Neighborhood Park

A 7.6-acre neighborhood park (P-1) is located in the Village Ten core along the Village Pathway. This location, within walking distance of the most densely populated portion of the village and near the elementary school, provides opportunities for shared facilities and programs. Amenities may include multipurpose open lawn areas, ball fields, lighted sports courts, picnic shelters, tot lots, parking, and restroom and maintenance buildings.

Pedestrian and Bicycle Facilities

Village Ten has been designed to accommodate the trails program described in the Otay Ranch Overall Design Plan, the City's Greenbelt Master Plan, and the OVRP Concept Plan. Regional Trails located adjacent to Circulation Element roadways provide circulation routes for pedestrians and bicycles separate from roadways. Village Pathways are intervillage, multipurpose paths that link all of the Otay Valley Parcel villages and provide access to the regional transit-way stations. Multiuse trail linkages will be established to improve connectivity to the Chula Vista Greenbelt and Greenbelt trails within Village Ten along Wiley Road.

The Modified Residential Promenade Street includes a wider tree-shaded sidewalk on one side of the street. The Promenade Trail links the residential neighborhoods to the village activity core and pedestrian network. The Village Ten Trails Plan and Bicycle Circulation Plan are shown on Figures 4-17 and 4-18.

Community-Purpose Facilities

In addition to the 2.6-acre CPF site in the village core, there are three private recreation facilities, ranging in size from 0.5 to 0.8 acre and totaling 1.7 acres, in Village Ten. Amenities may include picnic and play areas, tot lots, sports courts, and passive recreation uses.

Private Open Space

Village Ten includes two P-OS areas totaling 0.7 acre. These areas serve residents within single-family neighborhoods and may include open lawn areas, ball fields and sports courts, tot lots/play areas, picnic areas, and swimming pools.

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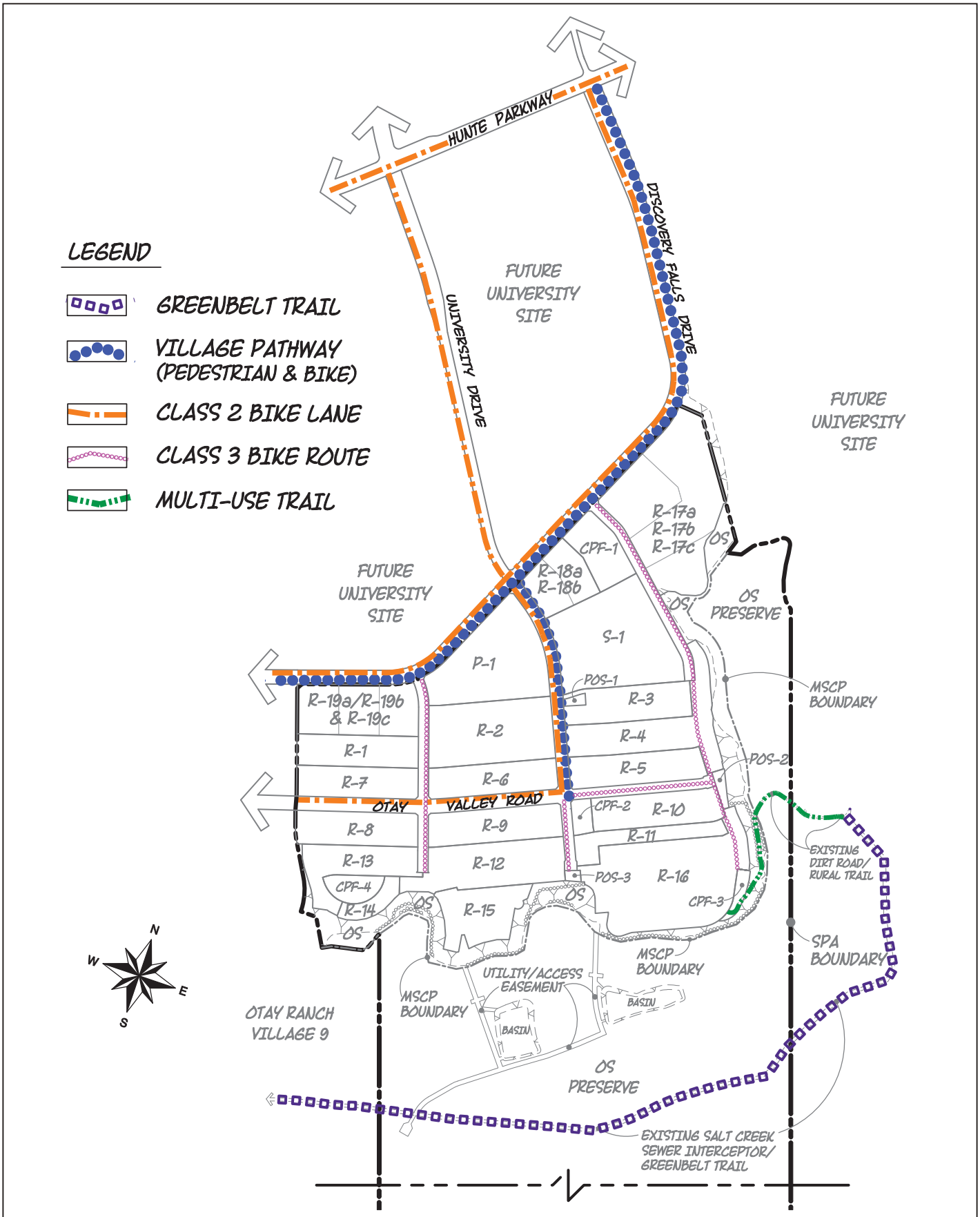

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-17

Bicycle Circulation Plan for Village Ten

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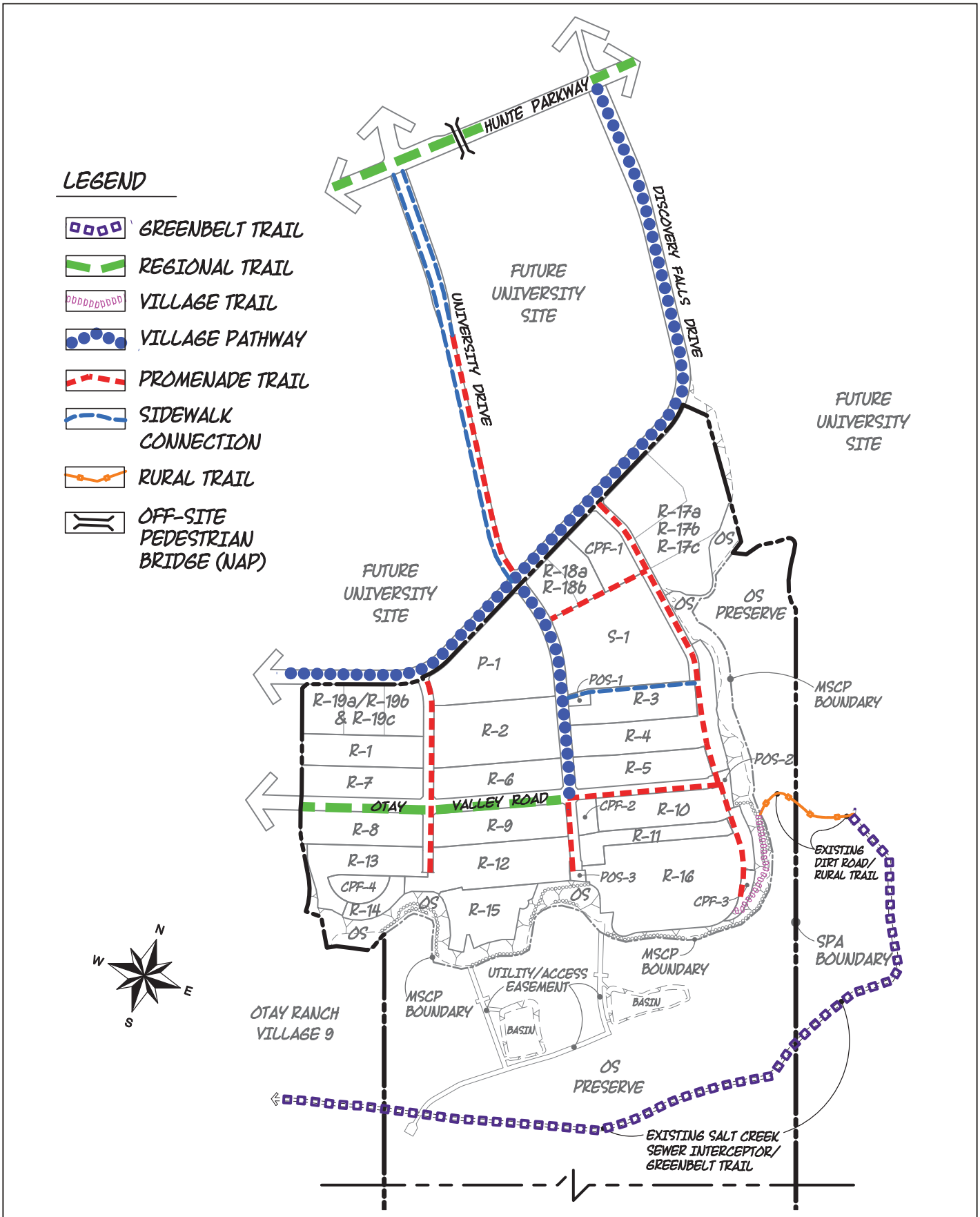

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-18

Pedestrian Circulation Plan for Village Ten

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4.2.3 Off-Site Improvements[2]

The proposed project includes several off-site improvements required to provide adequate circulation and public utilities to the project site. The off-site improvements, which are described in this section and shown on Figure 4-19, total approximately 160 acres.

1. **Main Street Widening and Detention Basin.** The proposed project would implement the City of Chula Vista's Circulation Element by connecting Heritage Road south to Main Street. Off-Site Area 1 would be required to accommodate grading associated with the widening of Main Street. Off-Site Area 1 is also proposed for a detention basin to treat water quality from Village Three North. The basin would be approximately 7 acres and is designed to treat stormwater runoff before it discharges into the Otay River Valley.
2. **Heritage Road.** Off-Site Area 2 would be required to accommodate grading associated with Heritage Road. Specifically, Heritage Road has been designed to create a more cohesive land plan for Village Three North and to align with the planned replacement of the off-site Heritage Road Bridge crossing the Otay River Valley.
3. **Main Street Widening.** Off-Site Area 3 would be required to accommodate grading associated with the widening of Main Street. Specifically, Main Street would be widened to its full improved width as a Six-Lane Prime Arterial.
4. **Main Street Extension.** The proposed project would implement the City of Chula Vista Circulation Element by constructing Main Street along the Village Three North frontage. Off-Site Area 4 would be required to accommodate grading and the improvements to Main Street east of Heritage Road. Off-Site Area 4a is an edge condition where grading would be required to match the existing off-site grades for neighborhood R-20.
5. **Heritage Road.** Off-Site Area 5 would be required to accommodate grading associated with the alignment of Heritage Road. Specifically, Heritage Road has been designed to create a more cohesive land plan for Village Three North and to align with the planned replacement of the Heritage Road Bridge crossing the Otay River Valley.
6. **Heritage Road.** Off-Site Area 6 would be required to accommodate grading associated with the alignment of Heritage Road. Specifically, Heritage Road has been designed to create a more cohesive land plan for Village Three North and to align with the planned replacement of the Heritage Road Bridge crossing the Otay River Valley.

[2] Off-Site Improvement Area 11 and Off-Site Improvement Area 20 are located on-site (i.e., – within the SPA Plan boundaries) but under different ownership and are therefore not reflected in this list. While not included on this list, these improvement areas were included in the analysis contained in this EIR. Off-Site Improvement Area 13 was an assumed improvement that is not required for this project and thus not reflected in this list.

7. **Main Street/La Media/Otay Valley Road Connection.** Off-Site Areas 7 and 7a would be required for the grading and construction of Main Street and La Media Road to provide secondary access to the Village Eight East site. In addition, utility lines would be constructed within the Main Street and La Media Road right-of-way. La Media Road/ Otay Valley Road includes the realignment of a portion of a 54-inch City of San Diego water line. Improvements in Main Street include dry utilities and storm drains.

8. **Off-Site Grading.** Off-Site Area 8 is an edge condition where grading would be required to match proposed grading plans with existing grades. In the event that Village Eight West develops prior to/concurrent with development of Village Eight East, off-site grading may not be required.

9. **Village Eight East Community Park (P-2) Access/Otay Valley Road.** Off-Site Area 9 would provide for vehicular access to the Community Park (P-2) south of Village Eight East. This access route through Village Eight West is necessary to provide a direct connection from a Circulation Element roadway (Otay Valley Road) to the Community Park (P-2) without requiring travel through a residential neighborhood. The access road would also provide sewer and storm drain facilities serving Village Eight West. A portion of Area 9 would provide for secondary access to Village Eight East via Otay Valley Road.

10. **Off-Site Grading.** Off-Site Area 10 is an edge condition where grading would be required to match proposed grading plans with existing grades. In the event that Village Eight West develops prior to/concurrent with development of Village Eight East, such off-site grading may not be required.

12. **Off-Site Grading/SR-125 Right-of-Way.** The project proposes grading within the SR-125 right-of-way owned by Caltrans. This off-site grading is anticipated to occur in portions of the SR-125 right-of-way that were condemned by Caltrans and are no longer necessary due to the final configuration of the toll way (Off-Site Area 12). Portions of the SR-125 right-of-way are being acquired for the expanded residential neighborhood associated with proposed project, including the graded slopes (Off-Site Area 12a).

14. **Off-Site Grading.** Off-Site Areas 14, 14a, and 14b would be needed to balance grading between Village Nine and Village Ten. Area 14b would provide a grading haul route between Areas 14 and 14a. A portion of Area 14 would be required to match proposed grades with existing Village Nine grades.

15. **EastLake Parkway.** Off-Site Areas 15 and 15a would be required for the grading and construction of University Drive south of Hunte Parkway to provide primary access to the Village Ten site.

16. **Off-Site Grading/Discovery Falls.** Off-Site Area 16 would be necessary to connect Discovery Falls Drive to Village Nine Street "B." Discovery Falls provides secondary

access to Village Ten. It is anticipated that Village Ten would develop prior to development of the University site such that off-site grading would be required.

17. **Off-Site Borrow Site.** Off-Site Area 17 is a "borrow" grading site required for the grading and construction of Discovery Falls Drive and University Drive within the future University/Regional Technology Park. All grading within the future University/Regional Technology Park properties would balance on site.
18. **Discovery Falls Extension.** Off-Site Areas 18 and 18a would be required for the grading and construction of Discovery Falls south of Hunte Parkway to provide secondary access to the Village Ten site.
19. **Off-Site Grading.** Off-Site Area 19 is an edge condition where grading would be required to match proposed grading plans with existing grades. It is anticipated that Village Ten would develop prior to development of the University site such that off-site grading would be required.
21. **Off-Site Trail.** Off-Site Area 21 is a trail that connects Village Ten to the Salt Creek Sewer Maintenance Road and the OVRP Greenbelt Trail/Chula Vista Greenbelt Trail. This trail connection is on land owned by the City of Chula Vista and partly over land owned by the City of San Diego containing a water line. No grading is proposed. Proposed improvements include fencing, signage, trail grooming, and erosion control.

In addition to the above off-site improvements, two existing City of San Diego waterlines currently traverse through Villages Eight East and Ten in an east-west direction. As part of the proposed project, these waterlines will be re-located from their existing alignment and placed within the right of way of the future Otay Valley Road.

4.2.4 Public Services and Utilities

This section provides a summary of the public services and utilities relevant to the proposed project. The analysis of the proposed project's impacts on these public services and utilities is provided in Sections 5.12 and 5.13 of this EIR.

Water Service

The proposed project would receive water service by expanding the existing Otay Water District (OWD) water system. A subarea master plan will be prepared prior to approval of the first final map for the project. The subarea master plan identifies existing on- and off-site pipeline locations, size, capacity, and the City of Chula Vista's fire flow requirements (e.g., flow rate, duration, hydrant spacing) to ensure that adequate infrastructure is developed to serve the project's water needs. The project would be phased and would ensure that the OWD criteria are met during all phases of development. The project would also be served by expanding the

existing recycled water system. Recycled water may be used to irrigate open space, parks, and common areas of school, multi-family residential, industrial, office, and commercial sites. In conformance with the Otay Ranch GDP and the Chula Vista Growth Management Program, Water Conservation Plans are included with each SPA Plan in the proposed project.

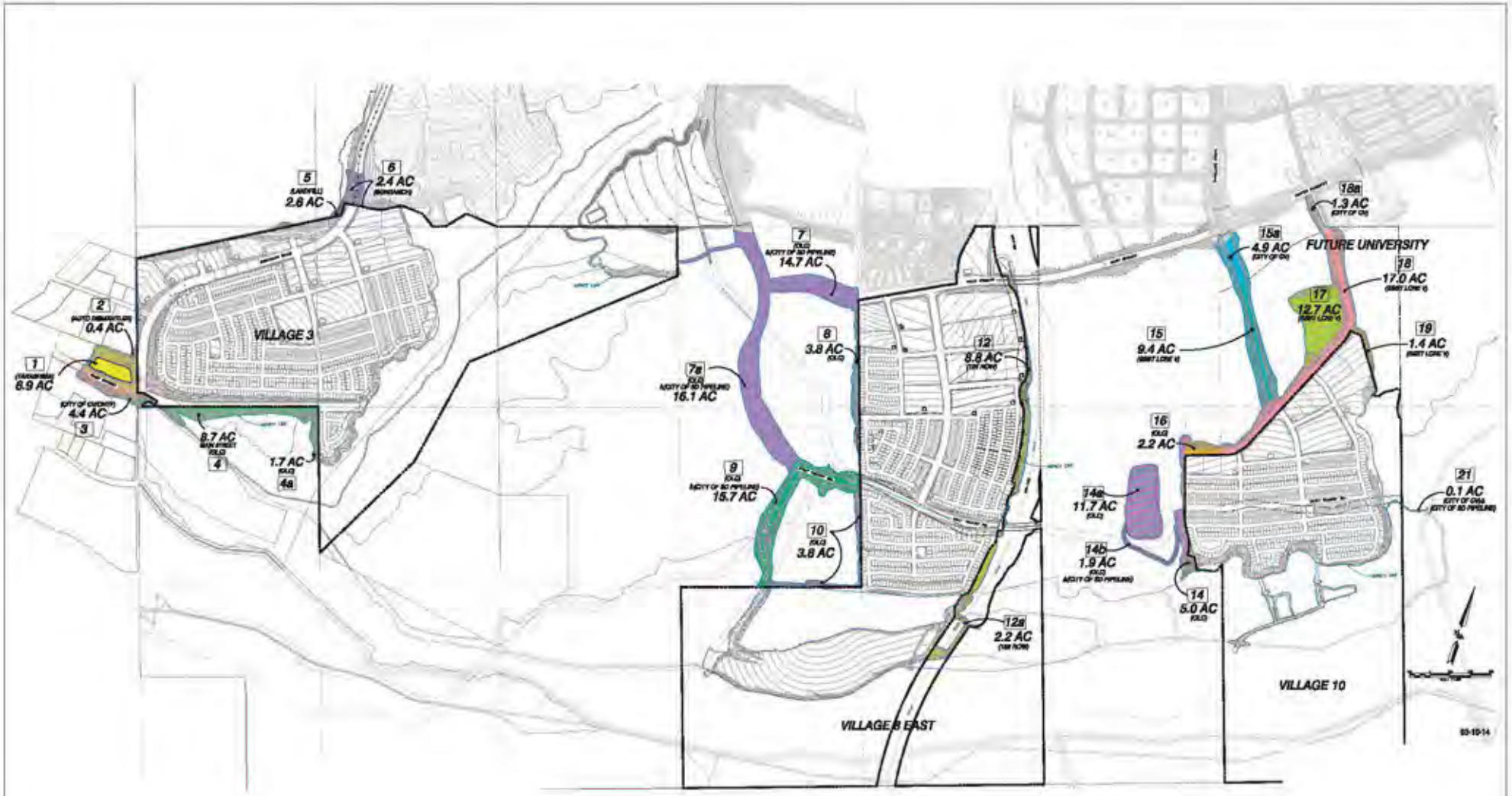
An Overview of Water Service for the Otay Ranch University Villages, prepared by Dexter Wilson (2014; Appendix N) calculates the expected potable and recycled water demand created by the proposed project and identifies the necessary infrastructure improvements required to serve the project site. The projected average water demand is 555,723 gallons per day (gpd) for Village Three North and a Portion of Village Four, 1,048,824 gpd for Village Eight East, and 516,929 gpd for Village Ten, for a total of 2,121,476 gpd or 2,334 acre-feet/year for the proposed project. Figures 4-20 through 4-22 depict the proposed potable water systems for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten.

The proposed project includes Water Conservation Plans for each SPA Plan Area, which propose implementation strategies to reduce potable water demand. These strategies include use of recycled water and water efficiency treatments. Figures 4-23 through 4-25 depict the proposed recycled water systems for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. As further detailed in Section 5.13 of the EIR, these water conservation features would combine to reduce the amount of potable water required for the proposed project by approximately 29.1%.

OWD prepared and approved a Water Supply Assessment and Verification Report in compliance with Senate Bills 610 and 221 demonstrating that adequate water supplies are anticipated to serve buildout of the proposed project in normal, single dry, and multiple dry years in conjunction with other existing and planned development within the OWD service area. The Overview of Water Service for the Otay Ranch University Villages and the OWD Water Supply Assessment and Verification Report are included in Appendix N of this EIR. Water supply and service is assessed in more detail in Section 5.13 of the EIR.

Sewer Service

Sewer service for the proposed project would be provided by constructing gravity sewer lines to connect with the existing Salt Creek Interceptor. A single point of connection from each of the four village development areas is proposed. The Salt Creek Interceptor was constructed and sized to serve regional development in the area, including the proposed project area. The proposed project would be required to pay a development impact fee to connect to the Salt Creek Interceptor.



SOURCE: Hexagon & Associates, March 2014

FIGURE 4-19
Off-Site Improvement Areas

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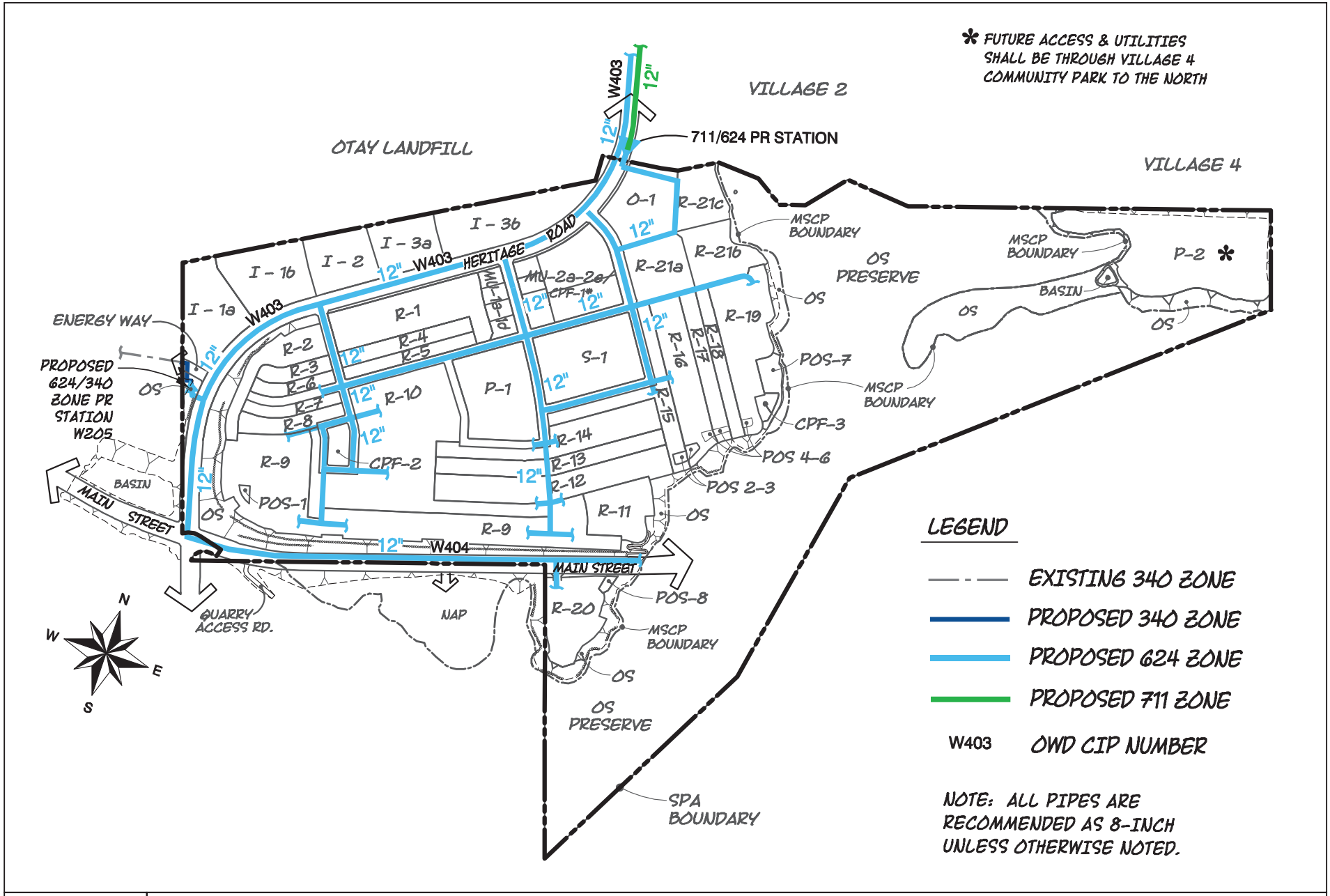

SOURCE: DEXTER WILSON ENGINEERING, INC. 2014

FIGURE 4-20

Potable Water Plan for Village Three North and Portion of Village Four

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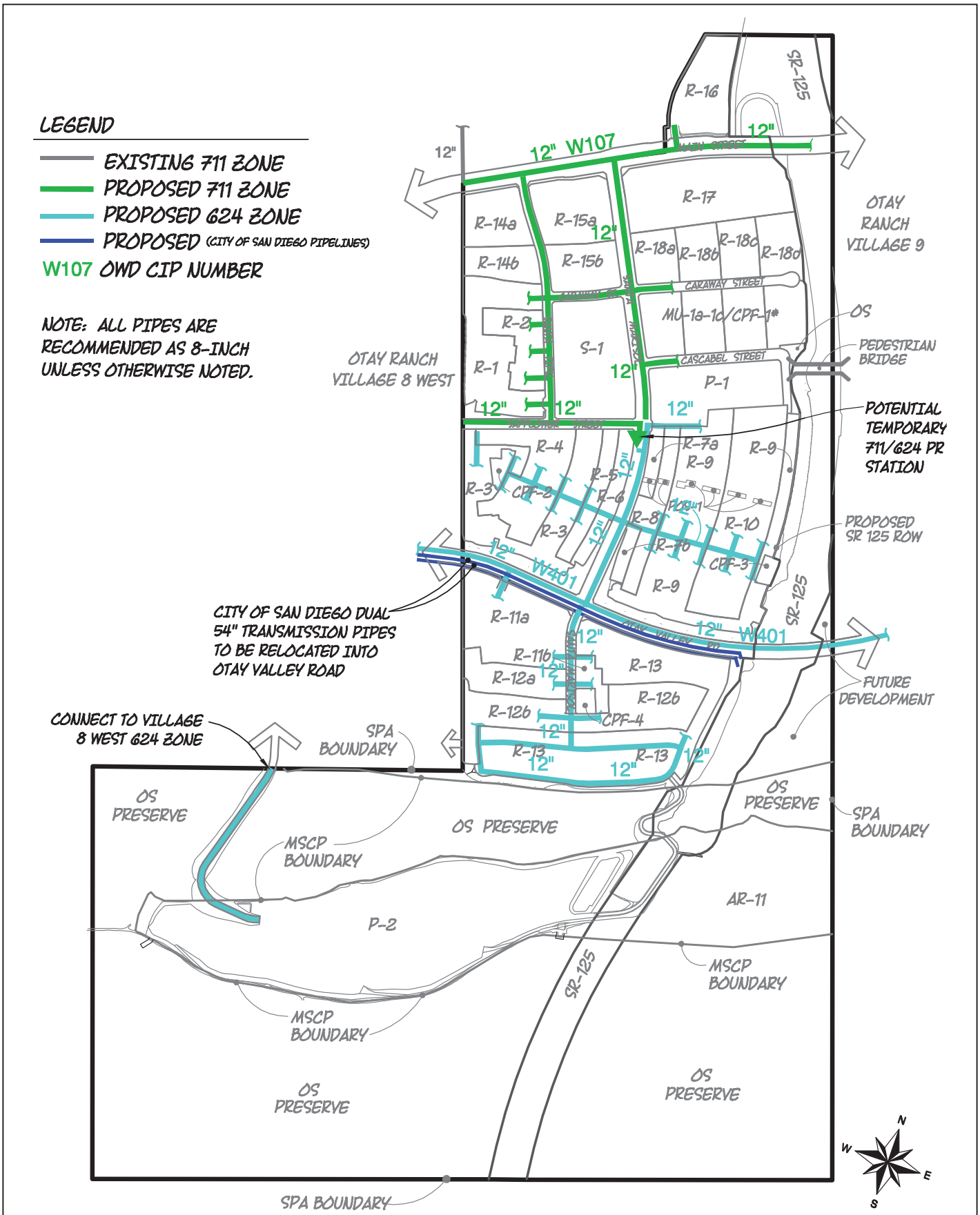

SOURCE: DEXTER WILSON ENGINEERING, INC. 2014

FIGURE 4-21

Potable Water Plan for Village Eight East

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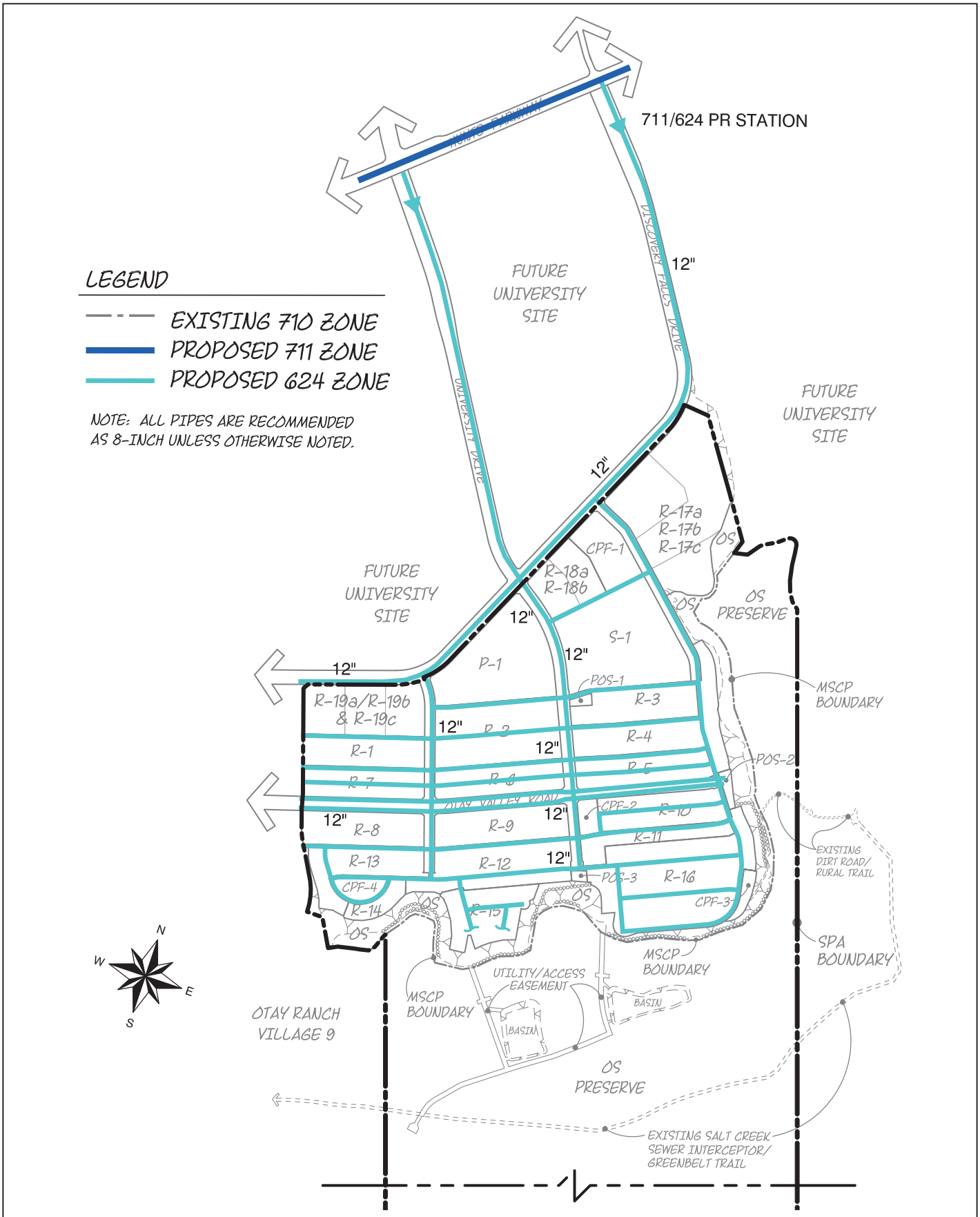

SOURCE: DEXTER WILSON ENGINEERING, INC. 2014

FIGURE 4-22

Potable Water Plan for Village Ten

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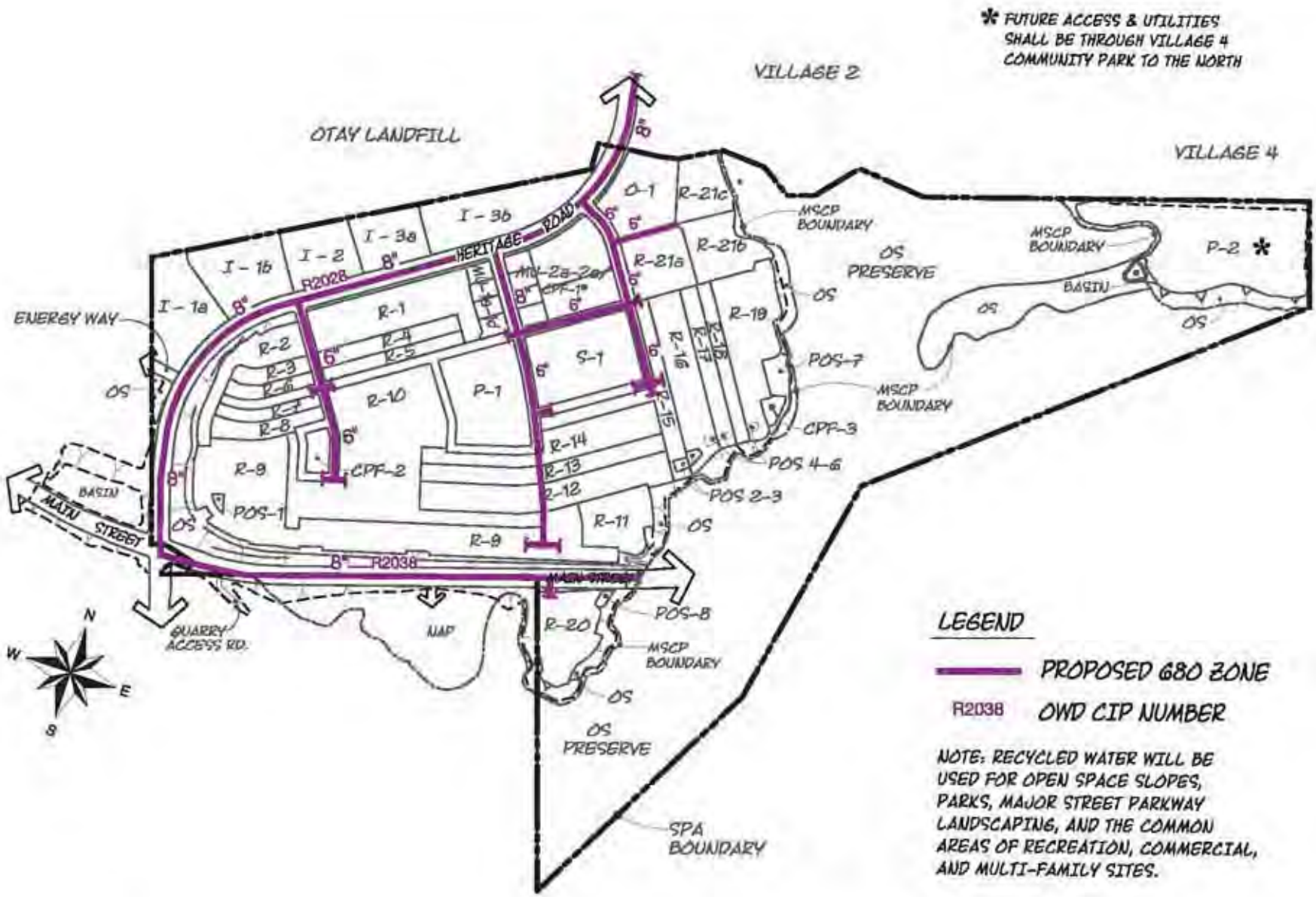

SOURCE: OTAY RANCH NEW HOMES 2006

FIGURE 4-23

Recycled Water Plan for Village Three North and Portion of Village Four

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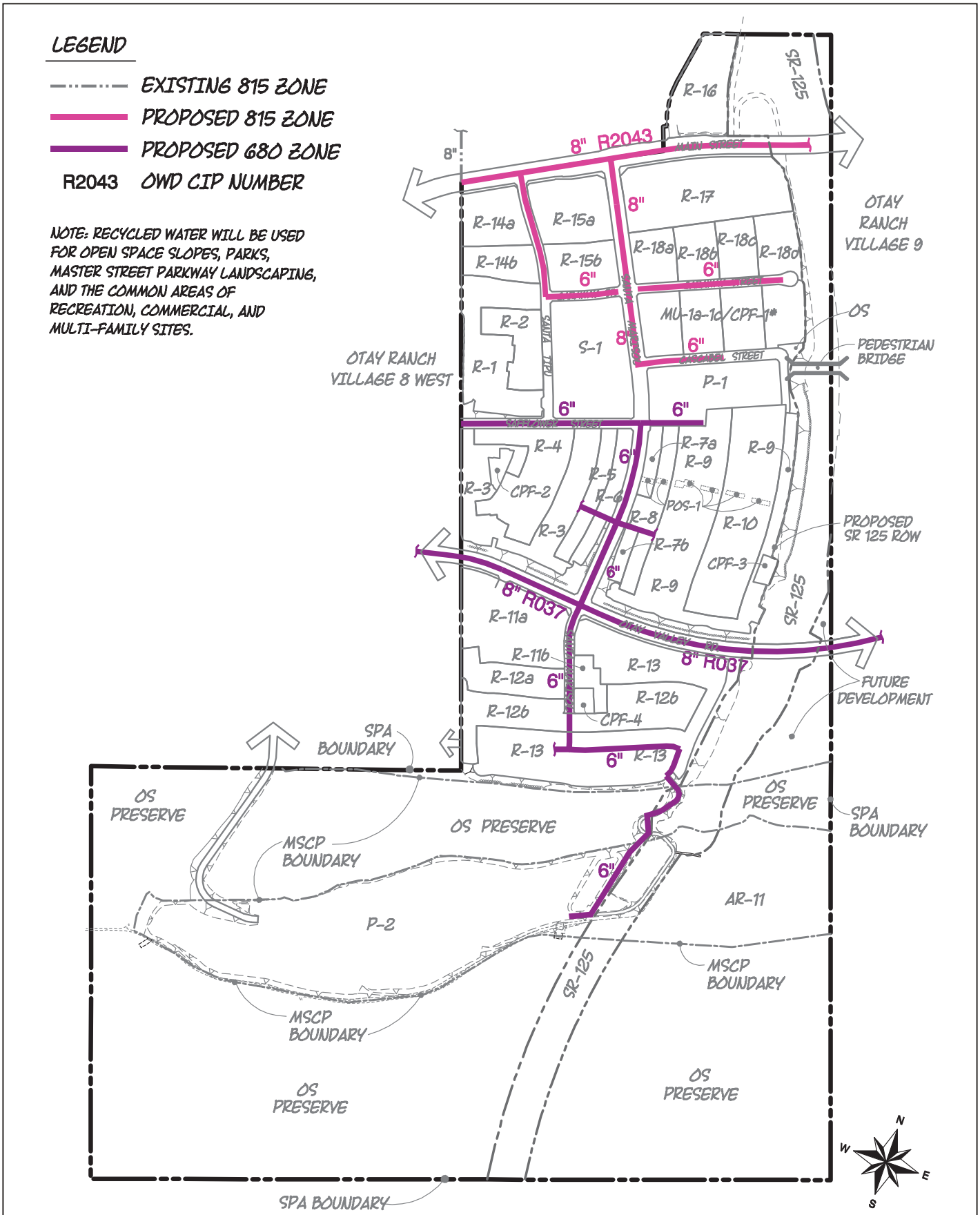

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-24

Recycled Water Plan for Village Eight East

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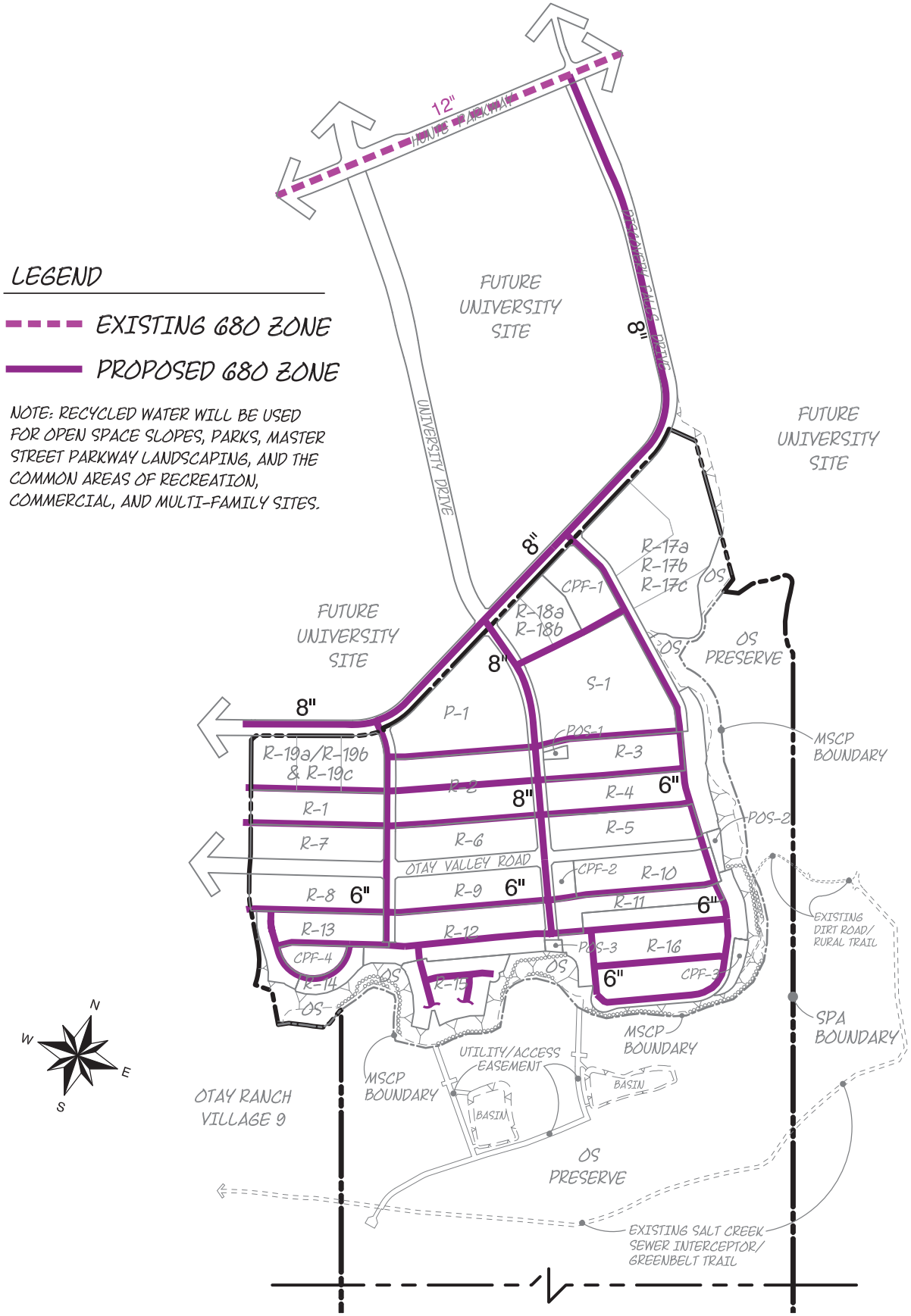

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-25

Recycled Water Plan for Village Ten

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The Overview of Sewer Service for the Otay Ranch University Villages (Appendix O) calculates the expected demand for sewage transportation and treatment. The projected average sewer flow is 526,355 gpd for Village Three North and Portion of Village Four, 849,589 gpd for Village Eight East, and 416,769 gpd for Village Ten. The total projected average sewerage flow is approximately 1.79 million gallons per day (mgd). This would result in a projected peak sewage flow of 3.15 mgd for the proposed project. The Salt Creek Interceptor was sized to accommodate flows from the buildout of the eastern portion of the City of Chula Vista including the proposed project area. No additional upsizing of the Salt Creek Interceptor would be necessary downstream of the proposed project. Figures 4-26 through 4-28 depict the proposed sewer systems for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten.

All sewage from the City of Chula Vista is collected and conveyed to the City of San Diego Metro Sewer System for treatment and disposal. The City currently has capacity rights of 20.864 mgd[3] of flow in the Metro Sewer System and existing average flows in the City are approximately 16.2 mgd. Anticipated sewage generation, conveyance, and treatment are discussed in detail in Section 5.13 of the EIR.

Drainage and Stormwater Facilities

Drainage and stormwater facilities for the proposed project are analyzed in master drainage studies and water quality technical reports for all three SPA Plan areas. All pre- and post-development runoff from the project area is within the OVRP watershed and runoff from the developed portion of the project area would discharge directly to the Otay River via internal storm drain systems, with the exception of the Portion of Village Four, which would discharge into a tributary drainage. No detention basins would be required for the proposed project because development of the villages would not increase the 100-year frequency peak flows in the Otay River. Figures 4-29 through 4-31 depict the proposed drainage and water quality systems for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten.

Development of the proposed project would meet the requirements of the City's Standard Urban Storm Water Mitigation Plan, the Jurisdictional Urban Runoff Management Plan, and the Storm Water Management and Discharge Ordinance (as specified in the City of Chula Vista Development and Redevelopment Storm Water Management Standards/Requirements Manual). The conceptual grading and stormwater control plans for the proposed project provide for water quality control facilities to ensure protection for the Otay River. Proposed stormwater conveyance and treatment infrastructure specific to each village is discussed in Section 5.10 of the EIR.

[3] Regional Wastewater Disposal Agreement between the City of San Diego and the Participating Agencies in the Metropolitan Sewerage System, adopted May 18, 1998 (City of San Diego Ordinance Number 00-18517).

Schools

The project area is located within the service areas of the Chula Vista Elementary School District and the Sweetwater Union High School District.

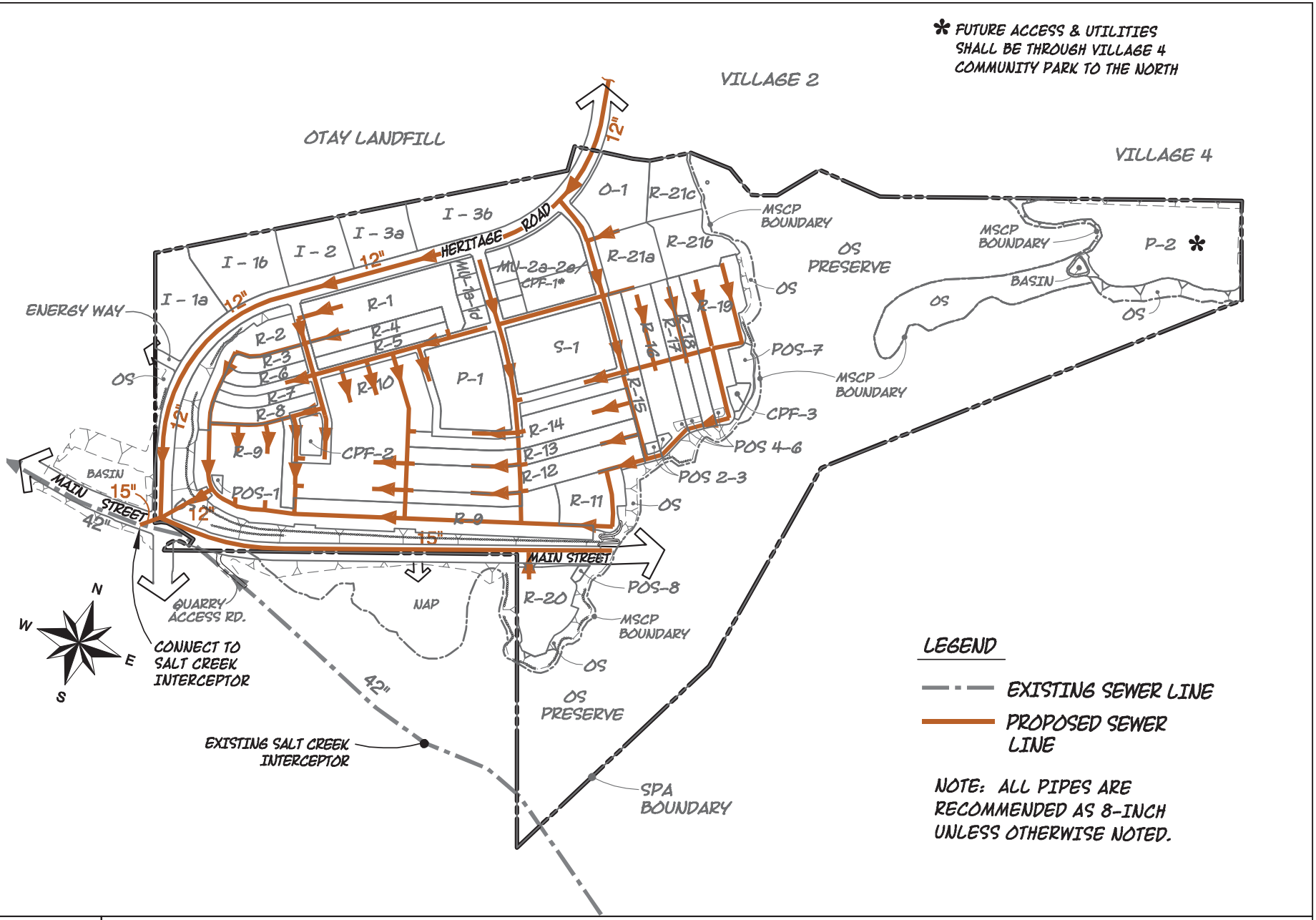
The proposed project includes elementary school sites within the village cores of each SPA Plan area. Village Three North and a Portion of Village Four includes an 8.3-acre school site in the center of the village; Village Eight East includes a 10.8-acre site in the northern portion of the village, and Village Ten includes a 9.2-acre site in the northeast portion of the village, as depicted in Figures 4-4, 4-9, and 4-14, respectively. The Chula Vista Elementary School District has reviewed the locations of the proposed elementary schools and provided conceptual approval. These sites would be reserved for acquisition or conveyance to the Chula Vista Elementary School District. The construction schedule for the school would be determined by the school district. Students in the project area 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 area: 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 on a site reserved according to the Otay Ranch GDP. Student generation and school capacity information is provided in Section 5.12 of the EIR.

Police, Fire, and Emergency Medical Services

The Chula Vista Police Department currently provides police services within the City of Chula Vista. The development of project area 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. It should be noted that should a station or storefront be desired by the City in the future, such a use would be compatible with the Mixed-Use Commercial/Office District or Mixed-Use Commercial Districts in Villages Three North and Eight East.



LEGEND

EXISTING SEWER LINE

PROPOSED SEWER LINE

NOTE: ALL PIPES ARE RECOMMENDED AS 8-INCH UNLESS OTHERWISE NOTED.

