities required for the implementation of the proposed project would be considered typical of residential development. It is likely that construction associated with several other projects will occur in the general vicinity of the proposed project; therefore, the project's contribution to the net cumulative emissions would be considered significant. Mitigation measures have been provided in the 2006 EIR to reduce impacts to air quality but not to below the significance thresholds at the cumulative level. As such, the project's contribution to cumulative construction emissions would be significant and unavoidable.

Additionally, operational emissions from the proposed project would exceed the significance thresholds, and no mitigation is available to reduce operational emissions; therefore, project emissions would be significant and unavoidable at the project level. When the proposed project emissions are combined with future project emissions analyzed under the cumulative condition, impacts would be cumulatively considerable. Other projects would likely be required to also have construction mitigation measures as well; however, impacts would still be significant. Additionally, daily operational emissions for VOCs, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ would be significant due to the absence of feasible mitigation measures. No additional mitigation is available to reduce cumulative impacts to air quality during project operation.

Sensitive Receptors

Carbon Monoxide. Carbon monoxide concentrations were analyzed for the worst case scenario. As shown in Section 5.3, the concentration at the "worst case" studied intersection was below state and federal standards. Carbon monoxide emissions for Village Eight West and Nine were also found to be below state and federal standards; therefore, a cumulative impact would not occur.

Toxic Air Contaminants. Impacts related to siting new sensitive receptors near sources of toxic air contaminants (TACs) would generally be site specific. Similar to the proposed project, new emitters of TACs would need to comply with the San Diego Air Pollution Control District criteria, such as Rule 1200. Potential diesel particulate matter emissions from commercial deliveries and bus service proposed in the adjacent villages would be subject to existing California Air Resources Board (CARB) regulations that would reduce emissions to the extent feasible.

Therefore, cumulative impacts related to TACs would be less than significant.

Objectionable Odors

Impacts relative to objectionable odors are generally limited to the area in close vicinity to the source and are not cumulative in nature. As the emissions that cause odors disperse, the odor becomes less and less detectable. Nuisance odor issues are regulated by the San Diego Air Pollution Control District through Rule 51.

The only odor-generating land use in the vicinity of the proposed project is the Otay Landfill. The Landfill is governed by the Lead Enforcement Agency (LEA), which does period site inspections. Odor complaints are registered with the SDAPCD. No odor complaints have been registered since 2006. While the proposed project would place sensitive receptors closer to the Landfill, the project itself would not result in any objectionable odors that taken with the Landfill would be cumulatively considerable. Therefore, a cumulatively significant impact associated with objectionable odors would not occur.

Air Quality Plans

The RAQS relies on San Diego Association of Governments (SANDAG) growth projections based on population, vehicle trends, and land use plans developed by the cities and by the county as part of the development of their general plans. If a project proposes development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might conflict with the RAQS and may contribute to a potentially significant cumulative impact on air quality.

As discussed in Section 5.3, the project would provide a mixed-use development with access to transit. This purpose meets the goals of the RAQS and State Implementation Plan (SIP), which include measures to encourage transit use and mixed-use developments. Accordingly, the project would meet the goals of the RAQS and SIP to reduce vehicle trips and associated air quality impacts (SRA 2014).

However, the proposed project would require amendments to the City of Chula Vista General Plan, the Otay Ranch General Development Plan, the Specific Plan, and the Otay Ranch Core Master Precise Plan. Accordingly, the project as proposed is not accounted for in the current SIP emissions budget. Consequently, the proposed project is not consistent with Chula Vista's General Plan and is not considered consistent with the growth assumptions in the RAQS and SIP. As such, impacts would be considered cumulatively considerable and unavoidable.

6.4.4 Noise

Potential cumulative impacts on noise would result when projects combine to generate noise levels in excess of the City of Chula Vista Ordinance standards, either during construction or operation. Project generated construction noise would pose a potentially significant impact on noise-sensitive receptors if construction hour limitations are not imposed. Noise levels associated with the commercial activities would vary depending on the number of delivery trucks, loading dock areas and customer traffic generated by the commercial site, as well as the location of parking areas. With distribution of project generated trips onto the area roadway network off site, the noise attributable to project contributed trips versus regional traffic becomes largely indistinguishable. Over time, as development continues in Otay Ranch, the ambient noise level would increase as traffic volumes increase and a general increase in urban activities and human presence occurs.

Excessive Noise Levels

When combined with the cumulative list of projects in Table 6-2, the increase in development would create a noticeable change in the noise environment. With the build-out of Otay Ranch the noise levels in the currently undeveloped area would continue to increase exponentially. The proposed project would have mitigation measures that would ensure operational noise levels comply with City standards. Cumulative projects would also be required to demonstrate compliance with City noise standards. Therefore, a cumulative operational noise impact would not be significant.

Village Two would be adjacent to future development proposed in the GDP (Villages Three, Four, Seven, Eight East and West, Nine and Ten). According to the GDP, these villages would be developed with similar land uses compared to the proposed project, including commercial, residential, and parkland development. Commercial equipment, including heating, ventilation, and air conditioning (HVAC) systems, would contribute to noise levels that exceed City standards, which may affect neighboring projects. Therefore, a potentially significant cumulative impact could occur. Mitigation measures would ensure that operational noise levels comply with City standards. Cumulative projects would also be required to demonstrate compliance with City noise standards. Therefore, a cumulative operational noise impact would not be significant.

Quarry operations, which would occur in proximity to the proposed project, would be required to comply with the City's noise ordinance standards. Noise generated by the quarry is temporary and periodic in nature. Due to compliance with the City's noise ordinance, the quarry would not result in cumulatively considerable noise impacts when including the proposed project.

Excessive Groundborne Vibration

Project-related construction activities have the potential to create groundborne vibration. Construction activities can result in varying degrees of ground vibration, depending on the equipment and methods employed. There are no businesses or institutions with highly sensitive equipment (such as hospitals, laboratories or printing presses) in the vicinity of the project. The highest vibration levels during construction typically occur during pile-driving, blasting or demolition activities. Neither pile driving or demolition activities are anticipated as part of this project. The proposed project as well as cumulative projects would be developed with new buildings constructed in accordance with all building codes and would not be susceptible to vibration damage.

In addition, the existing quarry has been approved to expand. The proposed residential, commercial, and parkland uses within Village Two are not vibration sensitive. Additionally, the existing Declaration of Covenants of Operation for the quarry includes provisions to minimize nuisance impacts from groundborne vibration. Other development that would occur in similar proximity to the quarry would be required to adhere to all building codes and would likely be required to designate non-vibration sensitive land uses closest to the quarry. Compliance with building code, careful planning, and coordination with the quarry operation would reduce potentially significant impacts. Therefore, groundborne vibration impacts would be less than significant and cumulatively considerable impacts would not result.

Permanent Increase in Ambient Noise Levels

Long-term on-site activities associated with the project would not have a regional effect upon community noise levels, and therefore need not be considered in combination with approved or proposed projects in the region. The one exception is the project's contribution to traffic-related noise levels, which extend beyond the site boundaries, and which must be considered in the context of proposed projects in the region. The project's contribution to cumulative noise levels would be limited to a one decibel (dB) increase at most, which by itself is not a discernible increase. Additionally, cumulative noise levels with the project would not exceed applicable thresholds (e.g., 65 dB Community Noise Equivalent Level (CNEL) for off-site traffic noise). Noise effects of the project would, for the most part, be confined to the project area and are evaluated on a project-specific basis. Long-term on-site activities associated with the project would not have a regional effect upon community noise levels, and therefore need not be considered in combination with approved or proposed projects in the region. Therefore, the project's contribution to increased noise levels would not be cumulatively considerable and cumulative impacts would be less than significant.

Temporary Increase in Ambient Noise Levels

Construction noise impacts are localized in nature because they are limited to the construction site where construction equipment is operating. Sound levels from project construction have been calculated for the proposed project to range as high as 89 dB at 50 feet. However, the cumulative projects and the proposed project would be subject to the Chula Vista construction noise ordinance, which limits the hours of construction to 7:00 a.m. and 10:00 p.m., Monday through Friday, and between the hours of 8:00 a.m. and 10:00 p.m., Saturday and Sunday. Compliance with the Chula Vista ordinance would reduce impacts to a less than significant level. The project would comply with the Chula Vista construction limits and would not result in a cumulatively considerable contribution to construction noise.

Excessive Noise Exposure from a Public of Private Airport

The project site is subject to overflights of planes and helicopters taking off from Brown Field, which are audible on the project site and would be audible in the future. Overflights from Brown Field may be considered a nuisance to residents. In accordance with standard condition #46 in Section 5-300 of the City's Subdivision Manual, applicants are required to record an Airport Overflight Agreement against the property to the satisfaction of the Development Services Director prior to recordation of any Final Map. Similarly, University Villages, Village Eight West, and Village Nine are within the Brown Field Overflight Zone, and noise from Brown Filed may be considered a nuisance. Village Eight West and Village Nine are also required to comply with standard condition #46 in Section 5-300 of the City's Subdivision Manual. This condition would run with the property, and as such, potential nuisance noise from aircraft overflights would be disclosed to future residents. Further, Village Two lies outside the 60-65 dB CNEL noise contours. All cumulative projects listed in Table 6-2 would be required to comply to similar measures associated with Brown Field and would therefore not result in cumulatively considerable impacts.

6.4.5 Biological Resources

Sensitive Plant and Wildlife Species, Riparian Habitat and Other Sensitive Natural Communities, Federally Protected Wetlands, and Wildlife Movement Corridors and Nursery Sites

Cumulative impacts consider the potential regional effects of a project and how a project may affect an ecosystem or one of its members beyond the project limits and on a regional scale. The Otay Ranch Program EIR analyzed the existing conditions, potential impacts, and mitigation measures related to biological resources for the entire Otay Ranch area, including the project site, which consists of approximately 23,000 acres in the County of San Diego, the City of Chula Vista, and the City of San Diego. The Otay Ranch Program EIR identified significant

unavoidable impacts to biological resources in Otay Ranch due to loss of raptor foraging habitat. Subsequent to the certification of the Program EIR and adoption of the Otay GDP, the City adopted the Chula Vista MSCP Subarea Plan, which is described in more detail in Section 5.8 of this EIR. The MSCP planning program provided for mitigation of impacts on sensitive species and their habitats on a regional basis. Such mitigation was not available at the time the Otay Ranch Program EIR was certified. Because of the level of conservation provided for habitats that support raptor foraging on a regional basis, new feasible mitigation for the impacts not identified in the Program EIR to raptor foraging habitat is now available to mitigate project-level impacts.