SOURCE: DEXTER WILSON ENGINEERING, INC. 2014

FIGURE 4-26

Sewer Plan for Village Three North and Portion of Village Four

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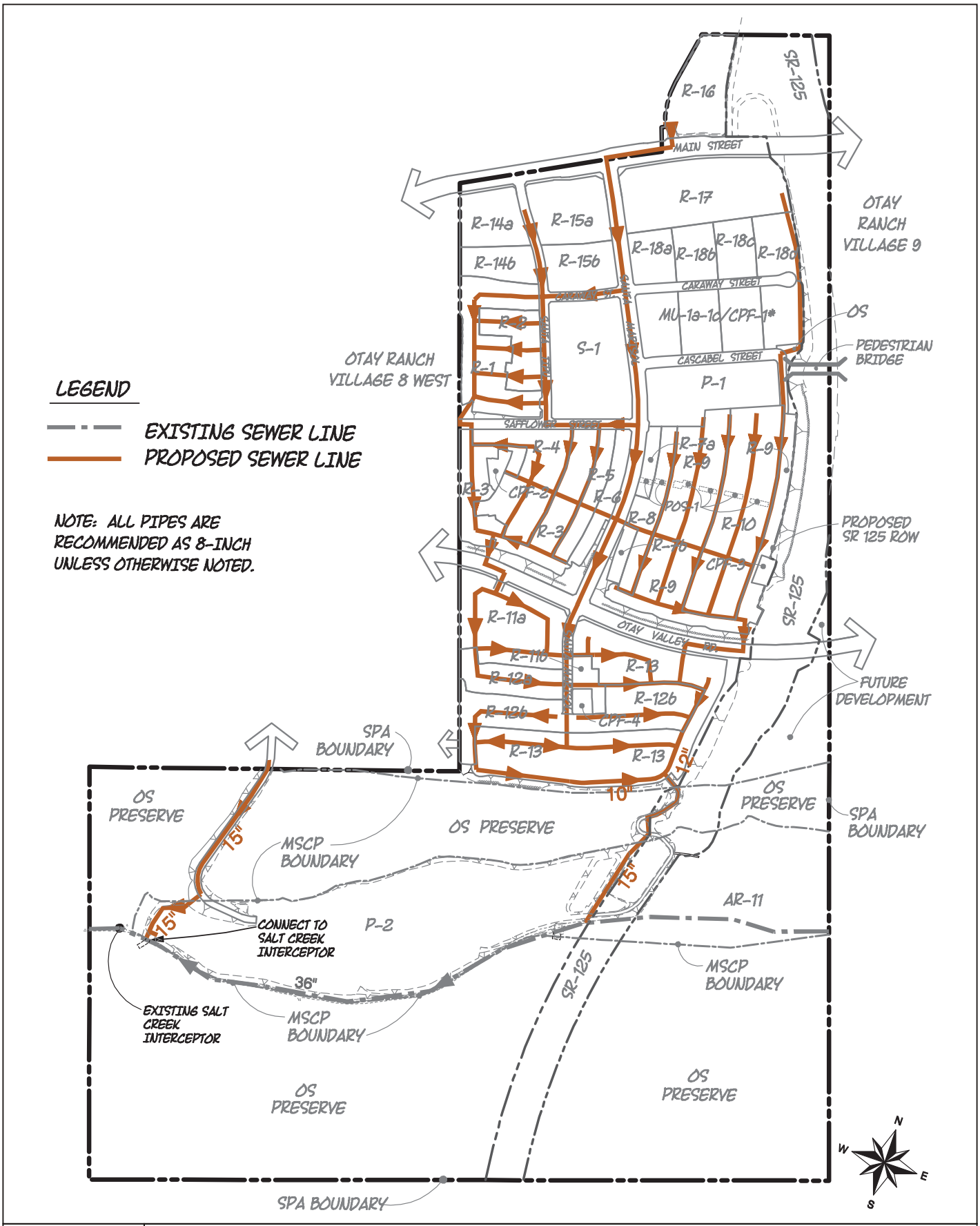

SOURCE: DEXTER WILSON ENGINEERING, INC. 2014

FIGURE 4-27

Sewer Plan for Village Eight East

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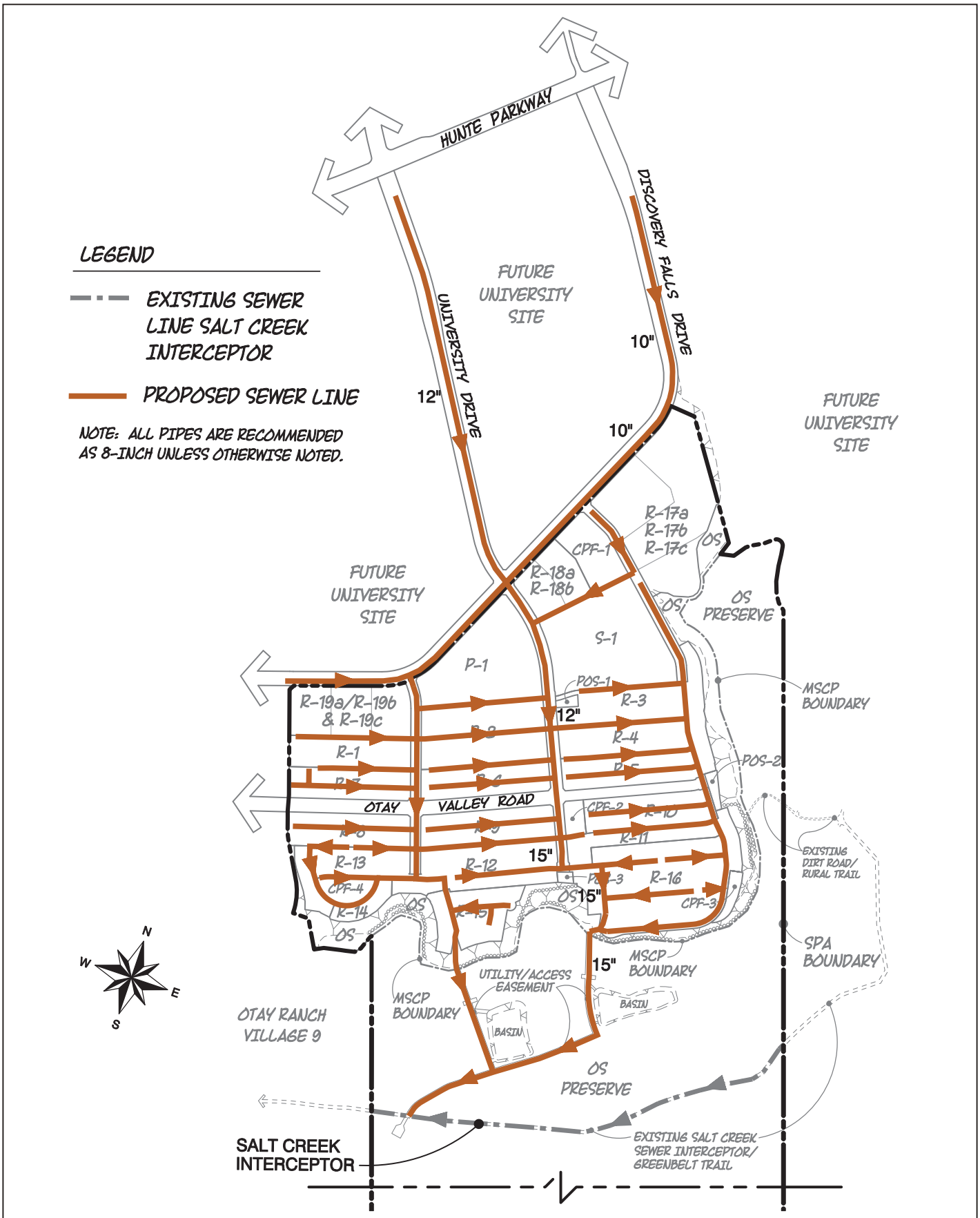

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-28
Sewer Plan for Village Ten

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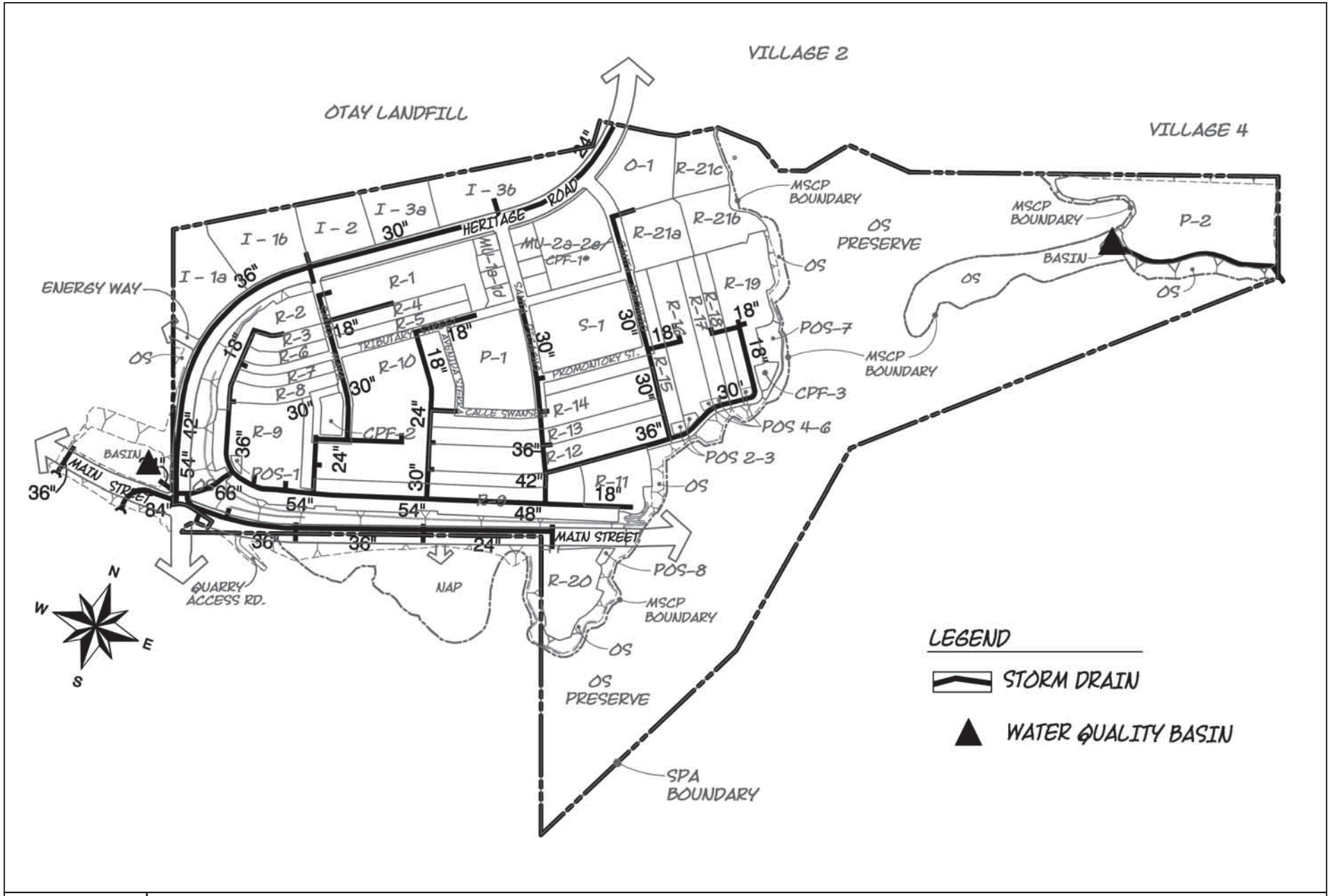

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-29

Hydrologic Basin and Drainage System for Village Three North and Portion of Village Four

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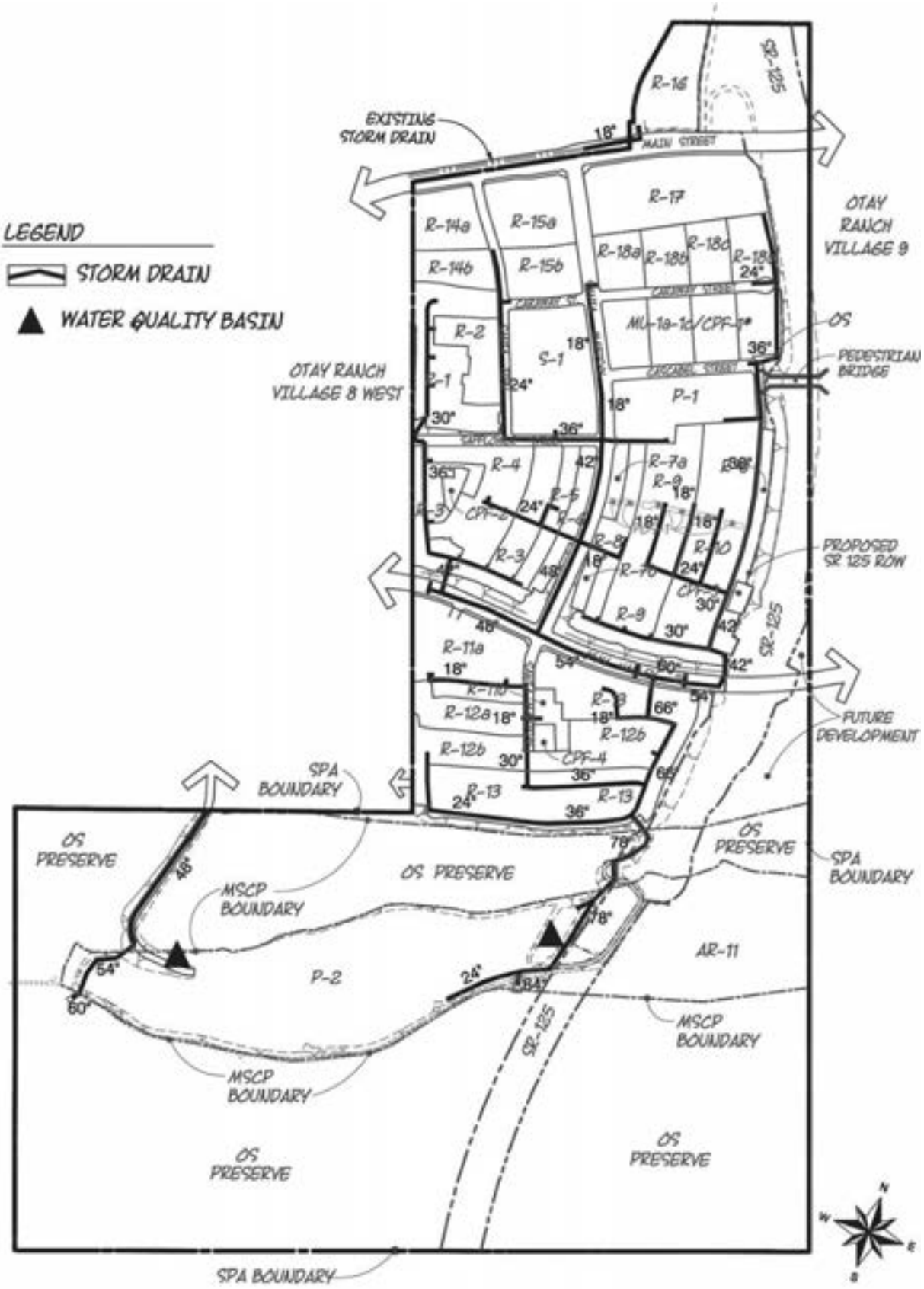

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-30

Hydrologic Basin and Drainage System for Village Eight East

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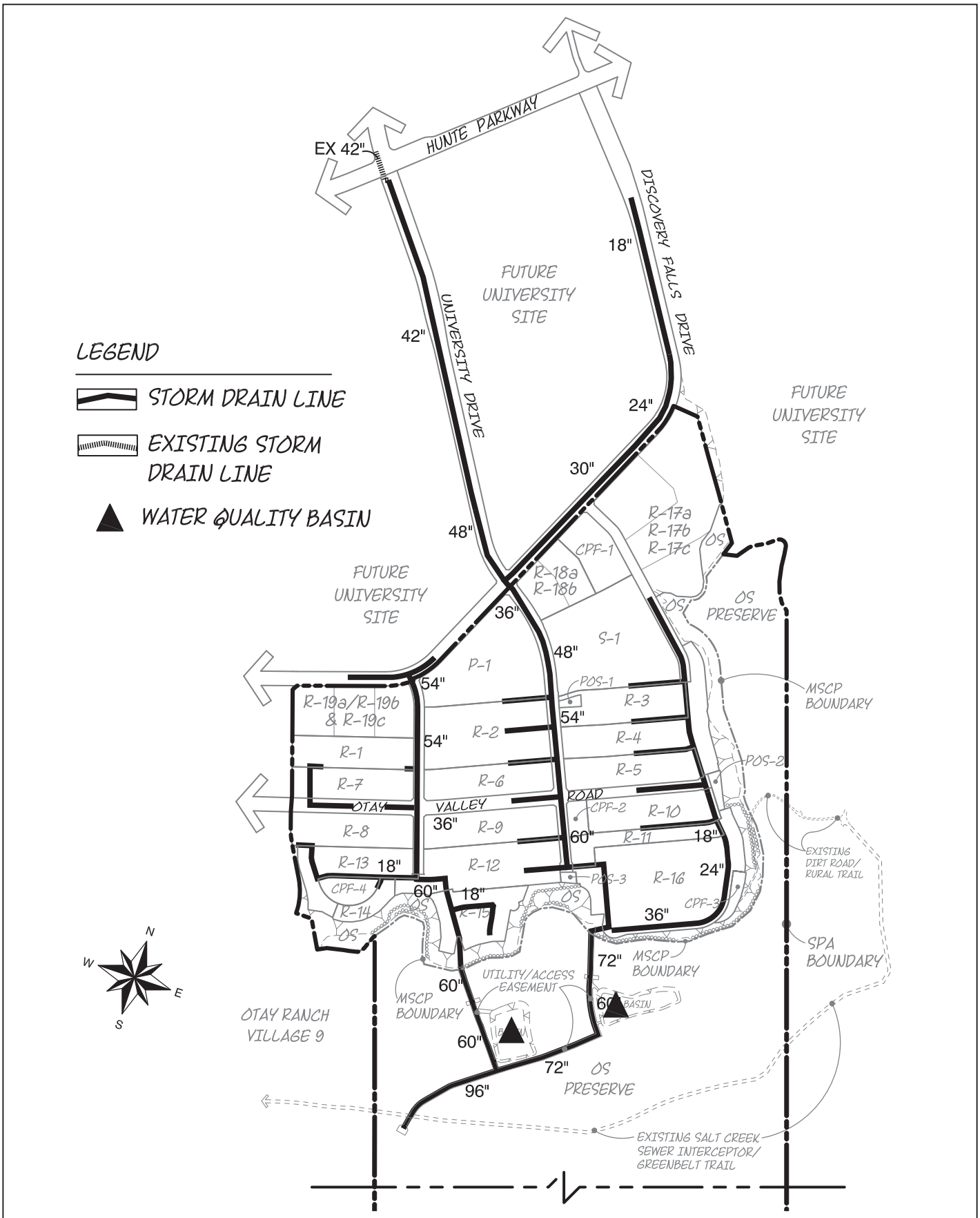

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-31

Hydrologic Basin and Drainage System for Village Ten

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The Chula Vista Fire Department would provide fire services for the proposed project area. Fire Station Number 7 is located adjacent to the Village Two core, and two additional fire stations are planned within Village Eight West and the Eastern Urban Center. The analysis of the proposed project's impacts on police and fire services is provided in Section 5.12 of this EIR. The proposed project includes 100-foot fuel modification zones around the perimeter of each village adjacent to natural open space, with specific management directives to limit the spread of wildfire from the adjacent Preserve areas. Figures 4-32 through 4-34 depict the proposed fuel modification zones for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten.

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 5.12 of the EIR.

Library

The Otay Ranch Facility Implementation Plan calls for the location of an approximately 36,750-square-foot "Main" library in the Eastern Urban Center. No library facilities/services are required in other Otay Ranch villages, including the project area. Additional information regarding library services is provided in Section 5.12 of the EIR.

Solid Waste

Residential and commercial solid waste generated by the proposed project would be collected by Republic Waste Services and be disposed of at the Otay Landfill. The City has a construction and demolition debris recycling program that mandates that 90% of all inert material (rock, dirt, concrete, brick, etc.) and 50% of all other debris be diverted from disposal. Implementation of the proposed project would increase the amount of solid waste generated in the City. Information regarding solid waste services is provided in Section 5.13 of the EIR.

Gas and Electric

Gas and electric service are provided by San Diego Gas & Electric, the owner and operator of electricity transmission and distribution and natural gas distribution infrastructure in the County. Implementation of the proposed project would increase energy consumption.

Cable and Telephone

Various service providers provide cable and telephone services in the San Diego region. The proposed project would require extension of these services to the project site.

Community-Purpose Facility

The City of Chula Vista CPF Ordinance allows exemption for projects in which an agreement is entered into providing a Public Benefit in exchange for providing less CPF sites. The proposed project is subject to a Land Offer Agreement (LOA) with the City whereby the requirement would be reduced to 4 acres per village if the City accepts the Irrevocable Offers of Dedication for the university property. CPF uses are described by the Chula Vista Municipal Code, Section 19.48.025. Further information regarding CPFs is provided in Sections 5.1 and 5.12 of the EIR.

4.2.5 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 maximum cuts and fills of approximately 80 and 90 feet, respectively, with cut and fill slopes having a maximum height of 85 and 90 feet, respectively, and a maximum slope inclination of 2:1 (horizontal to vertical). All slopes would be landscaped. Grading for the proposed project would result in a total of 14.31 million cubic yards of balanced cut and fill material on site.

The conceptual grading plans for each village of the proposed project are described in the following subsections.

Village Three North and a Portion of Four

The proposed raw grading quantity for Village Three North and a Portion of Village Four is approximately 5,405,000 cubic yards of cut and fill that would balance on each of the two separate land areas.

Village Eight East

The proposed raw grading quantity for Village Eight East is approximately 4,855,000 cubic yards of balanced cut and fill. The grading of the Community Park (P-2) will be balanced on site (i.e., – no export/import will be required through the Preserve).

Village Ten

The proposed raw grading quantity for Village Ten is approximately 3,400,000 cubic yards of cut and fill that would balance on site. In addition, 650,000 cubic yards of grading on the adjacent University property is required for the construction of two off-site roads: Discovery Falls and University Drive. All grading associated with Discovery Falls and University Drive, including the borrow/disposal site, would balance within the University site.

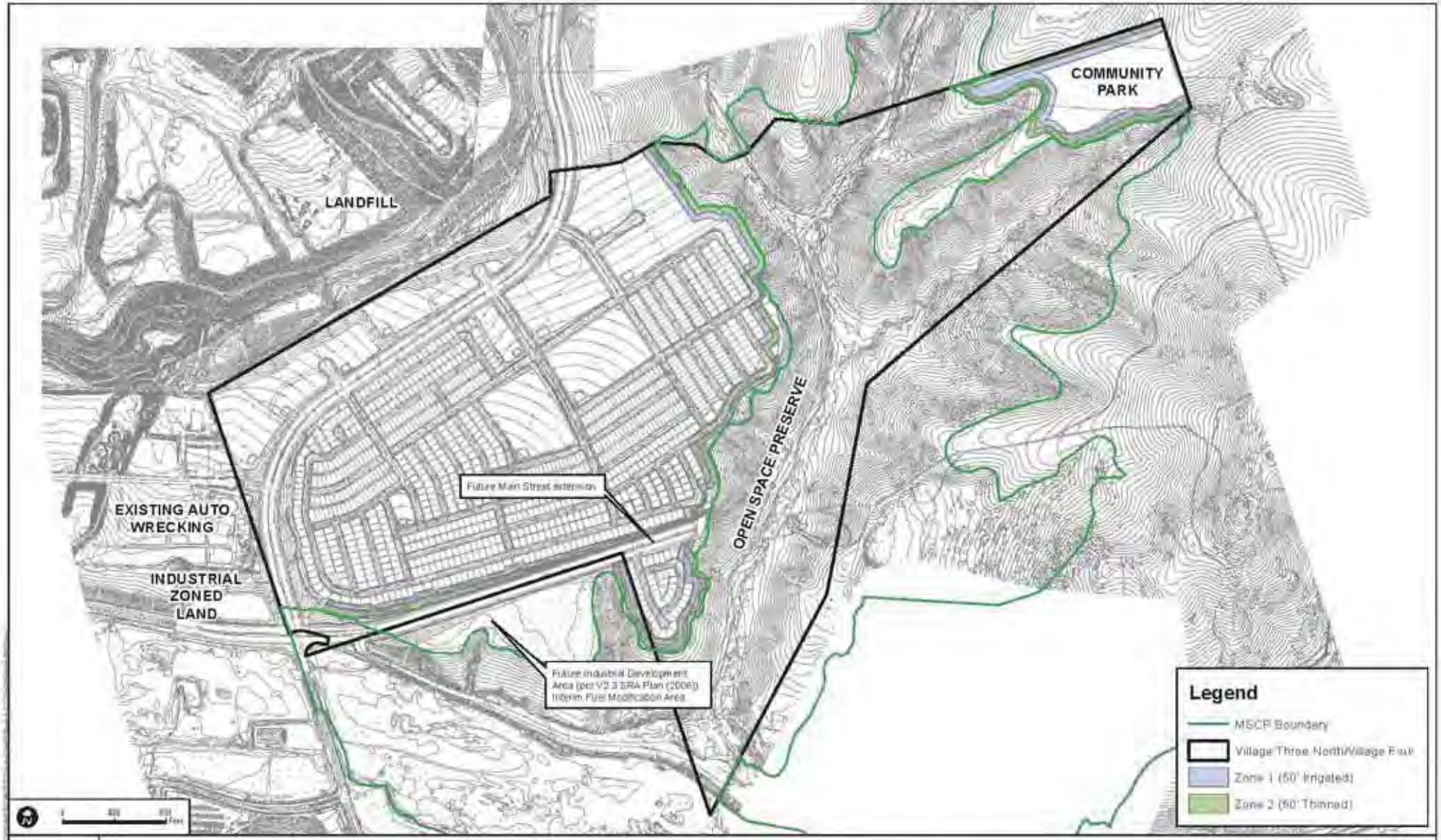

FIGURE 4-32

Village Three North and a Portion of Village Four Fuel Modification Zones

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FIGURE 4-33
Village Eight East Fuel Modification Zones

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FIGURE 4-34
Village Ten Fuel Modification Zones

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Figures 4-35 through 4-37 depict the proposed conceptual grading plans for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten; and Figures 4-38 through 4-40 depict the proposed cut and fill for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten.

4.2.6 Tentative Maps

Three TMs are proposed for the SPA Plan Areas concurrent with the SPA Plans. Figures 4-41 through 4-43 depict the proposed TMs for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. The TMs would address subdivision of the sites, street standards, and infrastructure. They would also address provisions for underground encroachment (e.g., all underground utilities line, etc.) into the right-of-way, off-site streets, and grading required to implement the subdivision. This includes the re-location of the City of San Diego waterlines in Villages Eight East and Ten.

4.2.7 Construction Phasing

Construction of the proposed project is anticipated to begin with Village Three North in late 2014[4]. Construction of the residential portion of Village Three North is anticipated to be complete in September 2018 and the non-residential portion (Industrial) is anticipated to be complete by 2025. Generally, Village Three North is expected to phase from northwest to southeast. Construction of Village Eight East is anticipated to begin in February 2016 and to be complete in September 2024. Village Eight East is expected to phase from north to south. Lastly, construction of Village Ten is anticipated to begin in August 2023 and to be complete in September 2029. Village Ten is expected to phase from north to south. Phasing dates are different between the Traffic Impact Analysis (Appendix M) and the EIR, because the TIA only analyzes the project in 5-year increments.

Figures 4-44 through 4-46 depict the conceptual phasing plans for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten, respectively. The water quality basins depicted in Figure 4-44 for Village Three North and Portion of Village Four will serve any and all of the development, therefore, it is not constructed in any particular phase. It will be constructed and operational prior as required by the Village Three North Public Facilities Financing Plan (PFFP). Similarly, the water quality basins depicted in Figure 4-46 for Village Ten are required to serve any and all phases of development and would be constructed and operational as required by the Village Ten PFFP.

[4] The original construction schedule beginning in March 2014 is analyzed for the proposed project; however, as identified above, construction would start at a later date. The construction scenario and schedule analyzed as part of the proposed project analysis is considered conservative.

The proposed project is analyzed in accordance with the assumed phasing schedule identified above, and further refined in Table 4-3 below. If the project is not implemented in accordance with the assumed phasing schedule, additional planning and environmental analysis will be required.

Public facilities finance plans (PFFPs) have been prepared as appendices for each SPA plan. The PFFPs define different phases of development within each village, 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. In addition, the proposed project's Traffic Impact Study (Chen Ryan 2014, Appendix M) was based on specific phasing assumptions for each horizon year (5-year increments). Table 4-3 provides the phasing by horizon year assumed in the Traffic Impact Study.

Table 4-3
Project Land Use by Study Year

Land Use	Village Three North				Portion of Village Four				Village Eight East				Village Ten			
	2015	*2020*	*2025*	*2030*	*2015*	*2020*	*2025*	*2030*	*2015*	*2020*	*2025*	*2030*	*2015*	*2020*	*2025*	*2030*
Single Family (DU)	408	1,002	1,002	1,002	-	-	-	-	0	557	963	963	0	0	288	691
Multi-Family (DU)	250	595	595	595	-	-	-	-	0	1,446	2,597	2,597	0	0	438	1,049
Mixed-Use Commercial (KSF)	0	10	20	20	-	-	-	-	0	10	20	20	-	-	-	-
Office (AC)	0.0	9.8	9.8	16.1	-	-	-	-	-	-	-	-	-	-	-	-
Light Industrial (AC)	0.0	10.2	16.7	23.1	-	-	-	-	-	-	-	-	-	-	-	-
CPF (AC)	1.0	1.5	1.5	1.5	-	-	-	-	0.0	1.0	4.2	4.2	0.0	0.0	0.8	4.6
Elementary School (AC)	0.0	8.3	8.3	8.3	-	-	-	-	0.0	10.8	10.8	10.8	0.0	0.0	0.0	8.9
Neighborhood Park (AC)	0.0	7.8	7.8	7.8	-	-	-	-	0.0	7.3	7.3	7.3	0.0	0.0	0.0	7.1
Community Park (AC)	-	-	-	-	0.0	17.8	17.8	17.8	0.0	0.0	20.3	40.7	-	-	-	-

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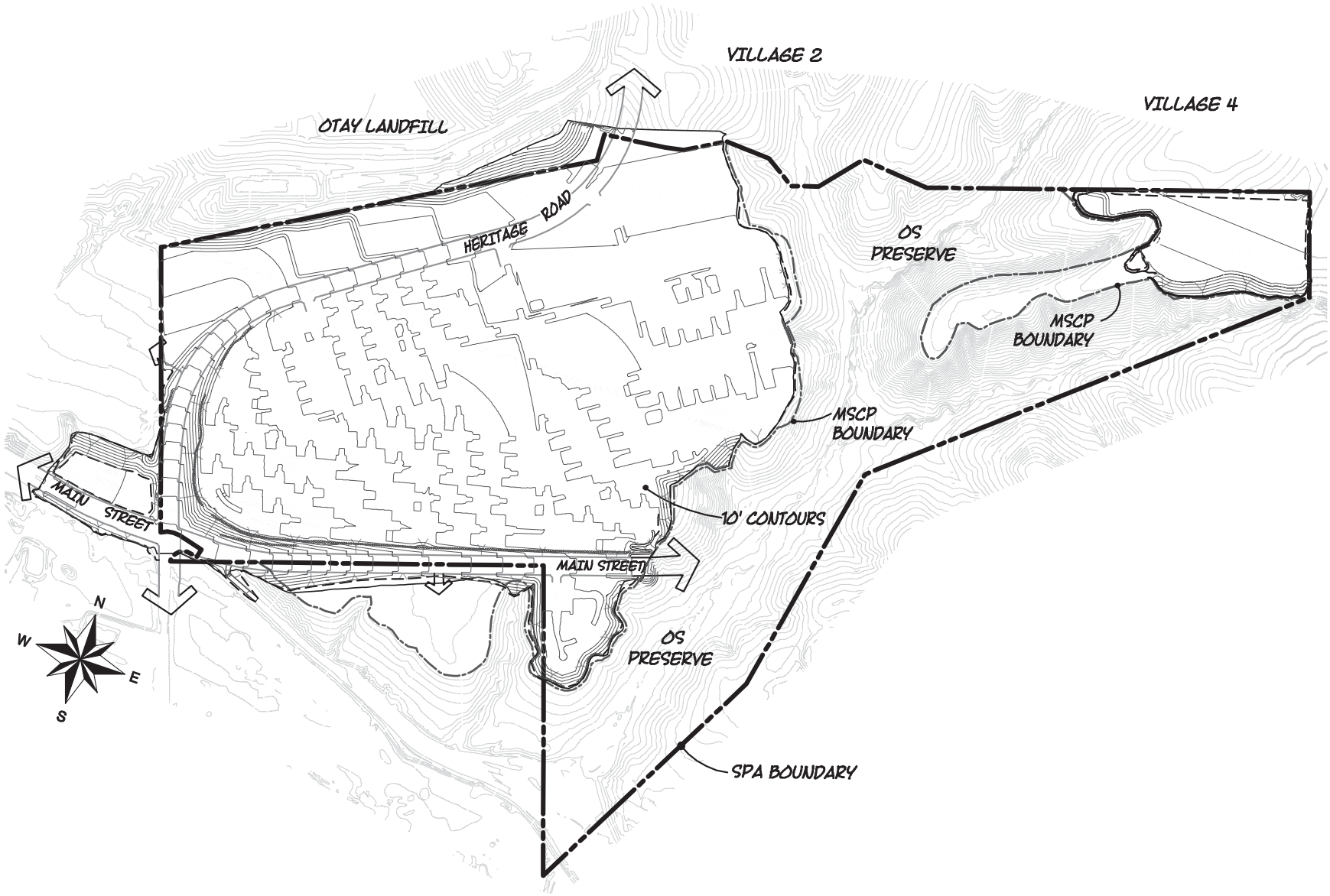

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-35

Conceptual Grading Plan for Village Three North and a Portion of Village Four

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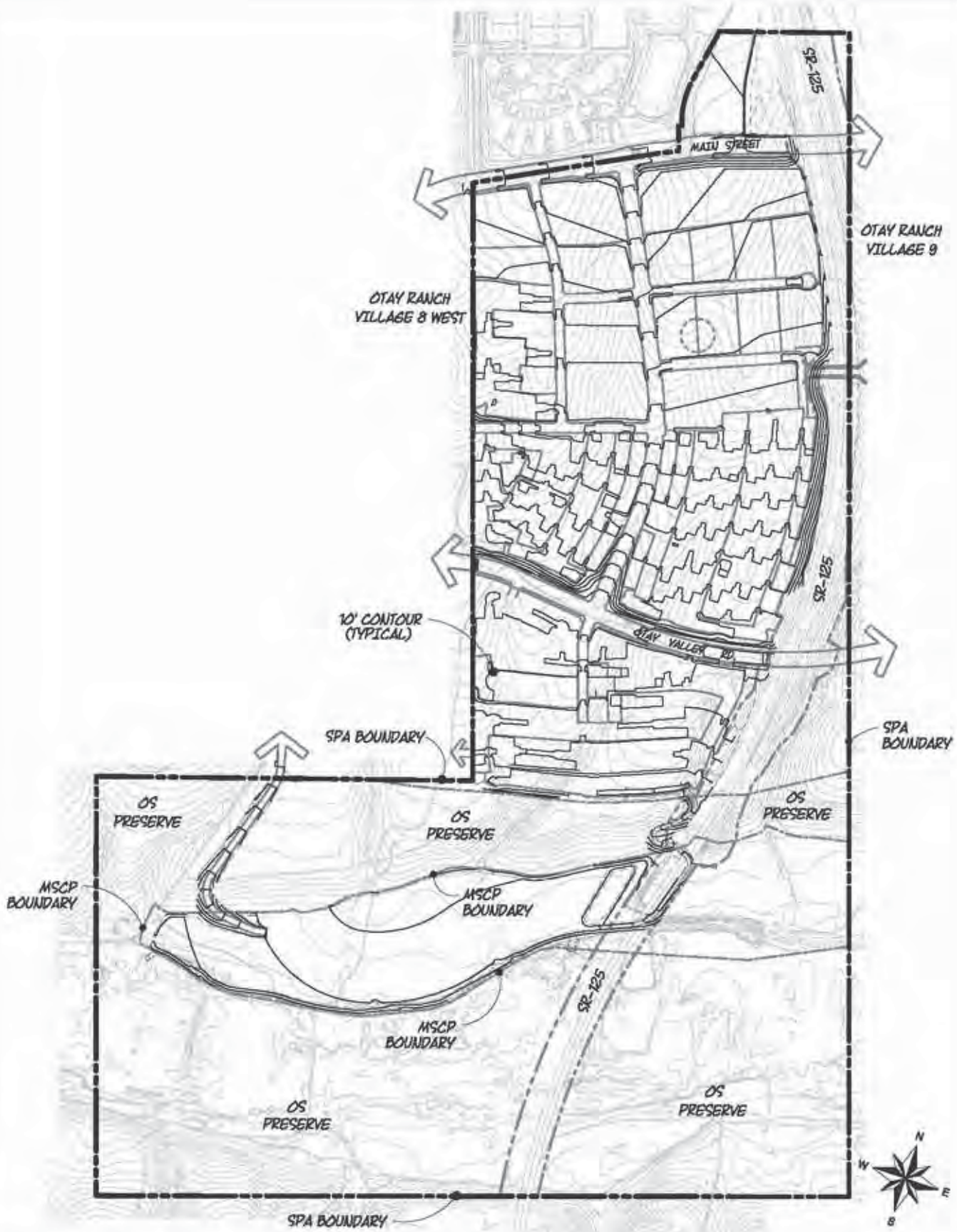

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-36

Conceptual Grading Plan for Village Eight East

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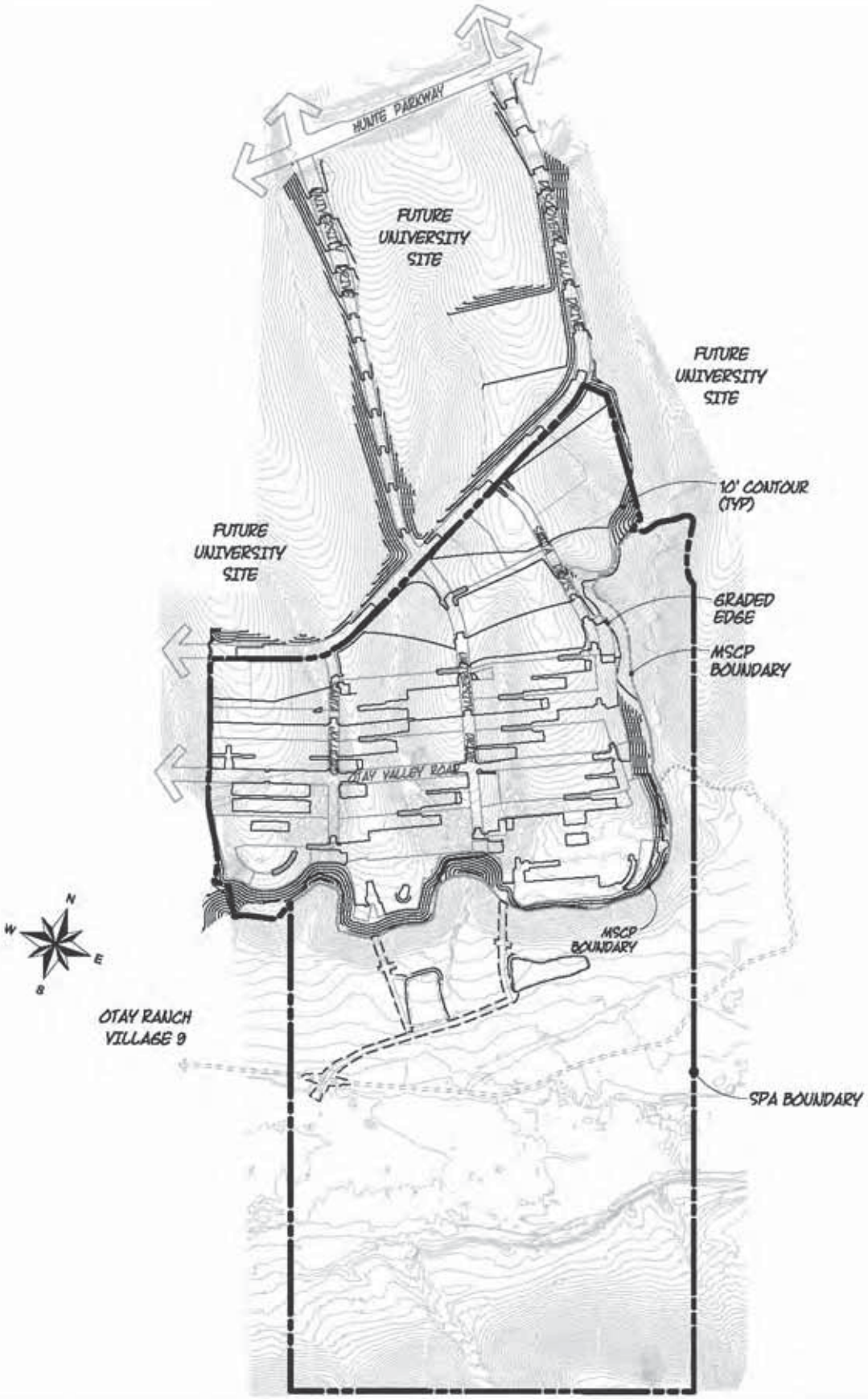

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-37

Conceptual Grading Plan for Village Ten

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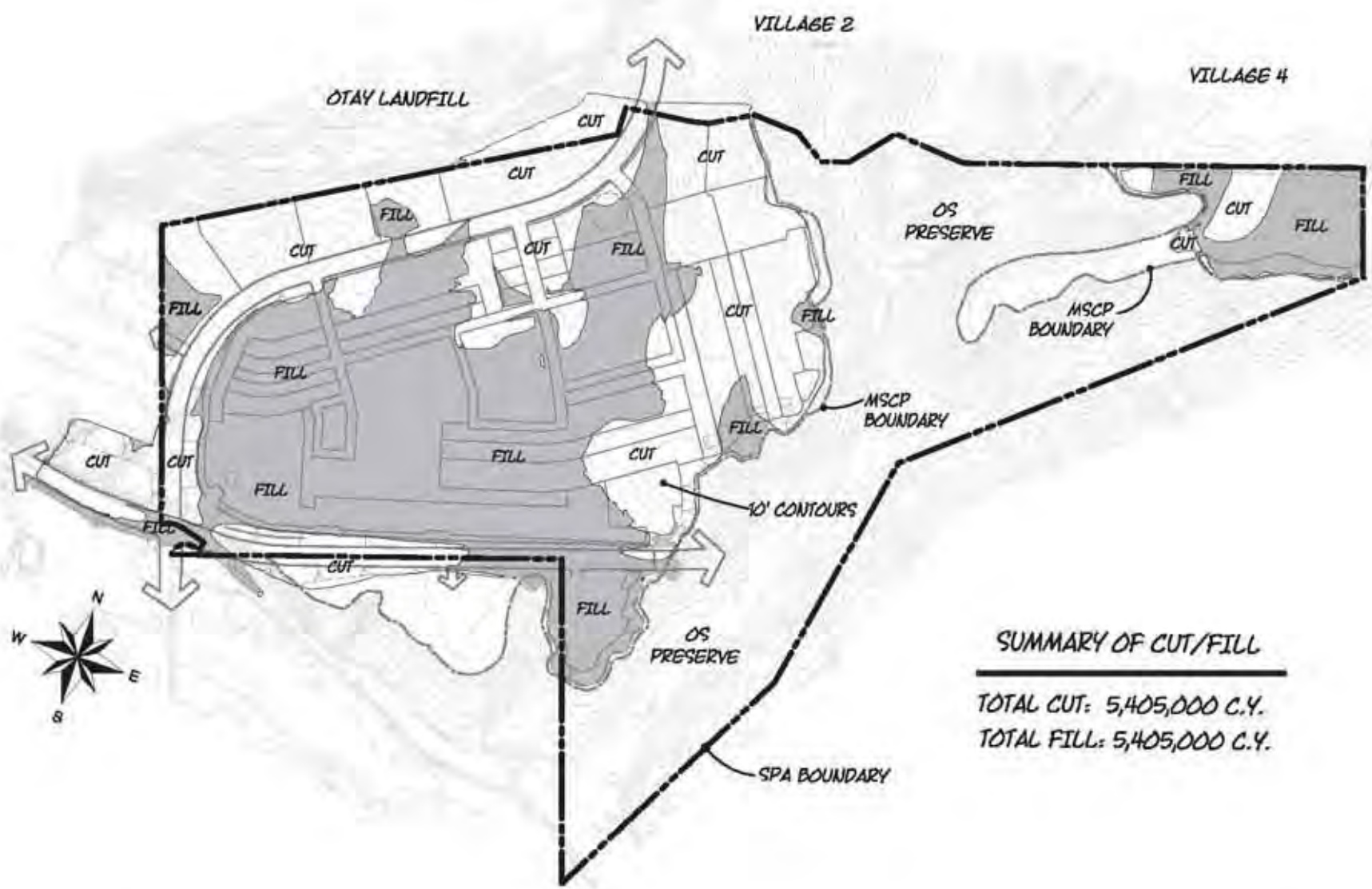

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-38

Cut/Fill Plan for Village Three North and a Portion of Village Four

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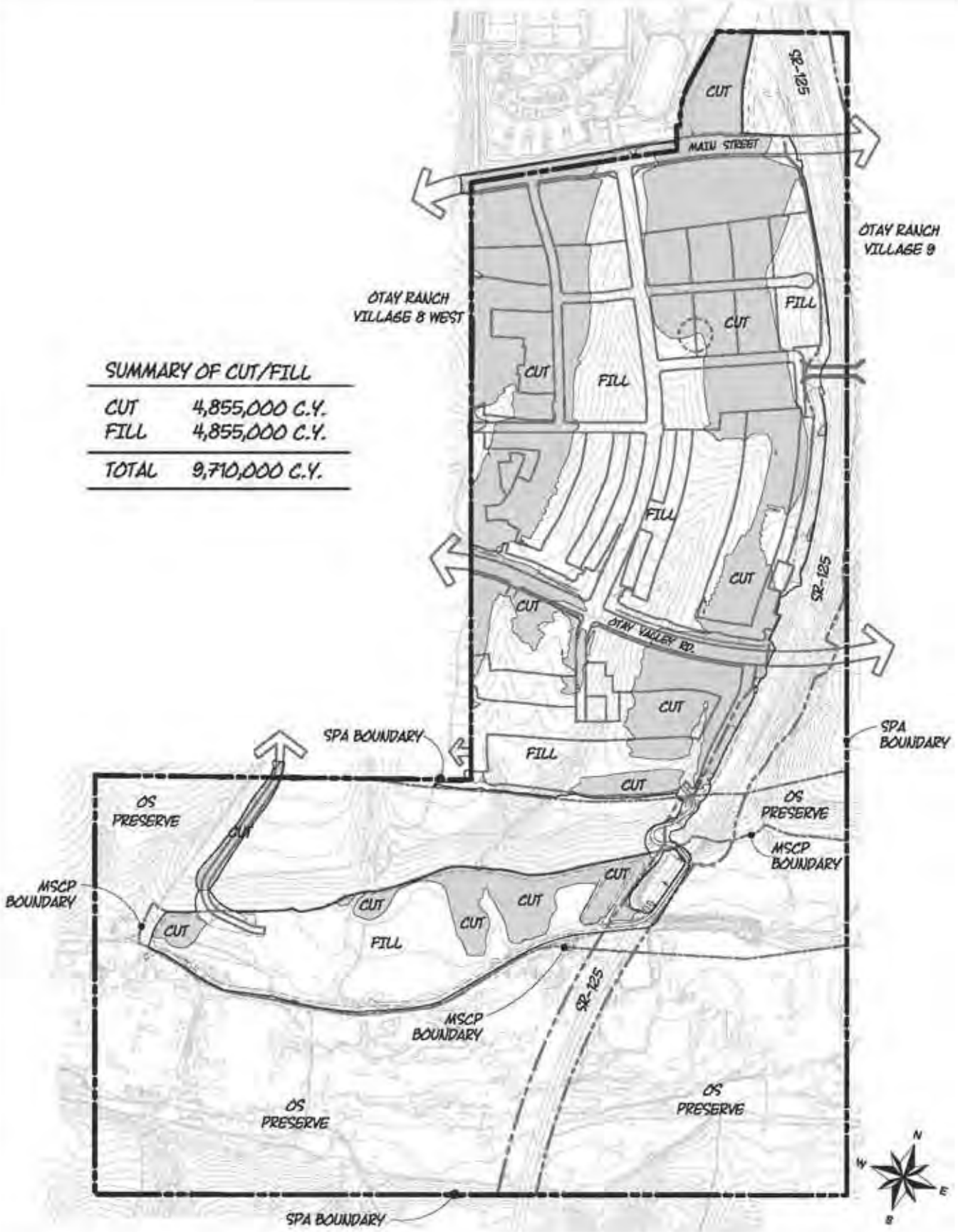

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-39

Cut/Fill Plan for Village Eight East

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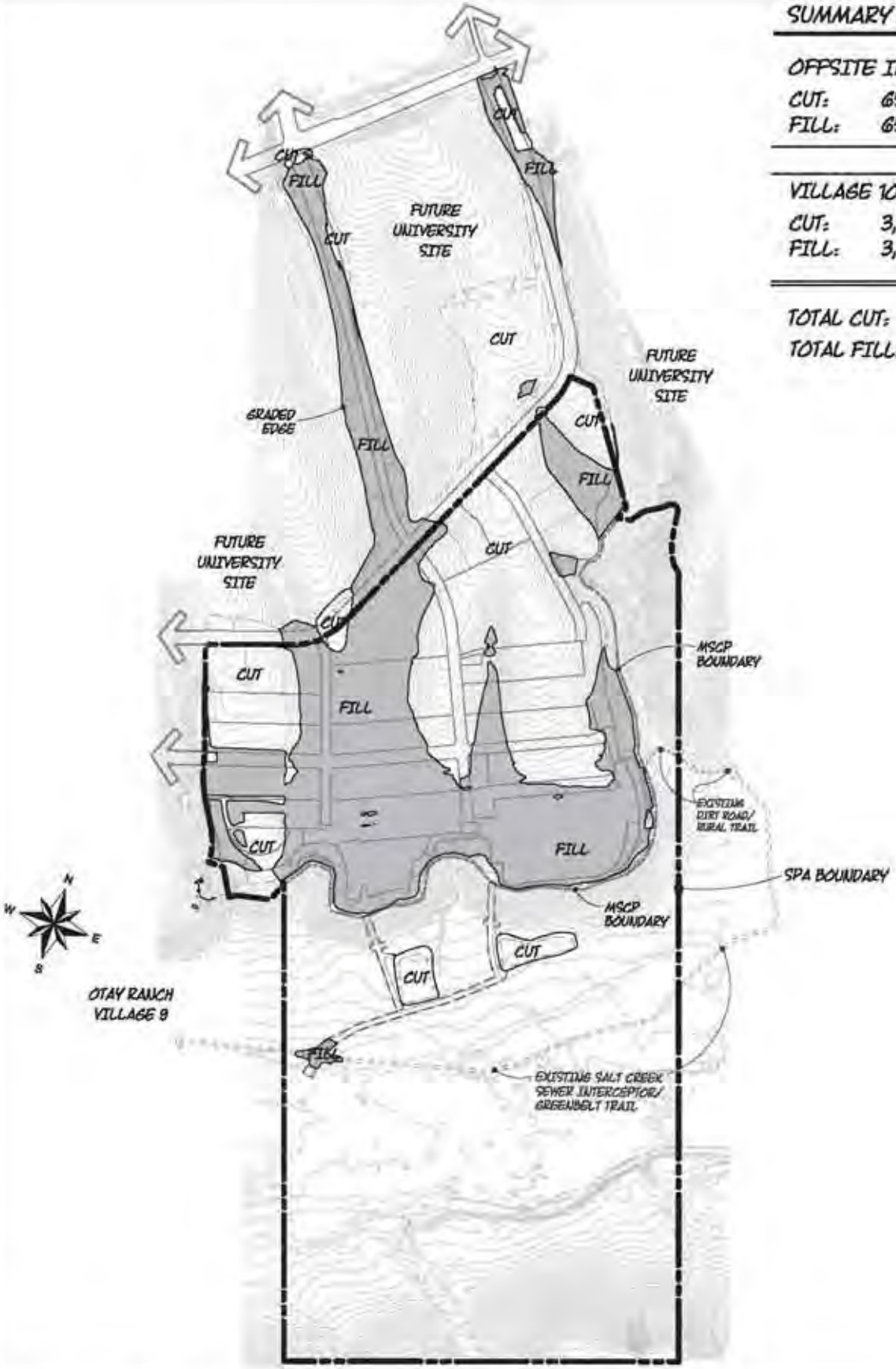

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-40

Cut/Fill Plan for Village 10

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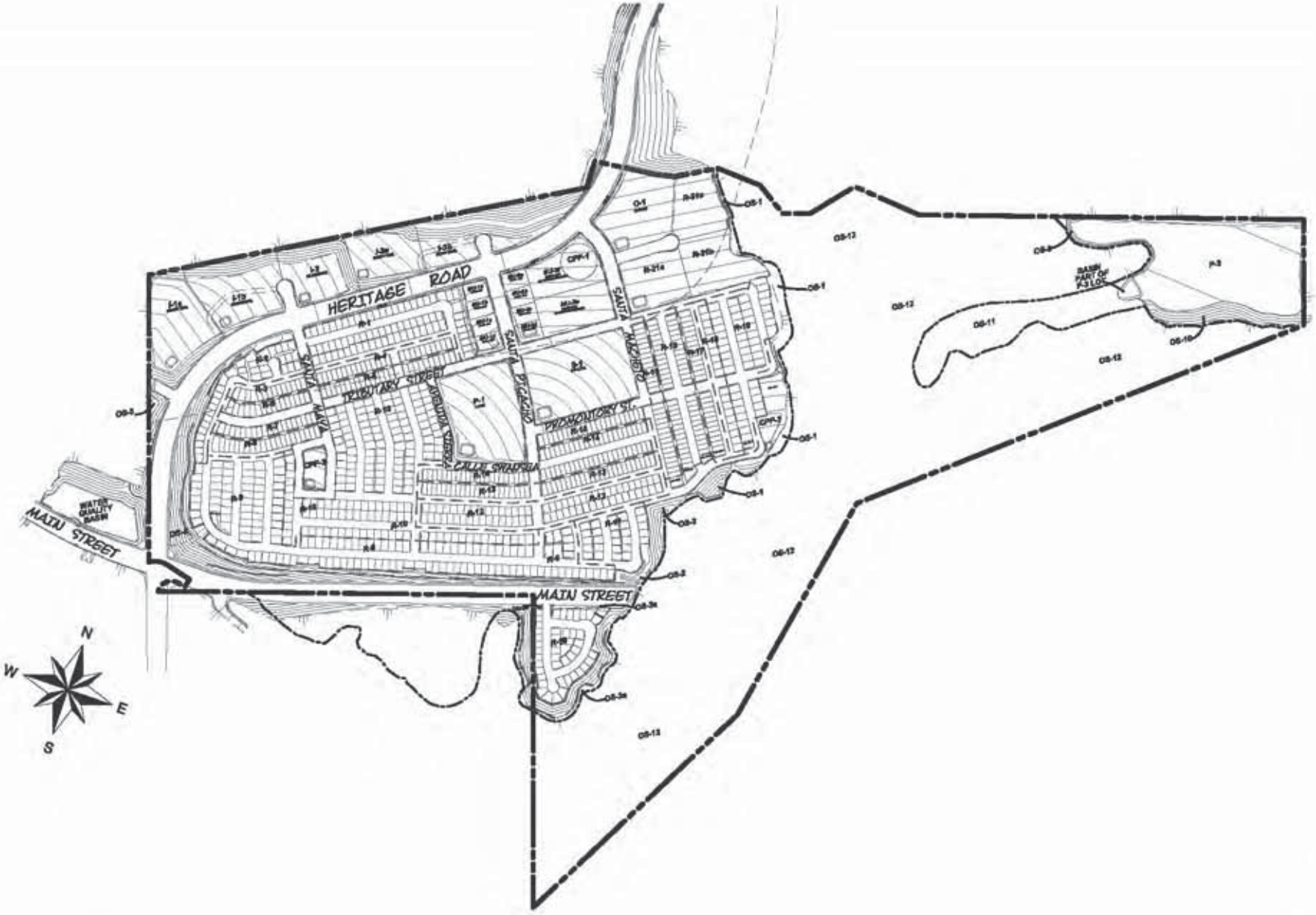

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-41

Tentative Map for Village Three North and Portion of Village Four

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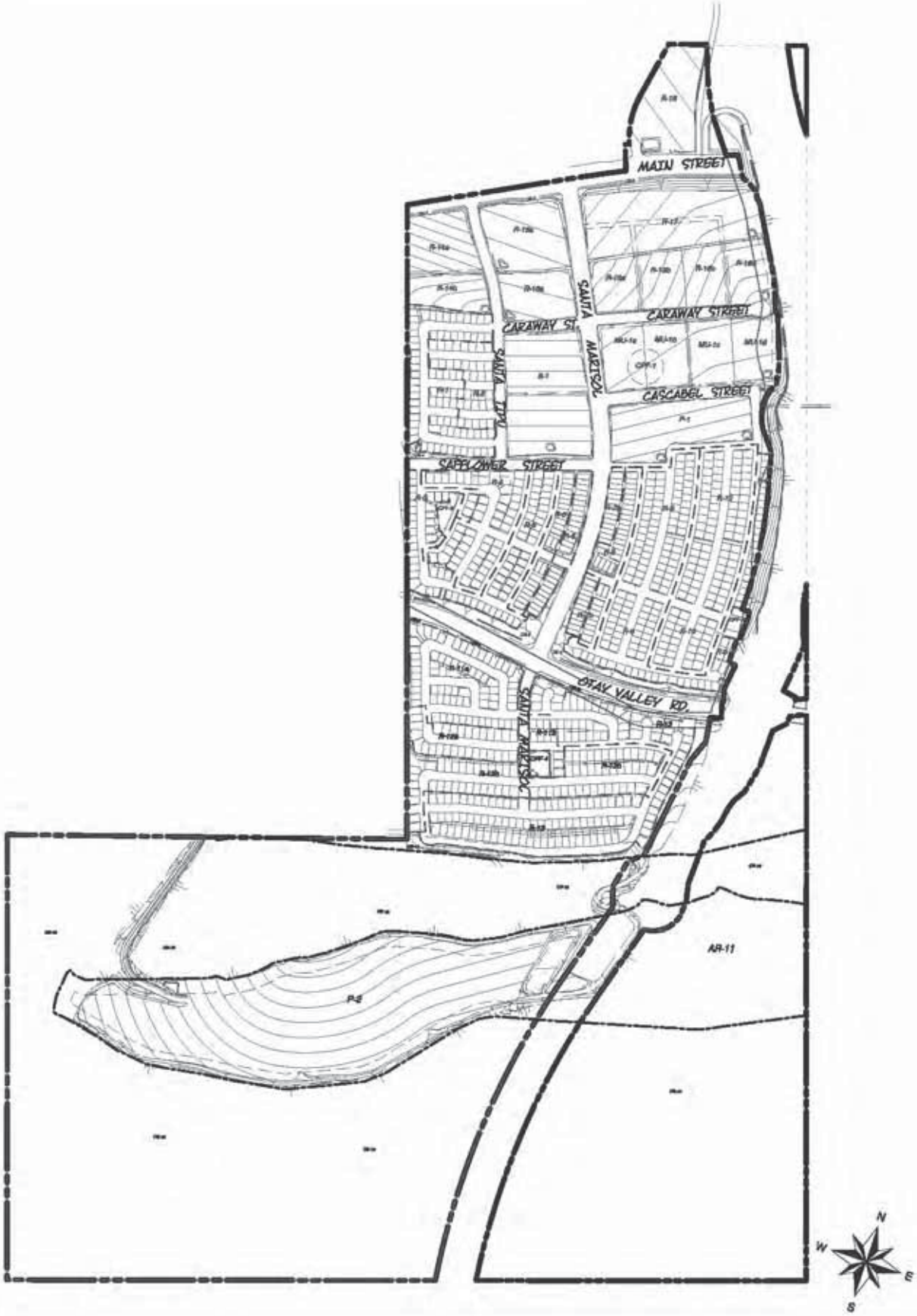