The proposed project, in combination with cumulative projects, would also result in the loss sensitive vegetation communities, which would be mitigated with conveyance of Preserve lands as required by the Otay Ranch RMP. Temporary construction areas will be revegetated with native vegetation. Additional wetlands mitigation is also expected as conditions of wetlands permits. The loss of sensitive plant species and vegetation communities would be mitigated through the conveyance of a specified number of acres of land to the City of Chula Vista for every developed acre impacted, along with habitat restoration of maritime succulent scrub at a 1:1 ratio, pursuant to the Otay Ranch RMP. This conveyance program, coupled with the maritime succulent scrub restoration program will adequately conserve a greater or equal amount of special status vegetation types within Otay Ranch. Implementation of these measures and consistency with the Chula Vista Subarea Plan and Otay Ranch RMP mitigates cumulative biological impacts to MSCP Covered Species and their associated habitats. Similarly, University Villages, Eight West, and Nine would all be developed in compliance with the MSCP Subarea Plan and Otay Ranch RMP, which would reduce impacts associated with development of these villages. Therefore, the project in combination with development of these villages would not result in a cumulatively considerable contribution to biological impacts.

Local Policies, Ordinances, HCP and NCCP

Implementation of the proposed project, in combination with cumulative projects, would contribute to the cumulative loss of biological resources within Otay Ranch and City of Chula Vista Subarea. Compliance with the Subarea Plan conditions for coverage, the Otay Ranch RMP, and conveyance of compensatory mitigation lands to the Preserve Owner Manager (POM) and compensatory wetland mitigation required by state and federal wetlands permitting agencies will ensure long-term sustainability of covered Species and their associated habitats. Both the RMP and the City of Chula Vista MSCP Subarea Plan provide consideration for and mitigation of cumulative impacts to biological resources.

6.4.6 Water Quality and Hydrology

Cumulative water quality impacts result from projects that combine to either pollute or increase the turbidity of water. Cumulative hydrology impacts also result from projects combining to alter the course of surface water flow or to increase flood hazards in a particular area, either through diverting floodways or constructing structures within the floodways. As stated in Section 5.6, Water Quality and Hydrology, during construction of the proposed project has the potential to violate water quality standards is a potential impact. However, compliance with the CBC, the Chula Vista Storm Water Management and Discharge Control Ordinance No 2854, the City of Chula Vista Subdivision Manual, Design and Construction Standards of the City of Chula Vista, San Diego Area Regional Standard Drawings, and Standard Specifications for Public Works Construction, as well as the preparation of site-specific stormwater pollution prevention plan (SWPPPs), impacts would remain below a level of significance. Furthermore, because all ssurrounding projects are regulated under the same City and Regional Water Quality Control Board standards, they too would be required to attenuate all drainage on site (to maintain pre development flow quantities) and incorporate water quality design features to prevent cumulative impacts to local drainage systems or water quality. Therefore, the proposed project would not contribute to a cumulatively considerable impact related to water quality.

Landform grading for the proposed project in combination with cumulative projects identified in Table 6-2 would be incorporated to mimic existing conditions on the sites where the proposed grading ties into or daylights with the existing terrain. It is intended that the stormwater from the manufactured slopes would sheet flow and follow the existing drainage patterns. Cumulative projects would also be required to take into consideration similar grading modifications in order to reduce stormwater runoff and erosion; therefore, impacts would not be cumulatively considerable.

6.4.7 Geology and Soils

Potential cumulative impacts on geology and soils would result from projects that combine to create geologic hazards, including unstable geologic conditions, or substantially contribute to coastal erosion. Most geology and soil hazards associated with development on surrounding projects would be site-specific and can be mitigated on a project-by-project basis. Such hazards include exposure of people or structures to rupture of an earthquake fault, liquefaction, landslides, unstable geologic units, and expansive soils. Individual project mitigation for these hazards would ensure that there are no residual cumulative impacts. Proper engineering design, utilization of standard construction practices, adherence to the erosion control standards established by the City's Grading Ordinance, implementation of BMPs required by the SWPPP, and implementation of the recommendations found in the Geotechnical Investigation Report (Geocon Inc. 2014) would ensure that the potential for geological impacts resulting from the

project would be less than significant. Since geologic hazards are site-specific and not cumulative in nature, the proposed project would not have a cumulatively considerable impact.

Excavation and ground-disturbing activities during construction of the proposed project, and cumulative projects, could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. Adequate drainage on project sites is critical in reducing potential soil erosion or the loss of topsoil. The project sites should be graded and maintained such that surface drainage is directed away from structures in accordance with 2010 CBC 1804.3 or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into swales or other controlled drainage devices. Earth-disturbing activities associated with construction would be temporary and compliance with the General Construction Permit and BMPs outlined in the SWPPP, cumulative impacts related to soil erosion and the loss of topsoil would be less than significant. Furthermore, implementation of BMPs and proposed drainage facilities would ensure cumulative impacts related to soil erosion and the loss of topsoil would be less than significant.

6.4.8 Public Services

Cumulative impacts on public services including fire and police protection, parks, schools, and libraries would result when projects combine to increase demand on services such that additional services must be constructed or provided. This would usually result from incremental addition of people occupying an area or incremental construction of new or larger buildings requiring public services provision. The SPA Plans include development standards that would apply to all future build-out of the planning area which specifically includes development elements and/or policies and measures to ensure that adequate public facilities and services such as fire, emergency medical services, law enforcement, schools, parks, and other public facilities are provided in conjunction with build-out of the development. By requiring the proposed project to pay a Public Facilities Development Impact Fee (PFDIF), prior to the issuance of each building permit, impacts related to public services and facilities would be less than significant.

Police and Fire Services

Development of the proposed project would increase the demand for fire and police services, including additional fire and police personnel, support staff, equipment, and facilities, as a result of increased population and development density. However, the increased demand that would occur with development of the proposed project would be a small portion of the anticipated area-wide increased demand associated with overall population growth and other development projects within the project area. Although the development of the proposed project would not independently impact existing police services, the City of Chula Vista recognizes that new residential and non-residential development is expected to continue to increase in the future.

Future development would generate additional residents and employees, which would result in increased service calls and increased demand for fire and police protection personnel and facilities. However, cumulative projects, including the proposed project, would be required to prepare a PFFP and demonstrate that public services, such as police services, meet the growth management oversight commission (GMOC) quality of life threshold standards. A project that is consistent with the city GMOC quality of life threshold standards, and agrees to payment of a PFDIF would not result in a cumulative impact.

Schools

The proposed project would generate additional students as a result of increased density under the proposed project, and in combination with cumulative projects. To provide for future elementary school demand, one elementary schools is proposed under the proposed project, and three elementary school sites have been designated within the University Villages site: an 8.3 acre site in Village Three North; a 10.8 acres site within Village Eight East; and a 9.2 acre site within Village Ten. While there are no middle school sites designated in the proposed project; a 21-acre middle school site has been designated within Village Eight West that is planned to serve up to 1,000 students and a 25.6 acre middle/high school site has been designated within Otay Ranch Village Eleven; therefore, these middle schools and high school would be adequate to serve buildout of the cumulative projects, and a cumulative impact would not occur.

Parks

The proposed project would increase population in the surrounding area, which would subsequently increase the use of existing neighborhood and regional parks. However, new development in the city is required to provide public parkland, improved to city standards and dedicated to the city. Parkland dedication requirements are specified in CVMC Section 17.10.040 of the Chula Vista Municipal Code. All cumulative projects, including the proposed project is required to comply with the parkland requirements in the CVMC. Compliance would ensure that cumulatively considerable impacts would not occur.

Therefore, in compliance with all applicable agency requirements and stipulations the proposed project would not contribute to a cumulatively considerable impact.

6.4.9 Utilities

Water

In accordance with Senate Bills 610 and 221, OWD has prepared a WSAV report for the proposed project. The WSAV report describes the current and long-range storage capacity and will confirm that OWD will be able to absorb the project's forecasted growth. The WSAV also

provides documentation of entitlements and contracts, and a financial analysis of OWD's maintenance and future water supplies. The WSAV report confirms that adequate long-term water supply will be available to the proposed project and other existing and reasonably foreseeable planned development in the OWD service area. Cumulative developments would be required to provide documentation of adequate long-term water supply as well. Therefore, cumulative impacts associated with adequate water supply would not result in a cumulatively considerable impact.

Wastewater

The sewer analysis for the proposed project determined that development of the proposed project including cumulative projects considered in the sewage flow analysis, would increase Poggi Canyon flows by 248,730 gpd, and Wolf Canyon flows by 128,315 gpd. The proposed project's wastewater generation volume combined with other planned projects would require sewage treatment capacity beyond the City's existing capacity rights and allocated additional treatment capacity. Additional capacity may require the expansion of existing or construction of new treatment facilities. All developments are required to prepare a PFFP that articulates needed facilities and funding mechanisms. The proposed project would prepare a PFFP and includes new and expanded sewer facilities to serve the proposed development. Implementation of existing policies and expanded sewer facilities would therefore avoid significant cumulative impacts associated with inadequate treatment capacity. The project will be timed to proceed with the City's acquisition of additional treatment capacity, and building permits will only be issued if the City Engineer determines that adequate sewer capacity exists. Mitigation measures are also provided to ensure that adequate wastewater facilities are provided concurrently with demand.

Solid Waste

Total permitted capacity at the Otay Landfill is approximately 62.4 million cubic yards and the landfill has a remaining capacity of 53%, or 33.1 million cubic yards. The 2005 General Plan Update/General Development Plan EIR (City of Chula Vista 2005) concluded that there is sufficient capacity within the Otay Landfill to accommodate project solid waste generated anticipated under the General Plan Update. The proposed project would generate approximately 1,206 tons of solid waste per year; therefore, the Otay Landfill would have sufficient capacity to accommodate the proposed project. The Otay Landfill is scheduled to close in 2028; however, under the current franchise agreement between the City of Chula Vista and Republic Services, solid waste would be disposed of at the Sycamore Landfill once the Otay Landfill meets its permitted capacity and terminates solid waste services. As such, solid waste service would continue following closure of the Otay Landfill and permitted capacity would be available to accommodate the proposed project and cumulative projects. Waste collection for proposed and

planned land uses would be provided by the City of Chula Vista under its contract agreement with Republic Services. The waste collection procedures and programs for all planned and proposed developments would be required to comply with the municipal requirements for recycling and collection of solid waste, including provision for litter control for public events. All planned and proposed projects would be required to be consistent with all applicable statutes and regulations, and would therefore not have cumulatively considerable impacts with respect to solid waste collection and management.

Energy

Implementation of the proposed project and cumulative development in the surrounding area would result in an increased energy demand of approximately 4,604,440 million kWh of electricity per year at full buildout. A significant cumulative impact to energy resources would result if demand exceeds the city's available supply and new or expanded facilities are required. As discussed in Section 5.9, Public Utilities, the proposed project and other cumulative projects are required to meet the mandatory energy standards of the Chula Vista Energy Code, current CCR Title 24, Part 6 California Energy Code, and Part 11 California Green Building Standards. Compliance with these policies and other energy reduction strategies would ensure that energy use as a result of development would not be wasteful, inefficient, or unnecessary.

Statewide emission reduction measures proposed in CARB's Scoping Plan (CARB 2008) include measures aimed at reducing GHG emissions associated with natural gas use (refer to Section 5.9 and Appendix I). Additionally, as described above, the Otay Ranch GDP requires all SPA Plans to prepare a Non-Renewable Energy Conservation Plan. This Plan identifies measures to reduce the use of non-renewable energy resources through, but not limited to, transportation, building design and use, lighting, recycling, and alternative energy sources which would further reduce energy use, including that derived from natural gas, within the SPA and under the proposed project. Moreover, the proposed project and other cumulative projects would be required to comply with Section 15.26.030 of the City's Municipal Code, which requires that new residential projects that fall within climate zone 7 be at least 15% more energy efficient than the 2008 Energy Code.

SDG&E has indicated that without an increased import capacity, including a new substation within the Otay Ranch area, future energy needs could not be assured. The new substation would be located in the EUC, south of the east end of Hunte Parkway. Construction of the substation is expected to begin in late 2014 and is expected to be placed in service in late 2015 (SDG&E 2013). The 120 megavolt amperes substation would provide infrastructure necessary to provide power to buildout of Otay Ranch, but would not generate electricity or guarantee that adequate supply would be available. Therefore, because no assurance can be made that long-term energy will be supplied to all cumulative project sites at full buildout and beyond,

impacts would be considered cumulatively considerable and the project's contribution to this cumulative impact would be significant and unavoidable.

6.4.10 Climate Change

Greenhouse gas emissions and their contribution to climate change are widely recognized as a global problem, and the State of California has acknowledged this phenomenon as a state concern. Assembly Bill (AB) 32, passed by state legislature in 2006, states in part that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." As discussed in Section 5.10, Climate Change, increased exposure of the project from the potential adverse effects of global warming on water supply would be considered less than significant. Additionally, the proposed project would be consistent with AB 32 and related Executive Orders. However, greenhouse gas emissions are a cumulative impact—resulting from past, current, and future projects—and the cumulative projects listed in Table 6-2 would likely contribute to this widespread cumulative impact. Given the global scope of climate change, it is not anticipated that a single project would have an individually discernible effect on global climate change. The business-as-usual calculation is essentially a cumulative analysis. It is more appropriate to conclude that if a project is anticipated to result in a substantial increase in greenhouse gas emissions, it would combine with global emissions to cumulatively contribute to global climate change. Since the proposed project is not anticipated to result in a significant increase in greenhouse gas emissions, it would not be a significant cumulative impact.

6.4.11 Housing and Population

As discussed in Section 5.11, Housing and Population, the project proposes 1,562 additional residential units, resulting in a new proposed total of 4,545 residential units within Village Two. The proposed project would exceed the planned population growth; however, with adoption of the proposed General Plan and Otay Ranch GDP amendments, implementation of the proposed project would not exceed anticipated population growth. The General Plan and Otay Ranch GDP amendments will ensure the consistency of the proposed project. Additionally, the proposed project would be in compliance with the City of Chula Vista Growth Management Ordinance (GMO), GMOC, and established "quality of life" threshold standards. The proposed project would be subject to the payment of DIFs and TDIFs to further reduce the impact of population growth. Population growth as a result of the proposed project would conflict with currently adopted growth forecasts as developed by SANDAG; however, growth forecasts associated with the updated 2050 Regional Growth Forecast are expected to accommodate population growth resulting from the proposed project. Therefore, impacts would be less than significant. The proposed project would not displace any existing households or people, or necessitate the construction of replacement housing elsewhere.

Village Eight West was approved for 300,000 square feet of employment/commercial space, the EUC has been approved for additional 3.0 million square feet of employment/commercial space, and Village Nine would include an additional 1.5 million square feet of commercial/office space. The density as a result of the proposed project would increase the number dwelling units, but this increase would accommodate both the population and employment growth anticipated. The projects listed in Table 6-2 would be expected to generate approximate (utilizing 3.24 population per dwelling unit) populations of 22,346 people from University Villages, 6,642 from Village Eight West, 12,960 from Village Nine, and 1,581 from PA-12. When combined with the list of cumulative projects in Table 6-2, which are primarily residential developments, there would be an increase in population and housing, but this in itself is not a significant housing and population impact.

CHAPTER 7
GROWTH INDUCEMENT

Section 15126.2(d) of the California Environmental Quality Act (CEQA) Guidelines mandates that the growth inducing nature of the proposed project be discussed. This CEQA Guideline states the growth inducing analysis is intended to address the potential for the project to "foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Further, the CEQA Appendix G Checklist (Population and Housing) also mandates that a CEQA document speak to the project's likelihood to induce substantial population growth in an area, either directly (for example, by proposing new homes or businesses) or indirectly (for example, through extension of roads or other infrastructure).

A project may be distinguished as either facilitating planned growth or inducing unplanned growth. Facilitating growth is relating to the establishment of direct employment, population or housing growth that would occur within a project site. Inducing growth is related to lowering or removing barriers to growth or by creating an amenity or facility that attracts new population/economic activity. For purposes of this Environmental Impact Report (EIR) analysis, a significant growth inducement impact would occur if the project, and all associated infrastructure improvements, directly or indirectly removes obstacles to growth such that the induced growth would significantly burden existing community services, the environment or cause a demand for General Plan Amendments. This section contains a discussion of the growth inducing factors related to the proposed project and as defined under CEQA Guidelines Section 15162.2(d). A project is defined as growth inducing when it directly or indirectly:

1. Fosters population growth;
2. Fosters economic growth;
3. Includes the construction of additional housing in the surrounding environment;
4. Removes obstacles to population growth;
5. Taxes existing community service facilities, requiring construction of new facilities that could cause significant environmental effects; and/or
6. Encourages or facilitates other activities that could significantly affect the environments, either individually or cumulatively.

It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

7.1 GROWTH INDUCEMENT DUE TO POPULATION GROWTH

The proposed project would directly contribute to population growth in the City of Chula Vista. The proposed project would develop and additional 1,562 residential dwelling units to the already planned and approved 2,983 residential units, resulting in a total of 4,545 residential units planned for Village Two. The proposed project would directly contribute to population growth in the area through the development of these dwelling units, which include a mix of single family and multi-family units. As discussed in Section 5.11, Housing and Population, the proposed project is expected to generate a buildout population of 5,061 people, contributing to a total Village Two expected buildout population of 14,726 people. The proposed project would exceed the planned population growth; however, with adoption of the proposed General Plan and Otay Ranch General Development Plan (GDP) amendments, implementation of the proposed project would not exceed anticipated population growth. The General Plan and Otay Ranch GDP amendments will ensure the consistency of the proposed project.

Additionally, San Diego Association of Governments (SANDAG) is currently in the process of updating the 2050 Regional Growth Forecast, which will merge the planning efforts behind the development of the Regional Comprehensive Plan and the Regional Transportation Plan, to be known as "San Diego Forward." San Diego Forward and associated growth forecasts are scheduled to be adopted in July 2015. Growth forecasts associated with San Diego Forward are expected to include population growth resulting from the proposed project.

Furthermore, the City of Chula Vista Growth Management Plan calls for directing growth in and around the city in an orderly fashion, to avoid "leapfrog" development, to protect and preserve the city's amenities, and to guide growth in a general west to east direction. The proposed project would promote synergistic uses between surrounding villages that would balance activities, services and facilities with employment, housing, transit, and commercial opportunities. Additionally, the proposed project contributes open space to the Chula Vista Multiple Species Conservation Program (MSCP) Subarea, the Otay River Valley Regional Park, and the Otay Ranch Preserve. The project does not facilitate growth in an area of the city that was not planned for residential growth or that was projected to remain vacant, as Village Two was previously planned and approved for a total of 2,983 single and multi-family residential units. Therefore, although the proposed project would result in substantial population growth, the General Plan and Otay Ranch GDP amendments – as well as the updated 2050 SANDAG Regional Growth Forecast – would ensure that the proposed project would not substantially contribute to growth inducement due to population growth. Nothing about the project is likely to induce further population growth beyond what is proposed and analyzed within this EIR.

7.2 GROWTH INDUCEMENT DUE TO ECONOMIC GROWTH

The proposed project would accommodate economic growth within the project area by providing services and employment opportunities for residents. The proposed project would generate direct and indirect population growth and employment opportunities, in which a potential for economic growth could evolve. An increase in population would also foster economic growth by increasing demand for regional and local goods and services. It is expected that future residents would demand a variety of goods and services, some of which may be provided by the future commercial uses established within the project area.