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-42
Tentative Map for Village Eight East

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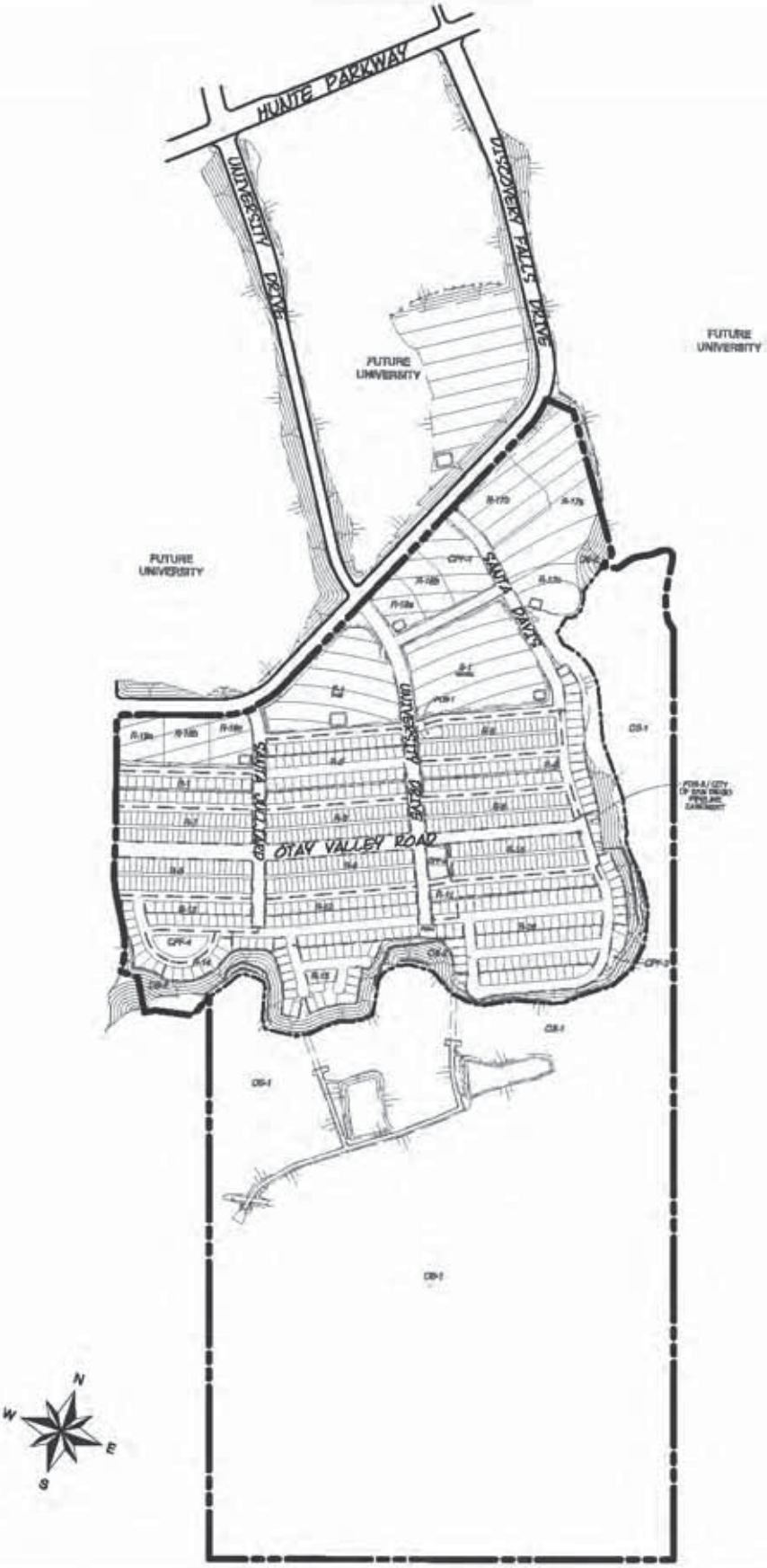

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-43
Tentative Map for Village Ten

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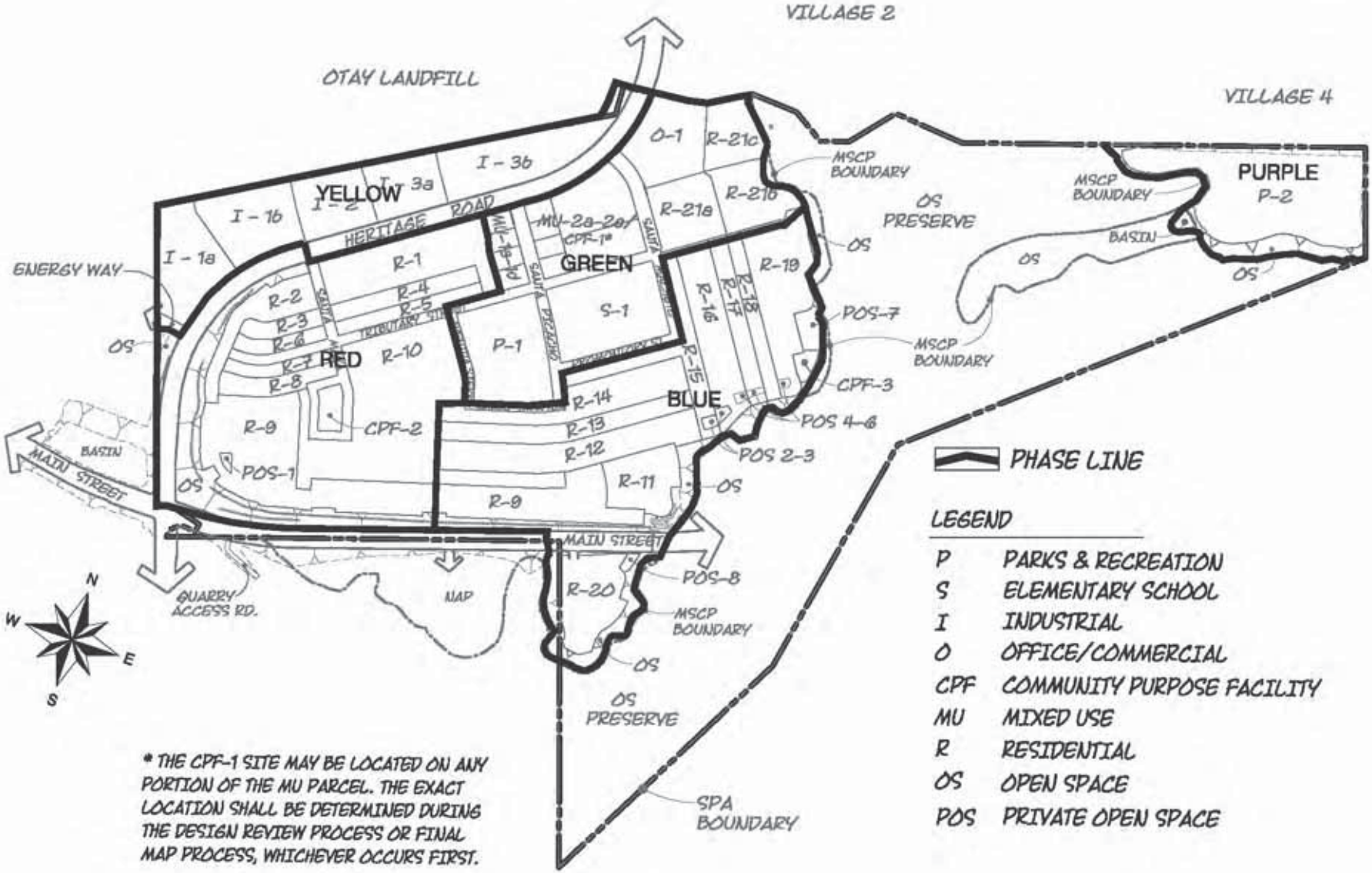

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-44

Phasing Plan for Village Three North and a Portion of Village Four

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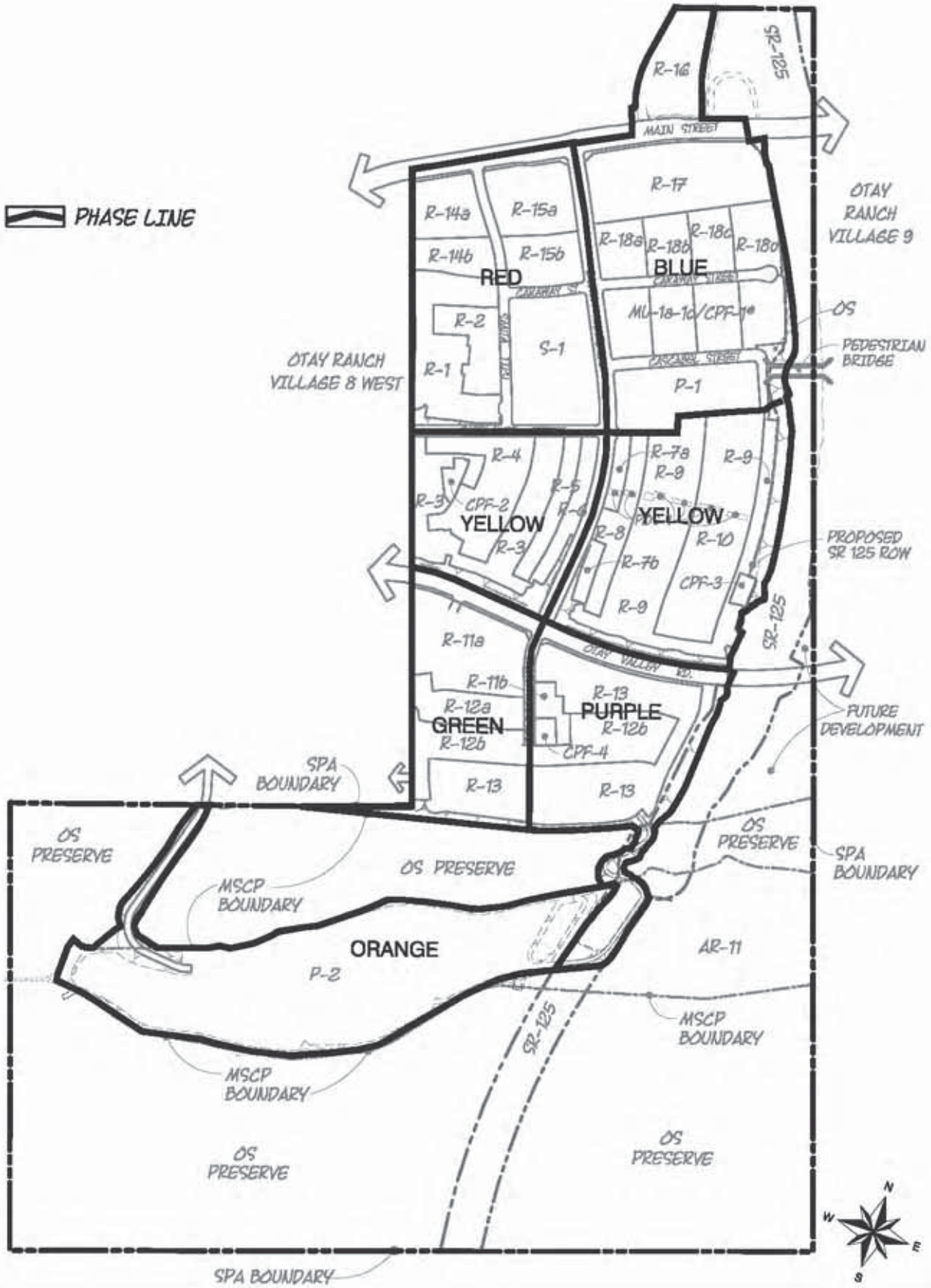

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-45

Phasing Plan for Village Eight East

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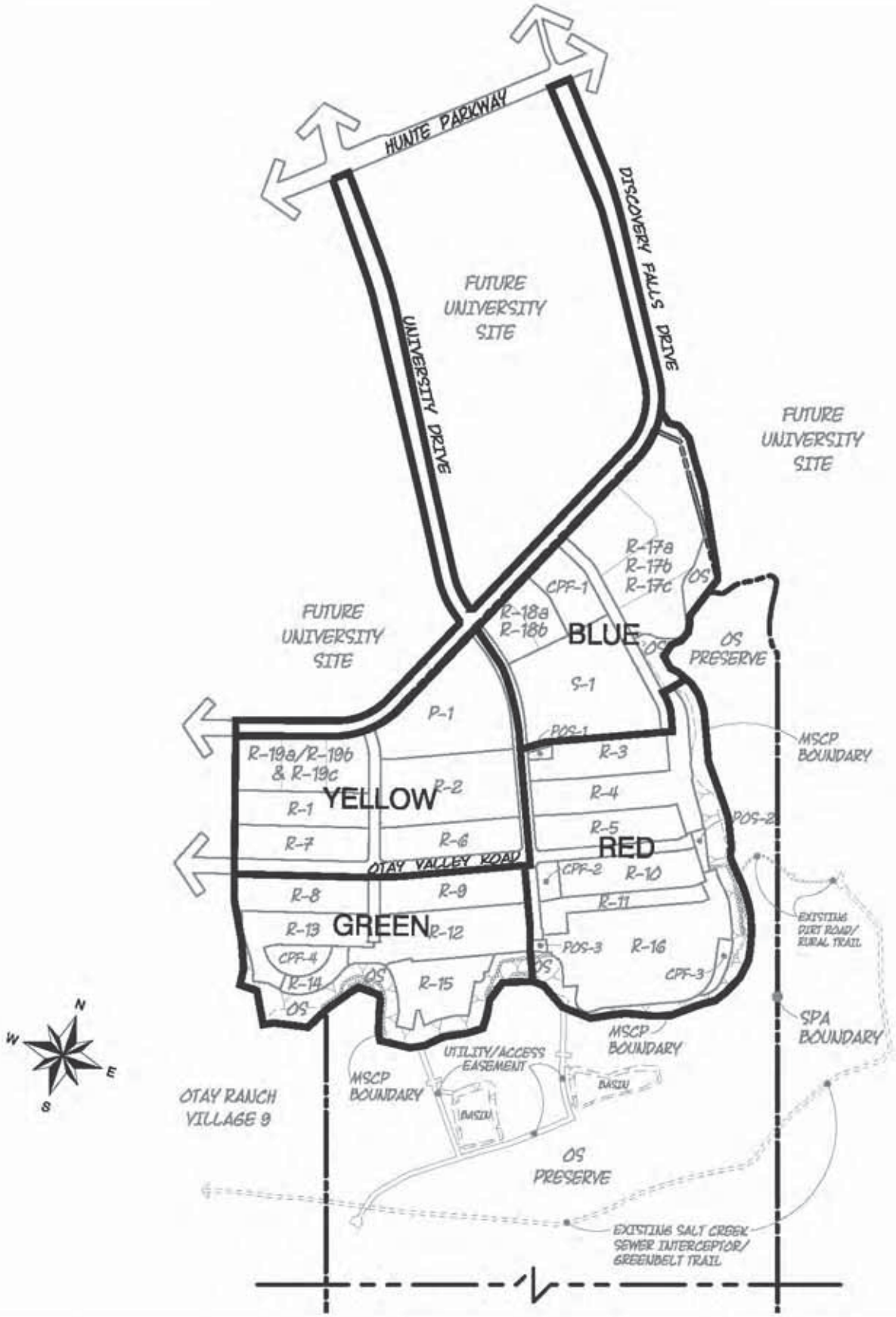

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 4-46
Phasing Plan for Village Ten

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4.2.8 General Plan and Otay Ranch GDP Amendments

Chula Vista General Plan Amendments

The following subsections provide an overview of proposed amendments to the Chula Vista General Plan. These amendments are required to implement the land plans of the proposed project.

Land Use Changes

The adopted Chula Vista General Plan Land Use Plan for the project area is shown on Figure 4-47. The proposed project includes proposed amendments to the land uses identified on the General Plan Land Use Map in Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. The proposed Chula Vista General Plan Land Use Plan for the project area is shown on Figure 4-48. The proposed amendments would result in the following changes in land use in each village.

Village Three North and a Portion of Village Four

Village Three North land use changes would convert the existing Limited Industrial land uses to the following: Residential Low–Medium, Residential Medium, Mixed-Use Residential, Parks and Recreation, Public and Quasi Public, Open Space (OS), Open Space Preserve (OS/P), and Mixed-Use Commercial. The proposed land use changes for the Portion of Village Four would convert a portion of the area designated as OS to OS/P. The amendment would allow for residential land uses to be located within the 1,000 foot nuisance easement area.

Village Eight East

Uses proposed for Village Eight East are consistent with the existing designated land uses: Mixed-Use Residential, Public and Quasi Public, Parks and Recreation, Open Space – Active Recreation and OS. Modifications are proposed to convert Residential Medium-High to Residential Medium.

Village Ten

Village Ten land use changes would convert the existing designated uses of Public and Quasi Public to Residential Medium, Mixed-Use Residential, Parks and Recreation, and OS.

Circulation Plan Changes

The adopted Chula Vista General Plan Circulation Plan–East is shown on Figure 4-49. The proposed project seeks to change portions of the adopted Circulation Plan–East. The

proposed Chula Vista General Plan Circulation Plan–East is shown on Figure 4-50a and Figure 4-50b. These amendments would allow the Circulation Plan to be consistent with proposed land use changes and include the following:

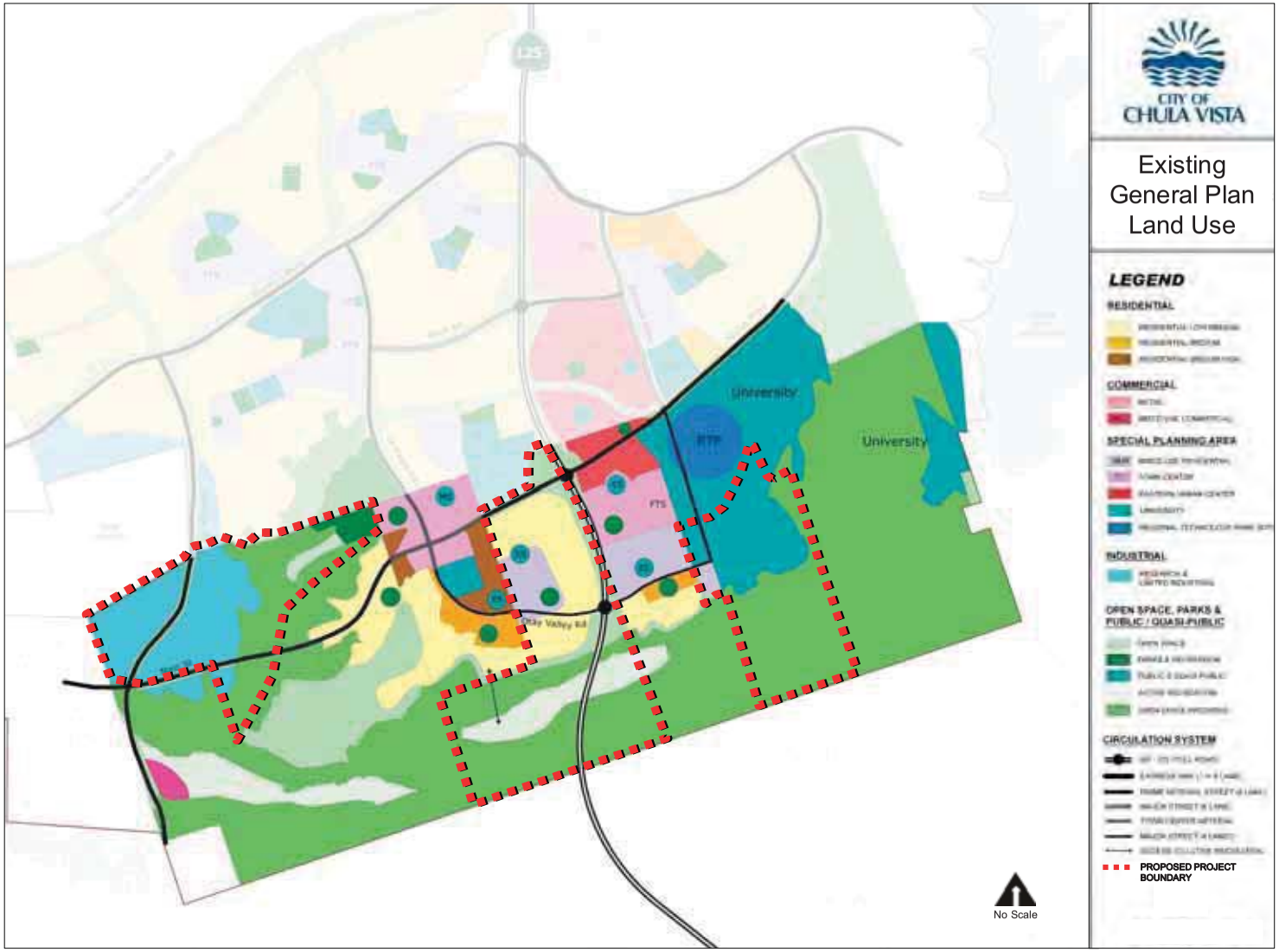
- Extend Discovery Falls Drive southerly and westerly to connect with Village Nine Street "B", and designate Discovery Falls Drive between Hunte Parkway and the University/RTP driveway as a 4-lane Major Road, and designate Discovery Falls Drive between the University/RTP driveway and Village Nine Street "B" as a Class II Collector;
- Rename Eastlake Parkway as "University Drive" between Hunte Parkway and Discovery Falls Drive. University Drive between Hunte Parkway and University Driveway #1 (northern) will retain its classification as a 4-lane Major Road, and reclassify the segment between University Driveway #1 and Discovery Fall Drive from a 4-lane Major Road to a Class II Collector;
- Rename Eastlake Parkway between Discovery Falls Drive and Otay Valley Road as University Drive, and reclassify this segment from a 4-lane Major Road to a 2-lane non-Circulation Element road (Residential Promenade Street w/ Village Pathway); and
- Reclassify Otay Valley Road, east of Village Nine Street "B" from a 4-lane Major Road to a 2-lane non-Circulation Element road (Secondary Village Entry w/ Median).

Otay Ranch GDP Amendments

The following provides an overview of proposed amendments to the Otay Ranch GDP. These amendments are required to implement the land plans of the proposed project.

Land Use Changes

The adopted Otay Ranch GDP Land Use Plan for the project area is shown on Figure 4-51. The proposed project seeks to amend the land uses identified on the Otay Ranch GDP Land Use Map in Villages Three North, a Portion of Village Four, Village Eight East, and Village Ten. The proposed Otay Ranch GDP Land Use Plan for the project area is shown on Figure 4-52. Tables 4-4, 4-6, and 4-8 provide the existing Otay Ranch GDP land uses as currently approved. Tables 4.5, 4-7, and 4-9 provide the proposed Otay Ranch land uses. The proposed amendments are the same as the previously described General Plan Amendments and would result in the following changes in land use in each village.



SOURCE: City of Chula Vista 2014

FIGURE 4-47
Adopted Chula Vista General Plan Land Uses

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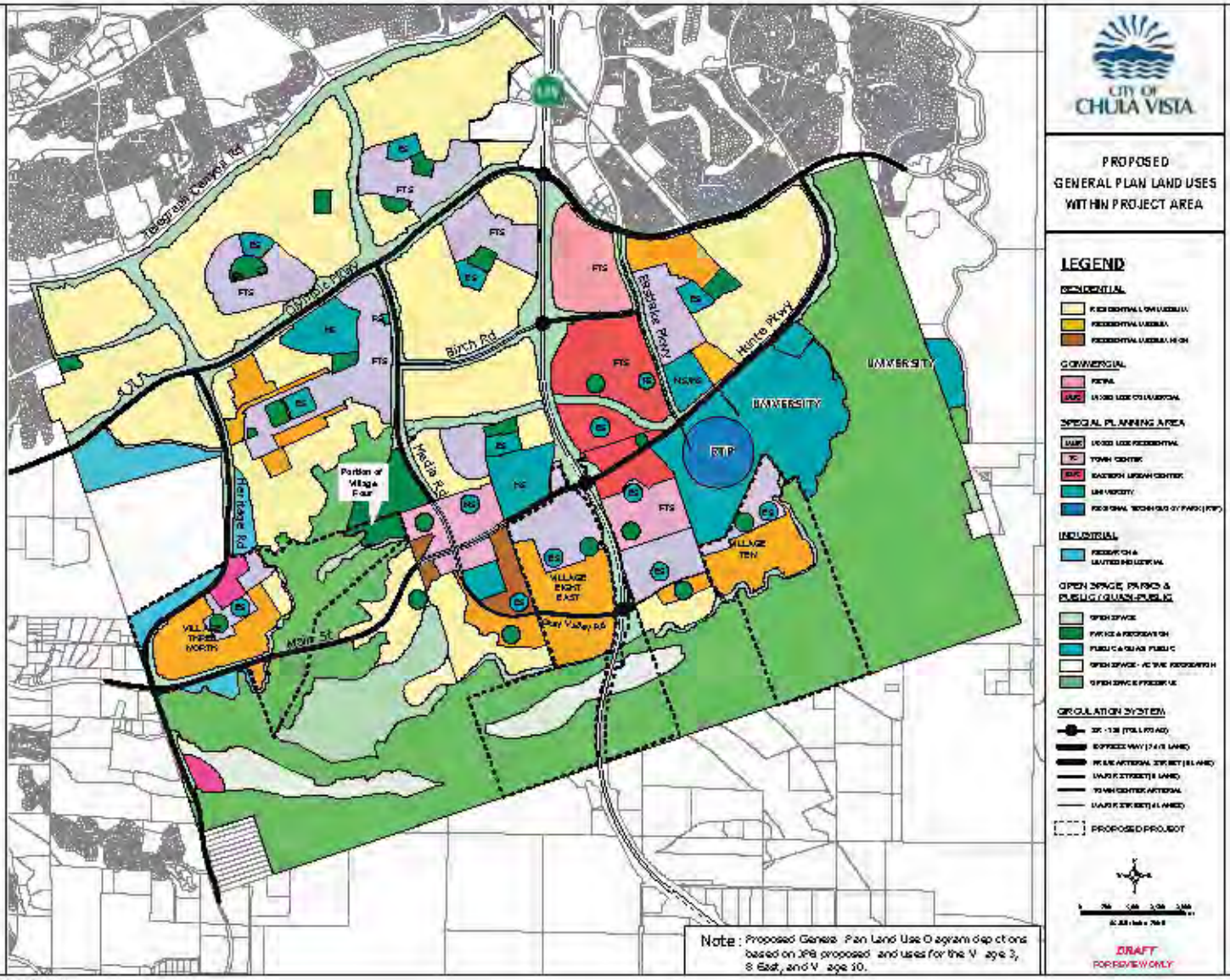

SOURCE: City of Chula Vista 2014

FIGURE 4-48
Proposed Chula Vista General Plan Land Uses

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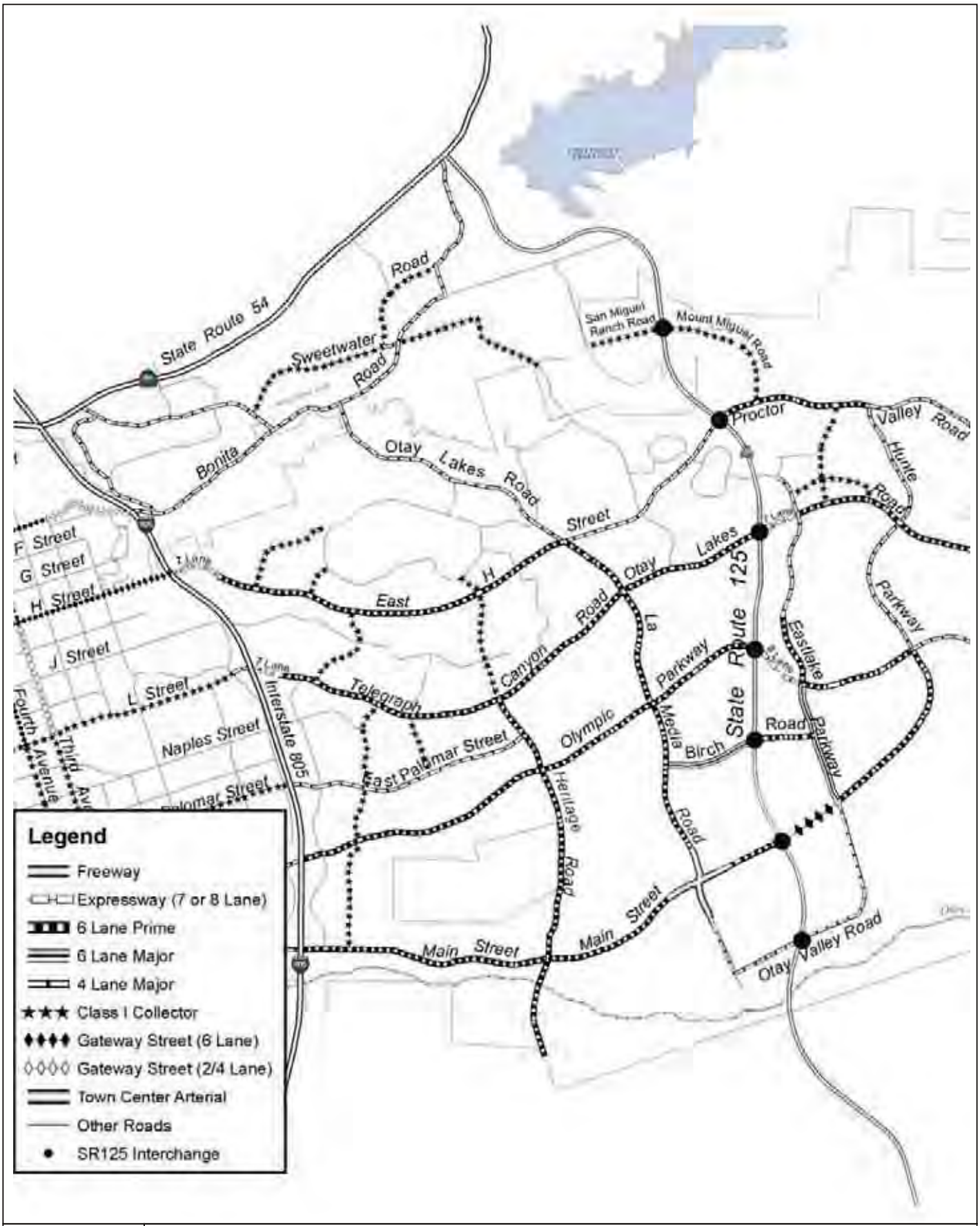

SOURCE: CHEN RYAN ASSOCIATES 2013

FIGURE 4-49

Existing General Plan Circulation

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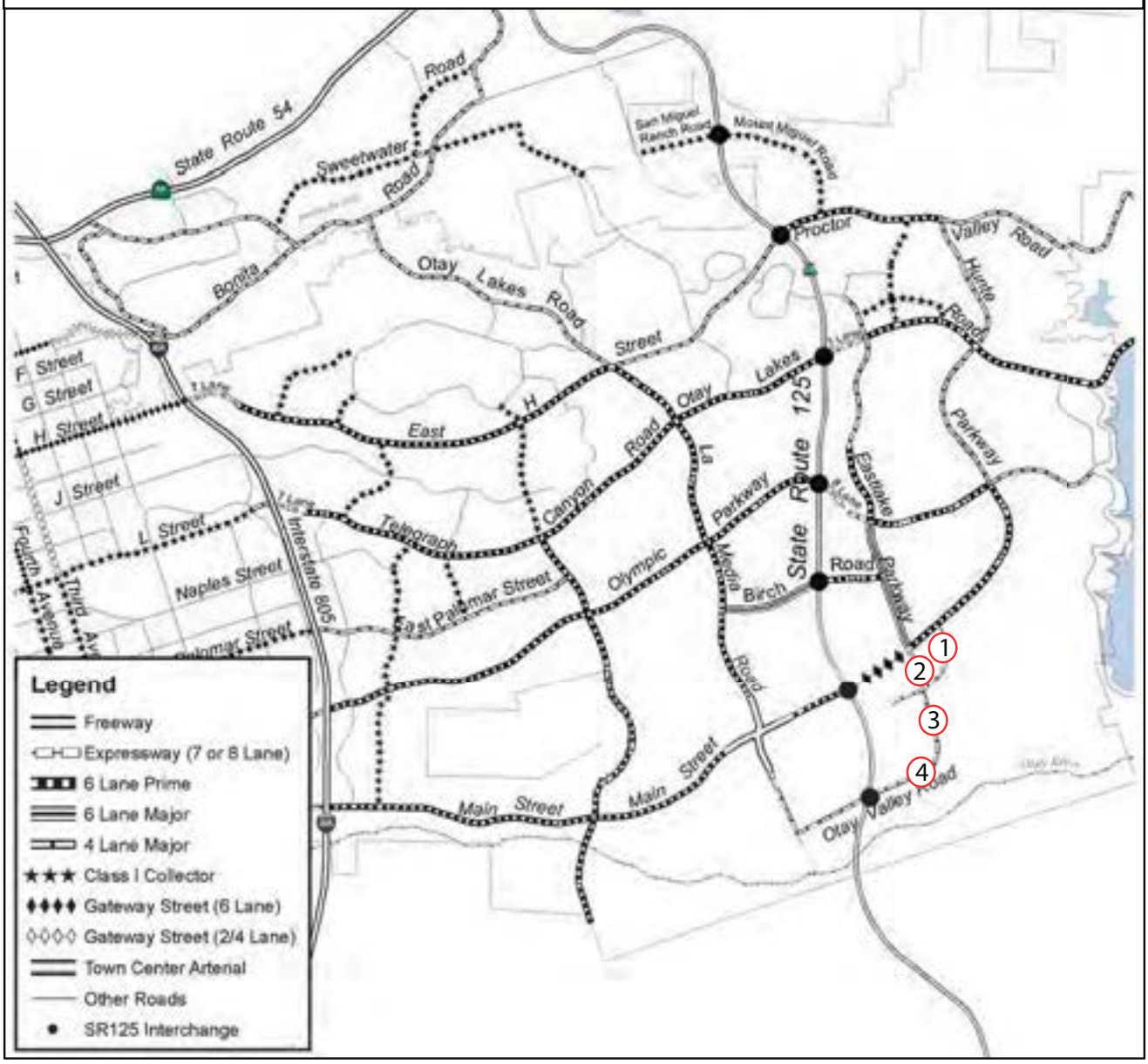
PROPOSED CHANGES

1. Extend Discovery Falls Drive southerly and westerly to connect with Village 9 Street "B" , and designate Discovery Falls Drive between Hunte Parkway and the University/RTP driveway as a 4-lane Major Road, and designate Discovery Falls Drive between the University/RTP driveway and Village 9 Street "B" as a Class II Collector;

2. Rename Eastlake Parkway between Hunte Parkway and Discovery Falls Drive as "University Drive". University Drive between Hunte Parkway and University Driveway #1 (northern) will retain its classification as a 4-lane Major Road, and reclassify the segment between University Driveway #1 and Discovery Fall Drive from a 4-lane Major Road to a Class II Collector;

3. Rename Eastlake Parkway between Discovery Falls Drive and Otay Valley Road as Village 10 Street "B" (interim - an official street name will be assigned at a later time), and reclassify this segment from a 4-lane Major Road to a 2-lane non-Circulation Element road (Residential Promenade Street w/ Village Pathway); and

4. Reclassify Otay Valley Road, east of Village 9 Street "B" from a 4-lane Major Road to a 2-lane non-Circulation Element road (Secondary Village Entry w/ Median).



SOURCE: CHEN RYAN ASSOCIATES 2014

FIGURE 4-50a

Proposed General Plan Circulation

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FIGURE 4-50b

Proposed Circulation Element Network

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Village Three North and a Portion of Village Four

Village Three North land use changes are proposed to convert existing Industrial use designations to the following: Low–Medium Village Residential, Medium Residential, Mixed Use, Mixed Use Commercial (MU-C), Community Park/Park (P-2/P), and OS. The Otay Ranch GDP land use changes for the Portion of Village Four would adjust a portion of the area designated as OS to OS/P. The amendment would locate residential uses within the 1,000 foot nuisance easement area (Table 4-4 and 4-5).

Table 4-4
Existing Village Three Land Uses

	Dwelling Units				Acreage									
Use	*SF*	*MF*	*Total*	*Dens*	*Res.*	*Park*	*CPF*	*Sch.*	*C'ml.*	*Ind.*	*Open Sp.*	*Art.*	*Total*	Approx. Pop.
Industrial										176.5			176.5	
Other							10.2				146.9	34.8	191.9	
Total							**10.2**			**176.5**	**146.9**	**34.8**	**368.4**	**0**

Table 4-5
Proposed Village Three Land Uses

	Dwelling Units				Acreage									
Use	*SF*	*MF*	*Total*	*Dens*	*Res.*	*Park**	*CPF*	*Sch.*	*C'ml.*	*Ind.*	*Open Sp.*	*Art.*	*Total*	Approx. Pop.
LMV	51		51	4.9	10.5		.5						11.0	169
M	951		951	7.8	122.4		1.1	8.3					123.5	3,169
MU		595	595	40.8	14.6	7.9	2.6		+				33.4	1,535
MUC									11.3 **				11.3	
I										39.9			39.9	
Other											129.5	19.8	164.3	
Total	**1,002**	**595**	**1,597**	**10.8**	**147.5**	**7.9**	**4.2**	**8.3**	**11.3**	**39.9**	**129.5**	**19.8**	**368.4**	**4,873**

\+ 20,000 Square feet of commercial may occur vertically or horizontally; therefore, actual acreage may vary.
* Part of park acreage requirement has been allocated to community parks. Actual park size to be determined at the SPA level. Park acreage based on ratio of 3.0 acres per 1000 persons.
** Includes 5.2 acres of Office and 6.1 acres of Mixed Use.

Village Eight East

Land uses proposed for Village Eight East would be consistent with the existing Otay Ranch GDP land use designations—Mixed Use, Community Park/Park, and OS—and would convert Medium-High Residential to Medium Residential (Table 4-6 and 4-7).

Table 4-6
Existing Village Eight East Land Uses

Use	Dwelling Units				Acreage								Approx. Pop.
	SF	*MF*	*Total*	*Dens*	*Res.*	*Park*	*CPF+*	*Sch.*	*C'ml.*	*Open Sp.*	*Art.*	*Total*	
LMV	635		635	4.3	148.5							148.5	2,115
MU						5.9**	2.9		8.9			17.7	
MH		293	293	14.5	20.2			10.0				30.2	756
Other										15.1	9.5	24.6	
Village Eight East Subtotal	*635*	*293*	*928*	*5.5*	*168.7*	*5.9*	*2.9*	*10.0*	*8.9*	*15.1*	*9.5*	*221.0*	*2,871*

** Part of park acreage requirement has been allocated to community parks. Actual park size to be determined at the SPA level. Park acreage based on ratio of 3.0 acres per 1000 persons.

Table 4-7
Proposed Village Eight East Land Uses

Use	Dwelling Units				Acreage								Approx. Pop
	SF	*MF*	*Total*	*Dens*	*Res.*	*Park*	*CPF*	*Sch.*	*C'ml.*	*Open Sp.*	*Art.*	*Total*	
M	943		943	7.2	130.5		1.6					132.1	3,140
MU		2,617	2,617	42.2	62.1	7.3	2.6	10.8				82.8	6,752
Other										11.2	9.9	21.1	
Village Eight East Subtotal	*943*	*2,617*	*3,560*	*18.5*	*192.6*	*7.3*	*4.2*	*10.8*	*	*11.2*	*9.9*	*236.0*	*9,892*

* 20,000 Square feet of commercial may occur vertically or horizontally; therefore, actual acreage may vary.
** Part of park acreage requirement has been allocated to community parks. Actual park size to be determined at the SPA level. Park acreage based on ratio of 3.0 acres per 1000 persons.

Village Ten

Village Ten proposed land use changes would convert the existing land designated as University to the following: Medium Residential, Mixed-Use Residential, Park, and OS (Table 4-8 and 4-9).

Table 4-8
Existing Planning Area Village Ten Secondary Land Uses*

Use	Dwelling Units				Acreage								Approx. Pop.
	SF	*MF*	*Total*	*Dens*	*Res*	*Park***	*CPF+*	*Sch*	*C'ml*	*Open Sp.*	*Art*	*Total*	
L	35		35	2.0	17.8							17.8	112
LMV	242		242	4.5	53.9							53.9	774
M	30		30	6.0	5.1							5.1	96
MU						4.0	2.5		3.1			9.6	

Table 4-8 (Continued)
Existing Planning Area Village Ten Secondary Land Uses*

Use	Dwelling Units				Acreage								Approx. Pop.
	SF	*MF*	*Total*	*Dens*	*Res*	*Park***	*CPF+*	*Sch*	*C'ml*	*Open Sp.*	*Art*	*Total*	
MH		335	335	17.8	18.8			4.6				23.4	854
CP						3.3						3.3	
Other										24.9	12.7	37.6	
Total	**307**	**335**	**642**	**6.7**	**95.6**	**7.3**	**2.5**	**4.6**	**3.1**	**24.9**	**12.7**	**150.7**	**1,836**

* Area is a project boundary as of September 27, 2013.
** Actual park size to be determined at the SPA level. Park acreage based on ratio of 3.0 acres per 1000 persons.
\+ Actual CPF acreage to be determined at the SPA level; CPF acreage based on ratio of 1.39 acres per 1000 persons.

Table 4-9
Proposed Village Ten Land Uses

Use	Dwelling Units				Acreage								Approx. Pop
	SF	*MF*	*Total*	*Dens*	*Res.*	*Park*	*CPF*	*Sch.*	*C'ml.*	*Open Sp.*	*Art.*	*Total*	
M	695		695	7.9	88.0		1.7					89.7	2,314
MU		1,045	1,045	41.6	25.1	7.6	2.6	9.2				44.5	2,696
Other										16.5		16.5	
Total	**695**	**1,045**	**1,740**	**15.4**	**113.1**	**7.6**	**4.3**	**9.2**		**16.5**		**150.7**	**5,010**

Circulation Plan Changes

The adopted Otay Ranch GDP Circulation Plan is shown on Figure 4-53. The proposed project seeks to change portions of the adopted Otay Ranch Circulation Plan. The proposed Otay Ranch GDP Circulation Plan is shown on Figure 4-54. These amendments would allow the Circulation Plan to be consistent with proposed land use changes and include the following:

- Extend Discovery Falls Drive southerly and westerly to connect with Village Nine Street "B", and designate Discovery Falls Drive between Hunte Parkway and the University/RTP driveway as a 4-lane Major Road, and designate Discovery Falls Drive between the University/RTP driveway and Village Nine Street "B" as a Class II Collector;
- Rename Eastlake Parkway as "University Drive" between Hunte Parkway and Discovery Falls Drive. University Drive between Hunte Parkway and University Driveway #1 (northern) will retain its classification as a 4-lane Major Road, and reclassify the segment between University Driveway #1 and Discovery Fall Drive from a 4-lane Major Road to a Class II Collector;
- Rename Eastlake Parkway between Discovery Falls Drive and Otay Valley Road as University Drive, and reclassify this segment from a 4-lane Major Road to a 2-lane non-Circulation Element road (Residential Promenade Street w/ Village Pathway); and

- Reclassify Otay Valley Road, east of Village Nine Street "B" from a Four-Lane Major Road to a Class II Collector.

Other amendments to the Otay Ranch GDP include the following:

- Establish revised village/planning area boundaries for Village Three North, Village Eight East, Village Nine, Village Ten, and the University/Research Technology Park Planning Area.
- Eliminate the requirement to provide an average 75-foot landscape buffer along Otay Valley Road through Village Ten due to the change in character of the road and surrounding village development.

Chula Vista MSCP Subarea Plan Boundary Adjustment

The adopted Chula Vista MSCP Subarea Plan is shown on Figure 4-55. The proposed project would result in an adjustment to the boundaries of the Chula Vista MSCP Preserve as identified in the MSCP Subarea Plan. Specifically, the project proposes to develop approximately 5.1 acres adjacent to Village Three North, 1.3 acres adjacent to Village Ten, and roughly 40.9 acres adjacent to the University site previously identified as Preserve. The project proposes to designate 4.3 acres in Village Three North and a Portion of Village Four and 50.7 acres on the east side of Salt Creek, previously identified for development by the MSCP, as Preserve. The result is an overall increase of approximately 7.7 acres of MSCP Preserve land. The proposed Chula Vista MSCP Subarea Plan is shown on Figure 4-56. Additional information on the MSCP Boundary Adjustment is provided in Section 5.8, Biological Resources, of the EIR.

Otay Ranch Resource Management Plan

The proposed project would result in a Boundary Modification to the Otay Ranch Preserve as identified in the Otay Ranch RMP. As described above, the project proposes to develop approximately 5.1 acres adjacent to Village Three North, 1.3 acres adjacent to Village Ten, and 40.9 acres adjacent to the future University/Research Technology Park site that were previously identified as Preserve. The project proposes to designate 4.3 acres in a Portion of Village Four and 50.7 acres on the east side of Salt Creek, which were previously identified for development by the Otay Ranch GDP and RMP, as Preserve, resulting in an overall increase of about 7.7 acres of Preserve land.

SOURCE: City of Chula Vista 2014

FIGURE 4-51
Adopted Otay Ranch General Development Plan Land Uses

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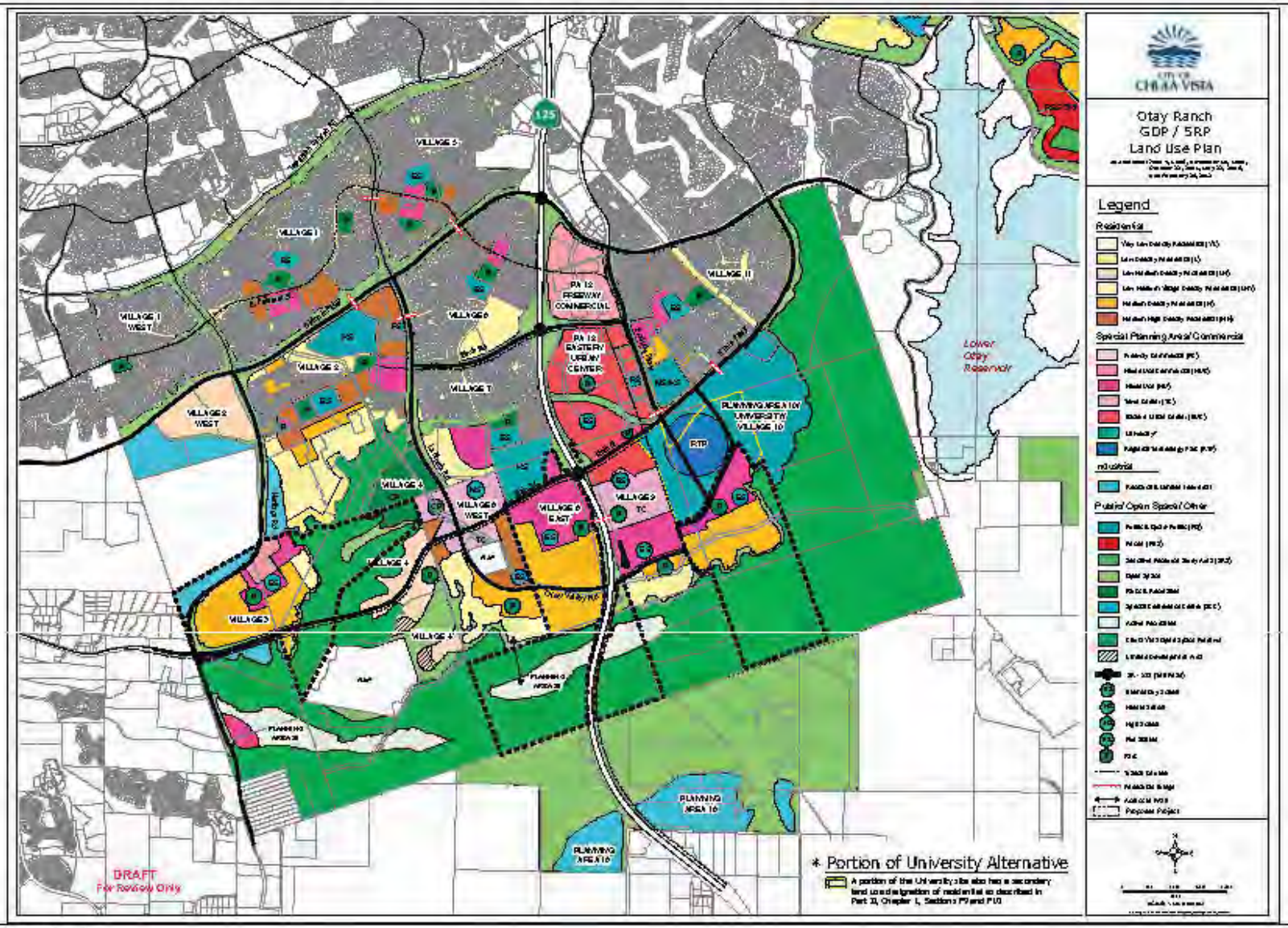

SOURCE: City of Chula Vista 2014

FIGURE 4-52
Proposed Otay Ranch General Development Plan Land Uses

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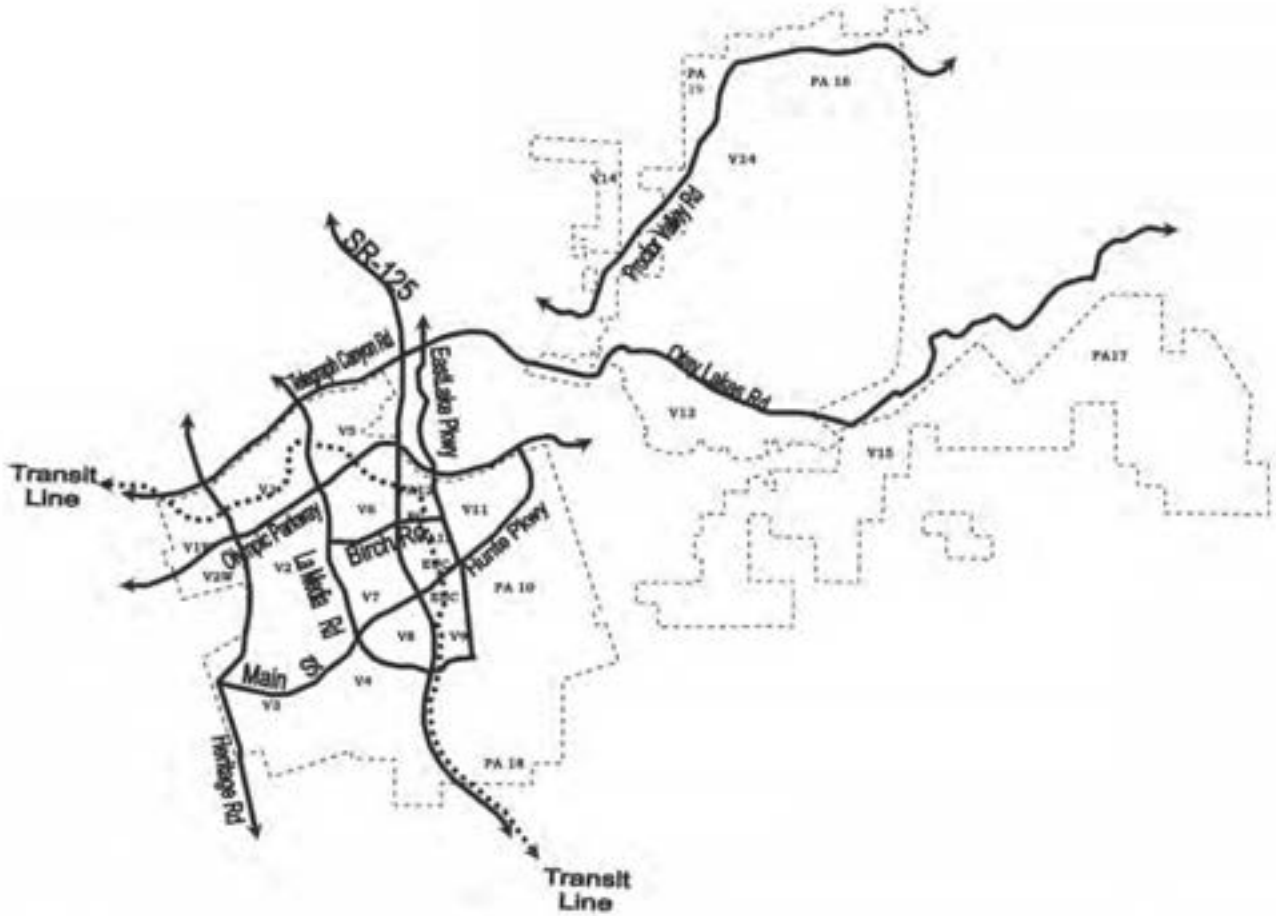

SOURCE: OTAY RANCH NEW HOMES 2013

FIGURE 4-53
Existing Otay Ranch GDP Circulation Plan

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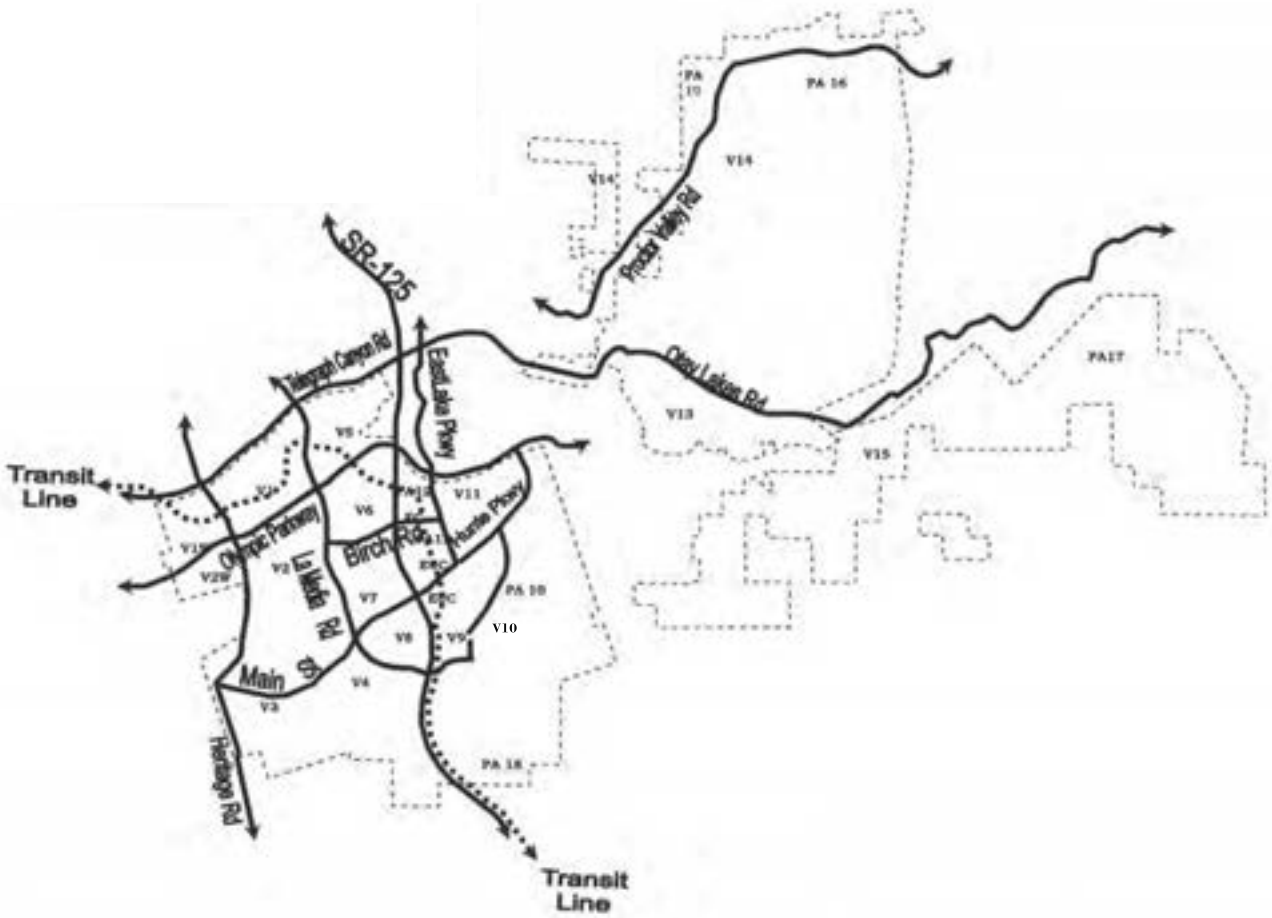