Development of the proposed project would provide a strong employment base for residents and support the economic development goals of the Chula Vista General Plan. However, the proposed project would not be considered growth inducing because a balance between employment opportunities and housing options would be provided by the proposed project. The proposed project is composed of mixed-use development patterns that include a variety of industrial, commercial, and office space land uses as well as a variety of housing options for all income levels. Additionally, the project site is located in close proximity to the EUC, the RTP, and University site, which would support a balance of jobs and housing in the area. Therefore, implementation of the proposed project would not result in significant growth inducement associated with economic growth.

7.3 GROWTH INDUCEMENT DUE TO ADDITIONAL HOUSING

The proposed project includes the development of 1,562 additional residential dwelling units within Village Two. Through previous Otay Ranch GDP and SPA planning efforts, Village Two was allocated a total of 2,983 residential units, resulting in a planned population increase approximately 9,575 persons. The proposed project includes an additional 1,562 residential units above the planned 2,983 residential units, and this increase would result in population growth that exceeds the growth planned for the project area by approximately 5,061 persons (approximately 14,726 in total for Village Two). While the proposed project would exceed the maximum residential buildout for the village set forth by the Otay Ranch GDP and current SPA Plan, the proposed project would be consistent with the housing policies contained in the General Plan and Otay Ranch GDP. By adding new residents, the amount of potential consumers would increase, resulting in the need for additional commercial services. The project is a mixed-use plan, the intention of which is to provide opportunities for both homes and employment. Additionally, with the adoption of the proposed General Plan and Otay Ranch GDP amendments, as well as the updated 2050 SANDAG Regional Growth Forecast, the increase in housing and population growth would be accommodated for and would not result in growth inducement.

7.4 GROWTH INDUCEMENT DUE TO REMOVAL OF OBSTACLES

The large-scale nature of the project would contribute substantial construction of and funding for roadway and utility infrastructure improvements needed to accommodate growth planned in the eastern portion of Chula Vista. Improvements to transportation, utilities, and public service infrastructure as part of the proposed project would help alleviate existing infrastructure deficiencies and accommodate planned growth, but would not result in a significant amount of unplanned growth to the area. These improvements would not open up new areas to development because on-site infrastructure would be sized to serve Village Two and specific surrounding development proposed in the General Plan and GDP. Infrastructure would not provide surplus capacity that would allow for additional, unplanned development. Public Facilities Financing Plans are included with each SPA Plan to ensure public utilities would be provided concurrently with development. The proposed project would not provide surplus infrastructure capacity that would induce growth in surrounding areas, but would rather help accommodate the continued population influx in eastern Chula Vista over the next several decades. Therefore, the proposed project would not result in growth inducement due to the removal of obstacles.

7.5 TAXATION OF EXISTING PUBLIC FACILITIES AND SERVICES

As described in Section 5.11, Housing and Population, the proposed project would be in compliance with the City of Chula Vista Growth Management Ordinance (GMO), Growth Management Oversight Commission (GMOC), and established "quality of life" threshold standards. The GMO requires public facilities finance plans (PFFPs) for every SPA plan. A PFFP is required in conjunction with the preparation of a SPA plan to ensure that development of the proposed project is consistent with the overall goals and policies of the General Plan and would not degrade public services. The PFFP provides a complete description of all public facilities included within the boundaries of the SPA Plan Area, including phasing and financing of infrastructure. The PFFP ensure development of the SPA Plans would not adversely impact the city's quality of life standards by requiring public facilities and services be provided concurrent with demand. An updated PFFP would be required to account for additional population within Village Two and the proposed second elementary school. Therefore, compliance with the regulations listed above would ensure that development of the proposed project would not tax existing public facilities and services.

7.6 OTHER ACTIVITIES OF POTENTIAL EFFECT

The proposed project would increase the need for the Main Street Extension. Main Street would be extended as a Six-Lane Prime Arterial in a northeasterly direction from its current terminus at Heritage Road, with a bridge crossing over Wolf Canyon, intersecting with La Media Road, and ultimately connecting with Hunte Parkway at EastLake Parkway. In addition to the Main Street

Extension, the proposed project would include extending Heritage Road from Olympic Parkway in the north to Main Street in the south, travelling through Village Two and Village Three. Both the Main Street and Heritage Road extensions are part of the City's adopted Circulation Plan, is included within the City's Transportation Development Impact Fee program, and would be designed and constructed by the City as part of its Transportation Development Impact Fee and Capital Improvements Plan programs. As such, the improvements would be constructed as a City project. Prior to construction of the Main Street extension, the City will conduct project-specific environmental review consistent with CEQA (14 CCR 15000 et seq.).

While CEQA requires that this EIR discuss the potential effects associated with mitigation measures that would cause one or more significant effects in addition to those that would be caused by the project (14 CCR 15126.4(a)(1)(D)), the mitigation in this case is the payment of the Transportation Development Impact Fee, which in and of itself would not result in environmental impacts. The extension of Heritage Road was previously analyzed as part of previously planning documents as well as this EIR. Since both Main Street and Heritage Road extensions are included in the City's adopted Circulation Plan as well as the City's Transportation Development Impact Fee program, the proposed project would not result in other activities that would significantly affect the environment.

The land uses proposed in the SPA Plan are consistent with the General Plan and GDP, as amended, and would not encourage or facilitate any off-site unplanned uses. The proposed trail connections through the Preserve that will connect to the Otay Valley Regional Park and Greenbelt Trail would provide access to open space areas that may include sensitive biological resources. However, the Otay Valley Regional Park is planned to include public access trails, and passive uses such as trails are considered appropriate uses in the MSCP Subarea Plan. The trail would include fencing and signage to direct users to stay within the designated trail. Therefore, the project would not result in any other activities that would significantly affect the environment.

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CHAPTER 8
SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

8.1 PURPOSE

California Environmental Quality Act (CEQA) Guidelines Section 15126.2(c) requires than an Environmental Impact Report (EIR) identify any significant irreversible environmental changes associated with the proposed project. Such changes include, for example, the intensification of land use or irreversible damage from environmental accidents associated with the project. The potential for such environmental changes is discussed below.

This section tiers from the 2006 EIR. The Sectional Planning Area (SPA) Plan EIR addressed the potential environmental effects of the development of Villages Two, Three, and portion of Four. The analysis and discussion of public services contained in the SPA Plan EIR is incorporated by reference and available for public inspection upon request to the City.

8.2 IRREVERSIBLE ENVIRONMENTAL CHANGES

Approval of the proposed project would result in similar irreversible environmental changes as the development of Village Two under the 2006 EIR. Development of the SPA Plan and implementing tentative maps would commit these sites to development area of urban uses including housing, industrial, commercial, community services, and public facilities. The proposed project would require commitment of resources associated with construction and long-term operations, including but not limited to, lumber and other related forest products; sand, gravel, and concrete; asphalt; petrochemical construction materials; steel, copper, lead, and other metals; water; fuels; and energy. Uses of these resources would represent an incremental effect on the regional consumption of these commodities. Implementation of the proposed project would involve consumption of electricity, which is, in part, derived from nonrenewable sources such as fossil fuels and natural gas. Due to the increase in density and population relative to Village Two under the 2006 EIR, the proposed project would utilize a greater amount of the resources listed above during both construction and operation.

The most notable nonrenewable resources identified by the Otay Ranch General Development Plan (GDP) and Otay Ranch GDP Program EIR are related to biological resources. The proposed project would not affect the biological preserve located in Wolf Canyon and no new irreversible changes to biological resources other than those identified in the 2006 EIR would result.

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CHAPTER 9
EFFECTS FOUND NOT TO BE SIGNIFICANT

Section 15128 of the California Environmental Quality Act (CEQA) Guidelines requires that an EIR briefly describe potential environmental effects that were determined not to be significant and therefore were not discussed in detail in the Environmental Impact Report (EIR). The environmental issues discussed in the following sections are not considered significant, and the reasons for the conclusion of non-significance are discussed below.

This section tiers from the 2006 EIR. The 2006 EIR addressed the Village Two, Three, and portion of Four development's potential environmental effects. The analysis and discussion of aesthetics, agriculture and forestry resources, cultural resources, hazards and hazardous materials, and mineral resources issues contained in the 2006 EIR is incorporated by reference and available for public inspection upon request to the City.

9.1 AESTHETICS

The 2006 EIR analyzed aesthetic impacts resulting from the development of Village Two. While the proposed project would result in increased residential density in and around the Village Core as well as additional school, park and community-purpose facilities, the overall development would be similar to that of the currently approved Sectional Planning Area (SPA) Plan for Village Two. The 2006 EIR conducted photosimulations at two points within Village Two: (1) a southwesterly view of Village Two from a location along the intersection of Heritage Road and Santa Victoria Road, and (2) a northwesterly view of Village Two from the proposed Community park site in Village Four.

The view of the proposed project buildout from the first viewpoint would change when compared to the current SPA Plan. The previous R-4 neighborhood would be split into three sections of single family in the west (R-4a) and multi-family in the east (R-4B(a) and R-4B(b)). Additionally, the proposed project would include a park (P-6) at the northwest corner of Heritage Road and Santa Victoria Road. The view of the industrial land uses IND-1B and IND-1A would not change. While the residential land uses would change from single family to multi-family and would add additional bulk and scale to the previously planned R-4 neighborhood, the structures would follow the same Design Guidelines developed for the SPA Plan to ensure compatibility with surrounding land uses and provide visual variety. Further, from the first viewpoint, the views to the R-4B(a) and R-4B(b) would be buffered by park P-6. Additionally, all residential units would be offset from roadways by open space and landscaping.

The view of the proposed project buildout from the second viewpoint would not change significantly. The proposed project would redistribute densities among neighborhoods R-18B, R-20, and R-21; however land uses would remain single family residential. A new use, CPF-8

(community garden) is proposed along the open space buffer adjacent to Wolf Canyon and would be visible from the second viewpoint. Because visible land uses would primarily consist of single-family residential uses and the bulk and scale of proposed development would be relatively similar, the anticipated views from this viewpoint would not significantly change from that of the current SPA Plan.

The proposed project would follow the lighting performance standards of the SPA Plan in order to address Village Two's contribution to nighttime illumination. Similar to the SPA Plan, development of the proposed project would require outdoor areas to be lighted at night (e.g., public use areas and commercial use parking lots, commercial buildings, street lights, walkways, entry nodes, park lighting for courts in neighborhood parks, and courts and fields on the community park site, and park security lighting). The Design Guidelines of the SPA Plan incorporate measures applicable to exterior lighting to ensure that all lighting would conform to City standards or an approved theme lighting program acceptable to the City. These measures include use of low pressure sodium lights and shielding to direct the light emissions downward.

Lighting from Otay Ranch High School, specifically the football stadium, presents significant and unavoidable lighting impacts to all surrounding land uses, including the adjacent residences within Village Two. The proposed neighborhood R-8C would place residences closer to the football stadium and major sources of nighttime lighting. These recreational lights would also be visible from land uses not adjacent to the high school. The 2006 EIR found that adverse impacts from off-site lighting uses at the high school would be significant and unavoidable. No new significant impacts not previously identified would occur as a result of the proposed project.

Similar to development approved under the current SPA plan, development of the proposed project would irreversibly alter undeveloped land to developed land and would significantly change the aesthetic landscape. The project proposes residential, school, parkland, and mixed use development in the same or similar area of Village Two as the current SPA Plan. Despite the proposed increase in residential density in and around the Village Core, the proposed project would not result in any new significant or potentially significant impacts not previously discussed in the 2006 EIR. In addition, the proposed project would be required to implement mitigation measures found in the 2006 EIR as they relate to aesthetics, including preparation of various landscaping and lighting plans. Therefore, no new significant impacts to aesthetics would occur.

9.2 AGRICULTURE AND FORESTRY RESOURCES

As analyzed in the 2006 EIR, the currently approved SPA Plan for Village Two would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use, as shown on the maps prepared pursuant to the Farmland Mapping and

Monitoring Program (FMMP) of the California Resources Agency. However, the SPA Plan EIR determined that locally important grazing land would be significantly impacted, and implemented the creation of an Agricultural Plan as a mitigation measure. The Agricultural Plan outlined requirements for ensuring compatibility of the different phases of development of the SPA Plan and surrounding ongoing agriculture. The proposed project would not alter the boundaries of Village Two, thereby not encroaching upon any land not previously approved and analyzed under the current SPA Plan and the 2006 EIR. In addition, the proposed project would be required to implement mitigation measures found in the 2006 EIR as they relate to agricultural resources. Therefore, no new significant impacts to agricultural resources not previously identified would occur as a result of the proposed project.

9.3 CULTURAL RESOURCES

According to the 2006 EIR, of the prehistoric and historic sites identified in the entire SPA Plan area, nine lie within Village Two. None of the prehistoric sites (eight total) within Village Two were determined to be important cultural resources. The only historic resource identified within Village Two is a Farm Complex with the majority of the buildings demolished before 1995; the remaining foundations were considered not to possess any cultural significance. However, due to the potential of significant cultural resources existing in the vicinity of the Farm Complex, the 2006 EIR provided a mitigation measure requiring archaeological monitoring while grading the historic site. The proposed project would not alter the boundaries of Village Two, thereby not encroaching upon any land not previously approved and analyzed under the current SPA Plan and the 2006 EIR. In addition, the proposed project would be required to implement mitigation measures found in the 2006 EIR as they relate to cultural resources. With consideration to the 2006 EIR, the proposed project would not result in any new significant or potentially significant impacts that were not previously analyzed and mitigated in the 2006 EIR.

9.4 HAZARDS AND RISK OF UPSET

As part of the preparation of the 2006 EIR, several Phase I and Phase II Environmental Site Assessments (ESAs) were performed within the Village Two area to evaluate the presences of chemical concentrations in the soils. Previous uses of the Village Two site include agricultural use as well as a former underground storage tank. The 2006 EIR found that concentrations of agricultural pesticides within soils and residual chemicals from the former storage tank were below acceptable threshold levels. The proposed project would not alter the boundaries of Village Two, thereby not encroaching upon any land not previously approved and analyzed under the current SPA Plan and the 2006 EIR. In addition, the proposed project would be required to implement mitigation measures found in the 2006 EIR as they relate to hazardous materials. As discussed in Section 5.4, Noise, Village Two is located outside the influence zone of Brown Field, the nearest airport. Upon buildout of the proposed project, the area would be

primarily urbanized, reducing the risk of wildfires. During construction and operation of the proposed project, compliance with applicable hazardous materials codes and regulations would ensure proper use, transport, and disposal of hazardous materials. While a new school site (S-2) is proposed under the project, it would be surrounded by residential and parkland uses and lie outside the Otay Landfill buffer zone. Therefore, the proposed project would not result in any new significant or potentially significant impacts that were not previously analyzed and mitigated in the 2006 EIR.

9.5 MINERAL RESOURCES

The 2006 EIR determined that important mineral resources do not occur within the Village Two area and would not result in any significant impacts. Because the proposed project does not alter the SPA Plan area for Village Two, no new significant or potentially significant impact to mineral resources would occur that were not previously discussed in the 2006 EIR. Therefore, the proposed project would not have significant impact on mineral resources.

CHAPTER 10
PROJECT ALTERNATIVES

10.1 INTRODUCTION

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, Environmental Impact Reports (EIRs) are required to "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" (14 CCR 15126.6(a)). This EIR "must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (14 CCR 15126.6(a)). The alternatives discussion is required even if these alternatives "would impede to some degree the attainment of the project objectives, or would be more costly" (14 CCR 15126.6(b)).

The inclusion of an alternative in an EIR does not constitute definitive evidence that the alternative is in fact "feasible." The final decision regarding the feasibility of alternatives lies with the decision maker for a given project who must make the necessary findings addressing the potential feasibility of reducing the severity of significant environmental effects (California Public Resources Code, Section 21081; see also 14 CCR 15091).

This section tiers from the 2006 EIR (City of Chula Vista 2006). The 2006 EIR addressed the Village Two, Three, and portion of Four development's potential environmental effects. The analysis and discussion of alternatives contained in the 2006 EIR is incorporated by reference and available for public inspection upon request to the City.

10.2 PROJECT OBJECTIVES

In developing the alternatives to be addressed in this chapter, consideration was given to the ability to meet the basic objectives of the proposed project and eliminate or substantially reduce the identified significant environmental impacts. The proposed project would provide additional benefits to Village Two, the Otay Ranch, and the City of Chula Vista as a whole. In particular, the proposed project would promote development of a complete community that furthers Village goals/objectives by enhancing living, working, learning, shopping, and transit options while increasing residents' opportunities for social interaction and recreation. Specific objectives are:

- **Increase density in and around the Core.** Density would be increased in and around the Village Two to further the vision of the Otay Ranch General Development Plan and the 2006 Village of Montecito SPA.
- **Increase housing choices and align with the housing market.** The proposed project would bring Village Two planning in-line with today's marketplace and homebuyer

preference. This would provide Chula Vista residents with additional housing choices/opportunities. Aligning Village planning and today's housing market also facilitates construction and home sales.

- **Enhance the viability of transit.** Increasing the number of dwelling units (and population) in Village Two would provide additional ridership for the regional Bus Rapid Transit and local bus systems. This would increase ridership/viability of the transit system and reduce automobile dependence, emissions, and traffic.
- **Enhance the viability of commercial and industrial uses.** Increasing the number of dwelling units (and population) in Village Two would strengthen the market for the commercial uses in the village. This would enhance the mixed use character of the Village and support the walkable, main street character of the village core. Supporting the commercial and industrial uses also would help to promote a balance between jobs and housing.
- **Mixing uses to encourage walking and biking.** With viable commercial uses, Village Two residents would be able to meet daily needs such as groceries, dry cleaning and entertainment within the village. By providing these uses, as well as schools and parks, close to resident's homes, the opportunity for walking and biking would be provided rather than automobile use. This would promote a healthy lifestyle, encourage local businesses, and reduce automobile dependence, emissions, and traffic.
- **Walking to schools.** Providing two elementary schools within Village Two puts residents and students closer to those schools which would allow implementation of programs such as 'walking school buses' where students walk to school in groups as opposed to getting rides or busing. This would promote a healthy lifestyle for students while reducing automobile dependence, emissions, and traffic.
- **Water pipeline relocation.** As part of the proposed project, the water pipeline owned by the City of San Diego which currently bisects Village Two would be relocated to La Media Road. This would allow cohesive development and reduce some of the development constraints that exist today.
- **Additional housing within the same development footprint.** Increasing density in select locations would create additional housing within the same village footprint. This would allow for new home creation in today's marketplace, increase affordability for homebuyers, increase viability of commercial uses, and decrease per capita costs of infrastructure and municipal services.

10.3 ALTERNATIVES PREVIOUSLY CONSIDERED

The 2006 EIR as amended discusses a range of alternatives including No Development (No Project Alternative), Reduced Development Alternative A, Reduced Development Alternative B, and Reduced Development Alternative C. It was then determined that the Reduced Development Alternative A was environmentally superior alternative. The details of the analysis can be found in the 2006 EIR as amended.

10.4 ALTERNATIVES CONSIDERED BUT REJECTED

As stated above, Section 15126(a) of the CEQA Guidelines, an EIR shall address a reasonable range of alternatives that would "avoid or substantially lessen any of the significant effects of the project." This SEIR found that the proposed project would have less than significant impacts, with and without mitigation, in all areas except air quality and traffic, circulation, and access (see Sections 5.2 and 5.3 as well as Table 10-2). In order to avoid or substantially lessen these identified impacts to air quality and traffic caused by the proposed project, an alternative would need to substantially reduce the proposed increase in population. As discussed in Section 5.3, the identified significant and unavoidable air quality impact is due to operational VOCs and NO_x emissions from the future residential population of proposed project and absence of feasible mitigation measures. These emissions would be reduced to a level below significance if the project substantially reduces the proposed increase in dwelling units; this alternative is discussed below. However, no feasible alternative exists that would avoid or reduce the significant and unavoidable traffic impacts. As discussed in Section 5.2, upon buildout (Year 2030), the proposed project would result in significant and unavoidable cumulative impacts to one intersection, one roadway segments, and seven freeway segments. These cumulative impacts would occur with or without the development of the proposed project, therefore any reduction in proposed density would not avoid or lessen any of these traffic impacts. Further, as stated in Section 5.2, no plan or program exists for the project applicant to pay its fair-share towards the cost of improving these cumulatively impacted segments. Because no form of a reduced density alternative would avoid or reduce these traffic impacts, only the reduced density scenario that would avoid or reduce air quality impacts is considered below.