SOURCE: OTAY RANCH NEW HOMES 2013

FIGURE 4-54
Proposed Otay Ranch GDP Circulation Plan

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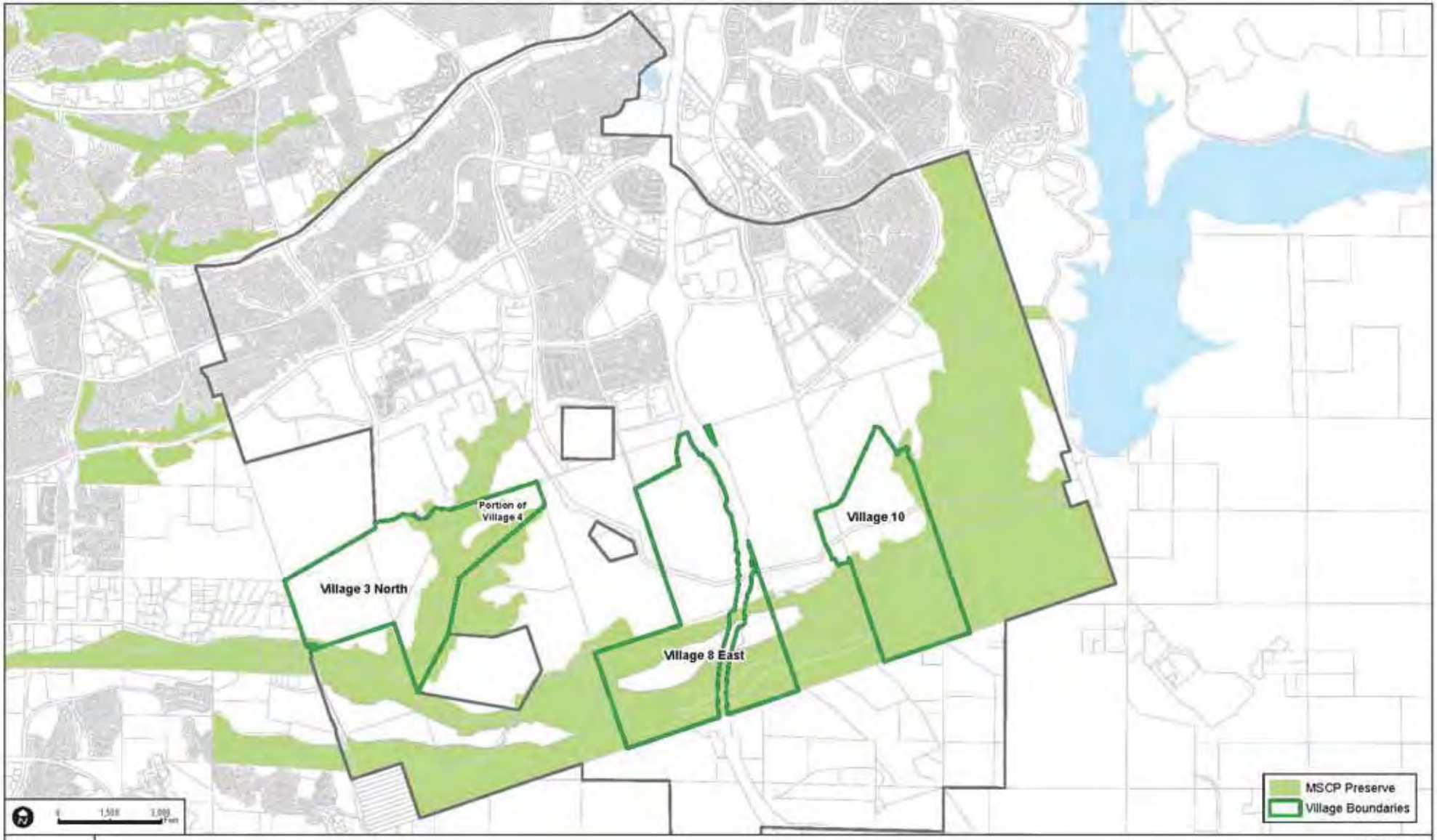

FIGURE 4-55
Existing MSCP

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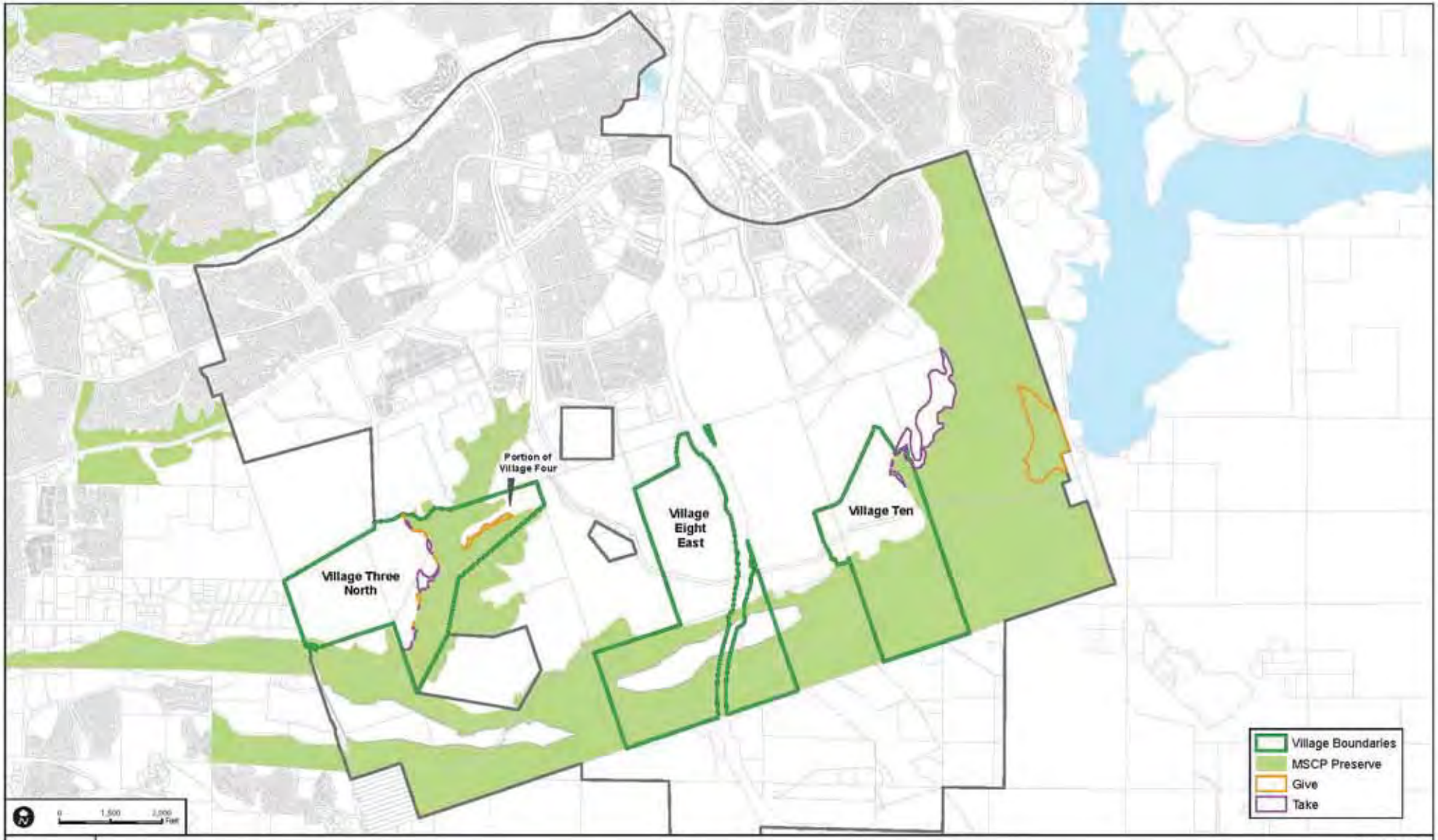

FIGURE 4-56
Proposed Preserve

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4.2.9 Sectional Planning Area Elements

The proposed project would require the approval of SPA Plan Amendments for the Village Seven SPA Plan (2004);Village Two, Village Three, and a Portion of Village Four SPA Plan (2006); and Village Nine SPA Plan (2014) to adjust the boundaries of those SPA Plans. This is required such that the same property is not within the boundaries of two SPA Plans. In addition, the project proposes the adoption of three SPA plans: Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. The SPA plans include the following components.

Air Quality Improvement Plan

The Air Quality Improvement Plan responds to the City's Growth Management policies and those policies and regulations established at the broadest geographic level (state and federal) to minimize air quality impacts during and after construction of projects. The Air Quality Improvement Plan also demonstrates compliance with the air quality standards and policies of the San Diego County Air Pollution Control District.

Water Conservation Plan

The Water Conservation Plan responds to the City's Growth Management policies and addresses the long-term need to conserve water in new developments, to address short-term emergency measures, and to establish standards for water conservation.

Energy Conservation Plan

The Otay Ranch GDP requires that all SPA plans 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.

Preserve Edge Plan

In accordance with the Otay Ranch RMP, a Preserve Edge Plan must be prepared for all SPA plans that contain areas adjacent to the Otay Ranch Preserve. The Preserve edge plan identifies allowable uses within appropriate land use designations for areas adjacent to the Preserve.

Fire Protection Plan

In accordance with the requirements of the City of Chula Vista Fire Department, Chapter 49 of the 2010 California Fire Code, and the City of Chula Vista Fire Code, a fire protection plan must be provided for all new development in the wildland–urban interface. A Fire Protection Plan

prepared for each SPA Plan Area identifies the wildfire risk associated with the proposed development in the wildland–urban interface and provides measures to minimize and mitigate potential for loss.

Agricultural Plan

The 1993 Otay Ranch certified Program EIR requires preparation of an Agriculture Plan concurrent with the approval of any SPA plan affecting on-site agricultural resources. This plan describes the type of agriculture activities allowed as an interim use, including buffering guidelines designed to prevent potential land use interface impacts related to noise, odors, dust, insects, rodents, and chemicals that may accompany agricultural activities and operations.

Affordable Housing Plan

The City of Chula Vista General Plan Housing Element requires that residential development with 50 or more dwelling units provide a minimum of 10% of the total dwelling units for affordable housing. Of these affordable housing units, one-half (5% of the total project) are to be designated available to low-income households and the remaining 5% to moderate-income households. To guarantee the provision of affordable housing opportunities, the City requires that the Applicant prepare a specific Affordable Housing Plan. The Affordable Housing Plan is implemented through an affordable housing agreement with the City.

The Affordable Housing Plan delineates how, when, and where affordable housing units will be provided, intended subsidies, income and/or rent restrictions, and methods to verify compliance.

Emergency Disaster Plan

An Emergency Disaster Plan should be adopted that becomes operative during periods of major emergency. This plan may be an existing plan of the City of Chula Vista or the County of San Diego or a separate plan that complements existing disaster responses. The plan shall include the following:

- A system for the effective management of emergency situations
- Lines of authority, communication, and relationships
- Staff tasks and responsibility assignments
- Protection and maintenance of community facilities and services
- Continuity of government
- A framework of recovery operations.

Parks, Open Space, and Recreation Master Plan

The Otay Ranch GDP requires all SPA plans to include a Parks, Recreation, Open Space, and Trails Plan. This plan identifies locations, conceptual designs, ownership, maintenance, and phasing of park, recreation, and trails facilities within the SPA plan area. The Parks, Recreation, Open Space, and Trails Plan for each village are provided in the corresponding SPA plan.

Public Facilities Finance Plan (PFFP)

The PFFP implements the City's Growth Management Program and Ordinance to ensure that the project's phased development is consistent with the overall goals and policies of the City's General Plan and Growth Management Program and the Otay Ranch GDP. The PFFP ensures that facilities are constructed concurrent with demand such that development of the project will not adversely impact the City's Quality of Life Standards. The PFFP also contains a fiscal analysis identifying capital budget impacts on the City as well as maintenance and operation costs for each phase of development.

The PFFP components include an analysis of infrastructure facilities such as drainage, traffic, water, and sewer, as well as the provision of community services and facilities, including fire protection and emergency services, law enforcement, libraries, schools, and parks. The analysis and provisions of the PFFP fulfill the Otay Ranch GDP requirements for SPA-level master facility plans for most facilities associated with the development of the villages. Where additional project-specific study and planning is needed, separate technical studies and plans for the villages have been prepared and included as a component of each SPA plan.

4.2.10 Environmental Design Features

In addition to the features of the project described in previous sections, other features designed to avoid or minimize project effects are proposed. Specifically, measures to avoid adverse effects on water quality from stormwater runoff are proposed, consistent with the requirements of the City. In addition, elements of the SPA Plans including the Air Quality Improvement Plan, Water Conservation Plan, Energy Conservation Plan, PFFP, and Pedestrian, Bicycle, and Transit Circulation Plans, have been incorporated into the project design and are discussed in this EIR as appropriate.

4.3 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 will be considered by the Chula Vista Planning Commission and City Council:

- Certification of a Final EIR, adoption of the Mitigation Monitoring and Reporting Program pursuant to CEQA, and approval of the CEQA Findings and Statement of Overriding Considerations
- Approval of the Chula Vista General Plan Amendments (please see discussion in Section 4.2.8)
- Approval of the Otay Ranch GDP Amendments (please see discussion in Section 4.2.8)
- Approval of the Otay Ranch RMP Boundary Modification
- Approval of amendments to the Villages Two, Three, and a portion of Four SPA Plan; Village Seven SPA Plan and Village Nine SPA Plan
- Adoption of the Village Three North and a Portion of Village Four SPA Plan (please see discussion in Section 4.2.9)
- Adoption of the Village Eight East SPA Plan (please see discussion in Section 4.2.9)
- Adoption of the Village Ten SPA Plan (please see discussion in Section 4.2.9)
- Approval of three TMs; Village Three North and a Portion of Four, Village Eight East, and Village Ten (please see discussion in Section 4.2.6)
- Approval of the Chula Vista MSCP Subarea Plan Boundary Adjustment (please see discussion in Section 4.2.8)
- ~~Approval of Grading Plans (please see discussion in Section 4.2.5)~~
- Habitat Loss and Incidental Take (HLIT) Ordinance Permit
- Amend the Development Agreement in accordance with the Land Offer Agreement provisions.

Additionally, implementation of the project may require that the Applicant obtain approval, permits, licenses, certifications, or entitlements from various federal, state, and other local agencies, including but not limited to those listed in Table 4-10.

Table 4-10
Future Discretionary Approvals and Permits

Discretionary Approval/Permit	Agency Description	Agency Status	Notes/Explanation
Final "A" Map(s)/Financial Parcel Map(s)	City of Chula Vista	Lead Agency	Mapping to facilitate project financing.
Final "B" Map(s)	City of Chula Vista	Lead Agency	Final mapping to facilitate development.
Construction and Encroachment Permit(s)	City of Chula Vista	Lead Agency	Construction and encroachment permits are required for work performed within the City's road right-of-way.
License, Easement, Entry Permit, Encroachment Permit, Land Sale, Land Exchange, or Other Similar Action	City of San Diego	Responsible Agency	Approval to relocate City of San Diego waterlines through Villages Eight East and Ten from existing alignment into future alignment of Otay Valley Road/La Media Road.
Construction and Encroachment Permit(s)	Caltrans	Responsible Agency	Construction and encroachment permits are required for work performed within Caltrans road right-of-way (SR-125).
Site Plans	City of Chula Vista	Lead Agency	Site plans for single-family residential, mixed-use sites, and park developments.
Village Core Master Precise Plans	City of Chula Vista	Lead Agency	Each SPA Plan includes a requirement to prepare a subsequent Master Precise Plan to better define the village core uses, character and site plan.
Section 401 Water Quality Certification	RWQCB	Responsible Agency	Action required for development projects affecting waters of the United States.
Section 404 Permit – Clean Water Act	ACOE	Responsible Agency	Action required for development projects affecting waters of the United States.
Streambed Alteration Agreement/Memorandum of Understanding	CDFW	Responsible Agency/Trustee Agency	Action required for development projects affecting jurisdictional streams/waters.
Air Quality Permit	SDAPCD	Responsible Agency	Action required for construction and development projects using certain machinery, such as backup or emergency generators.
NPDES Permit; General Construction Activity Storm Water Permit, including the Storm Water Pollution Prevention Plan	RWQCB	Responsible Agency	Action required for development projects.
NPDES General Groundwater Extraction Waste Discharge Permit	RWQCB	Responsible Agency	Permit would be applicable if groundwater disposal is proposed during construction.
General Construction Storm Water Permit	RWQCB	Responsible Agency	Action required for development projects.
Subarea Master Plan	OWD	Responsible Agency	Reporting approval required from OWD for overall water availability, service connection, etc.

Caltrans = California Department of Transportation; RWQCD = Regional Water Quality Control District; ACOE = U.S. Army Corps of Engineers; CDFW = California Department of Fish and Wildlife; SDAPCD = San Diego Air Pollution Control District; NPDES = National Pollutant Discharge Elimination System; OWD = Otay Water District

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5.1 LAND USE, PLANNING, AND ZONING

This section tiers from the 1993 Otay Ranch GDP Program EIR, because the proposed project is within the boundaries of the Otay Ranch GDP and implements land uses (although at a different intensity), a circulation network, and village design policies that were analyzed in the 1993 Otay Ranch GDP. This section also tiers from the 2005 General Plan Update and GDP Amendment (GPU/GDPA) Program EIR, because existing conditions for the entire Otay Ranch area were assessed as part of the 2005 GPU/GDPA Program EIR. The 1993 Otay Ranch GDP Program EIR determined that land use impacts as a result of implementation of the proposed land plan would be significant and unavoidable. The 2005 GPU/GDPA also determined that impacts to land use would be significant and unavoidable. However, the Chula Vista City Council determined that land use impacts identified in these EIRs were acceptable because of specific overriding considerations.

A proposed project's land use effects fall into two main categories: (1) conflicts with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect; and (2) physically dividing an established community. 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 separately 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 serves as 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 the long-term planning framework for the San Diego region. It also provides a broad context in which local and regional land use decisions can be made 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 Eight East is identified as a planned Town Center

and a portion of Village Ten as a potential Special Use Center. Village Three North and the Portion of Village Four are not identified as smart growth areas by SANDAG (SANDAG 2012). Basic RCP smart growth principles 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 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).

After the RTP/SCS were adopted by SANDAG, a lawsuit was filed by petitioners Cleveland National Forest Foundation and the Center for Biological Diversity (later joined by Sierra Club and the California Attorney General's Office). The lawsuit challenges SANDAG's EIR evaluating the adopted 2050 RTP/SCS based on claims arising under CEQA. The trial court issued a decision partially in favor of petitioners in December 2012.

SANDAG appealed the trial court's decision; the appeal has been fully briefed and is set for oral argument before the Court of Appeal on August 14, 2014. A Court of Appeal decision is expected within 90 days of the conclusion of oral argument (or about November 2014). No injunction was issued during the appeal process, and SANDAG continues to implement the 2050 RTP/SCS.

Local Level

City of Chula Vista General Plan

The City of Chula Vista (City) 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 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. The adopted General Plan Land Use Plan for the project area is shown in Figure 4-47. The 2005 GPU/GDPA proposed preferred land uses for the project area. Village Three North was designated for Limited Industrial, consistent with the Otay Ranch GDP land uses; however, the land uses for Villages Eight East and Ten were not adopted. These areas which were not acted upon as part of the 2005 GPU were designated as "Deferral Areas" and the land uses remained as identified by the 2001 Otay Ranch GDP uses for Villages Eight East and Ten.

The 2013 GPA/GDPA did not address Village Three North and a Portion of Village Four. The 2013 GPA/GDPA did include Village Eight East and Village Ten; however, it did not alter any land uses for these villages, rather, the 2013 GPA/GDPA separated Village Eight into Villages Eight West and Eight East and relocated the RTP out of Village Eight to combine with the University site.

<u>Village Three North and a Portion of Village Four</u>

Village Three is designated Research & Limited Industrial and Open Space Preserve (OS/P) in the Chula Vista General Plan Land Use Diagram (Figure 4-47).

The Portion of Village Four within the project area is designated Open Space (OS) and Parks & Recreation in the Chula Vista General Plan Land Use Diagram (Figure 4-47).

Village Eight East

The General Plan designates Village Eight East for residential uses including Residential Mixed Use, Residential Low–Medium, Public and Quasi Public, Parks and Recreation, Active Recreation, and OS (Figure 4-47).

Village Ten

The General Plan designates Village Ten as Public & Quasi Public (University Study Area, Figure 4-47).

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 City's stewardship of 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; August 1998) is a subregional plan under the California Natural Community Conservation Planning Act (Fish and Game Code sections 2800-2835). The MSCP covers 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 Subregional Plan is implemented through local subarea plans prepared by participating jurisdictions. The City of Chula Vista MSCP Subarea Plan was approved in May 2003, and it provides for conservation of covered species and their associated habitats by establishing a preserve of interconnected conservation lands. The combination of the MSCP Subregional Plan and subarea plans, including the City's MSCP Subarea Plan, serves as a Multiple-Species Habitat Conservation Plan pursuant to section 10(a)(1)(B) of the federal Endangered Species Act and as Natural Community Conservation Plan (NCCP) and associated permit under the Natural Community Conservation Planning Act. The MSCP Subregional Plan is being implemented in phases as participating jurisdictions and special districts submit their subarea plans for approval to the U.S. Fish and Wildlife service (USFWS) and the California Department of Fish and Wildlife (CDFW). Upon approval, the USFWS and CDFW authorize the take of listed species and other species of concern, subject to the terms of the MSCP Subarea Plan and the MSCP Subregional Plan. Conservation and management responsibilities and implementation guarantees for each subarea plan are set forth in implementing agreements between the entity responsible for each subarea plan and USFWS and CDFW.

As stated above, the City's MSCP Subarea Plan was approved in 2003. The City's Implementation Agreement with USFWS and CDFW was entered into in February 2003. The City's MSCP Subarea Plan was prepared pursuant to a general outline developed by USFWS and CDFW to meet the requirements of the Natural Community Conservation Planning Act. The City's MSCP Subarea Plan is consistent with the MSCP Subregional Plan and contributes to its implementation. In addition, the City's MSCP Subarea Plan is a stand-alone document for purposes of implementing portions of the MSCP Preserve.

The City's Preserve was developed by the City, in cooperation with USFWS and CDFW, property owners, developers, and environmental groups. The majority of the City's Preserve consists of hard-line areas designated for 100% conservation, and these areas are either already in public ownership or will be dedicated into the Preserve as part of the City's development approval process for covered projects. Preserve boundaries for covered projects were established on a project-by-project basis after evaluation of habitat and species data and/or surveys conducted as part of project entitlement processing, evaluation by USFWS and CDFW, and consideration of how such mitigation could best contribute to the overall MSCP Subregional Plan.

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 Otay Ranch 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. A discussion of the facility siting criteria is contained in Section 5.8, Biological Resources.

Otay Ranch General Development Plan

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. The Otay Ranch GDP land use designations for the villages included in the project area are shown in Figure 4-51.

As shown in Figure 4-51, the Otay Ranch GDP designates Village Three North as Industrial and Open Space (OS); the Portion of Village Four as OS; Village Eight East as Low–Medium Density Village Residential, Medium–High Density Residential, Mixed Use, and OS; and Village Ten as University and OS. The Otay Ranch GDP also provides an alternative land use plan for Village Ten with the following designations: Low–Medium Density Village Residential, Medium-Density Residential, Medium–High Density Residential, and Mixed Use.

Otay Ranch Resource Management Plan

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 also connects 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 Otay Ranch 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 Preserve and for determining the proportionate share for each village. The Phase 2 RMP also addresses preservation of steep slopes within Otay Ranch.

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.

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 2012, Chapter 19.48).

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 2012, Section 19.48.020). 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 2012, Section 19.48.025).

As described above, a majority of the project area is zoned P-C. However, off-site improvement areas include limited areas outside the P-C zone. These areas are located to the north and west of Village Three North (Off-Site Improvement Areas 1, 2, 3, and 5) and are zoned Agriculture (A), General Industrial (I), and Limited Industrial (LI) (City of Chula Vista 2012).

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 park land; 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.

Park Land 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).

Tentative Map

Title 18 of the CVMC requires the adoption of a tentative map (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 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 identifies a 70-acre community park to be developed in Village Four.

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 includes segments of the Greenbelt Trail.

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 (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. Brown Field 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. 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.

As depicted in Figure 5.1-1, a majority of the project area is within Review Area 2 of the airport influence area and a small portion is within Review Area 1. The portion of the project area within Review Area 1 is designated as Safety Zone 6–Traffic Pattern Zone; however, it is not exposed to aircraft noise levels of 60 dB CNEL or greater. The Traffic Pattern Zone has a low relative risk level and both residential and non-residential development is compatible in this zone. A majority of the project area is within the FAA Height Notification Boundary and the southern portion of the project area is subject to height restrictions ranging from 676.3 feet above mean sea level (amsl) to 876.3 feet amsl. In addition, a majority of the project area is within the Airport Overflight Notification Area, which requires notification for all new residential development in this area (SDCRAA 2010).

SOURCE: Aerial Photo Maps

FIGURE 5.1-1

Brown Field Airport Influence Area

UNIVERSITY VILLAGES PROJECT EIR

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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 planning area for the OVRP Concept Plan 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 OVRP to the land surrounding the Lower and Upper Otay Lakes. A majority of the land within the plan is privately owned. The plan does not change existing zoning, land use plans or add new development regulations, nor does it preclude private development. Rather, it provides the multiple jurisdictions with policies and direction regarding land acquisition and development of the plan. The intent of the 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.

5.1.1.2 On-Site Conditions

The 1,375-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 composed of Village Three North and a Portion of Village Four, Village Eight East, and Village Ten, as well as off-site improvement areas for necessary infrastructure and public utilities. Historically, the Otay Valley Parcel, including the project area, has been used for ranching, grazing, dry farming, and truck farming activities. The project area is undeveloped and is not currently occupied by any structures or uses.

5.1.1.3 Surrounding Land Uses

Surrounding land uses are more fully described in Chapter 3, Environmental Setting. Village Three North is surrounded by the existing Otay Landfill and Village Two to the north, various auto parts recycling facilities to the west, Main Street/Heritage Road to the southwest, the OVRP to the south, and Wolf Canyon to the east. The portion of Village Four included in the proposed project (a Portion of Village Four) is surrounded by Wolf Canyon to the south and west, Village Two to the north and Village Seven to the east.

Village Eight East is surrounded by Village Eight West to the west, Wiley Road and the OVRP to the south, SR-125 to the east, and Village Seven to the north. Village Seven is currently developed with a mix of residential densities and schools, including Wolf Canyon Elementary School and Olympian High School.

Village Ten is surrounded by Village Nine to the west, Wiley Road and the Preserve/OVRP to the south, Salt Creek to the east, and the future University site to the north and east. The Brown Field Formerly Used Defense Site (FUDS) is within the southern portion of the Village Ten SPA Plan Area. Residential land uses are developed in Village Eleven further to the north of Village Ten.

As described in greater detail in Section 5.15, Hazards, the Brown Field FUDS consists of real property formerly owned, leased, or otherwise controlled by U.S. military services (U.S. Navy) during which contamination occurred, and where such property was disposed of prior to 1986. Specifically, the Brown Field FUDS was used by the Navy between 1942 and 1960 for practice dive-bombing and later as an aerial rocket range (Parsons 2007). By mid-1961, the Brown Field FUDS area was determined to be surplus and was sold or otherwise disposed of through the General Services Administration (Parsons 2007).

The only structures within the former Brown Field FUDS-eligible property boundary are buildings associated with the state's Richard J. Donovan State Correctional Facility. Another portion of the Brown Field FUDS area consists of Preserve land.

A portion of the southern Village Ten SPA Plan area is within the Brown Field FUDS-eligible property boundary. However, no Village Ten housing development is proposed in this area (Parsons 2007). As explained further in Section 5.15, Hazards and Risk of Upset, of this EIR, the former Brown Field FUDS-eligible property boundary area does not pose an unacceptable risk to human health or ecological receptors resulting from exposure to hazardous munitions in the surface soil at the site (see Parsons 2007, p. ES-2). Relying on site inspections and screening level risk assessments, Parsons reported to the U.S. Army Corps of Engineers (Corps or ACOE) that "immediate removal action was not warranted at this time," and recommended that the Corps complete a remedial investigation and feasibility study, along with surface water and sediment sampling of munitions debris and constituents (see Parsons 2007, p. ES-2).

The OVRP Concept Plan is one of the major open space areas within the southern area of San Diego County, linking south San Diego Bay with Otay, San Miguel, and the Jamul Mountains. It provides current and future residents and visitors recreational opportunities while protecting open space and biological resources. The plan is located south of the proposed project and portions of the Village Three North, Village Eight East, and Village Ten development sites are visible from trails and canyons located north and south of Otay River within the plan's planning area.

5.1.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR sections 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

The following impact analysis is based on the proposed land use plans for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. As described in Chapter 4, Project Description, the Village Eight East land use plan includes an alternative development scenario, which allows for either single-family or multi-family dwelling units in neighborhoods R-11A and 12A, south of Otay Valley Road. The analysis below considers the single-family land use option presented in Chapter 4.

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

The proposed project site is currently undeveloped; thus, the project would not incur an impact relating to physically dividing an established community on the site. Instead, the following discussion focuses on potential land use incompatibilities with surrounding off-site and future on-site land uses. First, potential land use conflicts associated with construction are discussed. Then the project's operational compatibility with surrounding land uses and internal land uses and the off-site improvement area are analyzed. Lastly, the project's impact on community character is addressed.

i. Short-Term Construction Impacts

Construction of the proposed project would primarily require grading, road building, installation of utilities, and building construction. Construction would be phased, beginning with Village Three North and a Portion of Village Four, then Village Eight East, and lastly Village Ten. The cut and

fill material resulting from grading for each village development area would be balanced on site and would not impact any existing surrounding land uses or roadways. Construction activities within the village development areas would not encroach upon surrounding villages or local streets outside the project area. Trips associated with construction of the proposed project would be directed to adjacent major arterials. The major arterials are part of the City's Circulation Element which was established such that roadways would not divide communities; rather, they would create the border within which communities exist. The villages would be built on currently undeveloped land and designed to improve connectivity in the region. Since no development currently exists on the proposed project sites, construction would not divide an established community.

During construction of the proposed project, indirect effects may include dust and construction related soil erosion and runoff. Dust may result in indirect impacts to a number of special-status wildlife species. Indirect impacts to special-status bird species may occur if construction is conducted during the breeding season for coastal California gnatcatcher (February 15–August 15) and raptors (January 15–August 31). Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to limit impacts of fugitive dust on sensitive habitat and species (See Section 5.4 Air Quality MM-AQ-2). Additionally, as required by MM-BIO-6, graded areas will be periodically watered to minimize dust that may affect adjacent vegetation.

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 two times daily, resulting in an approximately 55% reduction of particulate matter.

The majority of the project site is adjacent to currently undeveloped land; therefore, construction activities would not be incompatible with the undeveloped land to the north, east, and west of the project site. The northern edge of Village Eight East is adjacent to Olympian High School (part of Village Seven). Construction activities in this area would have the potential to be incompatible with the high school if equipment generates noise or vibration that would be disruptive to the operation of the school. The potential for construction to result in excessive noise or vibration is addressed in Section 5.5, Noise. As discussed in this section, construction noise and vibration could potentially impact sensitive receptors (including Olympian High School), and mitigation measures NOI-7 and NOI-8 are required to reduce potential impacts. No conflict with this existing land use would occur during construction; impacts would be **less than significant**.

The City's MSCP Subarea Plan Preserve is adjacent to each of the villages. Construction would have the potential to result in direct and indirect impacts to the biological resources in the MSCP

areas as a result of loss of habitat, stormwater runoff, noise, and dust. The mitigation measures in Section 5.10, Water Quality and Hydrology, of this EIR would protect the MSCP area from stormwater runoff from construction. Requirements for noise levels, pre-construction biological surveys, and habitat replacement and restoration are included as mitigation in Section 5.5, Noise, and Section 5.8, Biological Resources, of this EIR. Dust-minimizing construction practices are required in mitigation measure AQ-3 in Section 5.4, Air Quality, of this EIR. This measure would protect sensitive species from indirect impacts related to fugitive dust and reduced access to sunlight. No land use conflict with the MSCP Preserve would occur during construction as a result of direct or indirect biological resources impacts. Construction of the proposed project would not be incompatible with existing adjacent land uses. Impacts would be **less than significant**.

ii. Incompatibility with Surrounding Land Uses

Infrastructure in the MSCP Preserve

Certain infrastructure improvements associated with the proposed project would be placed within the Preserve, including trail, sewer, and stormwater facilities. These improvements have been located in the least biologically sensitive areas pursuant to the City's MSCP Subarea Plan's Facility Siting Criteria (CV MSCP Section 6.3.3). The infrastructure improvements have been designed consistent with the MSCP Facility Siting Criteria to minimize impacts to covered species in the Preserve. Following construction, the sewer and stormwater facilities would be located underground and would not result in any land use impacts.

The southern portion of Village Ten, approximately 153.9 acres, are located within the Brown Field FUDS-eligible property boundary. The 153.9 acres are part of the designated Otay Ranch Preserve. The project proposes no inhabited structures (or any other structures) within the 153.9-acre FUDS-eligible property boundary.

However, the project proposes certain improvements within the Preserve at the outer perimeter of the FUDS-eligible property boundary. The proposed improvements consist of: (a) construction of two water quality basins; (b) installation an access road for maintenance of the basins; and (c) installation of the OVRP/Greenbelt trail. All such improvements would be situated outside the former target boundary within the FUDS-eligible property boundary, as shown in Figure 5.15-6 found in Section 5.15, Hazards and Risk of Upset, of this EIR.

Of the 153.9-acre FUDS-eligible property boundary, the project's water quality basins would cover approximately 1.8 acres, the access road would cover 0.8 acres, and the trail would cover about 1.3 acres. The balance of the acreage, approximately 150 acres, would remain undisturbed Preserve land, and public access would be restricted through appropriate barriers (e.g., fencing) and signage as determined necessary by the Otay Ranch Preserve Owner/Manager**.**

The Brown Field FUDS-eligible property was the subject of a site inspection conducted by Parsons Infrastructure and Technology group for the ACOE in 2007. The site inspection consisted of a qualitative reconnaissance of the site area and munitions constituent sampling (Parsons 2007). During the inspection, munitions debris was found within the area, along with evidence of surface soil contamination (Parsons 2007).

After conducting screening level risk assessments, Parsons determined that the area does not pose an unacceptable risk to human health or ecological receptors due to exposure to hazardous munitions constituents in the soil at the site. Further, Parsons concluded that the presence of munitions and explosives of concern, along with munitions debris, have the potential for harm to human health, if there is contact to still functioning munitions. However, Parsons determined that immediate removal action was not warranted; instead, Parsons recommended a remedial investigation and feasibility study with surface water and sediment sampling as the next step in ACOE's phased cleanup process (Parsons 2007).

Notwithstanding the determinations in the Parsons report, because of the presence of some munitions and explosives of concern within the 153.9-acre FUDS-eligible property where some project-related improvements will be constructed, this EIR provides mitigation measures HAZ-2A and HAZ-2B as part of Section 5.15, Hazards and Risk of Upset, to address the potential safety issues related to the construction of project-related improvements within the FUDS-eligible property area.

The recommended mitigation in Section 5.15, Hazards and Risk of Upset, of this EIR would ensure that the improvement areas (i.e., installation of basins and road/trail access) would be inspected and safety-checked, and remediated to the extent required, to the satisfaction of the Development Services Director, the ACOE and the Department of Toxic Substances Control, as applicable, prior to any ground disturbance activities. Impacts as to Hazards and Risk of Upset therefore would **be less than significant** after the mitigation discussed immediately above.

The Corps also can and should implement various additional measures to further enhance public safety associated with the FUDS-eligible property boundary. In addition, through the remedial investigation and feasibility study process, the Corps will evaluate and balance site remediation against the potential damage that may occur to sensitive resources within the FUDS-eligible project boundary, including further coordination/consultation with U.S. Fish and Wildlife Service officials, the Department of Toxic Substances Control, and California Department of Fish and Wildlife (see Parsons 2007, p. 2-2, 8-1). Therefore, implementation and operation of the proposed improvements in the MSCP Preserve would not be incompatible with adjacent Preserve uses, and impacts would be **less than significant**.

Potential impacts associated with the land uses proposed in the village development areas are evaluated below.

Village Three North and a Portion of Village Four

Landfill Nuisance Easement

As described above, and shown in Figure 4-2, Vicinity Map, Village Three North is surrounded by the Otay Landfill to the north, existing industrial lands/auto dismantlers to the west, and open space preserve to the east (Wolf Canyon) and south (OVRP). A portion of the proposed development in Village Three North would occur within an existing 1,000-foot nuisance easement area around the Otay Landfill.

On March 15, 1996 the County of San Diego and City of Chula Vista entered into the Agreement between the County of San Diego and the City of Chula Vista Regarding Jurisdiction Over and Operation of Otay Landfill (Landfill Agreement). Subsection 6(f) of the Landfill Agreement required as a condition precedent to the annexation of the Otay Valley Parcel of the Otay Ranch GDP from the County to the City that property owners in Villages Two, Three, and Planning Area 18b grant to the County "Landfill Nuisance Easements" covering all land within 1,000 feet of the landfill property line. On March 17, 1997, the Applicants predecessor in interest (Otay Ranch L.P.) signed a Landfill Nuisance Easement to the County. This Landfill Nuisance Easement created the nuisance easement area.

This easement is designed to discourage, if not prohibit, the property owner from suing the landfill operator as a result of various defined Nuisance Items (e.g, dust, noise, vibrations, seagulls, etc.). The easement does not prohibit or even address any land use types that may be allowed or prohibited within the area of the nuisance easement. It is strictly a nuisance easement, not a land use covenant. Nothing in the document would prohibit changes to the land uses in the buffer.

The nuisance easement area is located along the south and southeast property boundary of the Otay Landfill and extends into the northern portion of Village Three North. The Otay Ranch GDP currently designates industrial land uses within the nuisance easement area and the proposed project would designate industrial, office, mixed-use, and residential land uses within the nuisance easement area. The Industrial land use designation proposed in the northern portion of Village Three North is consistent with the permitted land uses adjacent to the Otay Landfill and the existing land use designation in the Chula Vista General Plan, Otay Ranch GDP and Village Two, Three and Portion of Village Four SPA Plan. This land use is also adjacent to land zoned Industrial to the northeast (in Village Two) and the existing Industrial uses west of Village Three North.

Proposed Residential land uses within Village Three North will be screened from the Industrial land uses by slopes and landscaped streets, including the 104' right of way Heritage Road. In addition, the Planned Community District Regulations and Business Park Guidelines and the Village Three North Village Design Plan included in the Village Three North SPA Plan provide requirements and guidance related to buffering between land uses, such as landform grading, planting trees and tall shrubs, and screening techniques with decorative walls and fencing.

Health Risk Assessment

As explained above and in Section 4.0, Project Description, the project proposes residential uses within an area currently subject to a nuisance easement due to its proximity to the Otay Landfill. Because of the proposal for residential uses within this nuisance easement area, an HRA was prepared for analyzing any potential increased cancer risk impacts associated with potential development in Village Three North on property located within 1,000 feet of the Landfill resulting from the emission of toxic air pollutants. The HRA was prepared using guidance from Assembly Bill 2588 risk guidance document, *Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, with additional guidance from San Diego Air Pollution Control District (SDAPCD) guidance documents. Risks were evaluated to determine if residential populations within the 1,000-foot landfill nuisance easement area would have increased cancer risks from the Otay Landfill. Residential receptors have the highest level of exposure and represent the most conservative receptor scenario. Industrial/commercial receptors were also evaluated to determine whether significant health impacts would occur to workers in zones not designated for residential use.

The nuisance easement area currently contains no sensitive receptors. Cancer risks are summed across all carcinogens to arrive at a total increased lifetime cancer risk for each receptor population. SDAPCD CEQA guidance indicates that an increased cancer risk of 1×10^{-6} is significant, and San Diego County uses a threshold of 10×10^{-6} as significant. An increased cancer risk of 1×10^{-6} (one additional cancer case per million individuals exposed) or less is uniformly considered negligible by all state and federal regulatory agencies.

Cancer risk isopleths for residential receptors with 30 years of exposure do not exceed $1x10^{-6}$ in any location that would be utilized for residential development. The maximum cancer risk for a residential receptor in a location proposed for residential use is $0.85x10^{-6}$, which is below County, DTSC, OEHHA, and EPA risk thresholds for residential receptors. The nine-year exposure duration cancer risk does not exceed $1x10^{-6}$ at any location outside of the Otay Landfill. The maximum nine-year cancer risk at a location proposed for residential use is $0.55x10^{-6}$.

There is not a standard for non-residential cancer risk; thus, the same risk level for residential was assumed as the standard for non-residential uses to be conservative. Cancer risk does not exceed $1x10^{-6}$ for industrial or commercial receptors at any location outside the landfill boundary. The maximum cancer risk for a commercial or industrial worker outside the landfill boundary is $0.54x10^{-6}$. Therefore, all calculated carcinogenic (cancerous) risks are below the 1×10^{-6} threshold for each respective receptor within the development and are not significant under CEQA. Additionally, while the city does not have thresholds for non-carcinogenic (non-cancerous) risks, they adhere to the SDAPCD thresholds[1] developed by OEHHA. The non-cancerous risks were determined to be below the SDAPCD threshold and are not considered significant. A detailed discussion of the HRA for the Landfill is provided in Section 5.4, Air Quality, and Section 5.15, Hazards and Risk of Upset, of this EIR.

Odor Nuisance

The Otay Landfill could occasionally produce odors that may be detected outside of the landfill boundary. 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. Nonetheless, it is possible that odors from the Otay Landfill may be detected occasionally (depending on wind direction or other meteorological factors) by the future residents of Village Three North.

Additionally, the proposed project would locate residential units approximately 450 feet from the property boundary of the landfill and 700 feet from the waste containing portion of the landfill (i.e. –the portion of the landfill eligible to accept waste).

The 2005 GPU/GDPA included a mitigation measure (5.11-2), which indicated that no residential use shall be permitted within 1,000 feet of the Otay Landfill unless a project specific analysis is completed demonstrating that odor effects fall below odor thresholds for common compounds. The proposed project conducted specific analysis to determine the extent to which odors from the Otay Landfill may be detectable by future residents in Village Three North. Detailed analysis is provided in the Village Three North Nuisance Study conducted by SCS Engineers in June 2014 and is summarized herein.

Odor impacts are analyzed relative to the maximum impact on an area currently developed for residential use. The maximum odor impacts from the Otay Landfill in currently developed areas

[1] The ratio of the modeled air concentration to the Reference Exposure Level (REL) is the Hazard Quotient (HQ), with a quotient of one (1) or less indicating negligible non-cancer risks. HQs are summed across all chemicals to determine a Hazard Index (HI). The HI is the standard measure of cumulative non-cancer risks, with a value of one (1) or less considered by California regulatory agencies to be negligible.

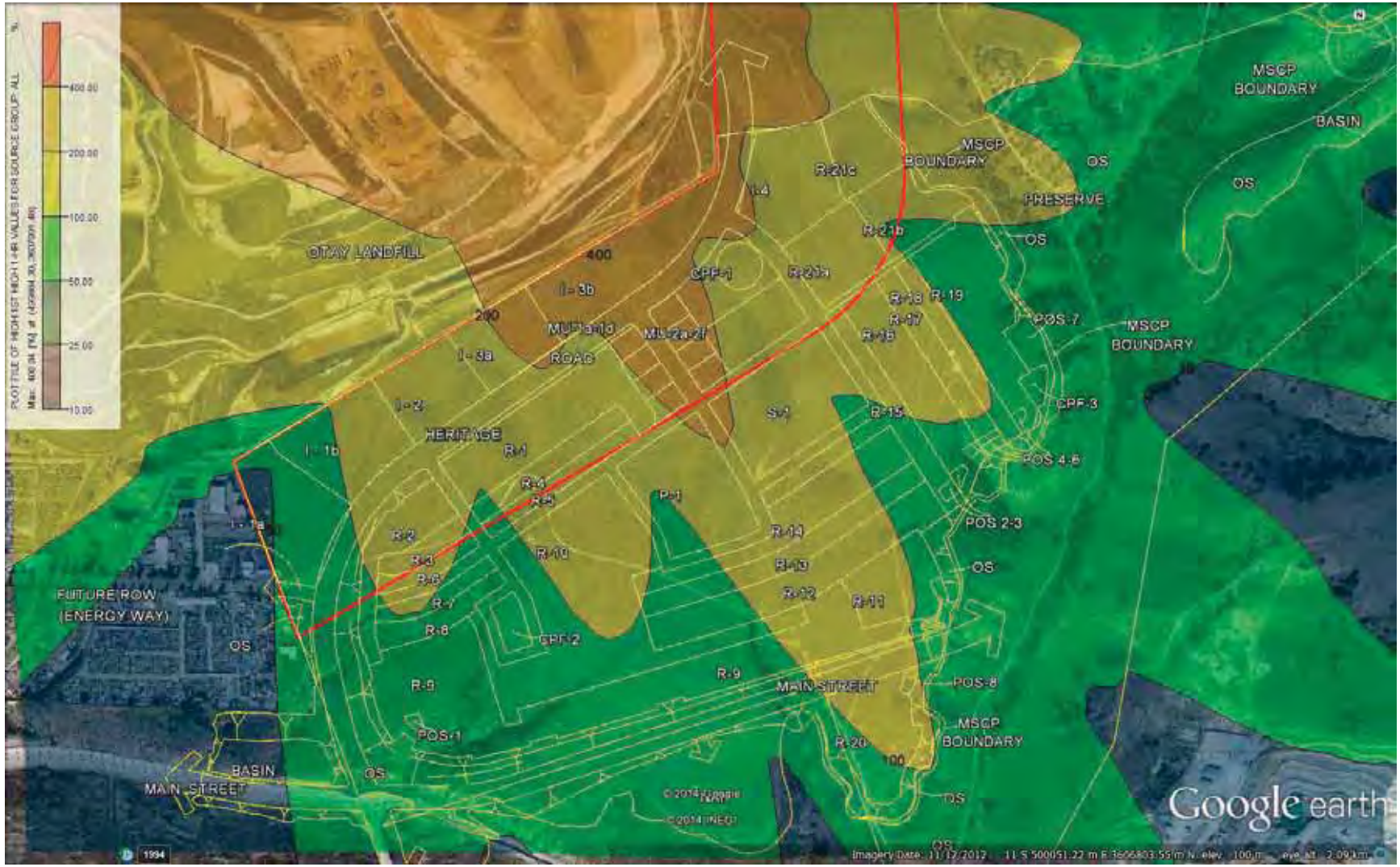
are identified as "100%" and are considered the baseline impact. Complaints have come from residential areas to the north and west of the Landfill, from areas with 50% to 100% of the baseline odor impact. This zone extends more than one mile from the Landfill, and covers extensive residential development. Most of the Village Three North development would be within this 50% to 100% area or lower exposure areas.

Figure 5.1-2 shows modeled odors on the Village Three North development. The maximum odor effects beyond the Landfill property line would occur to the southeast of the Landfill in areas proposed for industrial and multi-purpose use. Odors in this area would be 200% to 400% (i.e., two to four times greater than) the baseline odor impact. A small portion of the lot proposed for use as a school (S-1) and a small portion of the lot proposed for use as a park (P-1) fall within this area.

Most residential development in the Village Three North development will be located between 50% and 200% of the maximum odor levels from the Otay Landfill. This range (50% to 200 % of the baseline odor level) extends well outside the Village Three North area and into existing residential areas to the north and west of the Otay Landfill. Residential development above the 100% of baseline isopleth would potentially experience more intense and/or frequent odors than the maximally affected current residential areas, but the isopleth extends well outside the 1,000-foot nuisance easement area.

The Village Three North development would include approximately 1,597 additional residential units, and approximately 5,174 residents. Based on the proposed tentative map, of these estimated 5,174 residents, 259 would be located in the 200% to 400% zone (compared to zero residents currently) and 3,904 would be located in the 100% to 200% zone (compared to 39 residents currently). This zone represents the maximum current odor exposure for an existing resident. 1,011 residents would be located in the 50% to 100% zone (compared to 7,128 residents currently residing within the 50% to 100% west, north west, north and northeast of the Landfill), meaning they would be exposed to expected odor impacts equal to or below the current maximally exposed resident.

Table 5.1-1 summarizes the modeled odor impacts, their relation to where odor complaints have been made, the existing use of the areas in that odor range, and the proposed use in the Village Three North development. Table 5.1-1 also shows the expected number of complaints if the number of complaints is proportional to the modeled impacts.



Odor Zones and Proposed Development
Image from Google Earth
Site layout provided by Hunsaker and Associates
Existing 1,000 foot nuisance easement area shown in Red.

SOURCE: SCS Engineers 2014

FIGURE 5.1-2

Odor Effects in Village Three North

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Table 5.1-1
Odor Zone Impacts

Zone	Approximate Maximum Distance from Waste Containing Area[2]	Existing Use (Existing Units and estimated # of residents[3])	Number of Complaints – 2001 to 2013 (per 1000 units per year)[1]	Proposed Use (Proposed Units and estimated # of residents)	Village Three North Development Number of Complaints per year[1]
200-400%	1,500 feet	Not developed	0 (0.7)	Industrial, small portion of school lot, small portion of park mixed use, (80 DU – 259 residents)	0.056/year
100-200%	1 mile	Moderate commercial/ industrial, small residential area (12 DU – 39 residents)	0 (0.35)	Industrial, mixed use, school, community purpose facility residential, (1,205 DU – 3,904 residents)	0.42/year
50-100%	>1 mile	Commercial /industrial, moderate residential (2,200 DU – 7,128 residents)	5 (0.17)	Industrial, residential (312 DU – 1,011 residents)	0.054/year
25-50%	>1 mile	Diverse use, extensively developed (>2,000 DU)	0	Zone not located in Village Three North Area	N/A
10-25%	>1 mile	Diverse use, extensively developed (>4,000 DU)	0	Zone not located in Village Three North Area	N/A
Total			**0.38**		**0.53**

RU = residential units
1 Assumes complaints double with modeled odor intensity
2 Waste Containing Area is any area of the Landfill in which waste has been placed in the Landfill
3 Assumed number of residents based on 3.24 residents per household per 2013 Census data for City of Chula Vista

Amended and Restated Otay Landfill Expansion Agreement

On or about August 12 ~~5~~, 2014, the City Council approved the Amended and Restated Otay Landfill Expansion Agreement. Section 2.5 of this Amended Agreement states, in part, that the "City shall not allow the construction of residential units on properties within 1,000 feet of the active area of the Otay Landfill …." Based on this Amended Agreement, which is a valid expression and implementation of the City's police power and zoning authority to avoid the proximity of incompatible land uses, residential units in the proposed project will not be allowed to be constructed within 1,000 feet of the then active solid waste disposal areas of the Otay Landfill.

Section 2.5 of the Amended Agreement also provides that the operator of the Landfill will not move or open new active solid waste disposal areas within 1,000 feet of any already constructed residential units. Further, both the City and the Landfill operator will confer from time to time as appropriate to coordinate regarding the implementation of their obligations under Section 2.5 of the Amended Agreement.

Preserve Buffer

On the eastern edge of the village, single- and multi-family homes are proposed adjacent to Wolf Canyon, which is part of the Otay Ranch Preserve. The proposed residential uses would be compatible with the adjacent Preserve through 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 buildings are permitted within the 100-foot Preserve buffer and fuel modification zone. There would be an increased potential for impacts to wildlife and possible fire hazards by placing development adjacent to open space. This would be offset by not allowing development within the 100-foot Preserve buffer and fuel modification zone. The fuel modification zone limits the likelihood of wildland fires from encroaching upon development and vise-versa through the establishment of irrigation zones and a water efficient plant palette with restrictions on plant spacing. The main objective is to prevent wildland fires from impacting development through implementation of two-zone irrigation systems with the irrigated zone closest to development. A ring of open space would extend along the southern and eastern borders of Village Three North, serving as a buffer between the proposed residential uses and Preserve.

Surrounding Land Uses

Auto dismantlers and an operation center for the Otay Landfill are located west of Village Three North. These uses have been in place for many years. There would be a 150 foot distance between these existing land uses and the closest residential area, and this distance would decrease potential noise levels at residential areas. Noise from the current operations was included in the noise measurements taken in Village Three North and analyzed in Section 5.5, Noise of this EIR.

Otay Valley Rock Quarry is located south east of Village Three North and southwest of Village Four. The quarry produces rock products for construction material. Potential land use conflicts associated with the quarry would include dust and noise impacts that may disturb nearby residents. However, Village Three North and the quarry are separated by Wolf Canyon and Village Four is separated from the quarry by Rock Mountain. Intermittent noise from

particularly loud operations, such as blasting, is occasionally audible on the project site; however, it would not be a substantial disturbance to future residents. Occasional blasting operations may occur within approximately 1,600 feet from Village Three North; however, these activities would be temporary in nature and the quarry is required to follow protocol for any blasting activity, further described below. In addition, the proposed residential land uses along the eastern edge of Village Three North and park uses along the southern edge of Village Four are not vibration sensitive. Further, according to the Declaration of Covenants of Operation for the quarry, blasting would be limited to the hours between 10:00 a.m. and 4:00 p.m. and would not disturb residences' sleep.

The Mining Operator is required to retain a qualified blasting specialist to develop a site-specific blasting program report to assess, control, and monitor ground vibration from blasting, for any residences located within 1,000 feet of the mining operation. The Mine Operator is required to provide public notification of the blasting schedule for residents within 1,000 feet of blasting. The Mine Operator will give a monthly blasting schedule in writing to residences within 1,000 feet of potential blast locations. The notice will disclose the anticipated blasting schedule and provide a contact phone number for the blasting contractor. Unscheduled changes to the blasting schedule will require the blasting schedule to be reissued no less than 24 hours prior to the blasting.

I-805 and Main Street provide the main access routes to the quarry; therefore, no truck trips from the quarry would be anticipated to traverse the project site due to the quarry's proximity to I-805. The development of Village Three North or a Portion of Village Four would not encroach into the limits of the quarry or affect existing operations at the quarry. Therefore, implementation of the project would not result in a land use conflict with the existing operation of the quarry, and impacts would be below a level of significance. The quarry has been approved to expand operations eastward. Potential land use conflicts as a result of noise impacts associated with the expansion are addressed in Chapter 6, Cumulative Impacts.

Residential uses proposed adjacent to arterial roadways would be compatible through implementation of the Otay Ranch GDP setback requirement for homes adjacent to arterial roadways. A 75-foot average setback will be maintained along Heritage Road and Main Street, which are arterials with an anticipated 55 mph posted speed limit.

The Portion of Village Four included in the proposed project includes 17.8 acres of the planned Community Park located to the north and is consistent with the existing General Plan Land Use designation. This park use is appropriate adjacent to open space Preserve and is also subject to the Preserve Edge Plan, MSCP Preserve Edge requirements, 100-foot fuel modification zone buffer, and Fire Protection Plan.

The proposed conversion of land currently designated Open Space in the General Plan to Open Space Preserve is consistent with surrounding lands currently designated Open Space Preserve within Wolf Canyon.

Village Eight East

As described above, Village Eight East is surrounded by the Village Eight West property to the west, existing Olympian High School and the future extension of the Main Street to the north, SR-125 to the east, and OS/P to the south. Village Eight East was planned to complement Village Eight West by locating higher intensity land uses adjacent to Main Street and in the northern portion of the village, near the Village Eight West Town Center. The Village Eight East and Village Eight West interface would be primarily multi-family residential and pathways would be provided through the multi-family neighborhoods to provide direct pedestrian connections between the villages. Main Street would also provide a connection to the adjacent Village Eight West Town Center and would include bicycle lanes and sidewalks. Village Eight East is proposed to include a mixture of high-density, multi-family homes and single-family homes north of Otay Valley Road. This high-intensity configuration is appropriate because of the proximity to the neighboring Village Eight West Town Center, Eastern Urban Center, SR-125, and the future University site to the east. Where residential land uses are proposed adjacent to SR-125, an HRA has been prepared which determined there are no additional health risk impacts associated with proximity to the toll road (see Section 5.15, Hazards and Risk of Upset).

Single-family residential uses are proposed south of Otay Valley Road, where development approaches the OVRP and MSCP Preserve. These land uses will be compatible with the adjacent Preserve through implementation of the Preserve Edge Plan, MSCP Preserve Edge requirements, a 100-foot fuel modification zone buffer, the Fire Protection Plan, P-C District Regulations and the Village Design Plan, all of which will control the design and orientation of development adjacent to the Preserve. Buildings will be setback from habitat and fenced where appropriate to prevent intrusion. No buildings are permitted within the 100-foot Preserve buffer and fuel modification zone. There is an increased potential for impacts to wildlife and possible fire hazards by placing development adjacent to open space. This would be offset by not allowing development within the 100-foot Preserve buffer and fuel modification zone. The fuel modification zone limits the likelihood of wildland fires from encroaching upon development and vise-versa through the establishment of irrigation zones and a water efficient plant palette with restrictions on plant spacing. The main objective is to prevent wildland fires from impacting development through implementation of two-zone irrigation systems with the irrigated zone closest to development. A ring of open space would extend along the southern border of Village Eight East, serving as a buffer between the proposed residential uses and Preserve.

Additionally, locating single-family homes adjacent to open space would reduce the visual impact to users of the OVRP by placing lower-scale buildings at the top of slopes rather than taller multi-family buildings. The potential visual impact of the proposed development to users of the OVRP is discussed in Section 5.2, Landform Alteration/Aesthetics of this EIR.

The Village Eight East Land Use Plan includes an alternate development scenario, as described in Section 4.0, Project Description of this EIR, which would allow for either single-family or multi-family homes in the R-11A and R-12A neighborhoods immediately south of Otay Valley Road. This area is located adjacent to a planned multi-family site in Village Eight West and across the street from a planned elementary school; hence, this higher-density land use would be appropriate in this location.

A Community Park (P-2) is proposed south of the single-family neighborhoods on a site designated Open Space Active Recreation in the General Plan, OVRP Concept Plan and Chula Vista MSCP Subarea Plan. The siting of the Community Park (P-2) is consistent with the Open Space Active Recreation designation because the uses are similar. This area has been designed such that grading would balance on-site and no trucking would be required to import or export soil through the Preserve. While not required by the MSCP to comply with the 100-foot preserve edge requirement, the Community Park (P-2) must meet MSCP adjacency guidelines to reduce potential indirect impacts to the Preserve. For a discussion of how the indirect impacts are minimized, please see Section 5.8, Biological Resources, of this EIR.

Village Ten

Village Ten is surrounded by the future University site to the north, future Village Nine residential development and Town Center to the west, and open space Preserve to the east and south. The Village Ten land use plan includes a mix of single-family and multi-family homes. The highest intensity uses within Village Ten, including high-density multi-family homes, are proposed adjacent to the Village Nine Town Center, a high-intensity urban village, and the future University site. Tall high-density multi-family buildings proposed in Village Ten would be compatible with future building heights on the University site and also provide the high-density housing necessary to support students attending the University. Due to its proximity to the Village Nine Town Center and EUC, Village Ten does not include any mixed-use commercial/retail; however, Village Ten would still include a mix of uses in the village core, including a park, school and CPF site and high density housing. Similar to Village Eight East, density would generally decrease as development moves south toward the OVRP to minimize edge impacts on adjacent open space/Preserve areas. An open space buffer would be located along the southern and eastern boundaries between the residential uses and the Open Space Preserve. Both the Village Ten subdivision area and the open space buffer are located outside of the Brown Field FUDS eligible property boundary. However, the two water quality basins,

associated access roads, a portion of the OVRP trail that traverses the Village Ten SPA Plan area and Preserve land are within the FUDS-eligible property.

Lower density single-family neighborhoods are appropriate in the southern portion of the village as development approaches the OVRP and MSCP Preserve. This land use would be compatible with the adjacent Preserve through implementation of the Preserve Edge Plan, MSCP Preserve Edge requirements, a 100-foot fuel modification zone buffer, the Fire Protection Plan, Planned Community District Regulations, and the Village Design Plan, all of which will control the design and orientation of development adjacent to the Preserve. Buildings will be setback from habitat and fenced where appropriate to prevent intrusion.

No buildings are permitted within the 100-foot Preserve buffer and fuel modification zone. There is an increased potential for impacts to wildlife and possible fire hazards by placing development adjacent to open space. This would be offset by not allowing development within the 100-foot Preserve buffer and fuel modification zone. The fuel modification zone limits the likelihood of wildland fires from encroaching upon development and vise-versa through the establishment of irrigation zones and a water efficient plant palette with restrictions on plant spacing. The main objective is to prevent wildland fires from impacting development through implementation of two-zone irrigation systems with the irrigated zone closest to development. A ring of open space would extend along the southern and eastern borders of Village Ten, serving as a buffer between the proposed residential uses and Preserve.

For the reasons described above, the proposed project's villages would not physically divide an established community or be incompatible with any adjacent or surrounding land uses. Therefore, impacts would be **less than significant**.

iii. Internal Land Use Compatibility

Each SPA Plan is designed to facilitate a high level of compatibility between adjoining land uses within the project area. The SPA Plan establishes the plan for development implementation that would ensure that the project site is developed with compatible land uses. The SPA Plans also include Planned Community District Regulations that specify development standards, establishes neighborhoods, and includes allowable land uses. Additionally, the Village Design Plans establish design guidelines for development of each village. Development standards that ensure compatibility between different land uses include requirements for building configuration, open space, parking, design considerations, frontage types, performance standards, and sign regulations.

The potential for land use conflicts to occur as a result of air quality, noise, and water quality are addressed in the applicable sections of Chapter 5 of this EIR. As discussed in Section 5.4, Air Quality, compliance with SDAPCD regulations would minimize potential toxic air

contaminant risks. Section 5.5, Noise, describes how on-site noise-sensitive land uses may be exposed to excessive traffic noise and/or operational noise from sources including HVAC equipment, commercial equipment, and recreational facilities. However, the mitigation measures identified in Section 5.5 would reduce potentially excessive noise levels to the standards established in the city noise compatibility guidelines. As discussed in Section 5.10 Hydrology and Water Quality, impacts as a result of increased runoff would be reduced through mitigation measures.

Several water transmission lines traverse the project site that are owned, operated, and maintained by the City of San Diego. These pipelines would not provide water to the project, but the SPA Plan and TM would construct development above ground of where these pipelines are currently located. Construction of the proposed development would impede the availability of access to these pipeline easements. The project proposes to relocate these pipelines into the future public rights of way within Otay Valley Road. If relocation of these water transmission pipelines did not occur prior to construction of the proposed development, a conflict with the existing City of San Diego waterline easements would occur. Therefore, impacts to land use compatibility is considered **potentially significant**.

iv. Compatibility of the Off-Site Improvements and Grading with Surrounding Land Uses

The off-site improvement areas are located in undeveloped areas or along existing roadways and no land uses are proposed in these areas. The nearest developed areas include Olympian High School in Village Seven and residential uses in Village Eleven. In addition, the majority of the off-site improvements are associated with improvements to the City's Circulation Element Roadways. As shown in Section 5.3 of this EIR, the proposed project implements the City's adopted Circulation Element as planned. The Circulation Element was established such that roadways would not divide communities; rather, they would create the border within which communities exist.

Off-site areas 2, 3, 4, 5, 6, 7, 9, 13, 15, 16, and 18 are required for roadway improvements. These improvements generally follow the road alignments depicted in the General Plan Circulation Plan. As depicted in Figure 4-19, implementation of these off-site improvements would not physically divide an existing neighborhood or result in incompatible land uses with surrounding areas. The other off-site areas 1, 8, 10, 12, 14, 17, 19, and 21 are required for either pipeline relocation, to match proposed grading plans with existing grades, or for trail improvements. Similarly, implementation of these off-site improvements would not physically divide an existing community or result in incompatible land uses with surrounding areas. Therefore, impacts related to off-site improvements and grading would be **less than significant**.

v. Community Character Impacts

The SPA Plans include Planned Community District Regulations that specify development standards for the entire project area, specific neighborhoods, as well as individual development types. Additionally, the Village Design Plans in each SPA Plan establish design guidelines for the project area as a whole, as well as for specific land uses and the village cores. As discussed in greater detail in Section 5.2, Landform Alteration/Aesthetics, of this EIR, the development standards and guidelines proposed in the SPA Plan would ensure that a consistent community character is maintained within each village, as well as with surrounding development in Otay Ranch. The 2013 GPA/GDPA SEIR determined that specific design guidelines and regulations would minimize community character impacts. Therefore, implementation of the proposed SPA Plans would assure that impacts to community character are **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.

i. On-Site Development Areas

Construction and grading activities for the proposed project would comply with the Chula Vista Building Code and other established regulations, including local noise, air quality, and water quality regulations. Since the proposed project would be required to comply with existing construction regulations and codes, no impacts or conflicts associated with regulatory plans and policies are anticipated as a result of the proposed project's construction.

Below is an evaluation of the proposed project's consistency with the SANDAG RCP, SANDAG 2050 RTP/SCS, Chula Vista General Plan, Otay Ranch GDP, City of Chula Vista Municipal Code (Zoning Code, Design Manual, Subdivision Ordinance and Manual, Growth Management Ordinance, Park Land Dedication Ordinance, Tentative Map), Parks and Recreation Master Plan, OVRP Concept Plan, Greenbelt Master Plan, Airport Land Use Compatibility Plan–Brown Field, and the Otay Landfill Solid Waste Facility Permit.

Regional Comprehensive Plan

As described above, the SANDAG RCP establishes a planning framework to increase the region's sustainability and encourage smart growth. The RCP includes sustainability principles designed to encourage cohesive integration of land use and transportation throughout San Diego County. The proposed project's consistency with the RCP smart growth principles is addressed in Table 5.1-2. The proposed project would be consistent with the land use and urban design principle because development is focused in identified growth areas, design of each village

emphasizes pedestrian friendly design, and each village includes mixed use development. The proposed project provides a variety of travel choices including walking and biking trails, as well as a variety of housing choices within proximity of existing and planned employment centers. As shown in Table 5.1-2, the proposed project would support the RCP's smart growth principles and, therefore, not conflict with the applicable growth policies of the RCP.

Table 5.1-2
Consistency with the SANDAG RCP Smart Growth Principles

Principle	Comparison
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.	**Consistent.** This RCP Smart Growth Principle is applicable to the proposed project. The proposed project is not located within the urban city or unincorporated suburban area, nor is it a redevelopment project. However, the proposed project is consistent with this principle because development is focused in identified growth areas, design of the villages emphasizes pedestrian friendly design, and each village includes mixed use development. As discussed in Chapter 4, Project Description, the pedestrian circulation network includes an interconnected system of village pathways, sidewalks, the City's Regional Trail, the Chula Vista Greenbelt Trails, and rural trails.
Travel Choices. Provide people with additional travel choices (walking, biking, rail, bus, and automobile).	**Consistent.** This RCP Smart Growth Principle is applicable to the proposed project. The proposed project is consistent with this principle by providing a variety of travel choices, including walking and biking trails, future transit stops, and adequate roadways for automobiles and rapid transit. These travel choices are depicted in the Pedestrian and Bicycle Circulation Plans in Chapter 4, Project Description.
Jobs/Housing Mix. Locate housing near or within major employment areas and provide employment opportunities near major housing areas.	**Consistent.** This RCP Smart Growth Principle is applicable to the proposed project. The proposed project is consistent with this principle because it provides a variety of housing choices within proximity of existing and planned employment centers, including the Eastern Urban Center, the Otay Ranch Town Center, and the Village Eight West and Village Nine Town Centers and the Village Three North Business Park. In addition, the proposed project results in job-producing land uses (Industrial, and Mixed Use Retail/Office) in proximity to residential land uses.
Housing Choices. Provide, in each community, a variety of housing types for residents of all incomes.	**Consistent.** This RCP Smart Growth Principle is applicable to the proposed project. The proposed project is consistent with this principle by providing a variety of housing types, including single family, multi-family, and affordable housing. These travel choices are depicted in the Pedestrian and Bicycle Circulation Plans in Chapter 4, Project Description.
Infrastructure Capacity and Location. Provide adequate infrastructure in designated smart growth opportunity areas.	**Consistent.** This RCP Smart Growth Principle is applicable to the proposed project. As discussed above, the PFFPs include an analysis of infrastructure facilities, such as water, sewer and transportation, and the provision of community services including fire protection and emergency services, law enforcement, libraries, schools and parks. The PFFPs will require specific facilities be built in conjunction with development to ensure that improvements adequately serve such development and meet City threshold standards.

Table 5.1-2 (Continued)
Consistency with the SANDAG RCP Smart Growth Principles

Principle	Comparison
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.	**Consistent.** This RCP Smart Growth Principle is applicable to the proposed project. Otay Ranch is a covered project in the Chula MSCP Subarea Plan. The Otay Ranch RMP created the Otay Ranch Preserve which identified the most important habitat for Otay Ranch and set aside those areas the Otay Ranch Preserve. The Otay Ranch Preserve is managed in accordance with the Otay Ranch RMP (Phase 1 and Phase 2), which requires land to be contributed to the Otay Ranch Preserve in conjunction with development of each Otay Ranch village. In accordance with the Otay Ranch RMP, prior to the approval of each Final Map, the Applicant shall convey land within the Otay Ranch Preserve at a ratio of 1.188 acres of Preserve land for every acre of development. The SPA Plans would be compatible with these biologically sensitive areas by designating adjacent development areas for the lowest density residential development. Additionally, the Preserve Edge Plans establish requirements to ensure that development in the area is compatible with the Preserve, such as, limiting uses within 100 feet of the Preserve edge to passive uses that are not noise generating. As discussed in Section 5.14, Global Climate Change, the proposed project includes environmentally sensitive design considerations to conserve water and energy. As discussed in Section 5.10, Water Quality and Hydrology, implementation of the SPA Plans would not result in significant impacts to water quality. The Fire Protection Plan, Village Design Plan, and Preserve Edge Plan, which are all part of the SPA Plan, include a landscape palette of native planting. In addition, each SPA Plan includes a Water Conversation Plan, and Energy Conservation Plan and an Air Quality Improvement Plan. Combined, these plans ensure that the proposed project would reduce potable water demand and provide for energy efficient homes.

Source: SANDAG 2004.

2050 Regional Transportation Plan/Sustainable Communities Strategy

The SANDAG 2050 RTP/SCS includes a set of policy objectives related to mobility, reliability, system preservation and safety, social equity, healthy environment, and economy. The proposed project's consistency with these policy objectives is presented in Table 5.1-3. The proposed project is consistent with mobility objectives because it is designed to facilitate connections between people and jobs and other activities, by providing both residential and job-producing land uses, including industrial uses and a future University/RTP site. The proposed project would create equitable transportation opportunities by creating close proximities to bus stations and stops, and by creating a variety of transportation choices. Furthermore, transportation improvements would be sited in the least environmentally sensitive locations and would not be overbuilt; rather, improvements would be sized to accommodate the proposed project and

minimize impacts on the environment. Therefore, as shown in Table 5.1-3, the proposed project would not conflict with the applicable policy objectives of the 2050 RTP/SCS.

Table 5.1-3
Consistency with SANDAG 2050 RTP/SCS Policy Objectives

Policy Objectives	Comparison
Mobility: Tailor transportation improvements to better connect people with jobs and other activities. Provide convenient travel choices including transit, intercity and high speed trains, driving, ridesharing, walking, and biking. Preserve and expand options for regional freight movement. Increase the use of transit, ridesharing, walking and biking in major corridors and communities. Provide transportation choices to better connect the San Diego region with Mexico, neighboring counties, and tribal nations.	Consistent. This RTP/SCS Policy Objective is applicable to the proposed project. The proposed project is consistent with these policy objectives because it is designed to facilitate connections between people and jobs and other activities, by providing both residential and job-producing land uses, including industrial and office uses. Additionally, the proposed project would include transit stops that will ultimately connect with the future University/Research Technology Park (RTP) site which will provide employment opportunities. The proposed project is also designed to encourage alternative transportation modes such as walking and biking. Although transit is not currently running through the project area, the villages are designed to accommodate transit in the future. Transit stops will also be provided within a one-quarter mile of residential areas. Since the proposed project is limited in geographic area, the policy objectives related to regional freight movement and transportation choices are not applicable.
Social Equity: Create equitable transportation opportunities for all populations regardless of age, ability, race, ethnicity, or income. Ensure access to jobs, services, and recreation for populations with fewer transportation choices.	Consistent. This RTP/SCS Policy Objective is applicable to the proposed project. The proposed project would create equitable transportation opportunities by creating close proximities to bus stations and stops, and by creating a variety of transportation choices. As described above,, residential developments will be in close proximity to employment opportunities in Village Three North, Village Eight West, Village Nine, the Eastern Urban Center and the RTP.
Healthy Environment: Develop transportation improvements that respect and enhance the environment. Reduce GHG emissions from vehicles and continue to improve air quality in the region. Make transportation investments that result in healthy and sustainable communities.	Consistent. This RTP/SCS Policy Objective is applicable to the proposed project. The proposed project is consistent with these policy objectives because transportation improvements are being sited in the least environmentally sensitive locations and are not being overbuilt; rather, the improvements are sized to accommodate the proposed project and minimizes impacts on the environment. The proposed project is also designed to encourage alternative transportation modes such as walking and biking. The villages are designed with transit stops to accommodate transit in the future. Each SPA Plan includes an Air Quality Improvement Plan to specifically address air quality and what project design features have been incorporated, including providing a variety of land uses and travel choices. This will reduce GHG emissions from vehicles and promote improved air quality. The GHG emissions resulting from the project are addressed in Section 5.14 of this EIR.

Source: SANDAG 2011.

City of Chula Vista General Plan and Otay Ranch GDP

Consistency with General Plan and Otay Ranch GDP Policies

The proposed project's consistency with the applicable policies of the City of Chula Vista General Plan and Otay Ranch GDP are provided in Appendix B of this EIR. Prior to adoption of the proposed General Plan Amendment, the proposed project would be inconsistent with General Plan Policies LUT 61.1 and 69.1, which require development to be consistent with existing Otay Ranch GDP and SPA Plans.

Prior to the adoption of the Otay Ranch GDP Amendment, the proposed project would be inconsistent with the number of housing units and land use designations currently identified in the Otay Ranch GDP. However, the project proposes amendments to the Otay Ranch GDP primarily related to the number of housing units and land uses, not regulations. After adoption of the proposed General Plan and Otay Ranch GDP Amendments, the proposed project will be consistent with the General Plan and Otay Ranch GDP.

General Plan Objective E 6 aims to limit the exposure of people to air pollutants and toxic air contaminants. The proposed project has been designed to limit the exposure of people to such toxicity. In order to demonstrate consistency with this objective, the proposed project analyzed air quality impacts resulting from project implementation in the Air Quality and Global Climate Change Technical Report (Appendix D, Part I). The proposed project also evaluated potential air pollutants and toxic air contaminants in Village Three North and Village Eight East, due to proximity to the Otay Landfill and State Route 125, respectively. Additionally, the proposed project includes Energy Conservation Plans and an Air Quality Improvement Plan (AQIP). Furthermore, as discussed in Section 5.4, Air Quality, of this EIR, the proposed project would be consistent with all applicable transportation and area source control measures proposed in the Regional Air Quality Strategy (RAQS).

General Plan Policy E 6.4[2] calls for not placing sensitive receptors, such as a residential land use, within 1,000 feet of a major toxic emitter. (The terms of Section 2.5 of the Amended and

[2] General Plan Policy E 6.4 was amended in 2013 to state "Do not site new or re-powered fossil-fueled baseload or peaking-type Electrical Generating Facilities within 1,000 feet of sensitive receptors, or site sensitive receptors within 1,000 feet of such facilities." This amendment inadvertently omitted previously existing language to make the Policy applicable to other forms or types of possible toxic air emitters, which omission was not consistent with the intent or purpose of the amendment to the Policy. Consequently, the City is processing a further amendment and refinement to Policy E 6.4, which amendment is scheduled to be presented to the City Council in fall 2014 and will conform the text of the Policy to the intent of the City Council. The proposed language for the remedial amendment to Policy E 6.4 will read: "Do not site new or re-powered fossil-fueled baseload or peaking-type Electrical Generating Facilities and other major toxic air emitters within 1,000 feet of sensitive receptors, or site sensitive receptors within 1,000 feet of such facilities." This corrective amended language of Policy E 6.4 is used in this EIR to determine the proposed project's consistency with the General Plan.

Restated Otay Landfill Expansion Agreement discussed above are consistent with General Plan Policy E 6.4 (as ~~will be~~ corrected) in prohibiting the construction of residential units on properties or lots within 1,000 feet of the then active solid waste disposal areas and operations of the Otay Landfill.) In the case of proposed Village Three North land uses, planned residential land uses are considered sensitive receptors and the landfill to the north of Village Three is considered a major toxic emitter. The proposed project would locate residential units approximately 450 feet from the property boundary of the landfill and 700 feet or more from the current active solid waste disposal operation areas of the landfill. The active solid waste disposal areas of the landfill will change over time and could move further away from the location of residential units as proposed by the project.

As solid waste placed in the landfill decomposes, it generates LFG. Uncontrolled LFG is emitted through the landfill surface and is the main source of odor. To determine the extent to which odorous emissions from the Otay Landfill may be detectable by future residents in Village Three North, a Nuisance Study was conducted. The same LFG emissions that are known to cause odor were analyzed in the HRA for toxicity and potential to increase cancer risk. As previously discussed, the HRA determined that the toxicity LFG emissions, also known to cause odor, are below the threshold for each respective receptor within the development and are not considered significant under CEQA. Notwithstanding the fact that LFG emissions at the landfill do not pose a significant human health risk, the proposed project would not be consistent with the intent under General Plan Policy E 6.4 (as ~~will be~~ corrected) to not site residential land uses within 1,000 of a major toxic air emitter. Therefore, a **potentially significant** impact related to consistency with the General Plan would occur. Mitigation for this potentially significant impact is provided (see MM LU-4).

As demonstrated in Appendix B, the proposed project is consistent with all but one of the policies and regulations outlined in the General Plan Land Use Element and Otay Ranch GDP. The SPA Plans propose a mix of land uses that provide for a variety of uses both residential and commercial to meet the current and future needs of residents, as well as parks and open space, community purpose facilities, public transit opportunities, and schools, and would allow for the development of other facilities to maintain a high quality of life. The SPA Plans include P.C. District Regulations and Village Design Plans, which implement design guidelines for the project area to enhance Chula Vista's character and quality. The proposed project would include village cores, which would be a mixed-use area to support adjacent residential neighborhoods and foster walkability. Landscaped buffers would line sidewalks and be designed to encourage pedestrian activity. Transit stops are planned in the village cores. These core areas would include compact development consisting of a mix of retail sales and services,

and high-density attached homes located adjacent to neighborhood parks and schools[3]. As demonstrated in Appendix B, the proposed project is consistent with all but one of the applicable General Plan policies related to land use.

Consistency with General Plan and Otay Ranch GDP Land Uses

The Proposed Chula Vista General Plan land use designations are shown in Figure 4-48 and the Proposed Otay Ranch GDP land use designations for the villages are shown in Figure 4-52. The analysis of the proposed General Plan and Otay Ranch GDP amendments is provided in the following subsections to demonstrate the proposed project's consistency with these adopted plans.

Village Three North and Portion of Village Four

Village Three North is part of the existing Village Two, Three, and Four SPA Plan. The Village Two, Three, and Four SPA Plan designates Village Three North as Industrial, consistent with the Chula Vista General Plan and Otay Ranch GDP. The proposed project re-designates Village Three North as a residential village south of Heritage Road and maintains Industrial land uses on 28.6 acres north of Heritage Road.

The land use changes proposed for Village Three North and a Portion of Village Four would reduce the amount of land designated Limited Industrial by 136.7 acres and increase the amount of land designated for residential uses by 129.1 acres, including Low–Medium Residential, Medium Residential, and Mixed-Use Residential, as well as increase land designated Office/Commercial, School, CPF, Parks & Recreation, and OS. These changes would result in an increase of 1,597 dwelling units allocated to Village Three North. The change in land use would provide for housing consistent with SANDAG's 2050 forecasts.

Due to the reduction of industrial land, an Employment Lands Analysis (ELA) was performed. The ELA analyzes the project's impact on jobs created in the City. Village Three North will result in an array of jobs due to the various land uses proposed. Up to 20,000 sq. ft. of Mixed Use Commercial/Retail is proposed to serve the village at a neighborhood-commercial level. 11.3 acres of commercial/office and 28.6 acres for an industrial park, are also job-producing land uses which would result from implementation of the Village Three North land use plan. Additionally, the project will create service jobs such as landscape maintenance, public works maintenance, fire protection and law enforcement positions. The ELA findings demonstrate the City will still have more than sufficient lands (approx. 650 acres) for future industrial development (AECOM, 2014). See Appendix B and Section 6.3.1 for further information on the conversion of industrial land to residential.

[3] The locations designated as future school sites (S-1) have underlying zoning. If the school district does not want or need the site, then residential land uses will be put in place.

The Portion of Village Four included in the project includes 29.7 acres, of which 17.8 acres are designated Community Park (P-2), 8.6 acres remain designated OS, and 3.3 acres previously identified as OS are re-designated OS/P. Overall, Village Three North and a Portion of Village Four include 158.1 acres designated OS/P.

After adoption of the proposed amendments to the Otay Ranch GDP, the proposed project will be consistent with the land use designations in the General Plan and Otay Ranch GDP.

Village Eight East

The land use changes proposed in Village Eight East would increase the overall allocation of units by designating areas for higher-density residential uses, including Medium Residential and Mixed-Use Residential. These changes would result in a total allocation of 3,560 dwelling units compared to the planned 965 units from the Otay Ranch GDP and Chula Vista General Plan. In addition, consistent with the Otay Ranch GDP approximately 51.5 acres of Open Space (OS)–Active Recreation (AR) would accommodate development of a Community Park (P-2).

Under the proposed alternative development scenario, Neighborhoods R-11A and R-12A would develop as multi-family residential. To increase the density in these neighborhoods, units from the Mixed-Use Residential uses north of Otay Valley Road would be reallocated to the R-11A and R-12A neighborhoods such that the number of units in R-11A and R-12A would increase, but the overall unit count in Village Eight East would remain at 3,560 through a commensurate reduction in unit counts in other Mixed Use neighborhoods north of Otay Valley Road.

After adoption of the proposed amendments to the Otay Ranch GDP, the proposed project will be consistent with the land use designations in the General Plan and Otay Ranch GDP.

Village Ten

The land use changes proposed in Village Ten would eliminate the University designation and replace it with Medium Residential, Mixed-Use Residential, and Parks & Recreation. The proposed project would increase the number of residential units in Village Ten by 1,280 dwelling units. The village core area contains higher-density, multi-family homes, an elementary school site, a 2.6-acre CPF site, and a 7.6-acre neighborhood park (P-1) located along the northern village edge. It provides a transition area between future University land uses and the lower-density residential land uses to the south.

After adoption of the proposed amendments to the Otay Ranch GDP, the proposed project will be consistent with the land use designations in the General Plan and Otay Ranch GDP.

City of Chula Vista Municipal Code

Zoning Code

The proposed project is compared to the existing P-C District zoning regulations, which apply to the Village Development Areas, in Table 5.1-4. The proposed project would provide for orderly pre-planning and long-term development because it includes SPA Plans for each village within the project area, which will guide development in each village. Each SPA Plan includes a Village Design Plan which establishes the identity and character of each village and establishes a design review process for the villages. In combination with the P-C District Regulations, the Village Design Plan would ensure a stable and desirable village character. As shown in the table, the proposed project is consistent with the P-C zoning regulations.

Table 5.1-4
Comparison of the Proposed Project to the P-C Zoning Regulations

Code Requirement	Evaluation of Consistency
Section 19.48.010 A: Provide for the orderly preplanning and long-term development of large tracts of land which may contain a variety of land uses, but are under a unified ownership or development control, so that the entire tract will provide an environment of stable and desirable character.	Consistent. The proposed project is consistent because it includes SPA Plans for each of the villages within the project area, which will guide development in the villages. As described above, with adoption of the proposed amendments, the SPA Plans are consistent with the General Plan and the Otay Ranch GDP. Each SPA Plan includes a Village Design Plan which establishes the identity and character of each village and establishes a design review process for the villages which, in combination with the P-C District Regulations, will ensure a stable and desirable character.
Section 19.48.020 A: P-C zones may be established on parcels of land which are suitable for, and of sufficient size to be planned and developed in a manner consistent with the purpose of this title. No P-C zone shall include less than 50 acres of contiguous land. Section 19.48.020 B: All land in each P-C zone, or approved section thereof, shall be held in one ownership or other unified control unless otherwise authorized by the planning commission.	Consistent. The proposed project is consistent because it contains approximately 1,375 acres of land, which exceeds this requirement. In addition, the project area is held under the single ownership of SSBT LCRE V, LLC, with the exception of the off-site improvement areas, which are required for the provision of adequate public infrastructure and utilities.
Section 19.48.025 A: All land in the P-C zone, or any section thereof, shall provide adequate land designated as "community purpose facilities" (CPF). Section 19.48.025 B: A total of 1.39 acres of net usable land (including setbacks) per 1,000 population shall be designated for such facilities in any planned community, and shall be so designated in the SPA and planned community district regulations of each planned community. The total acreage requirement may be reduced only if the City Council determines, in conjunction, with its adoption of an SPA plan, that a lesser amount of land is needed, based on the availability of shared parking with other facilities, or other community purpose facilities that are guaranteed to be made available to the community. Any shared parking arrangements shall be guaranteed regardless of any future changes in occupancy of facilities.	Consistent. The projected population at build-out of the proposed project is 22,346 which would require a total of 30.8 acres of CPF. However, as part of the Land Offer Agreement with SSBT LCRE V, LLC, the City Council reduced the CPF requirement to 4 acres in each Village with the remaining CPF requirement met as part of the transfer of the future University/RTP site to the City of Chula Vista. The proposed project includes a total of 12 acres of CPF.

Table 5.1-4 (Continued)
Comparison of the Proposed Project to the P-C Zoning Regulations

Code Requirement	Evaluation of Consistency
Section 19.48.025 D: Criteria outlining the siting, property development standards, and operational parameters such as location, building setbacks, maintenance and design, and hours of operation, shall be incorporated into the SPA's planned community district regulations.	Consistent. Each SPA Plan locates CPF uses in appropriate locations. Private recreational facilities are distributed throughout neighborhoods within walking distance of residences. Larger CPF sites for non-recreational land uses are sited in the village core areas. Each SPA Plan includes a Village Design Plan establishing design character of each village and designating a design review process for the villages. P-C District Regulations establish property development standards and setback criteria. Hours of operation are subject to permitting requirements by the City of Chula Vista.
Section 19.48.040 B.6.d: Recreational facility land uses shall not utilize more than 35 percent of the overall CPF acreage required for CPF master plan area. Sites identified for recreational facilities in CPF land districts shall be a minimum one-half acre, and shall meet the minimum development criteria outlined in CVMC 19.48.025(H). Recreational facilities proposed for CPF credit will not receive park or open space credit.	Consistent. Of the required 12 acres provided as CPF, 65% (7.8 acres) will be provided in the village cores (2.6 acres per village core area) as a non-recreational facility. The remaining 4.2 acres are proposed as private recreational facilities.

City of Chula Vista Design Manual

The City's Design Manual provides a set of guidelines in conjunction with development standards to assist the City in achieving a high quality of aesthetic and functional design (City of Chula Vista 2011). Consistent with the City's Design Manual, the proposed project includes Village Design Plans that guide the site, building, and landscape design within the villages to ensure that the quality of the adopted urban design and architectural concepts established for the overall Otay Ranch community are maintained. The Village Design Plans identify a theme for the villages and delineate the identity of each village through streetscape and landscape design, architecture, signage programs and lighting guidelines. The Village Design Plans, therefore, do not conflict with the City's Design Manual.

Subdivision Ordinance and Manual

The Subdivision Ordinance requires that land be subdivided and developed in accordance with the provisions and regulations of the City's zoning ordinance and General Plan. As described above and in Appendix B, the proposed project is consistent with the City's Zoning Code and General Plan. Additionally, the Subdivision Ordinance contains provisions to ensure adequate public facilities and utilities are provided. A PFFP has been prepared for the proposed project consistent with the requirements of the Subdivision Ordinance. For these reasons, the proposed project does not conflict with the Subdivision Ordinance and Manual.

Growth Management Ordinance

The City's GMO (City of Chula Vista 2012, Chapter 19.09) requires the provision of a PFFP, air quality improvement 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. The proposed project includes a SPA plan for each village within the project area, including a PFFP, air quality improvement plan, and water conservation plan. Since the proposed project would not be developed without approved SPA plans, the project is consistent with the GMO.

The PFFP contains a complete description of all public facilities necessary to implement the SPA plans, including phasing and financing of infrastructure. The plan contains an analysis of the individual and cumulative impacts of the proposed project on the community as it relates to the Growth Management Program, the specific facility master plans, and the threshold standards. The proposed project would also prepare a fiscal impact report and provide funding for periods when City expenditures for the development would exceed projected revenues. In addition, the GMO requires that a project meet GMO quality of life threshold standards related to traffic, police and fire services, parks, schools, libraries, sewers, storm drainage, air quality, and water. The project's compliance with the GMO thresholds is provided in Appendix B. As discussed in Appendix B, the proposed project would be consistent with GMO threshold standards with respect to police service, fire service, libraries, parks and recreation, water, wastewater, drainage, and traffic — with the implementation of the mitigation measures identified throughout this EIR.

Additionally, as discussed in Section 5.4, Air Quality of this EIR, the proposed project would reduce its construction and operational air quality emissions to the maximum extent feasible. Therefore, for the reasons listed above, the proposed project would not interfere or conflict with the City of Chula Vista GMO.

Park Land Dedication Ordinance

Section 17.10.040 of the Chula Vista Municipal Code, the Park Land Dedication Ordinance, requires the dedication of three acres of parkland per 1,000 population. The Ordinance applies a per-unit park demand factor for single-family and multi-family homes to achieve this park standard. Each single family home is required to dedicate 460 square feet of parkland and each multi-family home is required to dedicate 341 square feet of parkland. Based on the projected mix of the proposed project of 2,656 single-family homes and 4,241 multi-family homes, a total of 61.3 acres of parkland is required (Village Three North – 15.3 acres, Village Eight East – 30.5 acres, and Village Ten – 15.5 acres). This requirement is met and exceeded with a total of 76.6 acres of dedicated parkland proposed by the project. Therefore, the proposed project

would be consistent with the Park Land Dedication Ordinance and land use impacts would be less than significant.

Tentative Map

Title 18 of the Chula Vista Municipal Code requires the adoption of a TM for division and development of land into five or more parcels. The proposed project is in accordance with this ordinance because it includes a TM for each of the villages. Each TM will be reviewed by the Director of Public Works, or their designee, to assure compliance with regulations applicable to public and private utilities, streets, and respective rights-of-way and easements. The TMs will also be reviewed by the Development Services Director, or their designee, to assure compliance with regard to the number, size, and configuration of lots to be created and the alignment and width of streets and easements.

Amended and Restated Otay Landfill Expansion Agreement

The Amended and Restated Otay Landfill Expansion Agreement, at Section 2.5, prevents the City from allowing the construction of residential units within 1,000 feet of the active solid waste disposal areas of the Otay Landfill, which active areas may change over time. Also under Section 2.5, the Landfill operator is prohibited from moving or opening new active solid waste disposal areas within 1,000 feet of already developed residential units. Further, both the City and the Landfill operator will confer from time to time as appropriate to coordinate regarding the implementation of their obligations under Section 2.5 of the Amended and Restated Otay Landfill Expansion Agreement.

While the active solid waste disposal areas of the landfill will change over time and could move further away from the location of residential units as proposed by the project, the project proposes to site residential units within 1,000 feet of the currently active solid waste disposal areas at the landfill. Accordingly, an impact related to consistency with the Amended and Restated Otay Landfill Expansion Agreement would occur.

Parks and Recreation Master Plan

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

Otay Valley Regional Park Concept Plan

The OVRP Concept Plan provides multiple jurisdictions with policies and direction regarding land acquisition and development of the plan. The proposed project would be consistent with the policies that encourage private development adjacent to the OVRP Concept Plan to provide linkages with the plan's trails, create open space and recreational facilities, and encourage recreational uses as buffers between the Preserve and private development. The proposed project is also consistent with the policies regarding the creation of the Preserve, coordinating with the OVRP Concept Plan Citizen Advisory Committee, preserving viable wildlife corridors, and clustering development around SR-125 and Hunte Parkway. Therefore, implementation of the SPA Plans and TM would be compatible with the applicable portions of the OVRP Concept Plan. Land use impacts would be less than significant.

Greenbelt Master Plan

The City of Chula Vista Greenbelt Master Plan provides guidance and continuity for planning open space and constructing and maintaining the Greenbelt 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 project would provide key segments of the Greenbelt Trail, which have been added to the Greenbelt Master Plan as a major trail linkage. This Greenbelt Trail presents an opportunity as a multi-use trail that would provide mobility for residents between several villages and connectivity between recreation areas in the project area and future parks along the Greenbelt Trail. According to the City of Chula Vista Greenbelt Maintenance Map, segments of Greenbelt Trail both future and proposed will run through the University Villages project (City of Chula Vista 2003b). The Village Greenbelt Trail is intended to connect active and passive users and provide them with the opportunity to stop and enjoy an enhanced open space paseo.

The project would be consistent with the Greenbelt Master Plan (GMP) 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 whenever possible and to provide other amenities that enhance the greenbelt system. Further evaluation of the proposed project's compatibility with the Greenbelt Master Plan is provided in Section 5.12, Public Services, of this EIR.

Airport Land Use Compatibility Plan–Brown Field

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 depicted in Figure 5.1-1, a majority of the project area is within Review Area 2 of the airport influence area and a small portion is within Review Area 1. As described in Section 5.1.1, Existing Conditions of the EIR, the portion of the project area within Review Area 1 is not subject to land use restrictions related to aircraft noise levels. In addition, the proposed project land uses are compatible in Safety Zone 6. The project would also be in compliance with the height restrictions ranging from 676.3 feet amsl to 876.3 feet amsl that apply to the southern portion of the project area because this area would be developed with Park and Recreation uses and Low-Density Residential. The project would also comply with the notification requirements for the areas that fall within the Federal Aviation Administration Height Notification Boundary and Airport Overflight Notification Area. On July 7, 2012, the Airport Land Use Commission determined Villages Three North and Eight East to be conditionally consistent with the ALUCP for Brown Field (Village Ten was not within Zone 1 or Zone 2 of Brown Airfield; and, thus, is not subject to compliance with the ALUCP) (SDCRAA 2012).

A conditionally consistent determination means that the City must place certain conditions on the project in order for it to be consistent. The proposed project was found to be conditionally consistent because the findings require that the project distribute notices to future home buyers regarding the existence of Brown Field. This condition will be placed on the TMs for Village Three North and Eight East. As discussed in Section 5.15 Hazards, mitigation measure HAZ-5 also requires an Airport Overflight Agreement to be recorded at the County Recorder's office and to the City's Development Services Director prior to approval of the first Final Map.

Otay Landfill Solid Waste Facility Permit

The Otay Landfill Solid Waste Facility Permit (No. 37-AA-0010), details landfill specifications, findings, prohibitions, and local enforcement agency (LEA) conditions. The permit specifies allowable non-hazardous municipal solid waste disposal per day tonnage to be below 5,830 tons. The proposed project would not exceed allowable per day tonnage and would be consistent with the permit. The permit finds that the design and operation of the facility is in compliance with the State Minimum Standards for Solid Waste Handling and Disposal as determined by the LEA. Implementation of the proposed project would not affect the Otay Landfill's compliance with LEA standards. The permit prohibits the acceptance of any liquid waste that is less than 50% solid by weight, designated waste, or hazardous waste. The proposed project would be required to comply with the landfill's prohibitions of liquid waste. Furthermore, the permit lists LEA conditions in which the landfill must operate under

and the proposed project would not conflict with these conditions or prohibit the landfill from operating under these conditions. Therefore, the proposed project is consistent with the Otay Landfill Solid Waste Facility Permit.

As demonstrated above, the proposed project is consistent with the applicable plans, policies, and regulations related to land use, except for General Plan Policy E 6.4 (as ~~will be~~ corrected) and for the Amended and Restated Otay Landfill Expansion Agreement. The proposed project would also conflict with the land use designations in the City's adopted General Plan and Otay Ranch GDP; however, upon adoption of the proposed amendments to the General Plan and Otay Ranch GDP, impacts as to land use designation issues would not be significant. Nonetheless, impacts as to inconsistency of the proposed project with General Plan Policy E 6.4 (as ~~will be~~ corrected) and the Amended and Restated Otay Landfill Expansion Agreement are **potentially significant**. Mitigation for this potentially significant impact is provided (see Mitigation Measure LU-4).

ii. Off-Site Improvement Areas

The off-site improvement areas do not include any proposed land uses. The short-term construction of the improvements would be carried out in accordance with the Chula Vista Building Code (City of Chula Vista 2012, Title 15) and engineering standards, including local noise regulations and regional water and air quality regulations. In addition, the off-site improvements are mostly circulation roads and would comply with the City's General Plan policies by providing adequate infrastructure needed to support the proposed project. For these reasons, the off-site improvements would not conflict with the City's applicable land use plans, policies, and regulations; therefore, there would be **no impact**.

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

i. On-Site Development Areas

Development of the proposed project would primarily occur in areas previously identified as developable under the Chula Vista MSCP Subarea Plan and the Otay Ranch GDP, the Phase 1 RMP, and the Phase 2 RMP. Portions of the project area proposed for development are currently within the Preserve; however, this land is being replaced with biologically equivalent Preserve land, which would result in a superior Preserve design, increased wildlife connectivity/improved wildlife corridors, and preservation of sensitive species and habitat. The exchange of Preserve land is consistent with the requirements of the City's MSCP Subarea Plan for adjusting the boundaries of the MSCP. For further explanation of how the proposed project is consistent with the requirements of the MSCP, please see Section 5.8, Biological Resources, of the EIR.

Additionally, the proposed project will continue to implement the Otay Ranch RMP (Phase 1 and Phase 2). An amendment to the Otay Ranch RMP to amend the boundaries of the Otay Ranch Preserve is proposed by the project. The amendment is consistent with RMP Policies 9.6 and 9.7 regarding amendment of the RMP Preserve boundary and Policy 9.8 regarding Preserve boundary adjustments, as further analyzed in Table 5.1-5.

Table 5.1-5
Comparison of the Proposed Project to the Otay Ranch RMP

Applicable Goals, Objectives, and Policies	Comparison
Policy 9.6: Guidelines 1. An amendment to the RMP is viewed as a discretionary action subject to CEQA review. 2. The overall size of the Preserve shall not be reduced by a Preserve boundary modification unless the County Board of Supervisors and the Chula Vista City Council are satisfied that the biological standards and guidelines set for the in the RMP can nevertheless be met and the Preserve design is not adversely affected by a Preserve boundary modification that results in a reduced acreage. 3. Amendments must be consistent with RMP goal, objectives and policies	Consistent. The proposed project and associated RMP amendment are addressed in this EIR. 1. As a result of the proposed RMP amendment, the RMP overall size of the Otay Ranch Preserve will increase by approximately 6.8 acres; therefore, Guideline #2 does not apply. 2. The amendment to the RMP is consistent with the RMP goals, objectives and policies. 3. Because the RMP amendment is analyzed as part of this EIR and is consistent with the RMP goals, objectives and policies, the proposed project is consistent with this policy.
Policy 9.7: An amendment shall be required for any land use within the Preserve that is not specifically permitted by these policies, including the location of a university, landfill, or other development within the Preserve.	Consistent. The proposed project includes an amendment to the Otay Ranch RMP because it proposes both a boundary modification for the location of a University and development within the Preserve. Thus, the project is consistent with this policy.
Policy 9.8: Preserve boundary modifications shall be made based on site-specific studies completed for individual SPA/Specific Plans.	Consistent. The proposed project includes site-specific biological studies which were used to determine the proposed boundary modification.

Table 5.1-5 (Continued)
Comparison of the Proposed Project to the Otay Ranch RMP

Applicable Goals, Objectives, and Policies	Comparison
Standards	Consistent.
1. The overall size of the Preserve shall not be reduced by a Preserve boundary modification unless it can be demonstrated that the biological standards and guidelines can be met and the Preserve design is not adversely affected by a Preserve boundary modification that results in a reduced acreage.	1. As analyzed in Section 5.8 Biological Resources, the overall size of the Preserve is not proposed to be reduced as part of this project. Further, the proposed boundary modification would result in a superior Preserve design, increased wildlife connectivity/improved wildlife corridors, and preservation of sensitive species and habitat.
2. All amendments to the RMP that would reduce the size or substantially revise the location of the Preserve boundary, or that would in any way delay the conveyance of all or portions of the Preserve the Owner/Manager, shall require written approval by both the City of Chula Vista and the County of San Diego.	2. See above. The proposed boundary modification would not substantially revise the location of the Preserve because it would result in a superior Preserve design, increased wildlife connectivity/improved wildlife corridors, and preservation of sensitive species and habitat.
3. Boundary modifications shall conform with the setback criteria listed below. The locations of the most sensitive areas are illustrated in Figure 19.	3. The proposed boundary modifications conform to the setback criteria through the establishment of a 100-foot Preserve edge which is the longest required setback.
4. Boundary modifications are intended for use at the SPA level to make minor refinements to include additional resources within the Preserve.	4. The proposed boundary modification is being processed as part of an application for SPA Plans which will result in a superior Preserve design, increased wildlife connectivity/ improved wildlife corridors, and preservation of sensitive species and habitat.
Guidelines	
1. Coastal sage scrub and chaparral shall be provided with a 100-foot setback where interfacing with residences, and a minimum of 50 feet where interfacing with commercial and industrial development, active park uses, and schools.	
2. Gnatcatcher- or cactus wren-occupied habitat shall be provided with a setback no less than 100 feet determined in consideration of topography or other factors through additional study at the SPA level.	

Table 5.1-5 (Continued)
Comparison of the Proposed Project to the Otay Ranch RMP

Applicable Goals, Objectives, and Policies	Comparison
3. Perennial (native) grassland shall be provided with a setback of a minimum 25 feet and a maximum of 50 feet between the habitat and proposed development (e.g., residential, commercial, pipeline, roadway). 4. Vernal pools setback must include the watershed and a minimum of an additional 100 feet, depending upon adjacent land use. 5. Mule fat scrub should be provided with a setback that is a minimum of 50 feet and a maximum of 100 feet wide, depending upon the quality of the habitat and its function within the matrix of the surrounding vegetation (e.g., corridor, foraging habitat, etc.), and the specific type of adjacent development.	

Development would only occur with approval of the proposed MSCP Boundary Adjustment by the Chula Vista City Council and concurrence from the wildlife agencies. The project proposes an adjustment to the Chula Vista General Plan Land Use designations and the Otay Ranch RMP Preserve Boundary to implement the proposed General Plan and Otay Ranch GDP land uses. This amendment would provide consistency between the RMP Preserve and the adjusted MSCP Preserve.

The proposed project would comply with the requirements of the City's MSCP Subarea Plan, including facility siting criteria, the 100-foot Preserve edge zone, and minimizing impacts to narrow endemics and sensitive species. The project includes Preserve edge plans and fire protection plans with each SPA Plan. These documents describe what uses may occur in the fuel modification zone and adjacent to the Preserve.

Because the subject property is part of Otay Ranch, 1.188 acres of land would be conveyed to the Preserve owner/manager for every impacted acre of land defined as developable land under the Otay Ranch RMP. As such, any development in addition to what already has been identified in the Otay Ranch GDP would result in additional land conveyed to the Otay Ranch Preserve. Implementation of the proposed project would ensure the Otay Ranch Preserve, which is a part of the Chula Vista MSCP Preserve, is fully conveyed to the Preserve owner/manager.

Although the proposed project includes MSCP boundary adjustments and changes to the Otay Ranch Preserve boundary, the project would comply with the requirements of the City's MSCP Subarea Plan and the Otay Ranch RMP (Phase 1 and Phase 2). Therefore, impacts to

applicable habitat conservation plan or natural community habitat conservation plans would be **less than significant**.

ii. Improvement Areas within the Preserve

The development of the proposed project would be within the area designated for development under the Otay Ranch RMP and the MSCP Subarea Plan, with the exception of the areas subject to the boundary adjustment and some of the off-site improvement areas. However, a limited number of facilities proposed within the off-site improvement areas are proposed to be located in designated Preserve areas. Section 6.0 of the City's MSCP Subarea Plan identifies permitted uses within the Preserve. The proposed project includes permanent impacts to the Preserve resulting from the following infrastructure uses: detention basins south of Village Ten, associated storm drain lines and access roads for detention basins, sewer laterals connecting to the Salt Creek Interceptor, and access and emergency/fire roads to the Community Park (P-2) south of Village Eight East. Trails within the Preserve area are either located in existing dirt roads or are co-located with other planned facilities (i.e., sewer line roads). These uses are considered facilities within the Preserve as described in Section 6.3.3 of the MSCP Subarea Plan.

Section 6.3.3 of the MSCP Subarea Plan differentiates between planned facilities and future facilities. Planned facilities are major roads and infrastructure that were planned for development through existing plans and/or project approvals (i.e., General Plan and Otay Ranch GDP) and allowed to be constructed, operated, and maintained within the Preserve at the writing of the City's MSCP Subarea Plan. These planned facilities are identified in Table 6-1 of the MSCP Subarea Plan. Consistent with Table 6-1, associated ancillary sewer facilities for the Salt Creek Interceptor, including connections and maintenance access roads, are planned facilities, as are trails designated in the OVRP Concept Plan, which are also discussed above under compatible uses within the Preserve since these are existing trails and not new trails. In addition, the off-site areas within the Preserve include improvements associated with Main Street widening.

Future facilities are those facilities necessary to support planned development that were not identified at the time of the City's MSCP Subarea Plan but were anticipated to be required. Table 6-2 of the MSCP Subarea Plan identifies future facilities and implementation criteria. These facilities include detention facilities/basins, fire access roads, maintenance and operations roads, and new trails.

Both planned and future facilities located within the Preserve are subject to the Facility Siting Criteria contained in Section 6.3.3.4 of the City's MSCP Subarea Plan. Compliance with the Facility Siting Criteria ensures that the facilities located within the Preserve have been sited within the least environmentally sensitive areas and that impacts to the Preserve have been minimized to the maximum extent practical. An analysis of compliance with these requirements is provided in Section 5.8 of this EIR, which concludes that with the proposed mitigation, the

planned and future facilities would be in conformance with the Facility Siting Criteria. In addition, Preserve land included within the FUDS-eligible property as well as proposed improvements within the Preserve would be subject to mitigation in Section 5.15, Hazards and Risk of Upset, of this EIR. Therefore, impacts would be **less than significant**.

5.1.4 Level of Significance Prior to Mitigation

The project area is currently undeveloped, but is planned for development in the City's General Plan and the Otay Ranch GDP. The area surrounding the project area consists of recently developed or planned development, and therefore, 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, as well as with the surrounding areas except, possibly, with respect to any active solid waste disposal areas of the Otay Landfill that may be within 1,000 feet of the proposed location for the construction of residential units in the project at the time of approval of building permits for those units within Village Three North and a Portion of Village Four. With adoption of the proposed General Plan and Otay Ranch GDP amendments, implementation of the proposed project would not conflict with an adopted plan, policy, or regulation established to avoid environmental effects. The proposed MSCP Preserve Boundary Adjustment and RMP boundary adjustment would comply with the requirements of the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP. However, a potentially significant land use compatibility impact would occur if the on-site City of San Diego waterlines would not be relocated before development of Village Eight East and Village Ten and if the SPA Plan area within the FUDS-eligible property is not inspected for and cleaned of potential unexploded ordinance. In addition, a potentially significant land use compatibility impact may occur as to General Plan Policy E 6.4 (as ~~will be~~ corrected) and as to Section 2.5 of the Amended and Restated Otay Landfill Expansion Agreement if any residential units in Village Three North and a Portion of Village Four shall be constructed within 1,000 feet from the then active solid waste disposal areas of the Otay Landfill at the time of approval of building permits for those units within Village Three North and a Portion of Village Four. Therefore, the proposed project would result in a **potentially significant** land use impact.

5.1.5 Mitigation Measures

MM LU-1 Prior to approval of the mass grading permit for Village Eight East and Village Ten, the mass grading plans shall include the relocation of the City of San Diego waterlines to the satisfaction of the City of San Diego and the City of Chula Vista.

MM LU-2 Prior to approval of the first Final Map in Village Eight East, the Applicant shall provide evidence satisfactory to the Development Services Director (or their designee) that the:

1. Applicant has entered into an agreement with the City of San Diego to relocate the City of San Diego waterlines within Village Eight East within the right-of-way of future Otay Valley Road, as approved by both the City of San Diego and the City of Chula Vista. The pipeline relocation work contemplated by said agreement shall be secured with the City of Chula Vista listed as a third party beneficiary of the bonds.
2. The City of San Diego has abandoned, or is required to abandon, any water main easements not needed as a consequence of the relocation of the City of San Diego waterlines within Village Eight East and entered into a Joint Use agreement for the new location of the facility within the City of Chula Vista right of way of future Otay Valley Road.

Prior to the Final Map approving the 1,200th Residential Dwelling Unit (Single-Family and/or Multi-Family Residential) for Village Eight East, the new water line shall be constructed.

MM LU-3 Prior to approval of the first Final Map in Village Ten, the Applicant shall provide evidence satisfactory to the Development Services Director (or their designee) that the:

1. Applicant has entered into an agreement with the City of San Diego to relocate the City of San Diego waterlines within Village Ten within the right-of-way of future Otay Valley Road, as approved by both the City of San Diego and the City of Chula Vista. The pipeline relocation work contemplated by said agreement shall be secured with the City of Chula Vista listed as a third party beneficiary of the bonds.
2. The City of San Diego has abandoned, or is required to abandon, any water main easements not needed as a consequence of the relocation of the City of San Diego waterlines within Village Ten and entered into a Joint Use agreement for the new location of the facility within the City of Chula Vista right of way of future Otay Valley Road.

Prior to the Final Map approving the 580th Residential Dwelling Unit (Single-Family and/or Multi-Family Residential) for Village Ten, the new water line shall be constructed.

MM LU-4 Prior to approval of each residential building permit in Village Three North and a Portion of Village Four, the applicant shall provide evidence satisfactory to the Development Services Director (or their designee) that each proposed residential unit to be constructed shall be located at least 1,000 feet away from the then active solid waste disposal areas of the Otay Landfill as required by General Plan Policy E 6.4 (as ~~will be~~ corrected) and by Section 2.5 of the Amended and Restated Otay Landfill Expansion Agreement.

~~Notwithstanding the typically ministerial nature of building permit approvals, t~~The City shall ~~have and retain discretion here to~~ deny any building permit application regarding any residential lot or parcel that does not comply with this Mitigation Measure.

5.1.6 Level of Significance After Mitigation

The mitigation measures listed above in Section 5.1.5 and in Section 5.15, Hazards, would reduce potentially significant impacts related to land use compatibility to **less than significant**.

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5.2 LANDFORM ALTERATION/AESTHETICS

This section tiers from the 1993 Otay Ranch GDP Program EIR because the proposed project is within the boundaries of the Otay Ranch GDP and development of the proposed project area was analyzed in the 1993 Otay Ranch GDP. This section also tiers from the 2005 GPU/GDPA Program EIR, because existing conditions for the entire Otay Ranch area were assessed as part of the 2005 GPU/GDPA Program EIR. The 1993 Otay Ranch GDP Program EIR determined that impacts to visual character, alteration of landforms, and development in highly visible areas as a result of development planned in the 1993 Otay Ranch GDP would be significant and unmitigable. Mitigation measures were provided to reduce impacts; however, they would not reduce impacts to below a level of significance. However, the Chula Vista City Council determined that impacts were acceptable because of specific overriding considerations. The 2005 GPU/GDPA determined that impacts to landform alteration/aesthetics would be less than significant with implementation of General Plan objectives and policies as well as mitigation measures.