Another potential alternative to avoid or reduce significant air quality or traffic impacts would require substantial changes in land uses. As discussed above, the significant and unavoidable impacts would be primarily caused by the proposed increase in population to the area resulting in operational VOC and NO_x emissions and residential traffic impacts. Such impacts could potentially be avoided with a substantial alteration of land use by decreasing residential land use and increasing commercial, public facility, industrial, or parkland. However, such a change would not be aligned with the goals and policies of the governing planning documents such as the General Plan, Otay Ranch GDP, or SPA Plan. These planning documents describe Village

Two as a pedestrian-oriented residential village with a variety of housing options, as well as a small neighborhood-serving commercial area and other essential facilities such as schools and parks. Alternatives that conflict with the goals of the General Plan, Otay Ranch GDP, and SPA Plan for Village Two, while they may potentially avoid or reduce the significant and unavoidable impacts caused by the proposed project, were rejected from consideration.

10.5 ALTERNATIVES UNDER CONSIDERATION

This section discusses two alternatives to the proposed project, including the No Project (No Build) Alternative. The No Project (No Build) Alternative is a required element of an EIR pursuant to Section 15126.6(e) of the CEQA Guidelines that examines the environmental effects that would occur if the project were not to proceed. However, due to the nature of this EIR, a No Project Alternative would mean that development of Village Two would proceed as approved under the current SPA Plan. Additionally, the 2006 EIR addressed the No Project Alternative. The other alternatives are discussed as part of the "reasonable range of alternatives" selected by the City. The alternatives addressed in this section are listed below, followed by a more detailed discussion of each:

1. Reduced Density Alternative
2. No Project Alternative

10.5.1 Reduced Density Alternative

The Reduced Density Alternative would follow the same land use pattern existing SPA Plan, not the land use pattern of the proposed project. In addition to utilizing the existing approved land use pattern, the Reduced Density Alternative would propose an overall smaller increase in residential units. In summary, the Reduced Density Alternative would combine the current approved SPA Plan with SPA Lite, while still adding density to neighborhoods R-10, R-11, R-12, and C-1. The Reduced Density Alternative land use map is show in Figure 10-1.

Table 10-1 compares the existing SPA Plan to the proposed project and the Reduced Density Alternative. As shown in Table 10-1, the Reduced Density Alternative would alter 12 neighborhoods of the existing SPA Plan and increase total residential units by 484. When only considering these 12 neighborhoods, the proposed project would introduce 1,274 additional residential units when compared to the existing SPA Plan. Note that the proposed project would also alter neighborhoods not listed in Table 10-1, as the total additional units proposed under the project would be 1,562 units. Therefore, the total unit difference between the proposed project and the Reduced Density Alternative is 1,078 units.

Table 10-1
Comparison of Existing SPA Plan, Proposed Project, and Reduced Density Alternative

	Existing SPA Plan		Proposed Project			Reduced Density Alternative		
Neighborhood	*Units*	*Zoning*	*Units*	*Zoning*	*Δ Units from Existing*	*Units*	*Zoning*	*Δ Units from Existing*
R-4b	68	SF2	275	RM2	207	98	SF3	30
R-10a	34	RM2	44	RM2	10	44	RM2	10
R-10b	51	RM2	61	RM2	10	59	RM2	8
R-11	146	RM1	206	RM2	60	206	RM2	60
R-12	325	RM1/RM2	600	RM2	275	500	RM1/RM2	175
R-20	75	SF3	80	SF3	5	83	SF3	8
R-23	48	SF3	93	SF4	45	71	SF3	23
R-24	28	SF3	59	RM2	31	41	SF3	13
R-25a	24	SF4	330	RM2	306	34	SF4	10
R-25b	24	SF4	--	--	(24)	34	SF4	10
R-27	61	RM1	175	RM2	114	80	RM1	19
C-1	0	Comm	235	MU	235	118	MU	118
Total	**884**		**2158**		**1274**	**1368**		**484**

Source: Baldwin and Sons.

Landforms and Aesthetics

As discussed in Section 9.1, Aesthetics, the proposed project would change existing broad open space to a high-density urban environment. The change in land uses would have a significant impact on the visual character of the site. However, these impacts would be similar to those determined in the SPA Plan EIR, and no new significant or potentially significant impacts would occur.

Compared to the project, the Reduced Density Alternative would result in similar less than significant direct impacts related to scenic vistas, scenic roadways, and steep slopes. This alternative would accommodate structures with heights similar to the proposed project, and would result in similar grading. Because this alternative would utilize the same land use pattern as the current SPA Plan and would result in 1,078 less additional residential units, less intensive visual changes when compared to the proposed project. This alternative would adhere to the same Design Guidelines for lighting, landscaping, and building design as the proposed project. However, the Reduced Density Alternative would still result in significant direct impacts through irreversible alteration of undeveloped land into urban uses. Therefore, the Reduced Density Alternative would have the same overall impacts to landforms and aesthetics as the proposed project.

Land Use

As described in Section 5.1 Land Use, the area surrounding the proposed project consists of recently developed or planned development, and therefore, development of the proposed project would not physically divide an established community. The proposed design and layout of land uses for the project area would be compatible with one another, except for the portions of the project that would be developed above the existing City of San Diego waterline. However, relocation of the waterline would ensure no land use conflicts. As part of the proposed project, amendments to the GDP and SPA Plan would ensure no conflicts with any adopted plan, policy or regulation. Impacts as a result of the proposed project would be less than significant.

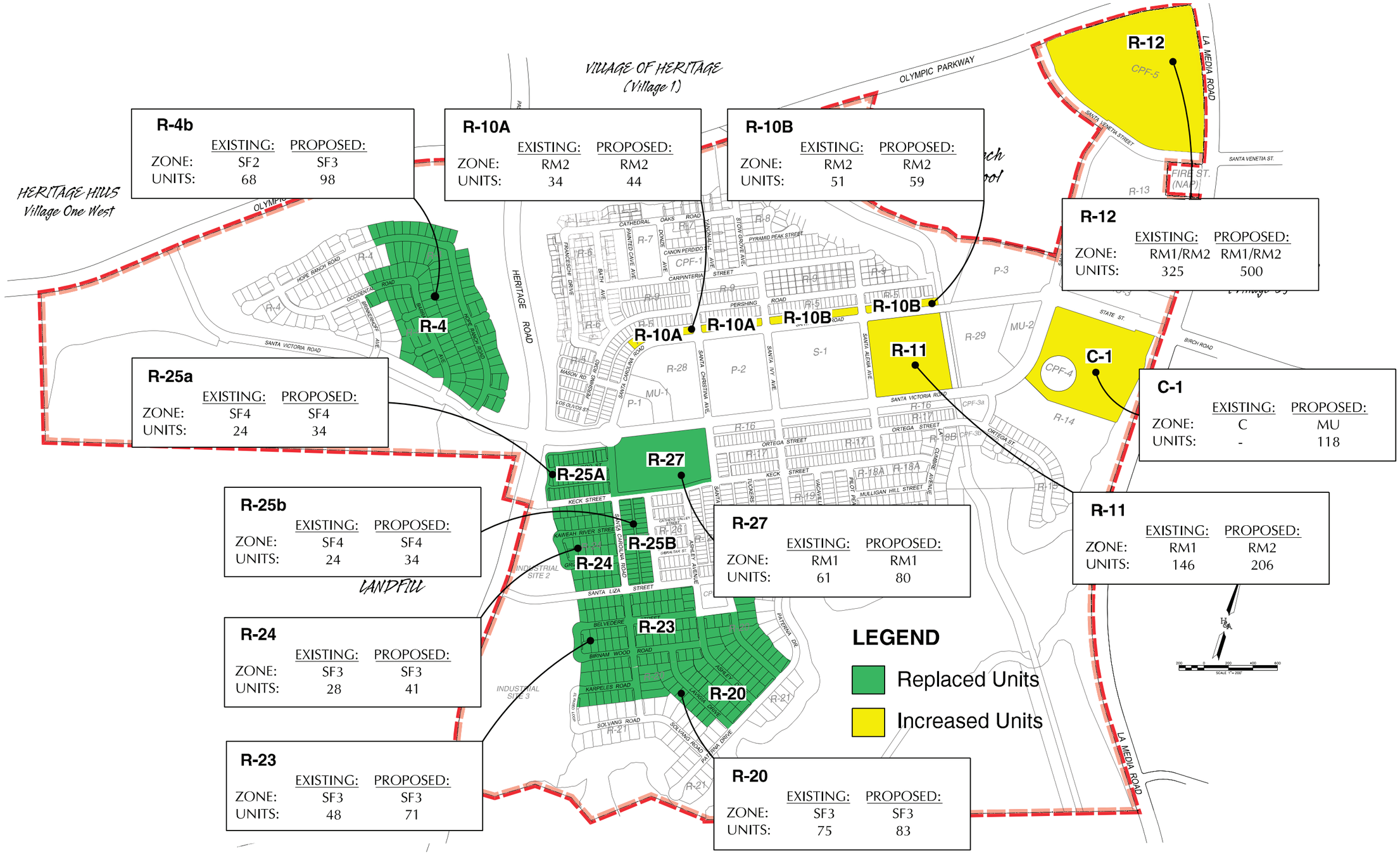
The Reduced Density Alternative would have the same surrounding land uses and would not physically divide an established community or displace housing or people. Similar to the project, the Reduced Density Alternative would not conflict with the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP, as it would not proposed the additional neighborhood R-8C. Because this alternative would result in an increase in in approximately 1,554 people, exceeding the maximum residential buildout anticipated in the Otay Ranch GDP, requiring amendments to the City of Chula Vista General Plan, GDP, SPA Plan, and the Otay Ranch Core Master Precise Plan (CMPP). Therefore, the Reduced Density Alternative would not conflict with any General Plan and GDP housing and population policies and overall impacts would be the same as the proposed project.

Transportation and Circulation

As discussed in Section 5.2 Transportation and Circulation, impacts to transportation and circulation as a result of the proposed project would be significant and unavoidable. Mitigation measures to reduce identified significant impacts would be provided; however, impacts would not be reduced to a level below significance.

The Reduced Density Alternative would result in fewer trips, which would decrease impacts on traffic and circulation due to the reduction from a proposed increase of 1,562 additional residential units to 484 additional residential units. Construction of new roadways or expansion of existing roadways would still occur as a result of the Reduced Density Alternative, and overall traffic impacts would be reduced but not avoided.

This alternative would result in a similar maximum number of daily construction trips compared to the proposed project because similar construction activities would be required; however, the length of construction, and the associated temporary increase in trips, would be reduced because less construction would occur. Similar to the proposed project, the mitigation measures that would be implemented for this alternative's operational impacts would also reduce temporary construction impacts to a less than significant level.



DUDEK

SOURCE: HUNSAKER & ASSOCIATES

FIGURE 10-1
Village Two Reduced Density Alternative

Z:\Projects\j678201\MAPDOC\MAPS\Noise

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Impacts related to General Plan and GDP emergency access, road safety, and transportation policies would be less than significant under this alternative, similar to the proposed project, because the circulation system proposed by the GDP would still be implemented by the Reduced Density Alternative. The Reduced Density Alternative would also result in similar impacts to air traffic patterns compared to the project because the same maximum building heights would be allowed under this alternative.

Overall, the Reduced Density Alternative would be less impactful than the proposed project.

Air Quality

As discussed in Section 5.3 Air Quality, criteria pollutant emissions for VOC and NO_x, are anticipated to be above the City of Chula Vista's thresholds as a result of operation of the proposed project. The proposed project would include mitigation measures and project design features to reduce significant impacts, however, impacts would not be reduced to a level below significance.

Both the proposed project and the Reduced Density Alternative would have emissions associated with daily vehicle trips; however, the Reduced Density Alternative would generate fewer daily vehicle trips than the proposed project due to the reduction in population. The Reduced Density Alternative would result in reduced impacts related to air quality violations compared to the project because fewer construction and operational emissions would result from this alternative.

Impacts related to odors would be reduced under this alternative because fewer sensitive receptors would be located in the vicinity of Otay Landfill. The Reduced Density Alternative would exceed the RAQS growth assumption, similar to the proposed project. While total operational emissions would be less than the proposed project, this alternative would still result in new significant and unavoidable criteria pollutant emissions, and would thus still be inconsistent with the RAQS and SIP. Direct and cumulative impacts would remain significant and unavoidable, similar to the project. Less than significant impacts related to consistency with General Plan and GDP air quality policies would be similar to the project under the Reduced Density Alternative. Overall, the Reduced Density Alternative would have reduced air quality impacts compared to the proposed project.

Noise

As discussed in Section 5.4, Noise, the proposed project would result in less than significant impacts with mitigation measures incorporated. On- and off-site traffic noise, commercial and industrial noise generation, parkland and school noise, and temporary construction noise were all considered potentially significant impacts. However, with incorporation of provided mitigation, all potential impacts would be reduced to less than significant.

The Reduced Density Alternative would have the same construction-related noise impacts since similar development would occur. Outdoor usable areas would still have the potential to be exposed to excessive noise. The mitigation measures required for the proposed project would also be required for the Reduced Density Alternative for potentially significant impacts.

The Reduced Density Alternative would result in less than significant impacts related to groundborne vibration and potentially significant temporary increases in ambient noise, like the proposed project, because similar construction activities would occur. Less than significant impacts related to aircraft noise and consistency with General Plan and GDP noise policies would also be similar to the proposed project.

The proximity of future development to major roadways would remain unchanged, and therefore, mitigation measures for noise impacts to future development areas would also be expected to remain unchanged. The Reduced Density Alternative would reduce impacts related to the permanent increase in traffic noise levels as compared to the proposed project because fewer trips would be generated; however, the Reduced Density Alternative trips, in combination with trips from cumulative growth, would still result in significant increases in traffic noise levels.

The Reduced Density Alternative would also place residences adjacent to parks and schools, resulting in potential significant impacts during use. The mitigation measures provided for the proposed project would be required for this alternative to reduce impacts to less than significant.

Therefore, overall impacts associated with noise would be the same as the proposed project.

Cultural Resources

As discussed in Section 9.3, Cultural Resources, the proposed project would have less than significant impacts to historical resources with mitigation incorporated.

Under the Reduced Density Alternative, the potentially significant historic Farm Complex would be altered in a similar way to the proposed project. Mitigation measures provided for the proposed project would also be required by this alternative. The change in density would not otherwise result in any less intensive impacts to cultural resources as the proposed project. Therefore, impacts to cultural resources would be similar and would not be substantially reduced as a result of the Reduced Density Alternative.

Biological Resources

The Reduced Density Alternative would have the same development footprint as Village Two under the 2006 EIR. Therefore, neighborhood R-8C would not be developed and all

impacts associated would not occur. The Reduced Density Alternative would result in fewer impacts to biological resources when compared to the proposed project.

Agricultural Resources

As discussed in Section 9.2, Agricultural Resources, the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. However, the proposed project would convert land designated as Farmland of Local Importance to residential and village land uses. Since there are no feasible mitigation measures to reduce the proposed project's impact on Farmland of Local Importance to below a level of significance, impacts are significant and unavoidable.

The Reduced Density Alternative would still result in the loss of land of designated Farmland of Local Importance. Therefore, impacts would be the same as the proposed project.

Water Quality and Hydrology

As discussed in Section 5.6, Hydrology and Water Quality, the proposed project would be in compliance with all applicable federal, state, and local rules, and regulations regarding water quality and hydrology. In addition, implementation of a SWPPP and BMPs described in Section 5.6 would further reduce potential impacts associated with water quality and hydrology to a less than significant level.

The Reduced Density Alternative would involve similar development as the proposed project and would have similar impacts related to water quality and hydrology, such as increased peak runoff flow, which would be reduced through implementation of a SWPPP and BMPs. Similar to the project, this alternative would not interfere with groundwater supplies and recharge, place housing or structures within a 100-year flood hazard boundary, conflict with General Plan and GDP policies related to hydrology and water quality, expose people or structures to significant risk of loss from flooding, or result in an increased risk of exposure to inundation by seiche, tsunami, or mudflow. Therefore, the Reduced Density Alternative would have the same impacts as the proposed project.

Geology and Soils

As discussed in Section 5.7, Geology and Soils, the proposed project would be exposed to strong seismic ground-shaking, erosion and loss of top soil, and expansive soils. During construction, SWPPs and BMPs would be implemented to ensure less than significant impacts occur as related to erosion. Potential impacts would be mitigated and reduced to a less than significant level through the standard Uniform Building Code/California Building Code requirements.

Development under the Reduced Density Alternative would have similar impacts and mitigation measures related to geology and soils. Similar to the project, the Reduced Density Alternative would be consistent with General Plan and GDP geotechnical policies and would not require any septic tanks or alternative wastewater disposal systems. However, the Reduced Density Alternative would reduce the amount of dwelling units and people exposed to geologic hazards compared to the proposed project. Therefore, the Reduced Density Alternative would result in reduced impacts compared to the proposed project.

Public Services and Utilities

As described in Section 5.8, Public Services, and Section 5.9, Utilities, the proposed project would result in an increased demand for public utilities and services including police, fire, water, recycled water, wastewater, solid waste disposal, and energy. Impacts would be mitigated through the construction of new or expanded facilities and entitlements, and by the required payment a Public Facilities DIF. Overall, impacts related to the Reduced Density Alternative would be slightly reduced compared to the proposed project.

Fire and Emergency Medical Services, Police Services, Schools, and Libraries.

The Reduced Density Alternative would generate less population growth, and thereby result in reduced demand for fire and emergency medical services, schools, and libraries because fewer residential units would be constructed. Therefore, while the proposed project's demand for these services would be off-set by mitigation, the Reduced Density Alternative would result in a slightly reduced impact to public services and utilities. Notably, new development under this alternative would still have the potential to affect the ability for services to meet the City's services standards if the services are not provided commensurate with need.

Similar to the project, the Reduced Density Alternative would be consistent with all General Plan and GDP policies related to fire and emergency medical, police, school, and library services with implementation of the mitigation measures identified for the project.

Parks, Recreation, Open Space, and Trails

Based on the CVMC method for calculating parkland requirements, the Reduced Density Alternative would require 33.4 acres of parkland to serve the entire Village Two development. This alternative would provide approximately 55.8 acres of neighborhood and community parkland. Similar to the project, the Reduced Density Alternative would have potentially significant impacts related to the City's parks and recreations standard if parkland would not be provided concurrently with demand. However, because dedicated parklands are a part of both the proposed project and this alternative, impacts of construction and operation of these facilities would remain largely the same, with mitigation provided throughout this

EIR. The mitigation measures identified for the proposed project would be required to ensure adequate park facilities would be provided.

With the Reduced Density Alternative, a smaller increase in services demand would occur, however, an increased demand for public services and utilities would still exist. Similar to the proposed project, impacts would be reduced through implementation of mitigation measures.

Climate Change

As discussed in Section 5.10, Climate Change, the proposed project would not result in a significant impact in relation to Assembly Bill (AB) 32. Due to implementation of project design features, impacts related to GHG emissions would be less than significant. Because this alternative would result in less GHG emissions due to reduction in land use intensity, construction and operation vehicle trips, and other sources. Additionally, the Reduced Project Alternative would employ similar project design features as the proposed project to ensure reduction from a business as usual scenario. Overall, the Reduced Density Alternative would have reduced impacts related to climate change as compared to the proposed project.