This section describes relevant regulations, policies and guidelines governing views and aesthetic considerations. As applicable, provisions of view ordinances, design guidelines, and general plan and scenic highway plans are summarized. Views of the site from representative public vantage points such as from scenic roads and regional trails are described using current photographs. On-site and nearby off-site scenic resources are also identified. Using photosimulations the analysis assesses the impact to existing topography and site character from the proposed grading and development of the site with potentially multi-story residential, commercial, industrial and community purpose facilities. The impact analysis determines whether the proposed project would significantly impact a scenic vista or visual feature or preclude the ability of the public to view a significant visual feature. In addition, the analysis addresses the introduction of new sources of lighting into the proposed project area.

5.2.1 Existing Conditions

5.2.1.1 Regulatory Framework

State

California Scenic Highway Program

The California Scenic Highway Program was created in 1963 with the intent “to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment.” The state laws that govern the Scenic Highway Program are Sections 260 through 263 of the Streets and Highways Code. A highway may be designated scenic based on the natural landscape visible by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the views of the highway. The Scenic

Highway Program includes both officially designated scenic highways and highways that are eligible for designation. It is the responsibility of local jurisdictions to apply for scenic highway approval, which requires the adoption of a Corridor Protection Program (Caltrans 2011). In addition, once a scenic highway is designated, the local jurisdiction is responsible for regulating development within the scenic highway corridor. There is no designated or eligible state Scenic Highway within the project area.

Regional

County of San Diego Light Pollution Code

County Code of Regulatory Ordinances Section 59.101-59.115 (Light Pollution Code) was adopted for the purposes of minimizing light pollution for the public enjoyment of the dark sky environment and to protect astronomical research at the Palomar and Mount Laguna observatories. The Light Pollution Code contains restrictions regarding the type of outdoor light fixtures that may operate on private property and designates all lands into one of two zones (Zone A or Zone B). Zone A has more stringent lighting regulations than Zone B and includes all areas within a 15-mile radius of the Palomar or Mount Laguna observatory. Zone B includes all other lands located outside of the 15-mile radius. The proposed project is located within Zone B and while Village Three North and a Portion of Village Four, Village Eight East, and Village Ten are located outside of County land use jurisdiction, the Otay Ranch General Development Plan requires compliance with the County Light Pollution Code.

Local

City of Chula Vista Design Manual

The City's Design Manual (City of Chula Vista 2011) provides a set of guidelines in conjunction with development standards to assist the city in achieving a high quality of aesthetic and functional design. Consistent with the City's Design Manual, the proposed project includes Village Design Plans that guide the site, building and landscape design within the villages to ensure that the quality of the adopted urban design and architectural concepts established for the overall Otay Ranch community are maintained. The Village Design Plans identify a theme for the villages and delineate the identity of each village through streetscape and landscape design, architecture, signage programs and lighting guidelines. The Village Design Plans implement and conform to the City's Design Manual.

City of Chula Vista General Plan

The City of Chula Vista General Plan contains objectives and policies to preserve and enhance aesthetic resources. Specifically, the Land Use and Transportation Element includes policies that

strive to continue to protect the open space network and design policies for features such as view, entryways, gateways, streetscapes, buildings, parks and plazas. The General Plan identifies valued scenic vistas and open space throughout the city. Resources in the project vicinity include the Otay River Valley and the Chula Vista Greenbelt, which is the backbone of the city's open space and park system and consists of a 28-mile open space system encircling the city. A consistency analysis concerning the proposed project and relevant policies of the General Plan is included in Appendix B and is summarized in Section 5.2.3 (F), below.

Gateways

The General Plan identifies entryways and gateways, which offer opportunities to improve the City's appearance and establish a community image through special design treatments such as signage, landscape, and architectural design enhancements. The City designates both Primary and Secondary Gateways. Primary Gateways are from freeways and should appear visually inviting, provide adequate direction to places of interest, and have high quality design features. Primary Gateways within or near the project site include State Route 125 at Otay Lakes Road, Olympic Parkway, and Birch Road. Also, General Plan Figure 5-6 calls for a Primary Gateway at State Route 125 and Main Street/Hunte Parkway, east of SR-125 which leads to the University site and Eastern Urban Center. There are no Secondary Gateways within or near the project site (City of Chula Vista 2005).

City-Designated Scenic Roadways

The City of Chula Vista has designated several Scenic Roadways that pass through or are adjacent to the project site. These roadways are designated for their views of natural features and roadway characteristics, including enhanced landscaping, adjoining natural slopes, or special design features (City of Chula Vista 2005). Existing and city-designated Scenic Roadways in the project area include:

- Main Street from Interstate 805 to Heritage Road;
- Hunte Parkway from Eastlake Parkway to Proctor Valley Road;
- Olympic Parkway;
- Rock Mountain Road from Heritage Road to State Route 125 (designated – not yet constructed);
- Heritage Road from Telegraph Canyon Road to the City's southerly boundary (designated- not yet constructed); and
- La Media Road from Otay Lakes Road to /Main Street (designated – not yet constructed).

City of Chula Vista Municipal Code

The City of Chula Vista regulates signage through Chapter 19.60, Signs, of the City's Municipal Code. Among other things, the purpose of the Sign Ordinance is "To balance the public interests in community aesthetics against the signage needs of establishments and persons who wish to express information or a message by displaying a sign." In addition, the Sign Ordinance is intended to improve the visual environment for residents and visitors of the city, and protect prominent viewsheds. There are specific standards for "sensitive" zones, such as agricultural, residential estates, and other residential zones.

Light and glare are regulated by Chapter 17.28 and Section 19.66.100 of the City's Municipal Code, respectively. Chapter 17.28, Unnecessary Lights, is intended to prevent lighting from creating a nuisance by regulating the use of lighting in and around residential areas. Although lighting can be used to improve the aesthetics of a residential property, this chapter ensures that such lighting is properly controlled and doesn't create a nuisance. The ordinance recognizes that lighting is widely used in commercial or industrial zones for the purpose of advertising and security and that such lighting is essential to the conduct of many commercial or industrial enterprises. The ordinance requires light shielding on commercial and industrial lighting near residences; prohibits residential lighting that spills over to adjacent properties during nighttime hours; and requires multi-family residential, commercial, and industrial developments to submit lighting plans to the city. Lighting from any use which is unshielded or so directed as to focus the beams directly upon adjacent residential property is prohibited at all times.

Section 19.66.100, Glare, prohibits direct or sky-reflected glare from floodlights and high-temperature processes that produce glare that is visible at the points of measurement as specified in Section 19.66.060, Locations where determinations are to be made. In any district except the Industrial zone, the point of measurement is at the lot line of the establishment or use. Within the Industrial zone it is 500 feet from the establishment or use or at any point within an adjacent zone other than an Industrial zone.

City of Chula Vista Greenbelt Master Plan

Comprised of natural and park-like elements, the City of Chula Vista Greenbelt System functions as a collection of open space segments or areas around the city that are linked by existing and proposed trails. The primary purpose of the Greenbelt Master Plan is to establish goals and policies, trail design standards and implementation tools to guide the acquisition and creation of trails connecting the greenbelt system. Design standards are also established in order to maintain a consistent architectural character in greenbelt facilities and elements. Chapter 3 of the Master Plan contains goals and policies that provide general direction regarding the establishment, maintenance and monitoring of the overall greenbelt system program. More specific regulations including design standards for multi-use and rural trails, design principles for facilities located

within natural resource areas and detailed design examples of signage, informational kiosks, trail sign posts and staging areas, are discussed in Chapter 4.

Otay Ranch General Development Plan

According to the Otay Ranch GDP, the major Otay Ranch visual elements include the Otay Lakes, which are man-made reservoirs, canyons, and steep mountain peaks. Otay Mountain, Jamul Mountain, and San Miguel Mountain are prominent peaks visible from the Otay Ranch area but located outside of the proposed project boundaries.

Otay Ranch GDP policies mirror the aesthetic policies of the General Plan and require that activities should flow out from buildings onto public spaces to create vitality and excitement along the street front. In addition, Otay Ranch GDP policies encourage the incorporation of public art into individual buildings or building clusters.

The Otay Ranch GDP includes objectives to retain the natural character of landforms in Otay Ranch and the Otay River Valley, preserve steep slopes, relate development to topography and natural features, and preserve views of major physical features. The Otay Ranch GDP includes design standards addressing architectural massing, grading, landscaping, and retaining walls to minimize adverse visual effects. The Otay Ranch GDP also includes a goal to preserve dark skies to allow for continued astronomical research and exploration to be carried out at the county's two observatories. Policies supporting this goal require compliance with the city lighting standards and outdoor lighting fixtures to be shielded to avoid spillage of light onto adjacent properties.

The Otay Resource Management Plan Phase 1 and 2

The Otay Ranch RMP, which was adopted concurrent with the Otay Ranch GDP, identifies prominent landforms and steep slopes within the Otay Ranch. These include the Jamul Mountains, portions of the San Ysidro Mountains, the Otay River Valley, and other associated ridges and drainages. The RMP establishes a ranch-wide standard that requires preservation of at least 83% of all natural slopes with gradients of 25% or greater throughout the Otay Ranch.

As part of the Otay Ranch GDP PEIR, a Ranch-wide steep slope analysis was completed using then available USGS topography. The results of the original steep slope analysis (circa 1989) concluded that Otay Ranch contained 7,651 acres of land with gradients of 25 percent or greater, of which 6,350 acres (83 percent of 7,651 acres) shall be preserved, and not more than 1,301 acres could be impacted for the entire Otay Ranch.

As an implementing action of the Otay Ranch GDP and RMP, a steep slope allocation table was provided as part of the Phase 2 RMP. The Phase 2 RMP requires that the ranch-wide preservation standard must be reviewed and monitored as additional Otay Ranch villages are processed to ensure that the 83% ranch-wide goal of steep slope preservation is maintained. The

Phase 2 RMP further allows some flexibility on steep slope allocated for each village provided that each SPA Plan demonstrate that the project's actual impacts to steep slopes will not preclude subsequent entitlements from achieving the ranch-wide 83% preservation standard. (City of Chula Vista and County of San Diego 1993).

A subsequent Ranch-wide analysis was performed in 2012 to verify current conditions and the accuracy of the steep slope assumptions contained in the Otay Ranch GDP PEIR. Based on the updated modeling results, Otay Ranch contains 9,821 acres of land with gradients of 25 percent or greater. The difference between the current steep slope acreages and the original calculations is attributed to advancements in computer aided data collection and processing, and the availability of detailed topographic data.

To date, development entitlements approved within Otay Ranch have impacted approximately 255 acres of natural steep slopes within the Otay Valley Parcel; therefore, 9,566 acres of steep slopes remain in Otay Ranch.

Otay Valley Regional Park Design Standards and Guidelines

In addition to the establishment of design standards for publicly owned facilities in Otay Valley Regional Park (OVRP), guiding principles for adjacent private development that interfaces with the park are also incorporated into the OVRP design standards and guidelines document. Guiding principles are provided in Section 5 of the planning document and are intended to maintain a consistent architectural style and synergy between park development and neighboring land uses as well as to ensure consideration of the park's natural character in future development plans. Goals and policies applicable to aesthetics and landform alteration include the enhancement of public access to the park through attractive, safe, and controlled access points and gateways, the provision of compatible edge treatment and buffering adjacent to the park to enhance the visual experience for park users, and minimization of natural landform alteration.

5.2.1.2 Visual Resources Components

The characterization of existing visual resources and available scenic vistas on the project site and the surrounding areas form the basis of this aesthetics and views analysis. Aesthetics refers to visual qualities within a given field of view and may include such considerations as size, shape, color, texture, and general composition, as well as the relationships between these elements.

Aesthetic features often consist of unique or prominent natural or man-made attributes or several small features that, when viewed together, create a whole that is visually interesting or appealing. Views refer to visual access to aesthetic features. Viewsheds, or the extent of a given view, are typically defined by landscape elements and building locations. Existing views may be partially obstructed or entirely blocked by modification of the environment. Conversely, modifications to the natural or man-made landscape of an area may create or enhance view opportunities.

Light impacts are typically associated with the use of artificial light during the evening and nighttime hours. Artificial light may be generated from point sources as well as from indirect sources of reflected light. Uses such as residences, hospitals, and hotels are considered light sensitive since they are typically occupied by persons who have expectations for privacy during evening hours and who are subject to disturbance by bright light sources. Wildlife habitat areas may also be considered light sensitive if the introduction of light sources would compromise the quality and function of a habitat area.

Glare is primarily a daytime occurrence caused by the reflection of sunlight or artificial light by highly polished surfaces such as window glass or reflective materials and, to a lesser degree, from broad expanses of light-colored surfaces. Daytime glare generation is common in urban areas and is typically associated with mid- to high-rise buildings with exterior façades largely or entirely comprised of highly reflective glass or mirror-like material from which the sun can reflect at a low angle in the periods following sunrise and prior to sunset. Glare can also be produced during evening and nighttime hours by the reflection of artificial light sources such as automobile headlights. Glare generation is typically related to either moving vehicles or sun angles, although glare resulting from reflected sunlight can occur regularly at certain times of the year. Glare-sensitive uses generally include residences and transportation corridors.

5.2.1.3 Existing Aesthetic Character

Village Three North and a Portion of Village Four

The Village Three North and Portion of Village Four project site is comprised of large mesas north of the Otay River Valley. Numerous drainages trend north–south and drain into the Otay River, which is located immediately south of Main Street (south of the southwesternmost corner of Village Three North). The eastern portion of the site is a narrow “finger” that extends west from Village Four toward Wolf Canyon. This portion of the project site is surrounded by Wolf Canyon with open space to the south, east, and north. Non-native grassland is the dominant vegetation community on Village Three North; however, agriculture/pastures occur in the northeastern portion of Village Three North/Portion of Village Four and on-site vegetation communities also include lesser occurrence of coastal sage scrub, disturbed habitat, and maritime succulent scrub. Some areas of the project site are devoid of vegetation due to grading, while other areas support vegetation characteristic of disturbed communities, including low-lying weedy vegetation and some brush. On-site elevations range from approximately 150 feet above mean sea level along the south/southwestern boundary of the site to 470 feet to the north. The northern and western boundaries of the site are defined by the Otay Landfill and auto recycling facilities and the Sleep Train Amphitheatre and SeaWorld Aquatica Water Park are located to the southwest (south of Main Street and west of Heritage Road). In addition, the Otay Valley Rock Quarry, operated by Vulcan Materials Company, is located southeast of Village Three North. Existing sources of light in the vicinity of Village Three North include auto salvage yards to the

west, Sleep Train Amphitheatre to the southwest, distant residential development to the north and vehicle traffic on Main Street.

In the Village Three North area, views of Rock Mountain and the Otay River Valley are available from Main Street and Heritage Road to the south. From the site there are view opportunities of adjacent open space and mountain areas, including the Otay River Valley preserve areas, Wolf Canyon, and Rock Mountain to the east, and distant views to the mountains to the east. Views of the Otay River Valley are considered scenic in the Chula Vista General Plan. From the Portion of Village Four, scenic views of Wolf Canyon are available to the south, east, and north, and scenic views of Rock Mountain are available to the south/southeast.

Village Eight East

The Village Eight East site consists of large mesas north of the Otay River Valley. There are several drainages within Village Eight East that drain south to Otay River. Agriculture vegetation consisting of pastures dominated by non-native grasses, dove weed, and black mustard comprises the majority of existing vegetation on Village Eight East; however, coastal sage scrub, developed cover, and disturbed habitat also occur, though at a lesser extent.

On-site elevations range from approximately 190 feet in the south/southwest portion of the site to 600 feet in the northern/north-central portion of the site. The northern edge of Village Eight East is defined by Village Seven development, including Olympian High School, and the existing Main Street, which is identified by the Otay Ranch GDP as a 6-lane Prime Arterial. In addition, Village Eight East is surrounded by the remainder of Village Eight (Village Eight West) and Village Four to the west, SR-125 and Village Nine to the east, and the Otay River Valley and Otay Ranch Preserve areas to the south. Existing sources of light in the area surrounding Village Eight East include exterior lighting at Olympian High School and residential development to the north and northwest, lighting installed along streets to the north, and vehicle traffic and lights on SR-125 to east and south.

From Village Eight East, view opportunities to open space areas and mountains, including Rock Mountain (located approximately 0.4 miles to the west), and the Otay River Valley (a portion of which is located within the Village Eight East development boundary), are available. In addition, more distant views to Otay Mountain (located approximately 7.4 miles to the east) and the San Ysidro Mountains are also available.

Village Ten

The Village Ten landform consists of large mesas north of the Otay River Valley and west of Salt Creek. Salt Creek Canyon and the Otay River Valley preserve areas are located east and south/southwest of the site, respectively. There are several drainages within Village Ten that drain south to the Otay River. Although dominant onsite vegetation includes non-native

grassland and coastal sage scrub, agriculture/pastures, disturbed habitat, maritime succulent scrub and limited areas of mulefat scrub and southern willow scrub also occur.

On-site elevations range from approximately 280 feet in the very south to 500 feet along the northern boundary of the site. The northern edge of Village Ten is defined by the future University land uses, existing Hunte Parkway identified by the Otay Ranch GDP as a 6-Lane Prime Arterial, and High Tech High Chula Vista. Village Nine (currently undeveloped open space) is located to the west, Salt Creek Canyon is located to the east, and the Otay River Valley is located to the south. While not located immediately adjacent to Village Ten, existing sources of light in the area consist of vehicle traffic on Eastlake Parkway and Hunte Parkway and existing development to the north (Village Eleven) and SR-125.

From Village Ten scenic views extend along Otay Valley Road, an open space scenic corridor. In addition, there are view opportunities to Rock Mountain (located approximately 1.5 miles to the west) and the Otay River Valley to the south and southwest. More distant views to Otay Mountain (located approximately 6 miles to the southeast) are also available from Village Ten.

Light and Glare

Two astronomical observatories are located within 50 miles of the project area: Mount Laguna Observatory, located approximately 20 miles from the site and Palomar Mountain Observatory, located approximately 37 miles north. Both of these observatories use large telescopes and conduct astronomical and other related research. These observatories are located in the unincorporated County of San Diego. Light pollution within a 15-mile radius of these observatories is strictly controlled through implementation of the County of San Diego's Light Pollution Code (Title 5, Division 9), which includes less restrictive measures for areas outside the 15-mile radius. The project site is outside the jurisdiction of the County of San Diego; however, the Chula Vista Unnecessary Lights Ordinance outlines restrictions and limitations on the use of lighting in or near the residential zones to prevent lighting from creating a nuisance to residents. These lighting restrictions also benefit the observatories.

Currently, the project site and the areas adjacent to the project site are undeveloped and not lit at night. Additionally, these areas do not contain expanses of material that would result in glare. To the north of Village Eight East is residential and commercial development that has nighttime lighting. The City of Chula Vista, including the Otay Ranch area, is urbanized and currently generates substantial night lighting. The buildings in the surrounding area include windows and other glass or metal expanses that can result in localized glare.

Viewers

Viewer exposure varies depending on several factors including the angle of view (i.e., normal, inferior, or superior viewing angles); view distance (foreground, middle ground, and background);

relationship to sun angle (backlighting versus front or side lighting); the extent of visibility (i.e., whether views are panoramic or limited by vegetation, topography, or other land uses); and viewer screening conditions (e.g., whether the project facilities will be skylined on ridgelines, backscreened by topography and/or vegetation, or screened by structures or vegetation in the foreground). Viewer exposure also considers the duration of view based on viewer activity (e.g., travel route, residential, recreation, etc.) and often relates to speed of travel (pedestrian, vehicular, or stationary).

Viewers that are exposed to the visual resources on and around the project site include area residents and pedestrians and cyclists and motorists on local roads and SR-125. Village Three North is visible from a portion of Village Two (currently developing) to the northeast and from existing industrial development to the west, but due to its elevation and location down-gradient of the Otay Landfill, it is not visible from residences to the north. Village Three North is however visible from distant residences to the south atop the Otay Mesa landform. Village Eight East is not visible from the residences to the north due to intervening structures at Olympian High School and elevated berms and landforms in the immediate area. The site is visible from Olympian High School by students, faculty and visitors. Motorists along Magdalena Avenue and Main Street are able to partially view the site, and motorists on SR-125 can view the entire site. Distant views of the project site are available looking north from Otay Mesa. Village Ten is visible from Hunte Parkway, and in the distance from SR-125. Portions of the Village Three North, Village Eight East, and Village Ten development sites are also visible from trails and canyons located north and south of Otay River within OVRP.

Key Views

Available public views to a site are affected by distance, viewing angle, and the number and type of visual obstacles, both natural and manmade. Public views can be from relatively stationary locations, such as from parks or scenic viewpoints, or from mobile locations such as trails and roadways. The visibility of an object or area mainly depends on the distance from the views. The further the object or area is from the viewer, the less distinct the objective/are becomes, and there is greater possibility of intervening objects blocking some or all of the view of a particular view or site.

As it is not feasible to analyze all possible locations from which a project may be seen, it is necessary to select a number of key public view points (KVP) that would most clearly display the visual effects of the project. Figure 5.2-1 illustrates the locations of twelve representative views of the proposed project. More specifically, KVP 1 to 6 illustrate the existing visual environment of the Village Three North/Portion of Village Four area as viewed primarily from public off-site areas to the south and the north. KVPs 7 through 11 illustrate the existing visual environment of the Village Eight East area as viewed from public off-site areas to the north, east, and south and includes locations on and immediately adjacent to SR-125 (i.e., KVPs 9 and 11) and within OVRP (KVP 10). Lastly, KVPs 12 through 16 illustrate existing conditions of the

Village Ten site as viewed from public areas (on- and off-site) to the north, east, and south. It should be noted that KVPs 10, 14, 15, and 16 are from locations situated within the OVRP. In addition, photo simulations from locations 1 and 11, while not within the OVRP, are representative of what potential users of the southern OVRP trail may observe. The photographs for the simulations where taken with a Canon Powershot at 28mm.

5.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines and the 1993 Program EIR for the Otay Ranch GDP (EIR 90-01), impacts regarding aesthetics and landform alteration would be significant if the project would:

A. Have a substantial adverse effect on a scenic vista.

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

C. Substantially degrade the existing visual character or quality of the site and its surroundings.

D. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

E. Alter areas of sensitive landforms and grade steep slopes that may be visible from future development and roadways that negatively detract from aesthetic character of the site or surrounding area.

F. Be inconsistent with General Plan, Otay Ranch GDP or other objectives and policies regarding visual character thereby resulting in a significant physical impact.

5.2.3 Impact Analysis

A. Have a substantial adverse effect on a scenic vista

The analysis of the proposed projects potential impacts on view considers the changes in key views to and from the project site. Figure 5.2-1 illustrates the locations of views to and from the project site. Anticipated changes to key views are discussed below according to village development and location.

Village Three North and a Portion of Village Four

a. Key View Point 1

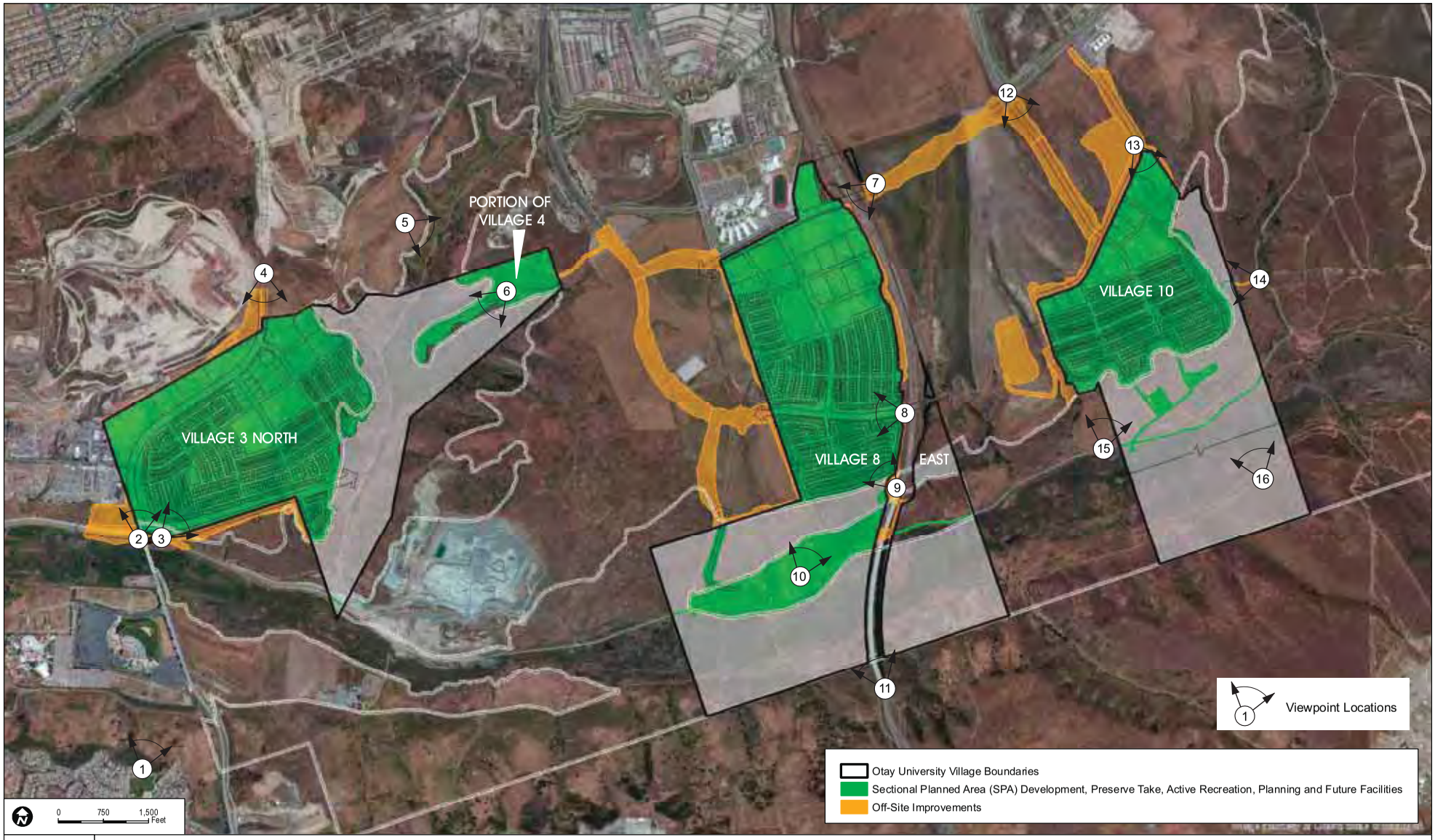
KVP 1 (see Figure 5.2-2) shows the view north from the paved perimeter trail of Vista Pacifica Neighborhood Park, a City of San Diego facility located approximately 0.75 miles south of the southwestern corner of the Village Three North development area in the community of Otay Mesa. The view from this location was selected as it is from a public vantage point, and due to

its elevation above the river valley, shows a more panoramic view of Village Three North. Due to the village's elevation, less of the proposed development within Village Three North would be visible from the river valley. Therefore, this vantage point is considered a conservative representation of views from the southern portion of the valley, such as the OVRP trail.

The view shows the sloping terrain and tan colored vegetation of the Otay Mesa landform in the immediate foreground, structures, seating, lawn and landscaping associated with the Sleep Train Amphitheatre and the patchy form and texture of vegetation located in the Otay River Valley in the middleground. North of the river valley, the terrain abruptly rises to form a mesa landform on which Village Three North and a Portion of Village Four would be located. Auto recycling facilities are visible north of the Otay River Valley and west of the mesa landforms and the elevated terrain of the Otay Mesa landfill can be seen to the northwest. The prominent, pyramidal forms of Mother Miguel Mountain (approximately 7.5 miles northeast of KVP 1) and San Miguel Mountain (approximately 8.8 miles northeast of KVP 1) and are visible in the distant background.

From KVP 1 (see Figure 5.2-2), existing south facing slopes and mesa tops would be graded to accommodate several travel lanes and the proposed landscaped median of the northerly extension of Heritage Road. The proposed easterly extension of Main Street would also visible along the southernmost extent of the Village Three North development. As viewed from Vista Pacific Park (i.e., KVP 1), middleground terrain located north of the Otay River Valley would be developed primarily with single-family residences (east of Heritage Road) and industrial uses (west of Heritage Road) within the Village Three North boundary (see Figure 5.2-2). A neighborhood park, multistory school buildings located northeast of the park and multistory mixed-use buildings located adjacent to Heritage Road would also be visible in the middleground distance from KVP 1 but would be buffered from the Otay River Valley by low-density residential land uses. Project landscaping installed throughout Village Three North and vegetated open space installed along Heritage Road and Main Street would help break up the intensity of development as viewed from KVP 1 and would somewhat soften the resulting visual effect.

While development would occupy a large portion of the landscape in the middleground distance, vegetation within the Otay River Valley and prominent peaks in the surrounding area including San Miguel Mountain and Mother Miguel Mountain would remain visible and would not be screened or blocked by proposed development from this vantage point. The incorporation of design principles such as locating lower-intensity uses and landscaping at the southern extent of the development edge would soften the transition between development and existing landforms of the Otay River Valley. Further, the implementation of project landscaping throughout the development sites would alleviate the visual effect of graded slopes and structures as viewed from off-site viewing locations.



AERIAL SOURCE: BING MAPPING SERVICE; DEVELOPMENT: HUNSAKER & ASSOCIATES 2012

FIGURE 5.2-1

Viewpoint Locations Map

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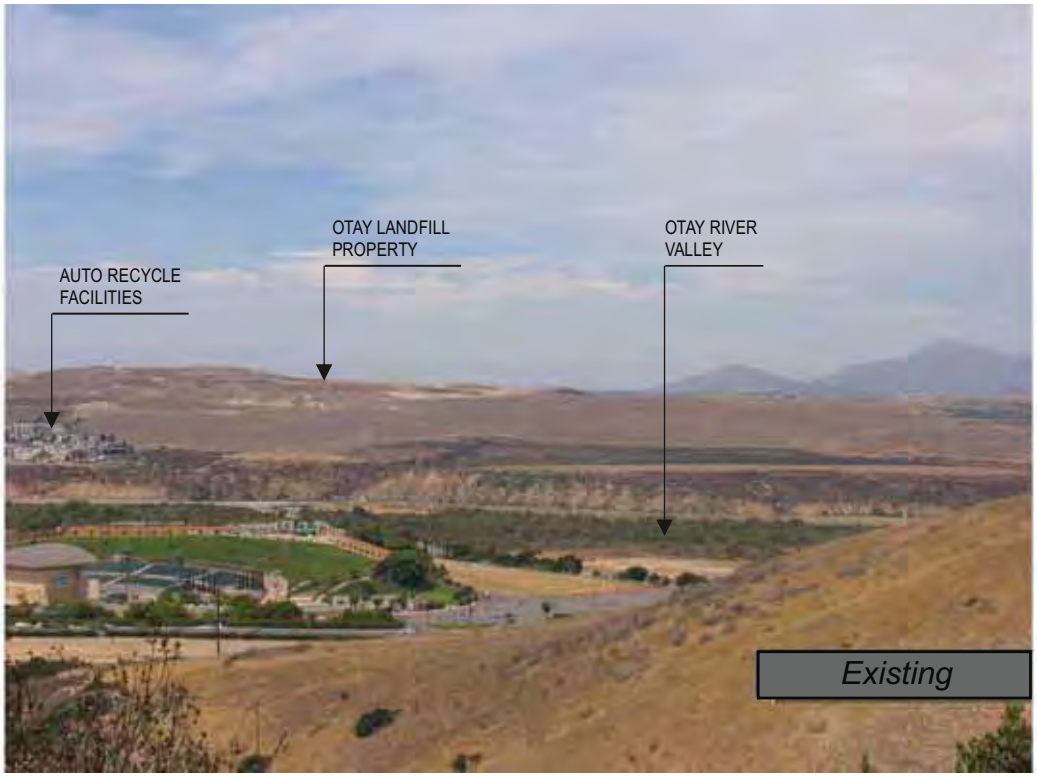
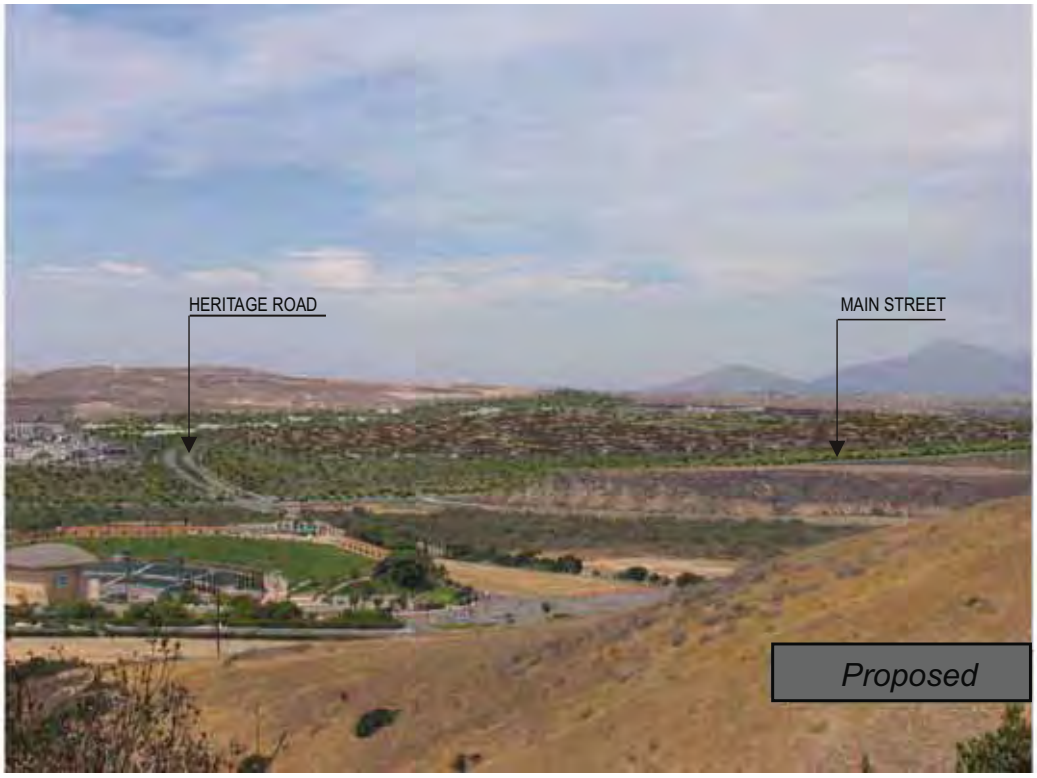


Key View 1: Existing view from Vista Pacifica Park looking north



Key View 1: Post-project view from Vista Pacifica Park looking north towards Village Three North

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-2

Village Three North and Portion of Village Four–Key View 1

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As noted previously, the vantage point is elevated above and across the river valley from the proposed development. Therefore, it offers a more panoramic view of Village Three North than vantage points within the valley, such as from future OVRP trail locations. While closer views of Village Three North would be afforded from future OVRP trail locations, the elevation difference between the OVRP trail locations and Village Three North would allow views of only the southern portion of the proposed development and Main Street. As such, KVP 1 can be considered a more conservative representation of views from the future OVRP trails.

While KVP 1 is a public vantage point, it is not a designated scenic vista and implementation of the project would be consistent with policies of the General Plan requiring the installation of landscaping and/or open space to maintain naturalized or soft edges for proposed private development located directly adjacent to natural areas. Therefore, the project would not result in adverse impacts from this KVP.

b. Key View Point 2

KVP 2 (see Figure 5.2-3a and 5.2-3b) shows a northeasterly view towards the southwestern corner of the Village Three North development area from Heritage Road at the existing access road to the Vulcan Materials Company construction aggregate quarry. The view presented in KVP 2 also represents the future northerly view available from the proposed westerly access road to Village Three North. The cracked, paved surface of Heritage Road, the lightly colored band displayed by the distant surface of the road and chain link fencing running parallel to the road comprise the immediate foreground of the existing view from KVP 2. Beyond the fenceline, the terrain abruptly rises and is dotted with clumps of darkly colored shrubs, scattered trees and rocks, and exposed tan soils. A series of overlapping ridgelines displaying the red to dark green colors of characteristic vegetation are visible to the northeast.

Located within the Village Three North boundary, the post-project foreground view from KVP 2 would consist of the intersection of the proposed extensions Heritage Road and Main Street at the southwestern corner of the development area. As shown in Figure 5.2-3a and 5.2-3b, several travel lanes of Main Street and Heritage Road would be constructed consistent with the Circulation Element and these roads would be lined with large landscaping trees. In addition, the post-project view from KVP 2 would include the entryway into Village Three North from the west and south and would show the 6-foot monument/wall constructed at the northeastern corner of the Heritage Road/Main Street intersection. Foreground views would also show steep, densely vegetated terrain sloping upwards towards a relatively flat building pad upon which single-family residences would be constructed.

The manufactured slope at the corner of Heritage Road and Main Street is approximately 100 feet tall. Along the eastern extension of Main Street, two plantable retaining walls would be constructed as part of the manufactured slope as shown on the Tentative Map. The wall nearest

to Main Street would be restricted to ten feet and setback from the road and screened by landscaping. Likewise, the higher wall would be setback from the lower wall by 25 feet to allow for landscaping to screen the appearance of the taller wall. These walls reach a maximum combined height of approximately 40 feet. Along Heritage Road, a single wall up to approximately 28 feet is proposed which would also be setback from the roadway and screened with landscaping. Figure 5.2-3a illustrates the view from the intersection of Heritage Road/Main Street towards Village Three North in the interim years, after the plantable walls have been constructed but prior to any landscaping. This exhibit is provided to demonstrate a worst-case scenario of the retaining walls without any screening from future landscaping. The inclusion of plantable walls along graded slopes would soften the appearance of retaining systems and would better visually integrate the retaining structures into the existing and proposed landscape setting (Figure 5.2-3b). Figure 5.2-3b illustrates what the plantable walls will look like approximately ten years after installation.

The vegetated terrain would comprise a portion of the overall dedicated open space proposed for Village Three North and would soften the visual effect associated with vegetation removal and grading. While KVP 2 is a public vantage point, KVP 2 is not a designed scenic vista and is not considered a public view corridor. Further, the extent of the view from KVP 2 is limited to the foreground viewing distance due to the presence of existing tall terrain and as a result, broad and/or panoramic views are not available to viewers from this location. Therefore, the project would not result in adverse impacts from this KVP.

c. Key View Point 3

The existing view from KVP shown in Figure 5.2-4a looks east from Heritage Road towards the entrance and access road to the Vulcan Materials Company construction aggregate quarry (a Vulcan Materials sign is visible north of the road). The landscape visible from KVP 3 is similar to that discussed above for KVP 2 as both KVPs are located in the same general location on Heritage Road and south of southwestern corner of the Village Three North development area (see Figure 5.2-1). However, in addition to coastal sage scrub vegetation and exposed tan soils on rising terrain and chain link fencing adjacent to Heritage Road, a single, tall wooden pole supporting a communication line, stacked granite-colored boulders, and a lone palm tree are visible in the foreground viewing distance from KVP 3.

Key View 2: Existing view from Heritage Road looking north

Key View 2: Interim project view from Heritage Road looking north towards Village Three North

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-3a

Village Three North and Portion of Village Four–Key View 2

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Key View 2: Existing view from Heritage Road looking north

Key View 2: Post-project view from Heritage Road looking north towards Village Three North

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-3b

Village Three North and Portion of Village Four–Key View 2

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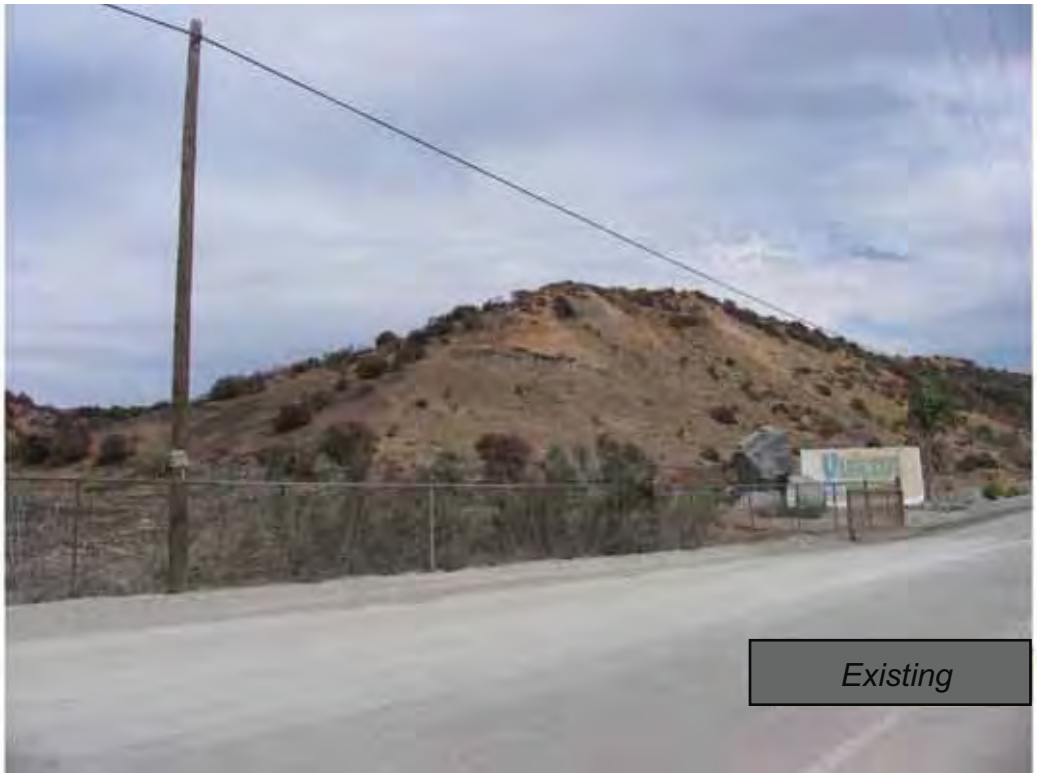
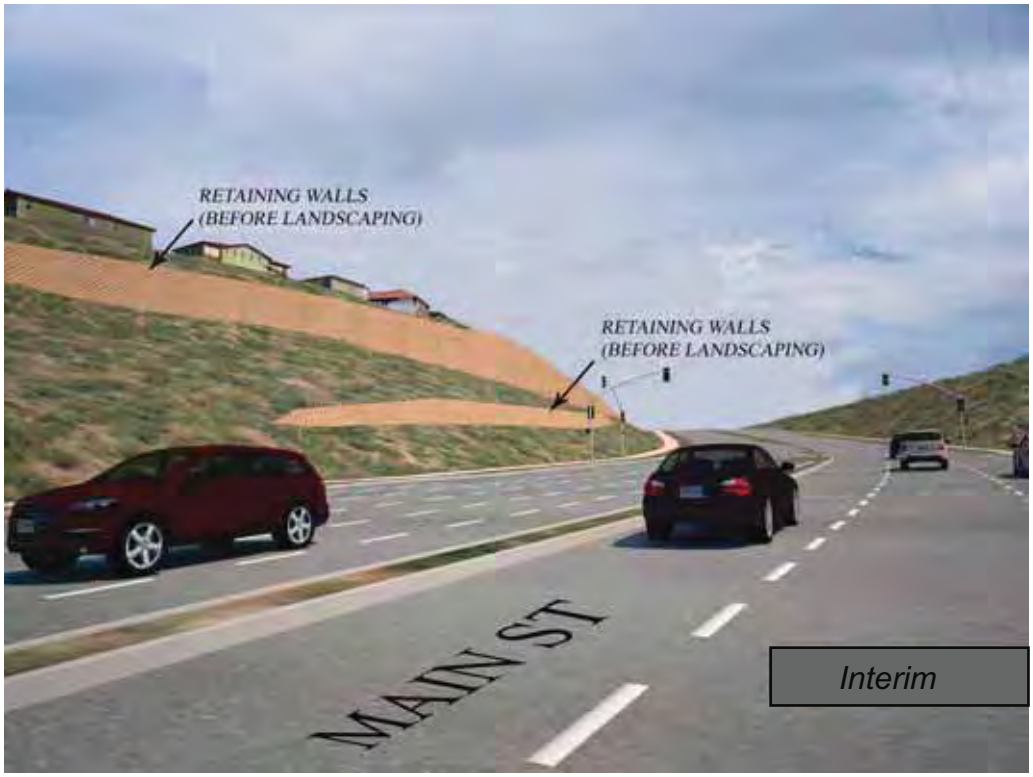


Key View 3: Existing view from Heritage Road looking northeast



Key View 3: Interim view from Heritage Road looking northeast towards Village Three North

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-4a

Village Three North and Portion of Village Four–Key View 3

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Similar to KVP 2, KVP 3 is located within the Village Three North boundary and the post-project view consist primarily of the proposed easterly extension of Main Street along the southern extent of the development area (see Figure 5.2-4a and 5.2-4b). Foreground views consist of the slightly curving alignment of Main Street (several west- and east-bound travel lanes would be constructed), a narrow landscaped median, and numerous street trees. In addition, densely vegetated and sloping terrain/open space and single-family residences located on elevated terrain north of Main Street would also contribute to the post-project view from KVP 3. As noted under KVP 2, plantable retaining walls would be constructed on this slope. Figure 5.2-4a illustrates the view looking northeast from Heritage Road towards Village Three North in the interim years, after the plantable walls have been constructed but prior to any landscaping. This exhibit is provided to demonstrate a worst-case scenario of the retaining walls without any screening from future landscaping. Once fully vegetated, the walls would not be visually intrusive as shown in Figure 5.2-4b. While KVP 3 is a public vantage, the current entryway to the Vulcan Materials Company quarry (i.e., KVP 3) is not considered a public view corridor or a scenic vista. Surrounding terrain to the north and an existing long berm constructed alongside the road to the south limits the availability of broad, panoramic views including southerly views of the Otay River. As such, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.

d. Key View Point 4

KVP 4 shows a southerly view toward Village Three North from undeveloped lands located east of the Otay Landfill (see Figure 5.2-1). In addition, KVP 4 is situated on the alignment of the proposed northerly access road (i.e., the northern extension of Heritage Road) into the Village Three 3 North development area. As shown on Figure 5.2-5, foreground views from KVP 4 include rolling, non-native grassland covered terrain to the east and west sloping downward towards a narrow, shallow canyon running the length of the Village Three North development area. Coastal sage scrub vegetation, fencing and narrow dirt trails are visible on east-facing terrain in the foreground. Traces of development including cleared land and lightly colored surfaces and structures located south of the Otay River Valley are visible in the middleground as is the rising, mounded terrain and elevated landform of Otay Mesa. Structures and vegetation atop Otay Mesa creates an irregular southern horizon line. Lastly, the silhouette of distant mountainous terrain in Mexico is visible in the background. Due to the elevated terrain on which KVP 4 is located, views of the undisturbed Otay River Valley are not visible from this location.

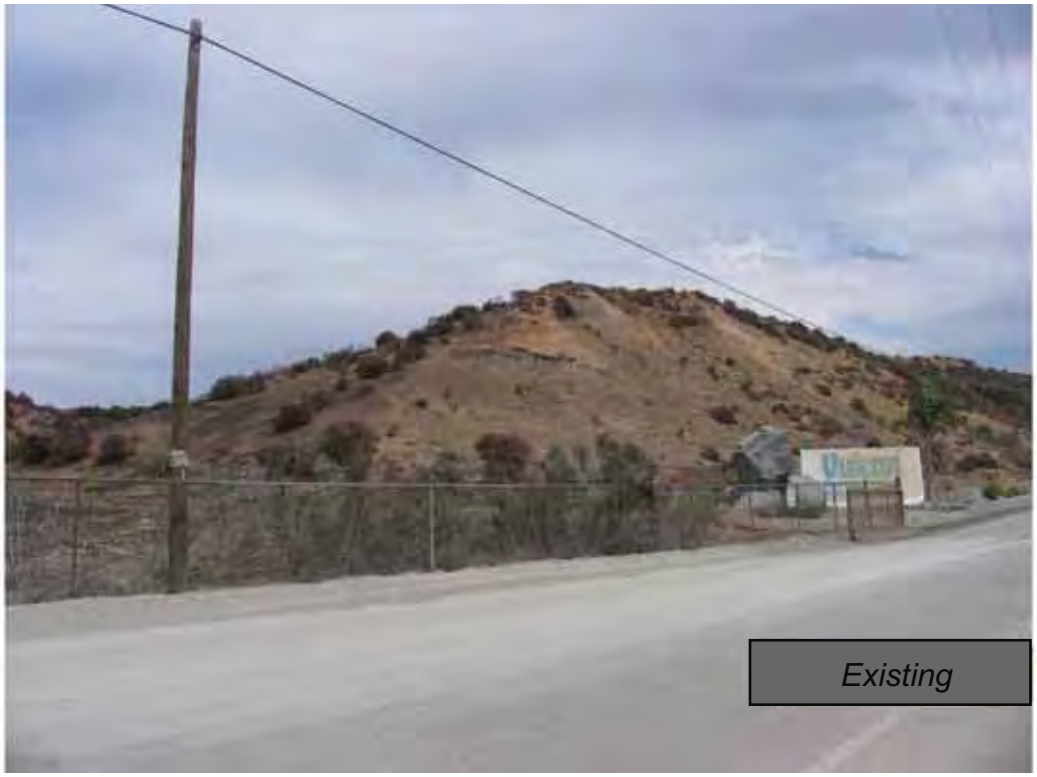
Post-project views from KVP 4 would be dominated by the northerly extension of Heritage Road and vegetation installed on terrain graded to accommodate the roadway, bicycle and pedestrian facilities. This post-project view appears elevated because the grading associated with the extension of Heritage Road would lower the location where the existing condition photograph was taken by approximately 70 feet. As shown on Figure 5.2-5, southerly post-project views from KVP 4 would include the paved and striped travel lanes of Heritage Road and raised landscaped median, street trees installed along roadway-adjacent parkways and sidewalk facilities. Existing terrain

would be substantially altered to accommodate the roadway and densely vegetated open space buffers would be created east and west of Heritage Road. Characteristic non-native vegetation would remain on a higher elevation slope to the west bordering the Otay Landfill and open space would be installed up to the MSCP boundary line located east of Heritage Road and residential development. Located in the northerly extent of Village Three North, post-project views from KVP 4 would include larger scale and more dense office/commercial and mixed use development (these uses occur adjacent to Heritage Road in the post-project view – see Figure 5.2-5) and viewers may also be afforded views of the buildings constructed on the proposed elementary school site. As shown on Figure 5.2-5, project development would display a consistent architectural style and theme and building scale would be appropriate for uses located in the urban village core. In addition, southerly views to the elevated landform of Otay Mesa would largely be maintained however, the southerly views of motorists, residents, and office workers may be partially obstructed by landscaping and project development. Still, mesas to the south of Village Three North are not designated scenic resources according to the City of Chula Vista and views of the Otay River Valley are not currently visible from KVP 4.

While Heritage Road is a City-designated scenic roadway, implementation of the proposed project would create a similar visual experience as currently provided on Heritage Road between Telegraph Canyon Road south to Olympic Parkway. This segment of the roadway is currently lined with street trees, features a raised landscaped median, and is located adjacent to sloped, vegetated terrain to the east and west. Therefore, for the reasons discussed above, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.

e. Key View Point 5

KVP 5 (Figure 5.2-6) shows a southeasterly view towards the Portion of Village Four included in the proposed project. As shown on Figure 5.2-1, KVP 5 is situated approximately 1,500 feet northwest of the Portion of Village Four development area and is located on currently undeveloped lands accessible by a trail off Santa Victoria Road. KVP 5 is located on the northwestern edge of Wolf Canyon and the visible landscape is dominated by the tan color of non-native grasslands in the foreground and middleground viewing distance. Clumps of coastal sage scrub vegetation are visible on northwest-facing slope of Wolf Canyon and vegetation is visibly denser in the canyon to the south. The lightly colored soil of a narrow trail leading to the top of Rock Mountain (located approximately 1 mile to the southeast) is also visible from KVP 5 in the middleground viewing distance. Background views include the descending and rising lines created by distant ridgelines to the southeast.



Key View 3: Existing view from Heritage Road looking northeast

Key View 3: Post-project view from Heritage Road looking northeast towards Village Three North

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-4b

Village Three North and Portion of Village Four–Key View 3

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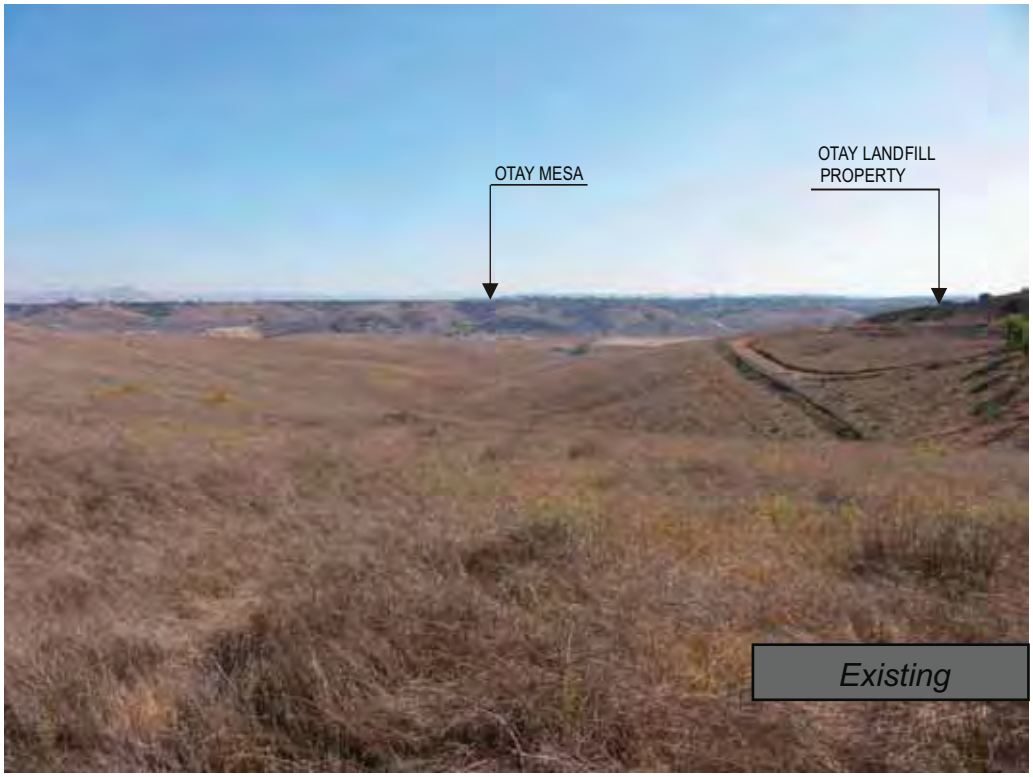

Key View 4: Existing view from east of Otay Landfill looking south

Key View 4: Post-project view from east of Otay Landfill looking south towards Village Three North

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-5

Village Eight East–Key View 4

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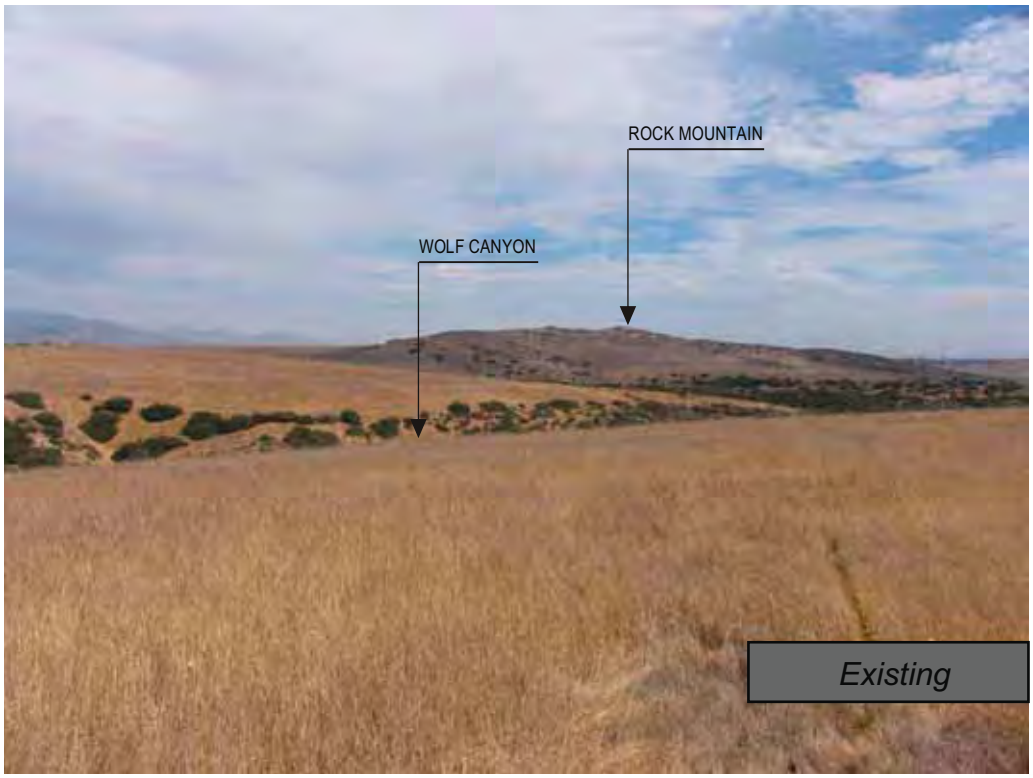

Key View 5: Existing view from the northwestern edge of Wolf Canyon looking southeast

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-6

Portion of Village Four–Key View 5

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No post-project views from KVP 5 are provided because no plan for the Village Four Community Park have been developed, thus, any simulation would be speculative at this time. However, post-project views from KVP 5 would include dedicated open space adjacent to the MSCP boundary and open space preserve. Therefore, southerly views including those of Wolf Canyon and the western slopes of Rock Mountain would be maintained. Further, foreground views of gently rolling terrain and non-native grasslands would also be maintained. Some park development and fencing occurring on a portion of the tan-yellow grassland covered elongated and elevated terrain located in the foreground may be visible but would not interfere with views of Wolf Canyon and Rock Mountain in the foreground to middleground viewing distance or views of the mountainous ridgelines located in the background viewing distance to the southeast. Therefore, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.

f. Key View Point 6

KVP 6 (Figure 5.2-7) is located on the Portion of Village Four included in the Project. It shows a southeasterly view towards the long, elevated grassland and occasional shrub covered terrain within the Portion of Village Four in the foreground. As shown on Figure 5.2-1, KVP 6 is located approximately 0.75 miles east of the eastern boundary of Village Three North and as proposed, development (primarily residential) would occur on the elevated landform located to the west and southwest in the middleground (see Figure 5.2-7). In addition to elevated terrain, existing middleground views from KVP 6 include the southerly extent of Wolf Canyon and an associated drainage. More distant views include cleared lands located south of the Otay River, the lightly colored band of Heritage Road heading south towards the community of Otay Mesa, residential structures and the elevated, flat landform of Otay Mesa. A series of tan colored hills supporting relatively few shrubs comprise the north-facing slopes of the mesa and hills are periodically interrupted by the darkly colored canyon slopes.

As shown in Figure 5.2-7, the post-project foreground view from KVP 6 would remain unchanged as the southeasterly extension of the land on which KVP 6 is located would not be developed. Similarly, project implementation would not obstruct or block views of Wolf Canyon (see Figure 5.2-7) as development would be located atop elevated terrain to the south and southeast. Southeasterly views of Otay Mesa would also be maintained. Single-family residential structures and landscaping would comprise the majority of proposed project components visible from KVP 6 however, the taller forms of school and mixed use buildings would also be visible and portions of these structures would be skylined. Despite these changes, the KVP 6 landscape would retain much of its existing natural character and views of scenic features including Wolf Canyon and the Otay River Valley would not be substantially screened or obstructed by project elements. As shown on Figure 5.2-7, project development would generally follow the natural terrain and would not substantially impede existing views available from KVP 6. Further, while KVP 6 is a public vantage point it is not a public view corridor or a designated scenic vista. Therefore, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.

Village Eight East

a. Key View Point 7

Located east of SR-125 on southwest-facing slopes comprising a road cut associated with construction of the state route, KVP 7a presents a southwesterly view towards elevated terrain that slopes gently to the east towards the Otay River Valley. As shown on Figure 5.2-1, the northeastern boundary of Village Eight East would be located immediately west of SR-125 and associated right-of-way and KVP 7b is situated on the alignment of a new street (Main Street) that would provide access from SR-125 to Village Eight East. As shown in Figure 5.2-8a, foreground views from KVP 7 consist of grassland-covered descending terrain interrupted by a concrete drainage running parallel to SR-125. Separated by a long band of low-growing shrubs and grassland, the paved surface of SR-125 is visible in the foreground as is a dark colored line created by fencing located on terrain to the west. The low, pyramidal form of the Rock Mountain summit is visible in the middleground viewing distance beyond sloping terrain located immediately west of the state route and the elevated, slightly rolling landforms of Otay Mesa are visible in the distance to the southwest. Lastly, the silhouette of mountainous terrain in Mexico is visible in the background viewing distance.

Key View 6: Existing view from Portion of Village Four looking west towards Village Three North

Key View 6: Post-project view from Portion of Village Four looking west towards Village Three North

SOURCE: HUNSAKER & ASSOCIATES 2014

FIGURE 5.2-7

Village Three North–Key View 6

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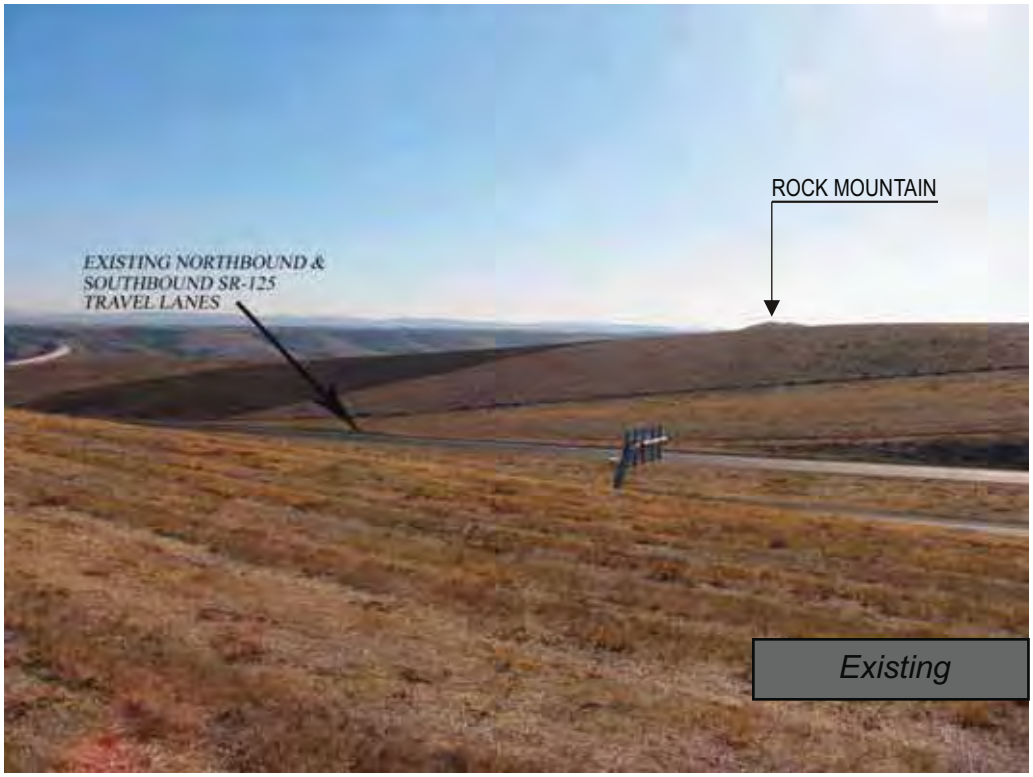
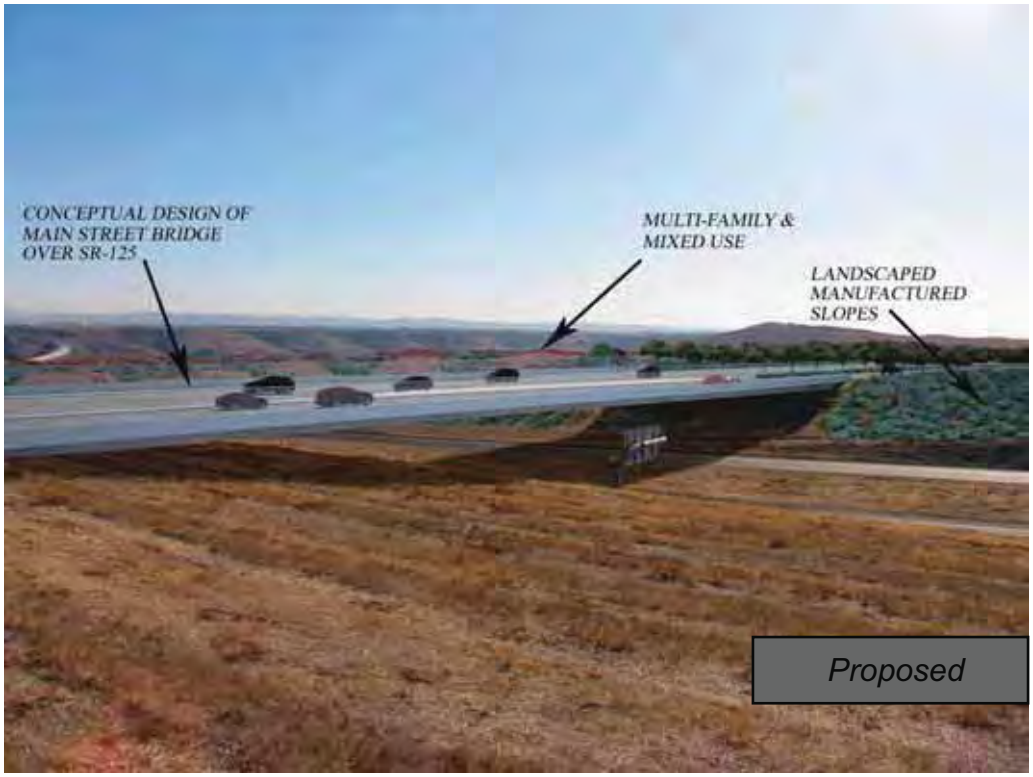


Key View 7: Existing view from east of SR125 looking southwest



Key View 7a: Post-project view from east of SR125 looking southwest

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-8a

Village Eight East–Key View 7 and 7a

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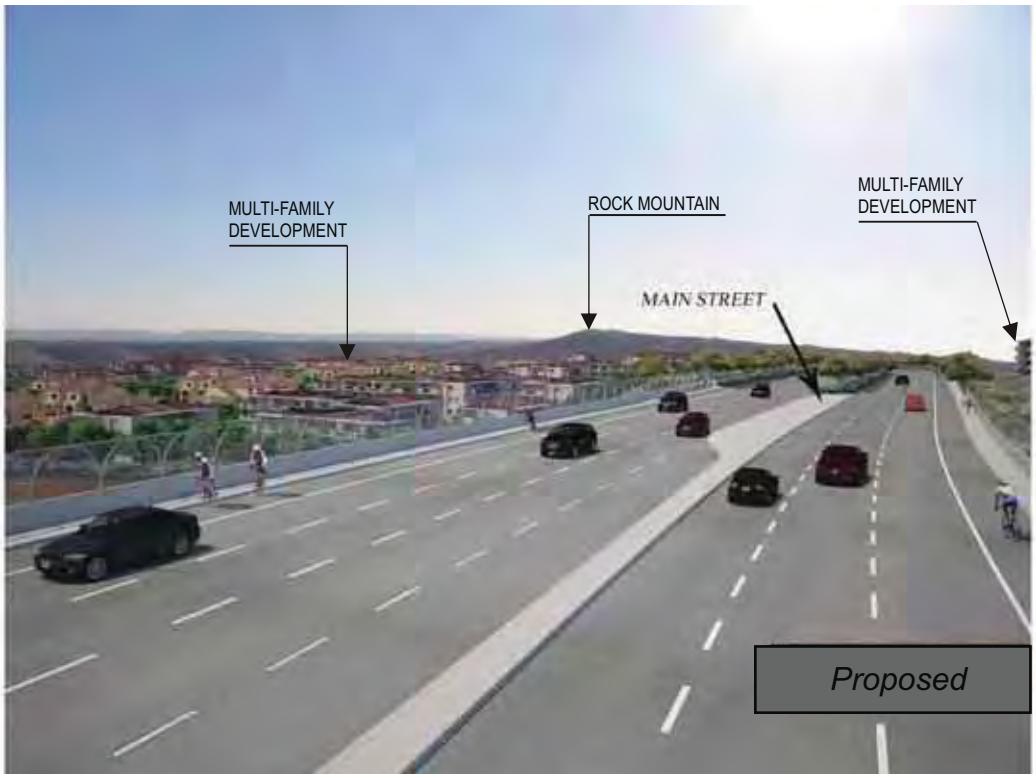
As shown on Figure 5.2-8a, rolling terrain located south and west of SR-125 would be extensively graded in order to accommodate multi-family residential and high density mixed land uses, project landscaping and a new road (Main Street) that would provide direct access to SR-125. As viewed from KVP 7a, Main Street would span SR-125 to connect elevated terrain located east and west of the state route and on- and off-ramps not visible in the Figure 5.2-8a would likely be constructed off the new road. It should be noted that the alignment, height and configuration of the Main Street crossing of SR-125 depicted in Figure 5.2-8a is purely conceptual at this time and that the crossing/bridge structure would be located outside of the Village Eight East development boundary. As discussed in Section 5.3 Traffic and Transportation, Main Street is an assumed improvement in 2030. For purposes of this analysis, multiple travel lanes, bicycle and pedestrian facilities, a raised median and landscaping along Main Street could be visible in the post-project foreground views from KVP 7a, consistent with a typical 6-lane prime arterial. In addition, multi-family residential land uses and mixed use development to the west-southwest would be located on graded terrain lower in elevation than the raised deck of Main Street. Because of this elevation difference, existing views to Rock Mountain and Otay Mesa from KVP 7a would be maintained (see Figure 5.2-8a). While views of the Otay River Valley are not available from KVP 7a, views of the north facing slopes of Rock Mountain are visible. However, the SR-125 crossing, landscaping and proposed multifamily development would not obscure, obstruct or screen views of Rock Mountain from KVP 7a (see Figure 5.2-8a). Therefore, implementation of the proposed project would not affect the availability of existing views of scenic resources in the area. In addition, SR-125 has not been designated as a scenic roadway by the City of Chula Vista and KVP 7a is not a public view corridor or a designated scenic vista. Southwesterly and westerly oriented views from KVP 7a are relatively limited in extent due to the presence of elevated, sloping terrain in the foreground viewing distance and as a result, long and broad views of the surrounding landscape are generally not available. Therefore, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.

An additional post-project view from approximately 300 feet south of KVP 7a is provided in Figure 5.2-8b. KVP 7b is situated on the future elevated deck of the proposed Main Street bridge (depicted in profile on Figure 5.2-8a) spanning SR-125 and presents a southwesterly view along the bridge. In addition to views of multiple travel lanes, bicycle and pedestrian facilities, and street trees, multi-family and mixed-use development planned in the northeastern corner of Village Eight East is also visible to the southwest and below grade of the Main Street bridge. Similar to the analysis of views presented above for KVP 7, views of Rock Mountain and Otay Mesa would be maintained from this location following project implementation (see Figure 5.2-8b). This post-project view appears elevated because of the grading associated with the extension of Main Street would lower the location where the existing condition photograph was taken by approximately 25 feet.

b. Key View Point 8

KVP 8 is situated with the southeastern extent of the Village Eight East development area and is located west of and adjacent to SR-125 at the planned location of Otay Valley Road (see Figure 5.2-1). As shown on Figure 5.2-9, KVP 8 shows a westerly view across the non-native grasslands comprising the Village Eight East development area and towards Rock Mountain. The foreground terrain visible in the KVP 8 is relatively flat and displays the tan to brown color and rough texture of non-native vegetation. A narrow access road is visible in the existing landscape as are the effects of vegetation removal and grading on the east-facing slopes of Rock Mountain. Background views include the silhouette of a ridgeline to the west.

The post-project view from KVP 8 would include multiple travel lanes and landscape trees installed along the new extension of Otay Valley Road providing access to Village Eight East. In addition and as shown in Figure 5.2-9, single-family residences and landscaping south of future Otay Valley Road and densely vegetated open space on terrain sloping to the north towards additional single-family residences would also be visible from this location. The location of Otay Valley Road and the lack of tall development between KVP 8 and prominent terrain to the west would maintain existing views of Rock Mountain from this location. Motorists on Otay Valley Road and residences located north and south of the road would be afforded views of Rock Mountain however, visibility would ultimately be determined by the presence or lack thereof of trees within the line of sight of individual viewers. Still, as shown on Figure 5.2-9, proposed residential and road development would not obstruct, screen or block available views of Rock Mountain. Further, KVP 8 is not currently a public view corridor (the area is not currently accessible to the public but will be when Village Eight East is developed) or a designated scenic vista. Once the project is developed, views to Rock Mountain would be available from KVP 8 (see Figure 5.2-9) and intermittently from future Otay Valley Road and therefore, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.



Key View 7b: Post-project view looking southwest from Main Street Bridge

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-8b

Village Eight East–Key View 7b

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Key View 8: Existing view from Village Eight East development area looking west towards Rock Mountain

Key View 8: Post-project view from Village Eight East development area looking west towards Rock Mountain

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-9

Village Eight East–Key View 8

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c. Key View Point 9

As shown on Figure 5.2-1, KVP 9 offers a northwesterly oriented view from undeveloped right-of-way located immediately adjacent to the southbound travel lanes of SR-125 and north of state route bridge crossing the Otay River Valley. While the travel lanes of SR-125 are not visible in the KVP 9 landscape captured in Figure 5.2-10, non-native grasslands and clumps of California buckwheat are visible in the immediate foreground and the foreground terrain slopes downward towards the paved surface of an existing unstriped access road. Given the location and alignment, it is assumed that the road provided construction access from bridge pier locations in the Otay River Valley to SR-125. This access road would be replaced as part of the proposed project by the Community Park Paseo. The sand colored soils of a narrow and slightly curving drainage are visible beyond the roadway and the drainage is surrounded by rising terrain to the south, west and north. Vegetation is relatively dense on north and south-facing slopes located the west of KVP 9 however; east-facing slopes in the foreground lack dense clusters of vegetation. As viewed from KVP 9, rising terrain to the west forms a relatively flat mesa in the distance.

From KVP 9, post-project views would include single-family residential development on the relatively flat grassland and occasional shrub covered terrain to the northwest. Residential development and a narrow strip of dedicated open space would extend to the existing fence line. The small drainage and canyon visible from KVP 9 would be filled and developed. While development associated with Village Eight East would be apparent to passing motorists on SR-125 in the vicinity of KVP 9, the existing northwesterly view is limited in extent by the elevated, mesa terrain of the project site and therefore, broad, panoramic views are not currently available. In addition, this specific segment of SR-125 is not a designated or eligible state scenic highway and KVP 9 is not a designated scenic vista. Therefore, given the lack of broad, panoramic views available from KVP 9 and because development would not obscure or obstruct views of valued scenic resources in the area, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.

d. Key View Point 10

KVP 10 is located in the Village Eight East Community Park (P-2), south of Village Eight East, north of the Otay River and Wiley Road, and west of SR-125 (see Figure 5.2-1). The key view was selected because it is representative of views of the Village Eight East site afforded to future OVRP trail and Community Park users. This location is on the community park site, which is at higher elevation and closer to the edge of development, and would be considered a worst case visual scenario for park and trail users. KVP 10 presents a northerly view across non-native grasslands and toward rising, coastal sage scrub covered terrain comprising the southern extent of the mesa on which the majority of the Village Eight East development area would be located. In addition to grasslands and scrub-covered terrain visible from KVP 10 (see Figure 5.2-11), the southern extent of a small canyon system is visible and the mounded form of large shrubs and

trees are visible in the distance (these features are distinguishable by their color as opposed to their scale because of the backscreening effect of existing terrain).

As shown in Figure 5.2-11, post-project foreground views would include developed park space constructed north of the Otay River and proposed single-family residential development located on the distant ridgeline to the north, approximately 800 feet from the location of where this simulation is situated. The MSCP Preserve located between the park space and the proposed single-family residential development in Village Eight East would be maintained. In addition to turf areas in the foreground and residential development in the distance, landscaping installed around the perimeter of the new park space would be visible from KVP 10. Rolling, coastal sage scrub covered terrain that is part of the MSCP Preserve would remain visible in the middleground. However, existing vegetation on a south-facing slope to the north (not a part of the MSCP Preserve) would be removed and replaced with project landscaping (this landscaped slope would comprise dedicated open space)

While existing broad views of the Otay River Valley landscape would be replaced with views of a turf park space and project landscaping, KVP 10 is not a designated scenic vista and Wiley Road (access to KVP 10 is currently available via Wiley Road) is currently used as a sewer maintenance road. KVP 10 is not currently a heavily trafficked viewing location; however, planned trail and park improvements, and access proposed by the project will increase the number of users within this portion of the OVRP. These users would be a minimum of approximately 800 feet from the edge of development, which is reflected in Figure 5.2-11. A plantable retaining wall reaching a maximum height of 38 feet is proposed within a drainage south of Village Eight East. The wall reaches maximum height for less than 20 feet before tapering off on either side into the contoured slope. The southern perimeter of Village Eight East consists of landscaped slopes with a plant palette that is consistent with existing native vegetation. In addition, in the post-project view, existing views of rolling terrain would largely be maintained. Further, locating lower density homes adjacent to open space would reduce the visual impact to users of the Otay River Valley by placing lower-scale buildings at the top of the slopes rather than taller multi-family buildings. Therefore, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.

Key View 9: from SR-125 right-of-way looking northwest

Key View 9: from SR-125 right-of-way looking northwest

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-10

Village Eight East–Key View 9

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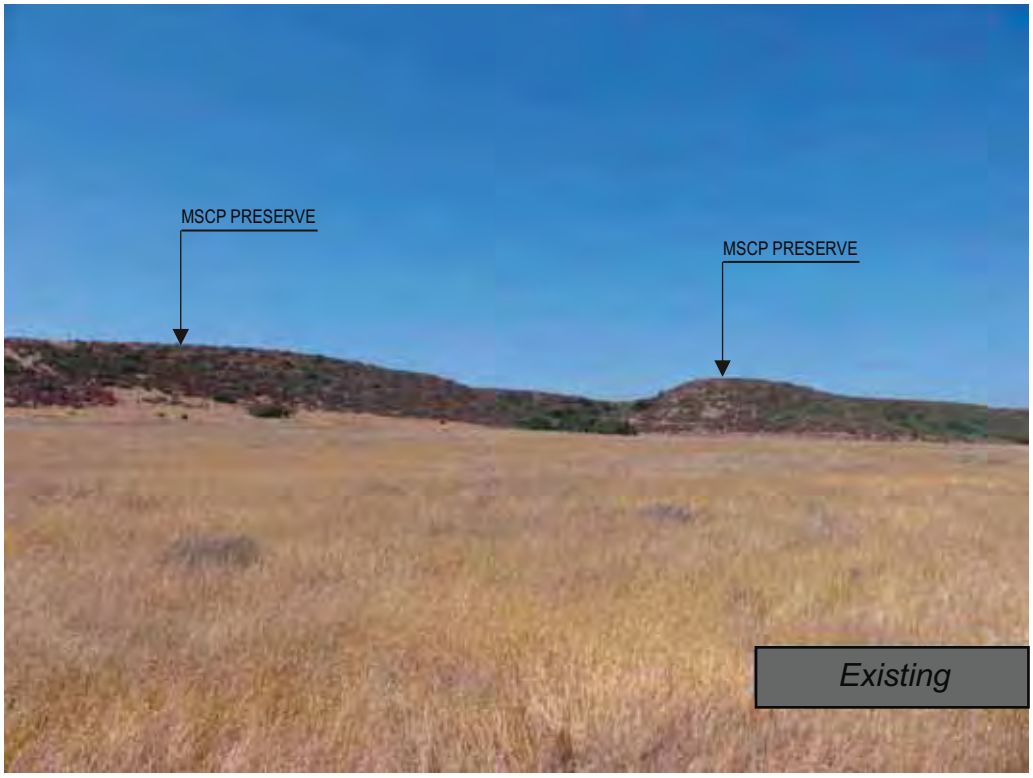
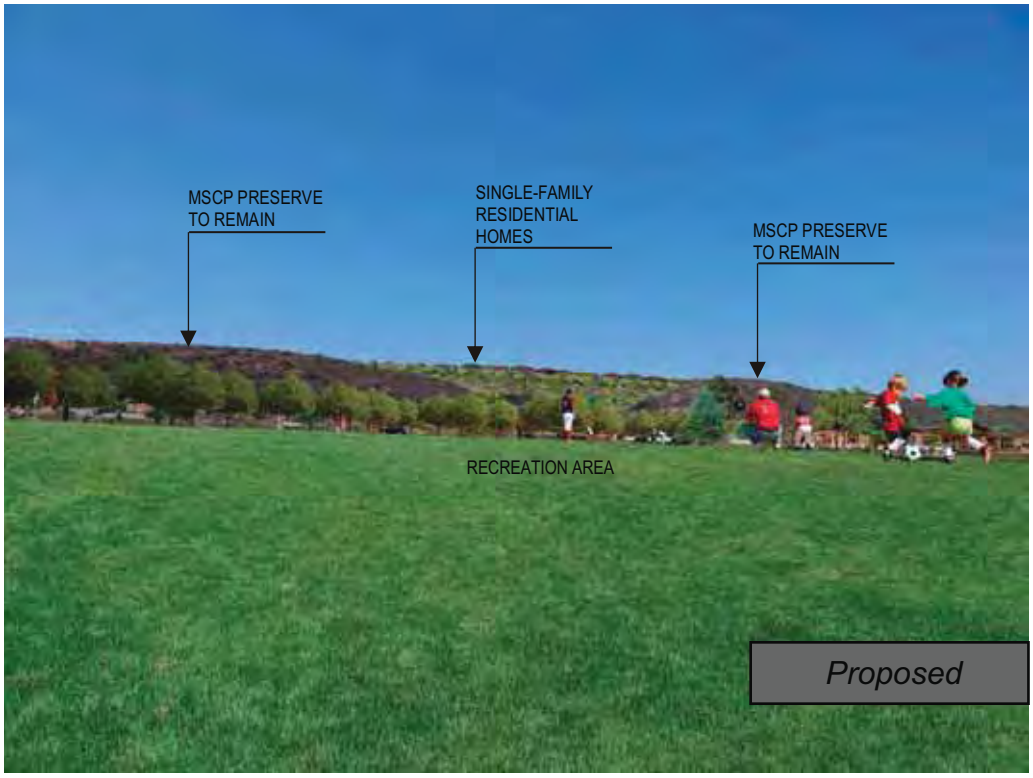


Key View 10: Existing view north of Wiley Road looking north



Key View 10: Post-project view from north of Wiley Road looking north towards Village Eight East

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-11

Village Eight East–Key View 10

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e. Key View Point 11

As shown on Figure 5.2-1, KVP 11 is located adjacent to SR-125 and provides a northerly oriented view towards distant south-facing hills and slopes on which a portion of the Village Eight East development is planned. KVP 11 is situated adjacent to the northbound travel lanes of SR-125 on a disturbed and revegetated portion of land just south of the state route bridge spanning the Otay River Valley (a physical break in k-rail installed alongside the state route provides access to the area for maintenance of electrical, sewer, and water infrastructure). This vantage point was chosen because it is representative of public views of Village Eight East from SR-125. In addition, this vantage point is located at a higher elevation than the OVRP trails, and as such, provides a more panoramic view of Village Eight East as opposed to a location within the river valley.

Coastal sage scrub vegetation, black chain link fencing and the deck and pylons of the state route bridge comprise the majority of landscape visible from KVP 11 (see Figure 5.2-12). North of the black chain link fence, the topography suddenly drops and then forms the relatively flat but colorful characteristic form of the Otay River Valley. Near the northern terminus of the bridge the terrain rises and forms a series of mounded hills and distant tan to brown colored mesas. As viewed from KVP 11, vegetation north of the Otay River Valley appears to be clumped near and along drainages.

Lastly, the silhouette of several tall lights and buildings associated with Olympian High School are visible atop the distant ridgeline to the north. The pyramidal form of Mother Miguel Mountain and the larger form of San Miguel Mountain are visible in the background.

KVP 11, as shown in Figure 5.2-12, is representative of the views from the OVRP Trail in the southern portion of the valley even though the vantage point is located above the future tail location. As noted above, this vantage point provides a more panoramic view of Village Eight East, which is more conservative than from lower elevations. The OVRP Trail along the southern river valley is over 2,000 feet south of the edge of Village Eight East and approximately 110 feet below the grade of the first row of homes.

Upon implementation of the proposed project, views of the Otay River Valley from this vantage point would be maintained. Single family residential development, dedicated open space (i.e., landscaping) and new Street A would comprise the majority of proposed project components visible from KVP 11 and would be located in the middleground to the north of the river valley and west of SR-125 on south-facing slopes (see Figure 5.2-12). As stated previously, lower density homes would be located towards the southern extent of Village Eight East and larger scale elementary school buildings and multi-family residential development would be located further to the north on the distant ridgeline.

While views of rolling grassland-covered terrain would be replaced by views of residential development and project landscaping, views of Mother Miguel Mountain and San Miguel Mountain would be maintained at KVP 11. The incorporation of design principles such as locating lower-intensity uses and landscaping at the southern extent of the development edge would soften the transition between development and existing landforms of the Otay River Valley. The implementation of project landscaping throughout the development sites would alleviate the visual effect of graded slopes and structures as viewed from off-site viewing locations. In addition, implementation of the proposed project would be consistent with City of Chula Vista General Plan policies requiring landscaping and/or open space buffers to maintain a naturalized soft edge for development located adjacent to natural open space areas. Further, the segment of SR-125 located in the vicinity of the proposed project is not a designated or eligible scenic highway. As such, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.

Village Ten

a. Key View Point 12

KVP 12 shows a southeasterly view towards the Village Ten development area near the southeastern corner of the University Drive/Hunte Parkway intersection (see Figure 5.2-1 for location). Foreground and middleground views are characterized by an expanse of non-native grasslands strewn across a long, wide landform that slightly slopes downward to the southwest (see Figure 5.2-13). From KVP 12 the foreground view shows the gently sloping terrain of the Future University Site across which a new access road from University Drive to the Village Ten development area would be constructed. The middleground view includes several distant, dark green colored shrubs clumps that demarcate the approximate western boundary of the Village Ten development area. Background views include pyramidal forms and dark colored ridgelines of the Jamul Mountains.

Key View 11: Existing view from east of SR-125 looking north

Key View 11: Post-project view from SR-125 right-of-way looking northwest towards Village Eight East

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-12

Village Eight East–Key View 11

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Key View 12: Existing view from future location of University Drive/Hunte Parkway intersection looking southeast

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-13
Village Ten–Key View 12

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Post-project foreground views from KVP 12 would include the new easterly extension of University Drive to the Village Ten development area in the foreground, park and recreation space and elementary school buildings approximately 0.75 miles to the east in the middleground and single-family residential development and associated landscaping. Lower density residential development would be of lower scale (1 to 2 story buildings) and would therefore not obstruct or block views of distant prominent landforms including the Jamul and Laguna Mountains. Broad views of the project area would be available at KVP 12 as development would occur within the middleground and the apparent scale of structures would be reduced and would not obstruct the panoramic nature of existing views. In addition, KVP 12 is not a designated scenic vista (KVP 12 is located near the near the southeastern corner of University Drive/Hunte Parkway intersection) and viewers primarily consists of passing motorists and occasional recreationists (i.e., runners, walkers, cyclists). Therefore, project implementation would not obstruct or screen views of distant mountainous ridgelines or other scenic resources identified by the City of Chula Vista and therefore, the proposed project would not result in adverse scenic vista impacts from this KVP.

It should also be noted that university development is planned immediately south of Hunte Parkway (see Figure 4-14, Village Ten Site Utilization) and future university development would obscure and/or screen views of Village Ten development from passing motorists and occasional recreationists. However, because specific development plans for the future university site have not been developed, affects to existing views and the severity of view blockage are speculative and therefore, a photosimulation from KVP 12 has not been provided.

b. Key View Point 13

As shown on Figure 5.2-1, KVP 13 is located approximately 0.4 miles southeast of KVP 12 on undeveloped land just outside of the Village Ten development area. In addition, KVP 13 is located on the alignment of the proposed southeasterly extension of Discovery Falls Drive that would provide local access to Village Ten. Foreground views from KVP 13 consist of rolling, grassland covered terrain supporting occasional dark green colored shrubs (see Figure 5.2-14). A narrow trail is visible on the rolling terrain to the east. The reddish color of shrubs on east-facing canyon slopes and trees and other vegetation on the canyon floor is visible in the middleground viewing distance. Views of the canyon, surrounding terrain and vegetation extend to the southeast and the relatively flat form of a mesa beyond the Otay River Valley is visible in the middleground viewing distance. The silhouette of a low mountainous ridgeline is also visible in the background.

As shown in Figure 5.2-14, foreground post-project views would be dominated by multi-family residential housing and project landscaping located in the northeastern corner of the Village Ten development area. In addition, the curving alignment of and street trees installed adjacent to the

new extension of Discover Falls Drive into the Village Ten area would be visible and would replace existing views of gently rolling, non-native grassland covered terrain. Further, the vertical scale of multi-family residential development and landscaping would screen existing views of rolling terrain. Residences located adjacent to the open space preserve (east of Village Ten) would be afforded views of the Otay River Valley; however, due to the presence of intervening structures, views of the valley would not be available to residences located closest to the new extension of Discovery Falls Drive or to motorists on Discovery Falls Drive. However, KVP 13 is not a designated scenic vista and while Discovery Falls Drive will be a public vantage point following project development, post-project views from the road would primarily be afforded to future residents of Village Ten. Therefore, because the proposed project would not result in substantial adverse impacts to scenic resources currently visible from an existing public vantage point, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP. This post-project view appears elevated because of the grading associated with the extension of Discovery Falls would lower the location where the existing condition photograph was taken by approximately 35 feet.

c. Key View Point 14

KVP 14 is located east of the University Villages boundary and presents a westerly view from Wiley Road towards an existing dirt trail/access road and slightly rolling terrain. The key view is representative of views of the Village Ten site afforded to trail users in OVRP near the southern extent of Salt Creek Canyon. The rolling, grassland and coastal sage scrub covered terrain visible in the foreground viewing distance from KVP 14 (see Figure 5.2-14) encompasses the eastern boundary of the Village Ten development area. Immediate foreground views consist of the gravel surface of Wiley Road and a narrow dirt trail/access road leading to the west. Non-native grasslands and occasional short shrubs populate the undeveloped lands in the foreground and the green crowns of trees and shrubs located near the Salt Creek drainage are visible to the southwest.

Key View 13: Existing view from proposed southeasterly extension of Discovery Falls Drive looking southeast

Key View 13: Post-project view from proposed southeasterly extension of Discovery Falls Drive looking southeast towards Village Ten

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-14

Village Ten–Key View 13

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Post-project immediate foreground views from KVP 14 would consist of an improved trail leading to the eastern extent of the Village Ten boundary. As shown in Figure 5.2-14, rustic, round wood rail fencing would be installed alongside the existing trail and signage noting the trail's inclusion in the Chula Vista Greenbelt system signage would be erected. Fencing would clearly demarcate the trail and would reduce opportunities for trail users to access adjacent natural lands. In the foreground, east-facing slopes would be graded, a plantable wall would be constructed and a relatively flat building pad would be developed. Existing vegetation on slopes would be removed and project landscaping would be installed (this area is planned as a dedicated open space buffer). Single-family residences would be constructed atop the leveled terrain and while portions of structures would be screened from view by project landscaping, the rooflines of structures viewed from the inferior angle location of KVP 14 would be skylined against the background sky (see Figure 5.2-14). Implementation of the proposed project would be apparent to users of Wiley Road however, KVP14 is not a designated scenic vista and the tall form of terrain in the foreground limits the availability of broad, panoramic views to the west. View to the south towards the Otay River Valley and the elevated landform of Otay Mesa are scenic and implementation of the proposed project would not obstruct or screen views of these resources. Therefore, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.

d. Key View Point 15

Located approximately 0.7 miles southwest of KVP 14 (see Figure 5.2-1), KVP 15 is also situated on Wiley Road within the Otay River Valley and presents a north-northeasterly view towards the Village Ten development area. The key view is representative of views of the Village Ten site afforded to trail users in OVRP. As shown on Figure 5.2-15, the existing landscape visible from KVP 15 consists of disturbed lands and non-native grasslands in the immediate foreground on terrain that slightly rises to the north towards a series of grasslands and coastal sage scrub dotted hills comprising the southerly extent of the Village Ten development area. In addition to several clumped shrubs of moderate height, two tall wooden poles supporting a single communication line are visible in the foreground viewing distance from KVP 15. The dark green crowns of vegetation are visible to the north and are located within the southern extent of a shallow canyon and drainage that runs across a portion of the Village Ten project site.

As shown in Figure 5.2-16, densely vegetated open space and single-family residential development would be installed/constructed atop elevated terrain located north of the KVP 15 in the middleground viewing distance. Manufactured slopes would be constructed at the southern extent of the Village Ten in order to construct level building pads and a vegetated open space buffer would be provided between residential development and natural areas. Foreground views of disturbed terrain and non-native grasslands would be maintained (KVP 15 is located on Wiley Road just south of the existing open space preserve) and coastal sage scrub and grassland-covered hills to the north would remain in place. Project components visible from KVP 15 would be skylined however, vegetation would reduce the resulting visual effect as experienced by users

of the Otay River Valley. Also, the inferior viewing location of KVP 15 and the presence of tall terrain to the north limits the availability of broad, long views to the north and KVP 15 is not a designated scenic vista. Therefore, implementation of the proposed project would not result in adverse scenic vista impacts from this KVP.

e. Key View Point 16

Located approximately 0.5 miles southeast of KVP 15 (see Figure 5.2-1) KVP 16 is south of Wiley Road in the Otay River Valley and represents a north-northwesterly view towards the Village Ten development area. The key view is representative of views of the Village Ten site afforded to southern trail users in OVRP. As shown in Figure 5.2-17, the existing landscape visible from KVP 16 consists of disturbed lands and non-native grasslands in the immediate foreground. Dark green crowns of varying vegetation types are visible within the southern extent of a shallow canyon and drainage that runs across a portion of Village Ten. Looking further to the north a series of grasslands and coastal sage scrub are scattered leading up to a series of mesas that comprise the southerly extent of the Village Ten development area. Due to the location of these mesas in the middleground viewing distance, far-reaching and expansive views to the north are limited.

As shown in Figure 5.2-17, the views from this location would be of the southern portion of development in Village Ten. Single-family residences atop the elevated mesas would be skylined; however, vegetation, natural terrain, and open space would reduce the resulting visual effect as experienced by users of the OVRP trails. Lower intensity single-family residential development located at the southern extent of the Village Ten development would be low profile and less visually disruptive than multi-story buildings. Two plantable retaining walls are proposed through an existing drainage which would reach a maximum combined height of 60 feet for a span of approximately 30 feet before gradually transitioning into the existing and proposed manufactured slopes. The plantable walls would consist of two 30-foot walls with roughly 50 feet of landscaped slopes between them.

The manufactured slopes that border the southern perimeter of Village Ten are approximately 110 feet max. Landscaped slopes include a plant palette that is consistent with existing native vegetation. Manufactured slopes would be constructed at the southern extent of the Village Ten in order to construct level building pads and a vegetated open space buffer would be provided between residential development and natural areas. The water quality basins would not be visible because they would be at roughly the same elevation as the trail users. The construction corridors on the southern slopes of Village Ten between the water quality basins and the development edge would be revegetated, which would further reduce visual impacts. Foreground views of disturbed terrain and non-native grasslands would be maintained and coastal sage scrub, and grassland-covered hills to the north would remain in place. The foreground views would remain undisturbed because it would be designated open space as part of the ultimate Preserve. KVP 16 is not designated as a scenic vista and would not result in adverse scenic vista impacts.

Key View 14: Existing view from Wiley Road looking west

Key View 14: Post-project view from Wiley Road looking west towards Village Ten

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-15
Village Ten–Key View 14

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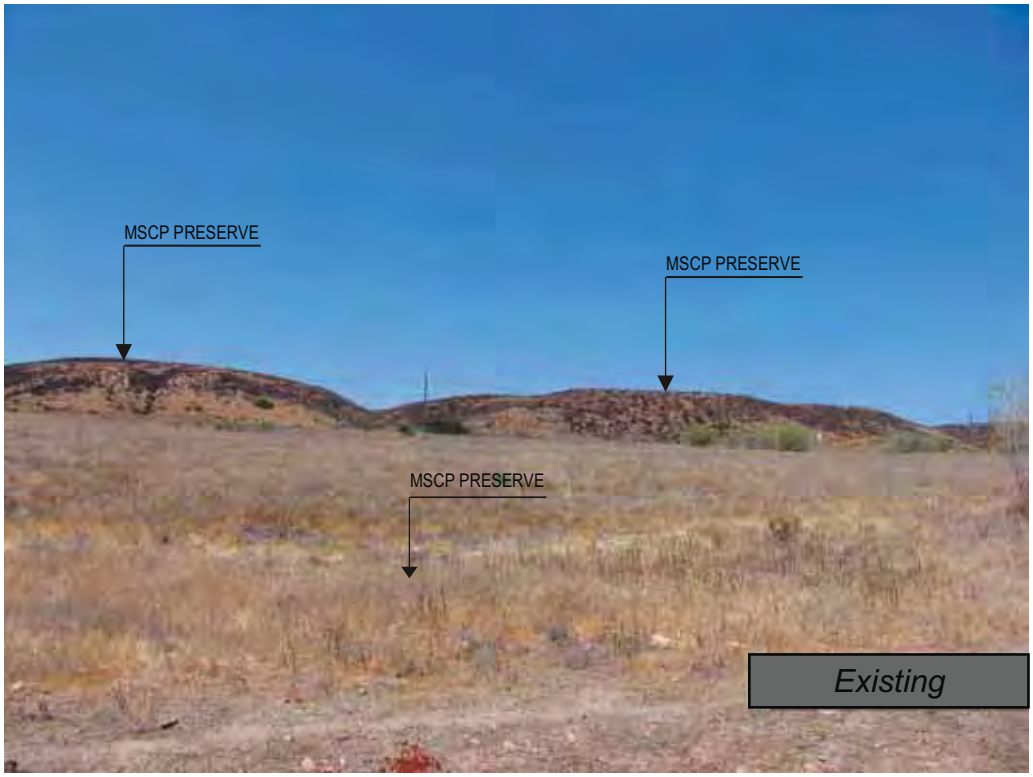
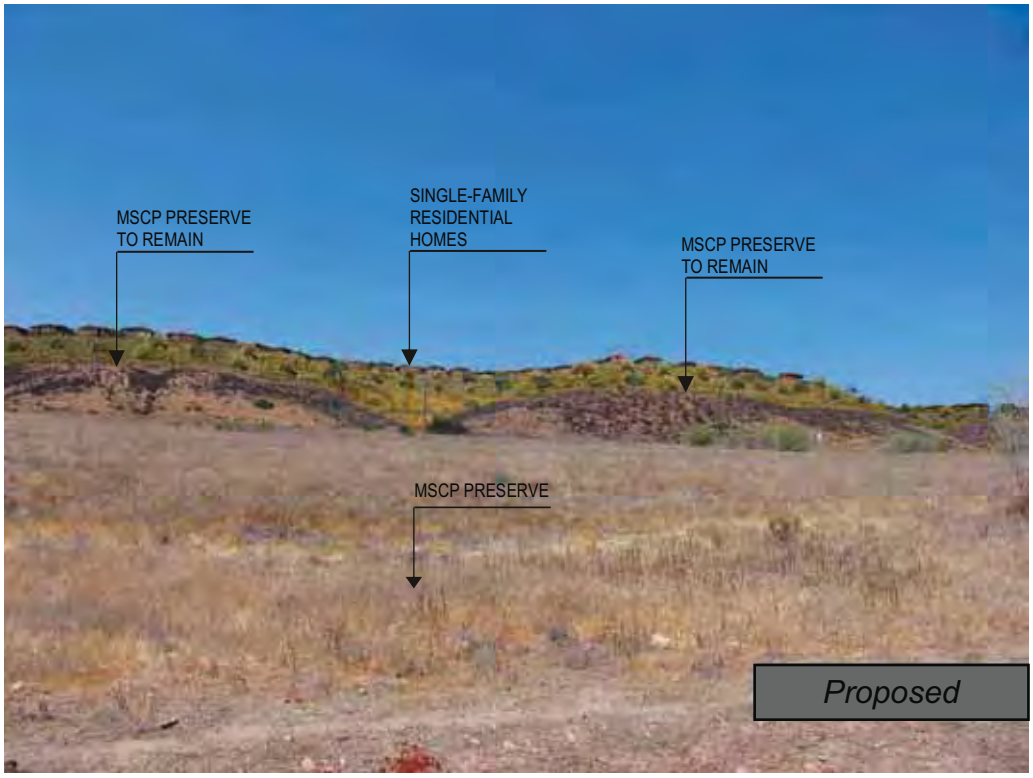


Key View 15: Existing view from Wiley Road looking north-northeast



Key View 15: Post-project view from Wiley Road looking north-northeast towards Village Ten

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.2-16

Village Ten–Key View 15

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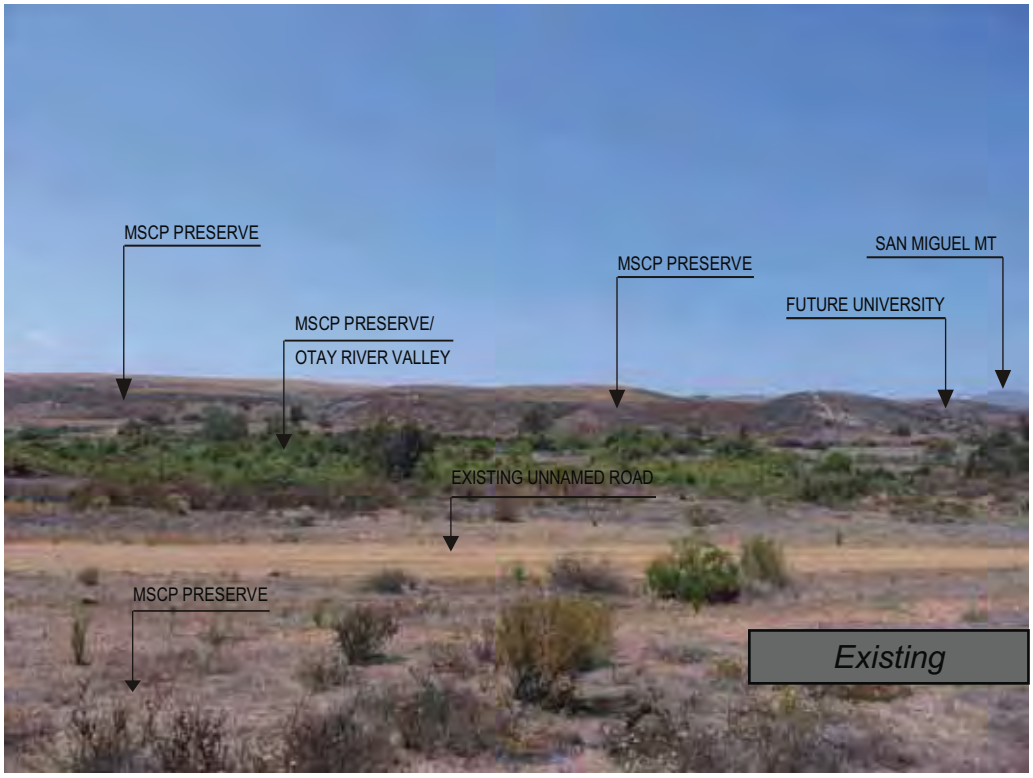
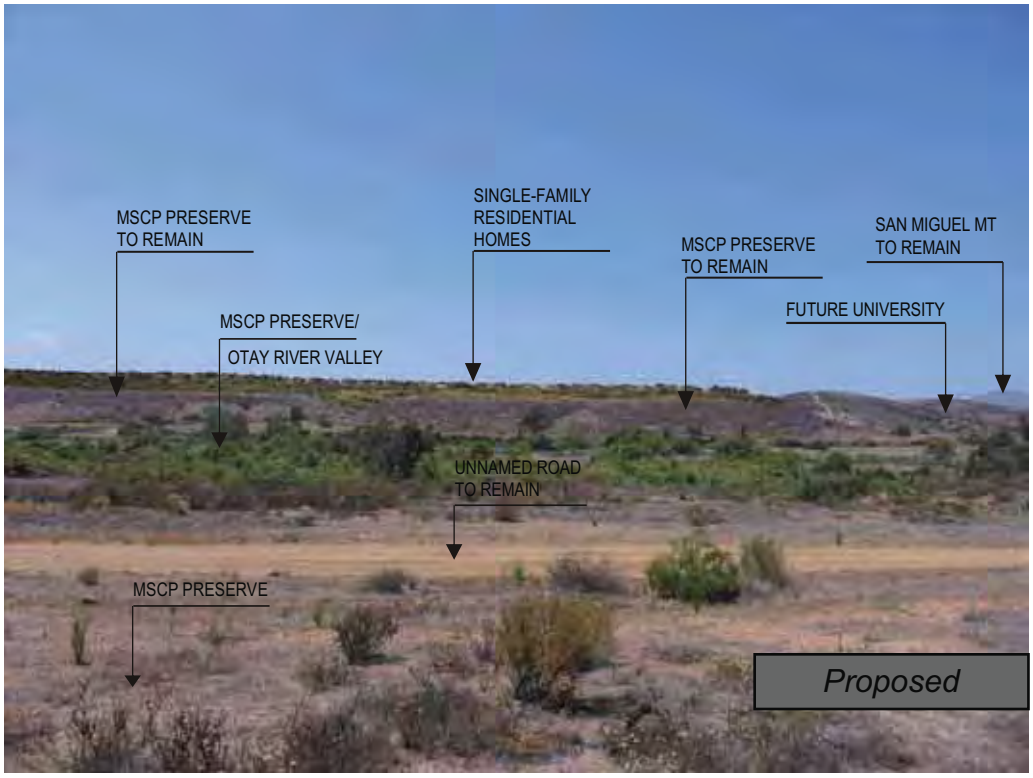


Key View 16: Existing view from south side of Otay River looking north-northeast



Key View 16: Post-project view from south side of Otay River looking north-northeast towards Village Ten

FIGURE 5.2-17

Village Ten–Key View 16

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Implementation of the proposed project would not obstruct or screen views of local scenic resources identified by the City of Chula Vista including the OVRP. Therefore, based on the discussion above, the proposed project would result in less than significant impacts.

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

While the project area has been historically used for ranching, grazing, dry farming, and truck farming activities, the proposed project sites (i.e., land included within the SPA boundaries of Village Three North and Portion of Village Four, Village Eight East and Village Ten) are currently undeveloped and are not currently occupied by any structures or uses. Development of the proposed project and the transformation of undeveloped and natural rolling hills to an urban residential environmental would substantially alter the existing visual landscape by increasing densities, intensity, and human activity in the project area. Rock Mountain and the Otay River Valley are designated scenic resources within the project area as identified in the City of Chula Vista General Plan. Further, the proposed project would be visible from these scenic resources and from SR-125 which runs adjacent to the eastern boundary of Village Eight East. Implementation of the proposed project would not result in physical impacts to Rock Mountain, and proposed active recreation development in the Otay River Valley associated with Village Eight East would be consistent with the City of Chula Vista General Plan Land Use Diagram. While active recreation development in the Otay River Valley is planned and contemplated by the City of Chula Vista, development would alter the existing visual character of the valley compared to existing conditions.

The Otay Ranch GDP and Design Plan, the City of Chula Vista Subdivision Manual and the SPA Plans for Village Three North and a Portion of Village Four, Village Eight East and Village Ten contain guidelines concerning grading techniques and landscaping that are sensitive to the existing environment. According to the Otay Ranch GDP, final grading designs are required to incorporate criteria such as, but not limited to the following:

- Naturalized buffering shall be provided as a transition between development and significant existing landforms;
- Manufactured slope faces over 25 feet in height shall be varied to avoid excessive “flat panned” surfaces;
- Variable slope rations not exceeding 2:1 should be utilized when developing grading plants; and
- To complement landform grading, landform planting techniques will be utilized. As in the natural setting, major elements of the landscape are concentrated largely in the concave “drainages,” while convex portions are planted primarily with ground cover and minor materials.

In addition, the Otay Ranch Overall Design Plan contains applicable grading and landscaping policies including:

- When grading in any of the defined scenic corridors, contours shall be carefully modulated and softened to blend with existing natural slopes to create a more natural and irregular appearance;
- Excessively long, uniform slopes shall be avoided;
- Contours should be rounded and blended without sharp or unnatural corners where cut of fill slopes intersect with a natural canyon or slope;
- Transitions between new cut and fill slopes and natural slopes should be made by rolling the top or bottom of the new slope to integrate the two conditions; and
- Landscape grading slopes with native and indigenous plant materials to blend with existing planting when adjacent to new landscaping.

Sections IV, Grading, of the SPA Plans for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten lists objectives that would implement the Otay Ranch GDP and Design Plan. Objectives applicable to the grading of the Rock Mountain slope and landscaping in the Otay River Valley include:

- Create efficient man-made landforms that visually respond to natural terrain characteristics where practical.
- Create and maintain on- and off-site views.
- When significant land forms are modified for project implementation, round the landform as much as possible to blend into the natural grade.
- With the approval of the City Engineer, round the tops and toes of slopes to blend with adjacent topography. When slopes cannot be rounded, utilize vegetation to alleviate sharp angular appearances.
- Balance earthwork utilizing an equal amount of cut for an equal amount of fill.
- Minimize, where feasible, impacts to sensitive areas adjacent including the Otay River Valley and Salt Creek.

Tentative maps and grading plans prepared for the proposed project would incorporate the grading objectives, policies, and concepts contained in the Otay Ranch GDP and Overall Design Plan and SPA plans would be prepared in conformance with all applicable City policies and ordinances. Applicable policies and ordinances include the Chula Vista Municipal Code, Grading Ordinance No. 1797, 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.

Also, the preparation of a Landscape Master Plan for the SPA plan areas is required by the City of Chula Vista Subdivision Manual. Landscape techniques and methods, planting concepts and other design features that implement the grading ordinance, Otay Ranch GDP, General Plan and the SPA plans would be included in the Landscape Master Plan as would detailed landscape and irrigation construction plans that would ensure visual compatibility between the manufactured slope areas and the native undisturbed peak of the mountain. In addition and according to the SPA plans prepared for the proposed project, grading permits would provide assurances acceptable to the City Engineer that landscaped slopes will have adequate maintenance to ensure continued viability of landscaping. Further, except for private lots, slopes which exceed ten feet in height would be maintained by a homeowners' or property owners' association or a landscape maintenance Community Facilities District (CFD). Lastly, visual compatibility between the southerly park and recreation area of Village Eight East and the adjacent MSCP Preserve Area and OVRP would also be required.

Portions of the Otay Ranch Preserve are also located within the SPA boundaries of Village Three North and Portion of Village Four, Village Eight East and Village Ten (see Figures 4-4, 4-9, and 4-14). The Otay Ranch Preserve contributes to the scenic value of the Otay River Valley by maintaining open space, native vegetation, and natural topography. As stated in Chapter 4, Project Description (see Table 4-1, Proposed Land Uses), approximately 155 acres of the 436 acre Village Three North and Portion of Village Four SPA area, 252 acres of the 576 acre Village Eight East SPA area, and 212 acres of the 363 acre Village Ten SPA area would be retained as preserve area and would remain in the Otay Ranch Preserve. Retaining open space and preserve areas and locating lower density residential uses and open space buffers adjacent to the preserve and the Otay River Valley would help to maintain the scenic value of these areas. In addition, there are no historic buildings, designated or eligible state scenic highways located within the viewshed of the proposed project. Impacts to views from local scenic roadways are addressed above under Threshold A and as discussed above, the project would not result in substantial adverse effects to views from a locally designated scenic roadway. As such, implementation of the proposed project would not substantially damage scenic resources as they relate to Threshold B and impacts would be **less than significant**.