Hazards and Risk of Upset

As discussed in Section 9.4, Hazards and Risk of Upset, the proposed project would have less than significant impacts with mitigation. Previous agricultural uses and the presence of a former underground storage tank (UST) resulted in potentially hazardous chemicals found in the soils of Village Two. However, previous Phase I and Phase II Environmental Site Assessments (ESAs) determined that chemical concentrations of the soils on site were less than significant. Potential hazardous materials impacts also exist during construction and operation due to routine transport, handling, and disposal of construction related materials and consumer products. Adherence to Federal, state, and local regulations related to hazardous materials would ensure less than significant impacts.

Under the Reduced Density Alternative the same potential hazards would exist. Impacts related to transport, use, and disposal of hazardous materials would be similar to the project under this alternative because similar land uses are proposed; however, impacts would be slightly reduced because less development would occur. Impacts related to emergency response and evacuation plans would be similar under this alternative because proposed circulation network would be fully implemented. Less than significant impacts related to wildland fire would be similar to the project because similar development would occur along the edge of the project area, and a Fire Protection Plan would be implemented. Similar to the project, the Reduced Density Alternative would not conflict with any General Plan and GDP policies related to hazards and hazardous materials. However, the Reduced Density

Alternative would expose less people to potentially hazardous conditions. Therefore impacts would be slightly reduced compared to the proposed project.

Housing and Population

As discussed in Section 5.11, Housing and Population, the proposed project would include development of 1,562 additional residential units, resulting in a total of 4,545 residential units in Village Two, generating a buildout population approximately 14,726 people. The proposed project would exceed the planned population growth; however, with adoption of the proposed General Plan, Otay Ranch GDP, SPA, and Otay Ranch CMMP amendments, implementation of the project would not exceed anticipated population growth. The General Plan and Otay Ranch GDP amendments will ensure the consistency of the proposed project. Additionally, the proposed project would be in compliance with the City of Chula Vista GMO, GMOC, and established "quality of life" threshold standards. The proposed project would be subject to the payment of DIFs and TDIFs to further reduce the impact of population growth. Therefore, impacts would be less than significant.

Table 10-1 outlines specific housing unit changes under the Reduced Density Alternative. Development under the Reduced Density Alternative would reduce the amount of housing available by 1,078 units relative to the proposed project. The Reduced Density Alternative would still exceed the maximum residential buildout anticipated in the Otay Ranch GDP, requiring approval of amendments similar to that of the proposed project; it would not displace any housing or people, or conflict with any General Plan and GDP housing and population policies. However, this alternative would introduce smaller population growth than the proposed project. Therefore, this alternative would result in less than significant impacts..

Mineral Resources

As discussed in Section 9.5, Mineral Resources, construction and operation of the proposed project would not 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.

Under the Reduced Density Alternative, similar development as the proposed project would occur. Compared to the proposed project, impacts related to mineral resources would be the same under this alternative. Impacts to mineral resources would be the same as the proposed project.

10.4.1.1 Relationship to Project Objectives

The Reduced Density Alternative would result in the development of fewer additional units, however would still increase density within Village Two. Also, this alternative would still include mixed use, pedestrian-oriented development, just at a lower density. The proposed project

objectives center on increasing the number of dwelling units and population within the same Village Two development footprint, and in doing so promoting the viability of transit, industrial, and commercial uses. Therefore, the Reduced Density Alternative would achieve most of the proposed project objectives, but to a lesser degree than the proposed project. This alternative would not meet the project objective of relocating the City of San Diego water pipeline.

10.5.2 No Project Alternative

CEQA Guidelines Section 15126.6 requires the inclusion of a No Project Alternative to be analyzed. Per CEQA, a No Project Alternative would entail analysis of no build and no development beyond the existing conditions of the project site. However, as stated above, due to the nature of this proposed project, the No Project Alternative would result in the continued development of the SPA Plan as it is currently amended without the proposed project. The change in land use pattern, additional school, parkland, and CPF, as well as the additional development of 1,562 residential units would not occur. Additionally, a "No Development" alternative was analyzed in the previous 2006 EIR.

Under the No Project Alternative, development of Village Two would proceed as under the current approved SPA Plan as amended. All significant, irreversible, and immitigable impacts identified in the environmental documents prepared for the current SPA Plan would occur. However, no further significant or potentially significant impacts would occur beyond what was analyzed, discussed, and mitigated for in the 2006 EIR.

Land Use

Land use would no longer be altered from the approved maps and SPA Plan for Village Two. The required amendments to the General Plan, GDP, SPA Plan, and CMP for the proposed project would no longer be needed.

Landforms and Aesthetics

The change in bulk and scale of Village Two as proposed by the project would no longer occur. The No Project Alternative would have similar impacts to nighttime views and illumination as the proposed project. Significant and irreversible changes to vistas and landform would still occur as analyzed in the previous EIR.

Transportation and Circulation

Development of the No Project Alternative would result in different transportation impacts, however some would remain significant and unavoidable. However, this alternative would have fewer construction and operational vehicle trips when compared to the proposed project. No new

impacts would occur beyond what was previously analyzed and the No Project Alternative would result in less intensive impacts to the surround roadway system.

Air Quality

Similar to Transportation and Circulation above, the No Project Alternative would not include the additional residential units that would result in an increase in vehicle trips to and from Village Two. Additionally, fewer residential units would result in fewer household emissions. Overall, total criteria pollutant emissions would be less than the proposed project.

Noise

The No Project Alternative would result in less traffic generated noise due to less vehicle trips to and from Village Two. Noise sensitive receptors would remain exposed to the similar on- and off-site noise impacts from Otay Ranch High School, industrial and commercial land uses, and traffic. However, this alternative would result in fewer impacts compared to the proposed project.

Cultural Resources

The No Project Alternative would result in the same potentially significant impacts to cultural resources as the proposed project. Mitigation provided would reduce impacts to less than significant.

Biological Resources

The No Project Alternative would result in fewer impacts to biological resources because it does not include the neighborhood R-8C that was not originally part of the land that would be graded and altered from its existing state.

Agricultural Resources

The No Project Alternative would also irreversibly convert locally important grazing land to urban uses. This alternative would have similar impacts to the proposed project.

Water Quality and Hydrology

The No Project Alternative would also increase peak runoff due to changes in surface permeability resulting from development of hardscape. This alternative would employ similar SWPPs, BMPs, and Low Impact Development as the proposed project to control for erosion and stormwater pollution. Overall, impacts would be similar to the proposed project.

Geology and Soils

The No Project Alternative would be subject to the same potential geologic impacts as the proposed project and would adhere to the same building codes and regulations to reduce these impacts. However, the No Project Alternative would expose fewer dwelling units and people to potential geologic impacts. Therefore, this alternative would result in fewer when compared to the proposed project.

Public Services and Utilities

The No Project Alternative would result in smaller population growth in Village Two. While demand for services and utilities would also increase under this alternative, the No Project Alternative would result in less demand as compared to the proposed project. Impacts would be reduced when compared to the proposed project.

Climate Change

Due to reduced land use intensity, population growth, and GHG emissions, impacts to climate change resulting from the No Project Alternative would be slightly reduced compared to the proposed project.

Hazards and Risk of Upset

The same or similar potential hazards impacts would occur under the No Project Alternative compared to the proposed project. Mitigation for the No Project Alternative would also reduce any potential impacts to less than significant. However, the No Project Alternative would expose less people to potentially hazardous conditions. Therefore impacts would be slightly reduced compared to the proposed project.

Housing and Population

The No Project Alternative would not include the 1,562 residential units under the proposed project. As a result, only 2,983 residential units would be developed resulting in an approximate population of 9,575 people within Village Two instead of approximate 14,590 under the proposed project. The population growth resulting from this alternative would be consistent with all relevant plans and policies. No amendments would be required. This alternative would result in fewer impacts than the proposed project.

Mineral Resources

Similarly to the proposed project, the No Project Alternative would not result in a loss of potentially significant mineral resources. Impacts would be similar to the proposed project.

10.4.2.1 Relationship to Project Objectives

The No Project Alternative would achieve some of the objectives of the proposed project as they related to development of pedestrian oriented development, as well as relocation of the waterline. However, this alternative would not achieve the primary goal of the proposed project, which is to increase residential density in order to increase housing availability and promote the viability of transit, commercial, and industrial uses through providing a greater service population.

10.6 ALTERNATIVES IMPACT SUMMARY

Table 10-2
Alternatives Impact Summary

Environmental Issue	Proposed Project Impacts Prior to Mitigation	Proposed Project Impacts with Mitigation	Reduced Density Alternative	No Build Alternative
Land Use	LTS	LTS	—	▼
Landform and Aesthetics	LTS	LTS	—	—
Transportation and Circulation	S	S	▼	▼
Air Quality	S	S	▼	▼
Noise	S	LTS	—	▼
Cultural Resources	LTS	LTS	—	—
Biological Resources	S	LTS	▼	▼
Agricultural Resources	LTS	LTS	—	—
Water Quality and Hydrology	LTS	LTS	—	—
Geology and Soils	S	LTS	▼	▼
Public Services and Utilities	S	LTS	▼	▼
Climate Change	LTS	LTS	▼	▼
Hazards and Risk of Upset	LTS	LTS	▼	▼
Housing and Population	LTS	LTS	▼	▼
Mineral Resources	LTS	LTS	—	—
Meet Project Objectives	Yes	Yes	Yes	No

▲ Alternative is likely to result in greater impacts to issue when compared to proposed project.
— Alternative is likely to result in similar impacts to issue when compared to proposed project.
▼ Alternative is likely to result in reduced impacts to issue when compared to proposed project.

LTS = Less than significant impact.
S = Significant impact.

10.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The No Project Alternative would result in the least environmental impacts and would be the environmentally superior alternative. However, Section 15126.6(e)(2) of the CEQA Guidelines states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. In this case, the environmentally superior alternative is the Reduced Density Alternative. The Reduced Density Alternative most of the proposed project objectives, but to a lesser degree than the proposed project while reducing impacts resulting from greater population growth of the proposed project.

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CHAPTER 11
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CHAPTER 12
EIR PREPARATION

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