C. Substantially degrade the existing visual character or quality of the site and its surroundings.

While the presence of heavy equipment and machinery would be visible from surrounding off-site areas, impacts to existing visual character resulting from construction activities are deemed less than significant due to the relatively short-term nature of construction. Therefore, the focus

of this analysis pertains to the long-term permanent physical changes anticipated to occur as a result of implementation of the proposed project. More specifically, the following discussion focuses on the nature and extent of the entirety of the proposed project in relation to existing surrounding land uses and consistency with applicable regulatory policies.

The development of the site would change the undeveloped, open and natural character of the on-site rolling hills to one of low to high density residential uses, industrial/office complexes, passive and active park and recreation areas, and public facilities. Natural and developed open space are also incorporated in the proposed project and would be included in Village Three North and Portion of Village Four, Village Eight East, and Village Ten. Although the SPA Plans would result in urban character consistent with the General Plan and Otay Ranch GDP, the change from the existing broad open space to an urban environment would represent a significant aesthetic/visual change that would impact the existing visual character and quality of the project site. As discussed in the Otay Ranch GDP Program EIR, the conversion of undeveloped land to urban uses is a significant and unmitigable impact of development.

As discussed previously, the Otay Ranch GDP Program EIR concluded that the conversion of undeveloped land to urban uses is a significant and unmitigable aesthetic impact of development. The permanent change associated with implementation of the proposed project is discussed under Threshold A above through an examination of existing and post-project views from fifteen representative key viewpoints. In addition, existing conditions and permanent changes anticipated to result from project development are visually displayed through a series photos and visual simulations (see Figures 5.2-3 through 5.2-16). As shown in the visual simulations, proposed project development would result in permanent changes to the existing visual character and quality of the village development areas. Vegetation removal, grading and construction of Village Three North and a Portion of Village Four, Village Eight East, and Village Ten would transform the rolling, coastal sage scrub and grassland covered terrain of the project area into an urban environment supporting residential development, industrial and commercial uses, and roadways. While the project would transform the existing character of the development areas, several design principles and elements are included to help reduce project impacts. For example, the incorporation of design principles such as locating lower-intensity uses and landscaping at the southern extent of the development edge would soften the transition between development and existing landforms of the Otay River Valley and the implementation of project landscaping throughout the development sites would alleviate the visual effect of graded slopes and structures as viewed from off-site viewing locations. Further, the inclusion of plantable walls at graded slopes would help to soften the appearance of retaining systems and would help visually integrate the structures into the existing and proposed landscape setting. However, even with the incorporation of these design principles and elements, the visual change resulting from development of the Proposed Project would be substantial. Therefore, as detailed in the discussion above, the examination of KVPs under

Threshold 1 above and consistent with the conclusion of the 1993 Otay Ranch GDP Program EIR, because the proposed project would permanently alter the character of the project site from open rolling hills development, impacts would be **potentially significant**.

D. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

i. Lighting

The proposed project development areas are currently undeveloped and there are no existing sources of on-site lighting. A discussion of existing land uses in the vicinity of Village Three North and a Portion of Village Four, Village Eight East, and Village Ten was included previously in Section 5.2.1.3. Therefore, the following discussion focuses on potential sources of light in the areas surrounding the proposed project.

Village Three North and Portion of Village Four

Development in the vicinity of the site include sources of nighttime lighting in the form of interior and exterior security lighting and parking, architectural highlighting, landscape lighting and illuminated signage (architectural highlighting, landscape and signage lighting is associated with Sleep Train Amphitheatre to the southwest). In addition, automobile headlights, streetlights and stoplights along Main Street, Heritage Road, La Media Road, and Santa Luna Road contribute to ambient nighttime lighting levels in the project area. In addition, Village Four and Village Eight West are planned for future development as part of the Otay Ranch GDP and would both be located east of Village.

Village Eight East

Located north of Village Eight East, Village Seven is currently developed with a mix of residential densities and schools, including Wolf Canyon Elementary School and Olympian High School, which include interior and exterior security lighting as well as lighting for athletic fields, parking and architectural highlighting. Automobile headlights streetlights and stoplights on local roads including Magdalena Avenue and Rock Mountain Road, as well as automobile headlights and highway lights on SR-125, contribute to ambient nighttime lighting levels in the immediate project area.

Village Ten

The areas immediately adjacent to Village Ten are currently undeveloped; however, residential land uses associated with Village Eleven and High Tech High Chula Vista are developed further to the north and include nighttime lighting for interior and exterior security, parking and architectural and signage highlighting. Automobile headlights, streetlights and traffic signals on

University Drive, Hunte Parkway and Discovery Falls Drive contribute to the ambient nighttime lighting levels in the area.

Short-term lighting impacts associated with construction activity would likely be limited to nighttime lighting installed within the SPA Plan boundaries at specific construction sites for security purposes. While residential uses are not immediately adjacent to the village development areas they could potentially be affected by spillover lighting emanating from construction sites. In addition, nighttime lighting may also affect motorists on local area roads in the vicinity of the project sites. Therefore, to minimize the potential for construction lighting impacts and consistent with the County Light Pollution Code, the use of lighting would be minimized to the extent practicable for safety and security and lights would be shielded and directed downwards. Therefore, short-term construction lighting impacts are anticipated to be **less than significant**.

Following construction of the proposed project and other planned village development in the immediate area, the Otay Valley Parcel and surrounding lands would be part of an urban-lighted area and this transformation in visual character would be particularly evident when viewed at nighttime from a distance. In addition, future urban and residential development at Village Three North, Village Eight East, and Village Ten and associated roadway development would include similar sources of interior and exterior lighting as existing and planned uses in the surrounding areas. The project would include low to moderate levels of interior and exterior lighting for security, exterior parking lighting and architectural highlighting. Interior and exterior lighting within the proposed uses would be visible from adjacent properties during evening hours. Development of the project would require outdoor areas to be lighted at night (e.g., public use areas, commercial use parking lots and buildings, street lights, walkways, entry nodes, park activity areas (including sport courts, playgrounds and fields), lighting for courtyards, etc.)). Accent lighting used for signage and illumination of village gateways/monuments, village core buildings, and other architectural highlighting would enhance visibility of the highlighted elements but would not be so bright as to cause direct spillover or glare. Vehicles on proposed project roads would also contribute lighting to the future nighttime environment.

SPA Plans for the proposed project include lighting performance standards that consider public safety as well as the need to minimize unnecessary lighting sources (and light pollution) and energy use and standards that establish consistent fixture styles and scales for the mix of land uses considered. Spillover of light to adjacent properties and undeveloped areas would be reduced through the use of low-glare, full cutoff, and shielded fixtures that would primarily be directed downward. Street lighting would be required to meet or exceed city standards and would require approval by the City Engineer. Site plan review would include a review of lighting for community facilities and recreation areas and would therefore require city approval. Any lighting that would illuminate residential uses beyond 10:00 p.m. would be clearly identified

on the site plan and lighting plans including the location, types, and devices installed to shield adjacent properties would be prepared and review for approval during design review. Lighting performance standards in the Village Design Plans (VDPs) for the proposed project may include the following:

- Lighting shall be designed to minimize spillage onto adjacent properties.
- Illumination of wall and projecting signs shall be limited to external or decorative types.
- Building illumination should be directed and concealed from view. Indirect wall lighting, wall washing from concealed fixtures, and landscape lighting is encourage, provided it is subtle and not overly bright. Exterior lighting shall be selective and shielded to confine light within the site and prevent glare onto adjacent properties or streets.
- Timers shall be provided for lighting associated with outdoor utilities and service activities.
- Lighting in areas designated Open Space: Preserve shall not be permitted
- Lighting in parks and recreation areas shall be designed to minimize light spillage onto neighboring properties, especially where these areas occur adjacent to the MSCP Preserve.

In addition, as stated in the SPA Plans for the proposed project, lighting would be provided in heavily urbanized areas of the Otay Valley Parcel to ensure a high degree of public safety and in less urbanized areas to preserve county-wide dark night skies. In these areas, lighting would be consistent with lighting standards prevalent in non-urbanized areas of San Diego County and lighting would adhere to all applicable City and County ordinances and standards. Also, compliance with the City and State energy conservation measures currently in place would limit the amount of unnecessary interior illumination during evening and nighttime hours.

The development of each village in the proposed project would include the installation and dedication of open space adjacent to the existing MSCP Preserve. Development located nearest to the MSCP Preserve would consist of single-family and multi-family residential uses in Village Three North, park and recreation uses in the Portion of Village Four, single-family residential and park and recreation uses in Village Eight East, and single-family residential uses in Village Ten. Single-family residential uses would include minimal exterior nighttime lighting for security purposes. Per the requirements of the Preserve Edge Plans prepared for the proposed project, all recreational uses are located a minimum of 100 feet from the Preserve boundary; however, a lighting study and photometric analysis (MM BIO-17) would be conducted for the Community Park (P-2) located in the southern extent of the Village Eight East SPA boundary to ensure that indirect impacts to wildlife are less than significant. In addition, park and recreation development in the Portion of Village Four included in the proposed project would be located adjacent to Wolf Canyon and bright nighttime lighting for evening and nighttime activities would result in indirect impacts to wildlife. However, the aforementioned Preserve Edge Plans

included in the SPA plans would address and describe avoidance of indirect effects to special-status species that occur along the preserve/development interface. As detailed in Section 5.8, Biological Resources, Preserve Edge Plans would restrict active uses and lighting within 100 feet of open space areas and therefore, indirect impacts to wildlife from active recreation areas and indirect lighting would be **less than significant**.

Due to the presence of ambient nighttime lighting in the project from existing development and from automobile headlights, street lights, and traffic signals and upon implementation of lighting standards included in the SPA plans, lighting associated with single-family residential neighborhoods would not substantially alter ambient nighttime lighting in the project area. However, specific photometric analyses are necessary for light intensive land uses (parks, mixed-use residential, commercial, multi-family residential, and CPF uses) to ensure that the individual projects would comply with applicable lighting regulations and lighting would be compatible with surrounding land uses. Therefore, impacts associated nighttime lighting are considered **potentially significant**.

ii. Glare

SPA Plans would include design guidelines and requirements that would limit glare received by on- and off-site viewers in the area. For example, metal or glass awning would be required to have a matte finish. Also, residential and commercial development would be required to display variety in building façades (such as through the incorporation of porches and balconies) and use a variety of building materials subject to design review that would break up continuous expanses of building surfaces and limit potentially reflective materials to reduce glare. In addition, project-generated glare experienced by nearby commercial or residential uses or the occupants of vehicles on nearby streets would be a temporary phenomenon that would change with the movement of the sun throughout the course of the day and the seasons of the year. Lastly, the proposed project would comply with City of Chula Vista Municipal Code Section 19.66.100, Glare, which prohibits direct or sky reflected glare that is visible of the lot-line of the use producing the glare through implementation of design guidelines and requirements included in the SPA plans. Therefore, the proposed project would not create a substantial new source of glare that would adversely affect day or nighttime views in the area and as such, glare impacts would be **less than significant**.

iii. Shade and Shadow

Shade and shadow issues typically pertain to the blockage of direct sunlight by on-site buildings and the casting of shadows onto residences, schools and outdoor use areas including parks, outdoor gathering places and outdoor restaurants. The extent and range of shading includes several factors included but not limited to season, time of day, weather, building height, bulk and

scale, spacing between buildings, and tree cover. Also, the SPA plans focus on a balance mix of land uses as opposed to building placement and would create vibrant pedestrian-oriented urban villages that include resident-serving public spaces including community and neighborhood parks, pedestrian and bicycle facilities, private open space and community purpose facilities that may include open lawn areas, ball courts, picnic areas, and swimming pools. Buildings located in the village core would be of a larger scale than residences in the outlying single-family residential areas and therefore, there is potential for streets, structures and public places to be shadowed by an adjacent building. Although SPA plans contain requirements that buildings shall be located on the site to provide adjacent buildings adequate sunlight for solar access (when practical), absent specific development plans including the specific location, size, and orientation of future buildings, shade and shadow are considered potentially significant impacts.

E. Alter areas of sensitive landforms and grade steep slopes that may be visible from future development and roadways.

For purposes of this analysis, unique/rare natural landforms or those that contribute to the character of a site are considered sensitive landforms. According to the Land Use Element of the Chula Vista General Plan, mesas, hilltops, and gently rolling topography offer the best conditions for development in the city. Where feasible for development, implementation of the proposed project would preserve existing contours of landforms within the individual SPA Plan boundaries; however, the project would include grading within natural steep sloped areas (i.e., areas greater than 25% slope) that are unique to the Otay Ranch areas and considered sensitive landforms in the Otay Ranch GDP. A ranch-wide steep slope standard requiring preservation of 83 percent of the natural steep slopes throughout the Otay Ranch to protect these resources was established in the RMP. As described above, based on current data collection and updated modeling results, Otay Ranch contains 9,821 acres of land with gradients of 25% or greater. Applying the Otay Ranch GDP/RMP requirement for 83% steep slope preservation equates to 1,670 acres of steep slopes ranch-wide that could be impacted.

Village Three North and a Portion of Village Four

Development of Village Three North and a Portion of Village Four will impact 36.8 acres of on and off-site natural steep slopes as depicted on Figure 5.2-18. Natural steep slope impacts associated with the Village Three North and a Portion of Village Four SPA Plan include the following:

- 31.2 acres (onsite) and 1.8 acres (off-site) (33.0 acres total) within the Otay Valley Parcel. The 33.0 acres of steep slope impacts are subject to the Otay Ranch GDP/RMP steep slope preservation requirement.

- 3.8 acres of additional off-site steep slope impacts outside of the Otay Ranch Parcel (Figure 5.2-18) which are not subject to the Otay Ranch GDP/RMP steep slope preservation requirement.

Village Eight East

Development of Village Eight East would impact approximately 18.6 acres of natural steep slopes within the Otay Valley Parcel as depicted on Figure 5.2-19. This acreage is subject to the Otay Ranch GDP/RMP preservation requirement .

Village Ten

Development of Village Ten would impact approximately 59.8 acres comprised of 53.1 acres (onsite) and 6.7 acres (off-site) of natural steep slopes within the Otay Valley Parcel as depicted on Figure 5.2-20. The on- and off-site impacts to steep slopes are subject to the GDP/RMP Preservation requirement.

Table 5.2-1 provides a cumulative summary of the projected Ranch-wide impacts to steep slopes at build out. As shown in the table, approved SPA Plans in the Otay Valley Parcel will impact 335.6 acres of steep slopes. An estimated 1,069 acres of steep slopes will be impacted by future build out of remaining SPA Plan areas in the Otay Valley Parcel, and Proctor Valley and San Ysidro Parcels. Combined with approved steep slope impacts (approximately 335.6 acres), Ranch-wide impacts are estimated at 1,404.6 acres. The 1,404.6 acres of impact equates to approximately 86% preservation which is above the 83% preservation standard in the RMP. Therefore, the RMP ranch-wide preservation requirement would be maintained and actually exceeded, and impacts to steep slopes would be **less than significant**.

Table 5.2-1
Otay Ranch Steep Slopes

	Existing Steep Slopes (Slope Gradient ≥ 25%)	Steep Slope Impacts (City of Chula Vista)	Projected Steep Slope Impacts (County of San Diego)
Otay Valley Parcel			
Approved SPA Plans			
Villages One and One West, Two, Four (Park Portion), Five, Six, Seven, Eight West, 9, 11, and Planning Area 12 (Eastern Urban Center and Freeway Commercial)	439	335.6	–
Remaining SPA Plans			
Village Three, Four (Remainder), Eight East, Ten, University, and Planning Area 18	287.4	202.7(1)	–

Table 5.2-1 (Continued)
Otay Ranch Steep Slopes

	Existing Steep Slopes (Slope Gradient ≥ 25%)	Steep Slope Impacts (City of Chula Vista)	Projected Steep Slope Impacts (County of San Diego)
Proctor Valley			
Remaining SPA Plans: Village 13, 14, 16, and 19	486.3	–	378.3[2a,3]
San Ysidro Mountains			
Remaining SPA Plans: Villages 15 and 17	560.1	–	488.0[2b,3]
Outside Development Areas	8,048.5	0	0
Ranch-wide Sub-totals	*9,821.3*	*538.3*	*866.3*
Ranch-wide Totals	**9,821.3**	**1,404.6**	

Notes:
1 Slope impacts are based on best available data including currently proposed projects (SPA Plans/Tentative Maps) and current Otay Ranch GDP/SRP development areas.
2 Excludes acreages associated with Wildlife Agency conservation acquisitions that would no longer be developable:
a 108 acres within Proctor Valley
b 72.1 acres within San Ysidro Mountains
3 Assumes development will impact 100% of steep slopes (slope gradient ≥ 25%) within current Otay Ranch GDP/SRP development areas.

Manufactured internal slopes within the SPA Plan area are typically 2:1 maximum gradient. If however, at the tentative map stage, manufactured slopes of 25 feet in height or greater in highly visible locations are proposed, landform grading techniques may be considered on a case-by-case basis as/and approved by the Development Services Director. In the SPA Plan area, the most visible slope locations are along prime arterial streets and adjacent to the Otay River Valley, Wolf Canyon, and Salt Creek open space preserve areas. It is anticipated that landform grading techniques would be used for manufactured slopes 25 feet in height or greater where they occur along prime arterial streets and natural open spaces.

The goal of the Otay Ranch GDP is to concentrate urban development on the flatter areas and retain the sensitive natural topographic features. The proposed project is located primarily on mesa tops sloping south to the Otay River Valley. Slopes surrounding village development would be undulating with variable horizontal and vertical gradients, to blend into the surrounding terrain and create an aesthetically pleasing setting. In addition, manufactured slopes would be contoured to blend with natural landform characteristics. The Otay Ranch GDP requires naturalized buffering to be provided as a transition between development and significant existing land forms. The Otay Ranch GDP also requires landform planting techniques that will complement landform grading. Each village SPA Plan supports the objective of enhancing the unique environmental and visual qualities of Otay Ranch. The SPA Plans reinforce the importance of conforming the villages to the natural topography of the project area and maintaining views towards open spaces and distant mountains. Implementation of grading techniques and adherence to applicable guidelines, goals and objectives of the SPA plans and

compliance with the Subdivision Manual and Grading Ordinance would reduce potentially significant impacts to sensitive landforms to the extent feasible.

However, development of the proposed project would create a substantial change in the topography of the Otay Ranch area. Placing three new residential communities on the currently undeveloped land would impact the aesthetic character of the area, even when steep slopes are graded to avoid detracting from the visual character. Although all appropriate measures would be taken in order to reduce potential impacts associated with alterations to existing landforms and visibility from future development and roadways, impacts would be considered **potentially significant**.

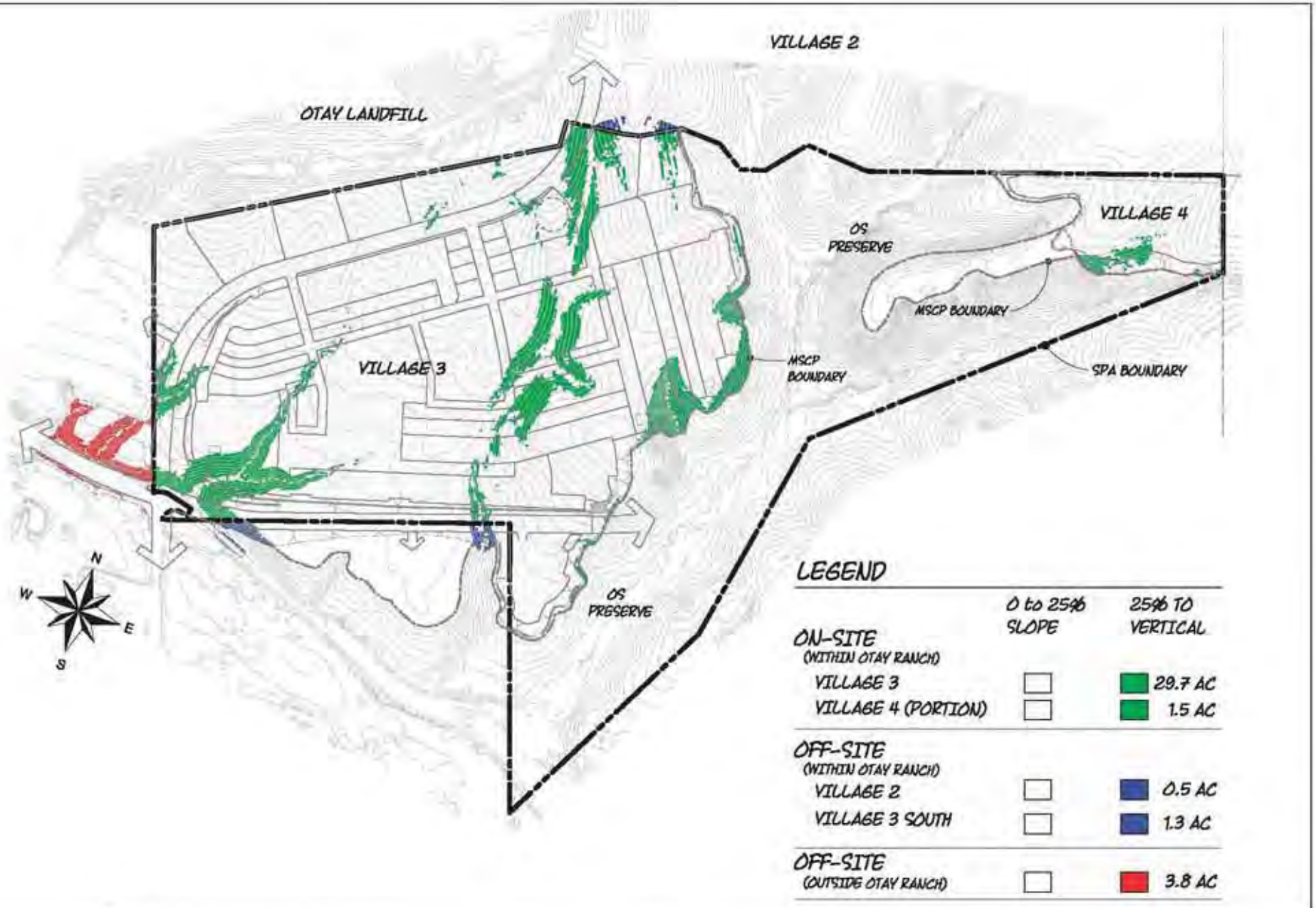
F. Be inconsistent with General Plan, Otay Ranch GDP or other objectives and policies regarding visual character, thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The General Plan contains objectives and policies to preserve and enhance scenic resources and landforms. Objectives and policies include the continued environmental protection of open space, and design policies for features such as views, entryways, gateways, streetscapes, buildings, parks, and plazas. Appendix B lists the relevant visual character objectives and policies in the Land Use and Transportation Element of the City's General Plan. The proposed project would be consistent with the General Plan objectives and policies because the Village Design Plan and P-C District Regulations establish development standards and design guidelines for the project. The P.C. District Regulations established a design review process for the villages which, in combination with the Village Design Plans, will ensure new residential neighborhoods are compatible with the surrounding neighborhood. Additionally, special identity for each village would be achieved through the Village Design Plan for each village as well as implementation of an overall landscape master plan and street cross section details that provide for well-designed landscape as well as specialized themes when appropriate. A more detailed analysis of the proposed project's consistency with the General Plan is provided in Appendix B.

Otay Ranch General Development Plan

Appendix B lists the relevant landform and visual goals, objectives, and policies found in the Otay Ranch GDP. The table also verifies the proposed project's consistency with each goal, objective, and policy related to aesthetics. The SPA Plans for the proposed project includes design guidelines and regulations for consistent and cohesive development across the various villages. Development would be unified by common elements including buildings heights, massing, and architectural styles, which would reinforce sense of place. In addition, development would be organized based on a centrally located village core that would be accessible to pedestrians from all areas. A more detailed analysis of the proposed project's consistency with the Otay Ranch GDP is provided in Appendix B.



SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 5.2-18

Steep Slope Map for Village Three North and Portion of Village Four

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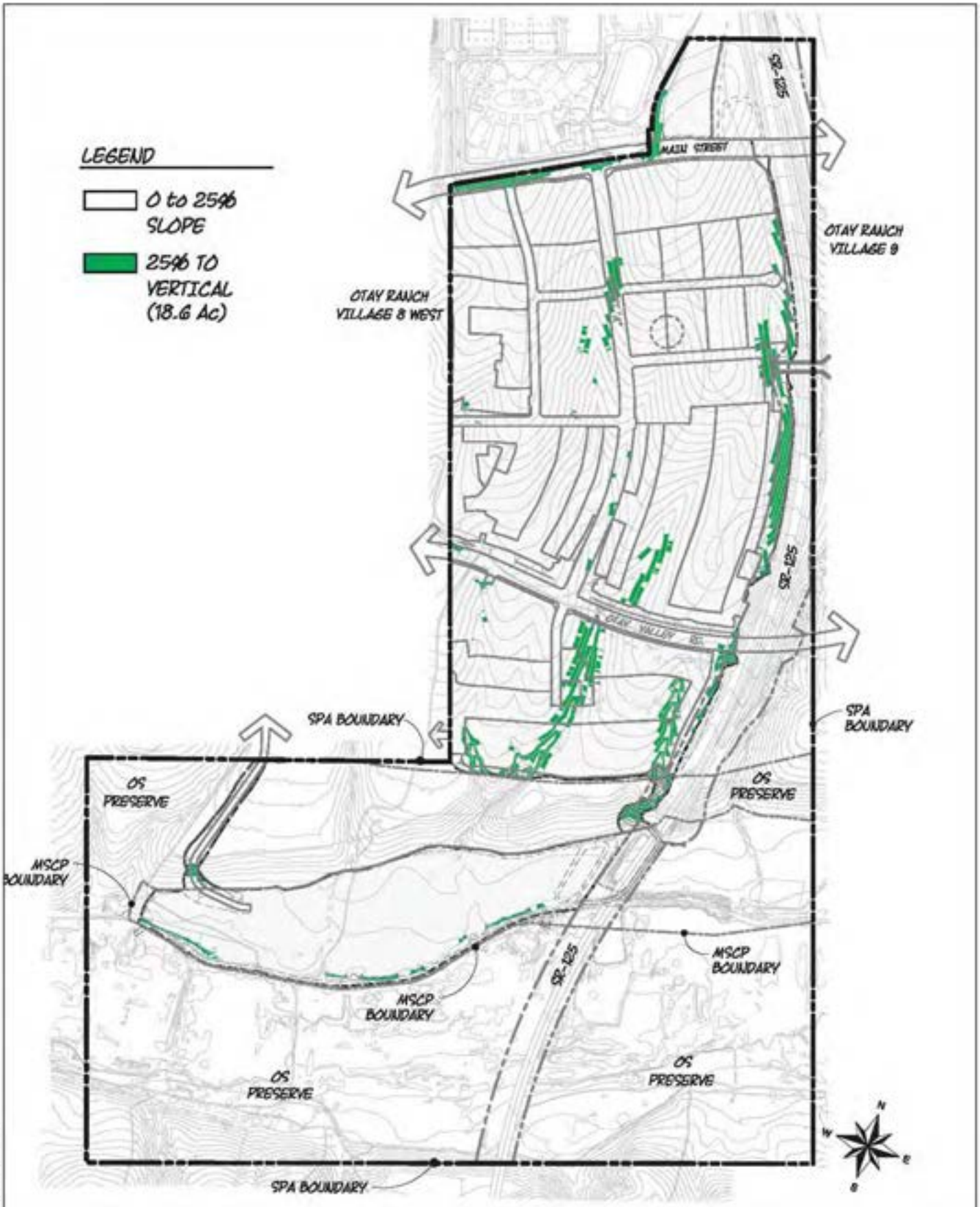

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 5.2-19

Steep Slope Map for Village Eight East

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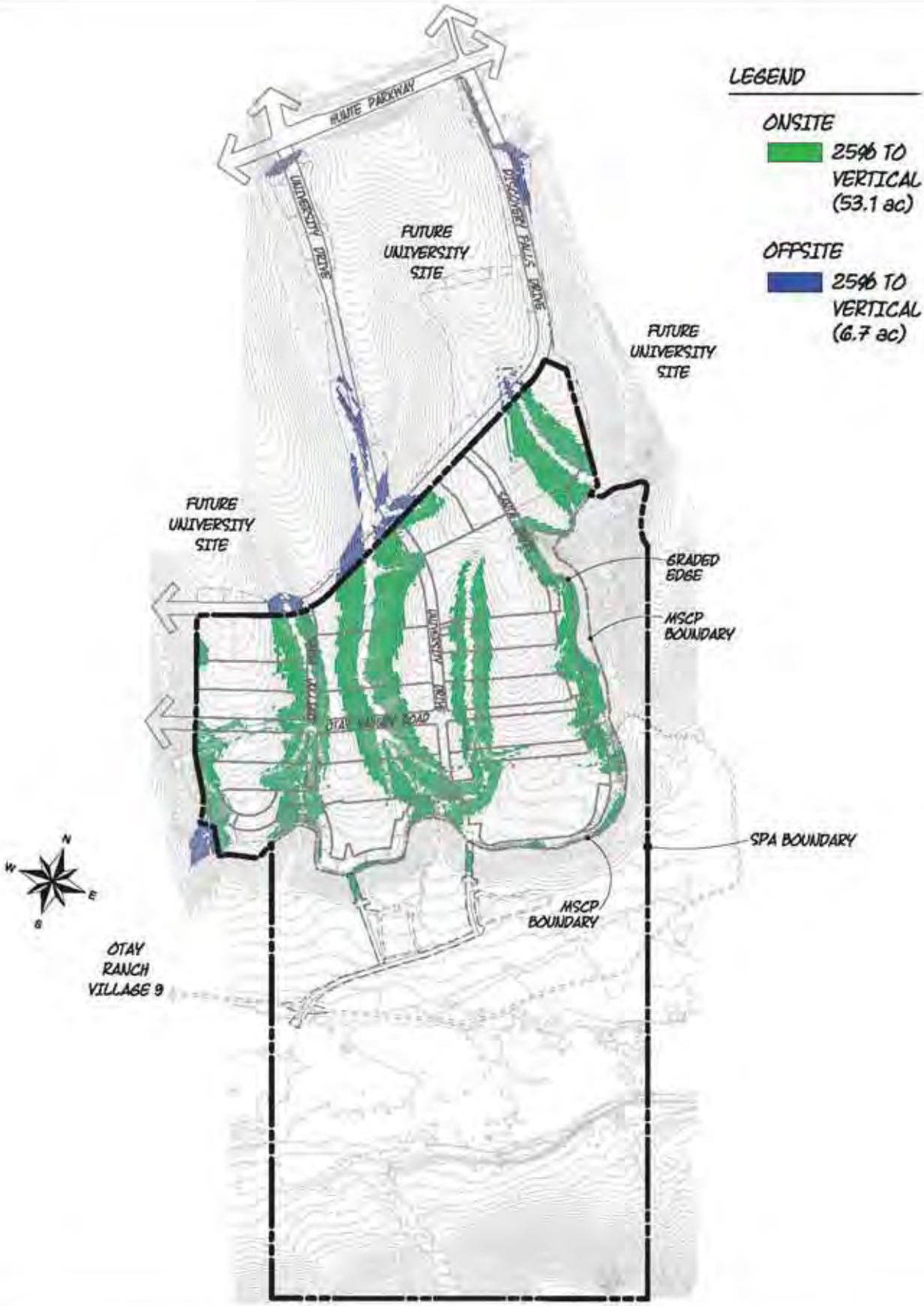

SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 5.2-20

Steep Slope Map for Village Ten

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OVRP Design Standards and Guidelines

Tables 5.2-2 and 5.2-3 list the relevant landform and visual goals and policies found in the OVRP Design Standards and Guidelines, and the City of Chula Vista Greenbelt Master Plan. The table also verifies the proposed projects consistency with each goal, objective, and policy related to aesthetics. While a detailed landscape plan has yet to be developed, each SPA Plan includes Village Design Plans and Preserve Edge Plants which contain plant palettes that emphasize native plant species as they would help visually integrate project landscaping with the existing setting. Lower intensity single-family residential development would be located at the southern extent of the development sites and would be buffered from OVRP by landscaped open space and natural terrain (see Figures 5.2-11, 5.2-12, 5.2-15, 5.2-16, and 5.2-17). A more detailed analysis of the proposed project's consistency with the OVRP Design Standards and Guidelines is provided below. Each village is surrounded by a 100-foot Preserve edge, which serves as a transition between development and the natural Preserve setting. Additional setbacks are provided by the MSCP Preserve, which limits access to approved trails.

Visual simulations were conducted from locations within the OVRP to represent what development might be seen by future trail and park users (see Figures 5.2-11, 5.2-12, 5.2-15, 5.2-16, and 5.2-17). KVP 10 is taken from the Village Eight East Community Park (P-2), which is part of the OVRP Concept Plan. This vantage point simulates what future users of the community park and trail users would see looking northward toward Village Eight East. The Community Park (P-2) is a minimum of approximately 425 feet from the southern edge of Village Eight East, roughly 90 to 100 feet below the grade of the first row of homes. KVP 10, as shown in Figure 5.2-11, is representative of the views from the OVRP Trail in the southern portion of the valley, along the southern boundary of Village Eight East Community Park (P-2). This vantage point is approximately 800 feet south of the edge of Village Eight East and approximately 110 feet below the grad of the first row of homes. The OVRP Trail on the southern boundary of Village Eight East , as shown in KVP 11 on Figure 5.2-12 is 2,000 feet south of the edge of Village Eight East and approximately 110 feet below the grade of the first row of homes.

KVP 14 and 15 are taken from the Greenbelt/OVRP Trail (existing Wiley Road). While landscaped slopes and retaining walls are proposed at the edges of Village Ten, the proposed development would be a minimum of 650' from the toe of slope (800' from the top of slope/back of homes) to the Greenbelt/OVRP Trail (east of Village Ten). This trail is approximately 115 feet below the top of slope and nearest residential units. KVP 16 is taken from south of the Greenbelt/OVRP Trail (existing Wiley Road). KVP is representative of views afforded to users of future OVRP trails in the Preserve area of Village Ten. Single-family residences atop the elevated mesas would be skylined; however, vegetation, natural terrain, and open space would reduce the resulting visual effect as experienced by users of the OVRP trails.

A more detailed analysis of the proposed project's consistency with the OVRP Design Standards and Guidelines is provided below.

Table 5.2-2
Project Consistency with OVRP Design Standards and Guidelines

Applicable Policies	Evaluation of Consistency
Section 5 – Private Development Guidelines	
5.3.2 Ensure Compatible Edge Treatment and Buffering Adjacent to the OVRP • - Proposed private development should be designed to blend with the natural landscape of the OVRP. • -Buildings adjacent to the OVRP should be adequately set back from the park edge and should be reduced in overall height near this edge to protect natural vistas of the park. • - When man made elements such as buildings, trash enclosures, and storage or utility areas are highly visible from the OVRP, provide vertical growing plant material to soften or screen the visual impact. • - Landscape buffers adjacent to the park should consist of native plant species. Manufactured slope banks should be treated with native plant species. • - Avoid constructing large retaining walls facing the park and encourage contoured naturalized slopes. If large retaining walls are necessary then they should be the type of construction that allows for plantings on the wall or a landscape buffer should be planted in front of the wall and should screen 2/3 of the height of the wall within four years. • - Exterior lights should be shielded from intrusion into the park.	Consistent. Lower intensity single-family residential development would be located at the southern extent of the development sites and would be buffered from OVRP by landscaped open space and natural terrain. Landscaped open space along the OVRP-adjacent development edge of Village Three North, Portion of Village Four, Village Eight East, and Village Ten would soften the transition between the natural landscape and the Proposed Project and would help screen views of development from OVRP. While a detailed landscape plan has yet to be developed, the proximity of OVRP and the existing natural character of the OVRP suggest that native plant species would be specified as they would help visually integrate project landscaping with the existing setting. In addition to landscaped open space buffers, plantable walls at select graded slopes would help to soften the appearance of retaining structures and blend project elements with the surrounding natural landscape. Exterior lighting would be buffered from OVRP by proposed development and landscaped open space and would be shielded and directed downward to avoid intrusion into the park.
5.3.3 Acknowledge and Complement OVRP Amenities and Resources • - Minimize the alteration of natural landforms • - All building facades viewed from the OVRP should have three dimensional relief to provide visual interest; this may include pop-outs, offsetting planes, overhangs, and recessed or protruding doorways and windows • - Architectural scale, massing, color, materials, and style for private development within the park • should conform to OVRP standards. • - Landscaping for private development projects within the park should consist of non-invasive • drought-tolerant or native plant species consistent with the OVRP standards. • - Large building signs, reflective glass surfaces, materials that cause glare or lights that cause • high levels of illumination should not be used on the building elevation(s) adjacent to the OVRP.	Consistent. While development of the proposed project would alter the topography of the Otay Ranch area, the implementation of grading techniques and adherence to applicable guidelines, goals and objectives of the SPA plans and compliance with the Subdivision Manual and Grading Ordinance would reduce potentially significant impacts to sensitive landforms to the extent feasible. Structures (single-family residences) located at the development edge and visible from OVRP would be partially screened by landscaped open space (see Figures 5.2-11, 5.2-15, 5.2-16, and 5.2-17) and rooflines, overhangs, protruding windows and offsetting planes would provide three-dimensional relief and variation. As shown on Figure 4-9, park and recreation uses and more specifically, an approximate 51.5-acre active recreation park, is proposed in the southern extent of the Village Eight East SPA boundary. The site is identified as Open Space-Active Recreation in the Chula Vista General Plan, Recreation in the Otay Ranch GDP, and Recreation Area #11 in the OVRP concept plan. In Section 4, Landscape Standards, of the OVRP design standards and guidelines large turf areas for group sports

Table 5.2-2 (Continued)
Project Consistency with OVRP Design Standards and Guidelines

Applicable Policies	Evaluation of Consistency
Section 5 – Private Development Guidelines	
	are envisioned in these larger regional recreational facility area and the use of non-invasive drought-tolerant plants endemic to the local climate are recommended in smaller planter, edges, parking islands, and other non-recreation areas. While a landscape plan has yet to be developed, species listed in Section 4 for urban and transition areas will be considered. The use of glass and lights causing high levels of illumination would be limited on single-family residential structures located at the OVRP development edge and development would be partially screened by landscaped open space.

City of Chula Vista Greenbelt Master Plan

Table 5.2-3 identifies the relevant design criteria and standards found in the City of Chula Vista Greenbelt Master Plan. The table also verifies the proposed project's consistency with the Greenbelt Master Plan. The proposed project would provide sufficient signage to clearly identify public access to the Preserve. Signage would be provided at public access points to the Preserve and the Greenbelt System. For example, signage consistent with Section 4.2, Greenbelt Design, of the Greenbelt Master Plan would be installed near the proposed Main Street and Heritage Road intersection within the Village Three North development site. As shown in Table 5.2-3 the proposed project would be consistent with the City of Chula Vista Greenbelt Master Plan.

Table 5.2-3
Project Consistency with City of Chula Vista – Greenbelt Master Plan Policies

Applicable Policies	Evaluation of Consistency
Chapter 4: Greenbelt Design Criteria and Standards	
4.1.5 Special Trail Design Criteria Provide sufficient signage to clearly identify public access to the Preserve. Barriers such as vegetation, rocks/boulders or fencing may be necessary to protect highly sensitive areas. Use appropriate type of barrier based on location, setting and use. For example, use chain link or cattle wire to direct wildlife movement, and natural rocks/boulders or post and rail fence to direct public access away from sensitive areas.	**Consistent.** Signage would be provided at public access points to the Preserve and the Greenbelt System. For example, signage consistent with Section 4.2, Greenbelt Design, of the Greenbelt Master Plan would be installed near the proposed Main Street and Heritage Road intersection within the Village Three North development site. In addition, sufficient signage consistent with the Greenbelt Master Plan design standards would also be provided at Greenbelt Trail Connections. In addition and as shown on Figure 5.2-15, post and rail fencing would likely be installed along trails located near sensitive areas to limit opportunities for public trespass. Consistent with the master plan design standards, fencing would also be provided on trails where there is a down slope condition

As shown in Appendix B and in Tables 5.2-2 through 5.2-3, the proposed project would be consistent with the applicable landform and visual policies in the General Plan, Otay Ranch GDP, OVRP Design Standards and Guidelines, and the Greenbelt Master Plan. Impacts associated with the proposed project would be **less than significant**.

5.2.4 Level of Significance Prior to Mitigation

A. Scenic Vista

No significant impacts to scenic vistas have been identified; impacts would be **less than significant**.

B. Scenic Resources

No significant impacts to scenic resources within a state scenic highway have been identified; impacts would be **less than significant**.

C. Visual Character or Quality

The project would permanently alter the character of the project site from open, rolling topography to urban development. This impact would be **potentially significant** prior to mitigation.

D. Lighting and Glare

New lighting installed at parks, mixed-use residential and commercial buildings, multi-family residential, and CPF uses may be incompatible with surrounding development and inconsistent with applicable regulations. Future lighting and shade and shadow impacts cannot be determined at this time because the location, size, and orientation of future buildings are not yet known. Therefore, these impacts are considered **potentially significant** prior to mitigation.

E. Landform Alteration

The project would impact steep slopes; however, landform alterations and the visibility of these alterations from future development and roadways are considered **potentially significant** prior to mitigation. However, the proposed project would not conflict with the RMP 2 steep slope preservation threshold.

F. Consistency with Visual Character Policies

The project would be consistent with all applicable visual character policies. Impacts would be **less than significant**.

5.2.5 Mitigation Measures

A. Scenic Vista

No mitigation measures are required.

B. Scenic Resources

No mitigation measures are required.

C. Visual Character or Quality

MM AES-1 Prior to issuance of the first Final Maps for Village Three North, Village Eight East, and Village Ten, the Applicant shall prepare to the satisfaction of the Development Services Director (or their designee), a Landscape Master Plan. The Landscape Master Plan shall demonstrate compliance with Otay Ranch GDP Policies pertaining to softening manufactured slopes, particularly on visible manufactured slopes greater than 25 feet in height, through plant selection, placement, and density, etc. The Landscape Master Plan shall also demonstrate compliance with Otay Ranch GDP Policies pertaining to blending development harmoniously with natural features of the land including the OVRP and its major canyons.

D. Lighting and Glare

MM AES-2 Concurrent with the preparation of site-specific plan(s) for park sites and prior to issuance of a building permit for any park, the Applicant shall prepare, or in the case of the City being the lead on the preparation of the site specific plan, the Applicant shall fund the preparation of a lighting plan and photometric analysis. The plan shall be prepared to the satisfaction of the Development Services Director (or their designee) and ~~evaluate~~ demonstrate that the proposed height, location, and intensity of all exterior lighting ~~for compliance~~complies with the City's performance standards for light, and glare (Chula Vista Municipal Code19.66.100).

MM AES-3 Concurrent with design review and prior to the issuance of building permits for mixed-use residential, commercial, Community Purpose Facility and multi-family residential, the Applicant shall prepare a lighting plan and photometric analysis. The plan shall be prepared to the satisfaction of the Development Services Director (or their designee) and ~~evaluate~~ demonstrate that the proposed height, location, and intensity of all exterior lighting ~~for compliance~~complies with the City's performance standards for light, and glare (Chula Vista Municipal Code19 19.66.100).

MM AES-4 Prior to design review approval for any structure three ~~four~~ stories and above, the Applicant shall prepare to the satisfaction of the Development Services Director (or their designee), a shadow analysis demonstrating that adjacent shadow-sensitive uses are not permanently shadowed, and/or any other approved city-standard in place at the time the shadow analysis is performed.

E. Landform Alteration

MM AES-1 would also reduce impacts related to landform alteration.

F. Consistency with Visual Character Policies

No mitigation measures are required.

5.2.6 Level of Significance After Mitigation

A. Scenic Vista

Impacts would be **less than significant** without mitigation.

B. Scenic Resources

Impacts would be **less than significant** without mitigation.

C. Visual Character or Quality

MM AES-1 would reduce impacts to visual character or quality to the extent feasible however, because the project would result in urban development on the primarily natural, open space site, it would permanently alter the character of the project site. Additional mitigation that would maintain the existing character of the site and its surroundings is not available and therefore, impacts would remain **significant and unavoidable**.

D. Lighting and Glare

Implementation of MM AES-2 through MM AES-4 would reduce impacts to lighting and shade and shadow to a **less than significant level**.

E. Landform Alteration

Implementation of MM AES-1 would reduce scenic resource impacts to a **less than significant level**.

F. Consistency with Visual Character Policies

Impacts would be **less than significant** without mitigation.

5.3 TRANSPORTATION, CIRCULATION, AND ACCESS

This section of the 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 *University Villages Traffic Impact Analysis, Otay Ranch Village 3 North, 8 East and 10* (TIA), prepared by Chen Ryan Associates (June 2014). The complete TIA is contained in Appendix M of this EIR. Additional information and analysis is provided in Chapter 6.0 Cumulative Impacts. The analysis herein assumes that the proposed project will develop in accordance to an assumed phasing schedule (see Section 4.2.7, Construction Phasing).

This section tiers from the 1993 Otay Ranch GDP Program EIR, because the proposed project implements the circulation roadways that were analyzed in the 1993 Otay Ranch GDP Program EIR. This section also tiers from the 2005 GPU/GDPA Program EIR, because existing transportation and circulation conditions for the entire Otay Ranch area was analyzed in the 2005 GPU/GDPA. Additionally, this section tiers from the 2013 GPA/GDPA Supplemental EIR, because the proposed project was included in the cumulative analysis as a reasonably foreseeable project.

The 1993 Otay Ranch GDP Program EIR determined that traffic and circulation impacts would be significant and unavoidable due to potential secondary impacts related to off-site roadway improvements. However the Chula Vista City Council determined that traffic impacts were acceptable because of specific overriding considerations. The 2005 GPU/GDPA determined that traffic impacts would be significant and unavoidable. Mitigation measure 5.10.2 in the 2005 GPU/GDPA describes how impacts to freeways could not be mitigated because 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.

The 2013 GPA/GDPA Supplemental EIR determined that cumulative impacts to roadway segments would be significant and unmitigable because proposed improvements would fall within the jurisdiction of the City of San Diego, and the City of Chula Vista would not have authority over the improvements.

5.3.1 Existing Conditions

5.3.1.1 Regulatory Framework and Analysis Methodology

Local Level

City of Chula Vista General Plan

The City of Chula Vista General Plan Land Use and Transportation (LUT) Element 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. The LUT Element promotes the use of non-polluting and renewable alternatives for mobility through a system of bicycle and pedestrian paths and trails. One of the overall goals of the LUT Element of the General Plan is the development of "a sustainable circulation/mobility system that provides transportation choices and is well-integrated with the City's land uses" (City of Chula Vista 2005).

Analysis Methodology

The traffic analyses prepared for this EIR were performed in accordance with City of Chula Vista (City) and City of San Diego (with respect to impacts to streets within the jurisdiction of the City of San Diego) traffic impact study guidelines (as the study area roadways lie within one or the other jurisdiction), CEQA, which imposes additional requirements on the analysis of transportation-related impacts and the San Diego Regional Congestion Management Program (CMP) requirements. The analyses were conducted utilizing the San Diego Association of Governments (SANDAG) Series 11 Southbay 2, University Villages traffic forecast model with specific land use and network modifications based upon the proposed project and the most current information available from the City. SANDAG, Chen Ryan Associates, and the City coordinated to conduct an extensive review of the model in order to ensure its accuracy.

Congestion Management Program/Study Area

The CMP was first adopted on November 22, 1991, and was intended to assist in the monitoring of regional transportation system level of service (LOS) performance. CMP analysis requirements for the San Diego region are delineated in a SANDAG document entitled the 2008 Congestion Management Program Update (SANDAG 2008). The purposes of the CMP are to monitor the performance of the transportation system, develop programs to address near-term and long-term congestion, and better integrate transportation and land use planning. On May 8, 2009 the SANDAG Board of Directors discussed options for the future direction of the CMP and directed staff to work with local jurisdictions electing to opt out of the state CMP. 14 of the 19 local jurisdictions, representing a majority of the population in San Diego County have adopted resolutions electing to be exempt from the state CMP process. The City of Chula Vista was one of the 14 local jurisdictions to opt out.

LOS Definition

The concept of 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. An LOS 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 represents the worst. Table 5.3-1 describes generalized definitions of urban transportation systems at LOS A through F.

Table 5.3-1
LOS 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 has a volume-to-capacity ratio greater than 1.0.

Source: TRB 2010, Chapter 16.

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 2010 (HCM; TRB 2010). The HCM methodology defines intersection LOS as a function of intersection control delay in terms of seconds per vehicle (sec/veh). The HCM methodology sets 1,900 passenger cars per hour per lane (pc/h/l) 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 LOS criteria used for this technique are described in Table 5.3-2.

Table 5.3-2
Signalized Intersection LOS for HCM Operational Analysis Method

Average Stopped Delay Per Vehicle (seconds)	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: TRB 2010, Chapter 18.

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections, were analyzed using the Chapter 19 and 20 HCM methodology. The LOS for a two-way stop controlled 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 the City of Chula Vista and the City of San Diego consider LOS D during the AM and PM peak hours to be the minimum standard for intersection LOS. The LOS criteria for unsignalized intersections are provided in Table 5.3-3.

Table 5.3-3
LOS Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	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: TRB 2010, Chapters 19 and 20.

Roadway Segment LOS Standards and Thresholds

Roadway segment LOS standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment LOS 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 LOS standards utilized to analyze roadway segments within the City of Chula Vista, and City of San Diego are provided in Tables 5.3-4 and 5.3-5 respectively.

Table 5.3-4
City of Chula Vista Roadway Segment Daily Capacity and LOS Standards

Circulation Element Roadway Classification	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 Associates 2014 (EIR Appendix M).
Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

Table 5.3-5
City of San Diego Roadway Segment Daily Capacity and LOS Standards

Roadway Functional Classification	LOS				
	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 Associates 2014 (EIR Appendix M).
Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

The standards shown in Tables 5.3-4 and 5.3-5 generally are 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 LOS 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 GDP, 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 Program

The City of Chula Vista's Growth Management Program (GMP) 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 (TRB 2010). This methodology determines roadway segment LOS based upon functional classification, roadway segment length, and travel speeds. Current information relating to roadway functional classifications, segment lengths, and travel speeds is maintained by the City's Growth Management Traffic Monitoring Program.

The GMP LOS standard requires the maintenance of LOS C or better, or LOS D for no more than any 2 hours of the day. If LOS D occurs for any period greater than 2 hours, additional analyses may be required along the respective high volume segments based upon direction provided by the Development Services Director (or their designee). 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 Development Services Director (or their designee).

Freeway/State Highway LOS Standards and Thresholds

Freeway LOS and performance was based upon procedures developed by the California Department of Transportation (Caltrans) District 11. The procedure for calculating freeway LOS 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 passenger cars per hour per lane (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 5.3-6. 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 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 5.3.6
Caltrans District 11 Freeway and State Highway Segment LOS 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 (in miles per hour (mph)). Signalized segments experience delays >60.0 seconds/vehicle.

Source: SANDAG 2008.

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* (Caltrans 2012a). 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 operating conditions. Values of ILV/hr associated with various traffic flow thresholds are shown in Table 5.3-7.

Table 5.3-7
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: Caltrans 2012, Topic 406.

[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 (SANDAG 2008; SANTEC/ITE 2000) 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 meters 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.

The demand per hour per lane was calculated using the following equation:

$$D_{vol} = \frac{(P_{vol} - H_{vol})}{N}$$

- D_{vol} (Demand Volume per hour per Lane): total peak hour demand expected to use the on-ramp (non-HOV lane only);
- P_{vol} (Peak Hour Ramp Volume): sum of all peak hour volumes using the on-ramp;
- H_{vol} (HOV lane volume): based on field observation, approximately 20% of the P_{vol} utilized the HOV lane; and
- N: number of non-HOV lanes at the on-ramp.

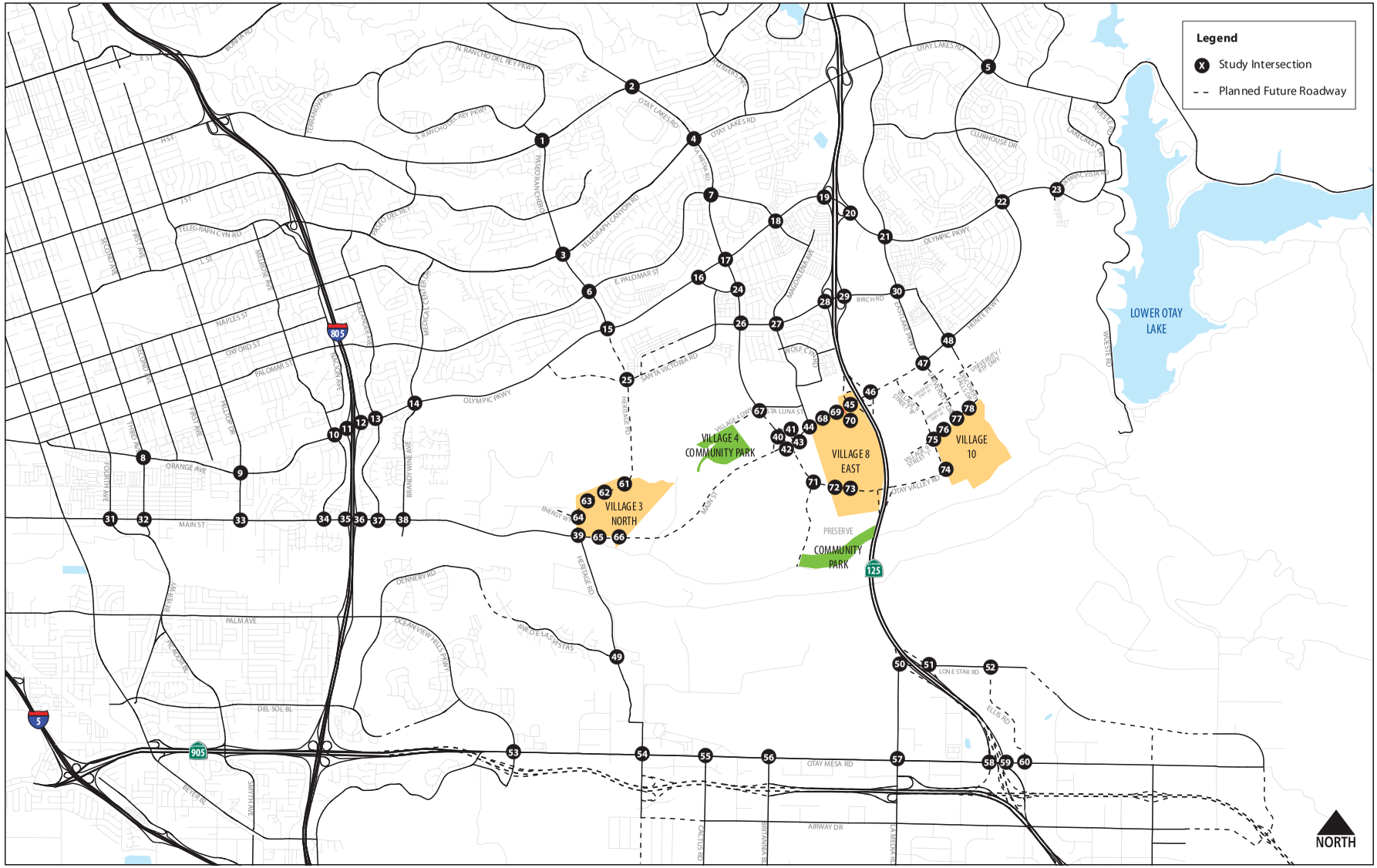
5.3.1.2 Existing Setting

Several regionally and locally significant roadways and freeways, and corresponding intersections, traverse and comprise the study area. A list of each of the study area intersections is provided below, followed by a description of the primary roadways. As previously noted, the project study area is depicted in Figure 5.3-1.

Study Area

Study Intersections

Consistent with the cities of Chula Vista and San Diego guidelines, the SANDAG Series 11 Transportation Model ("Southbay 2, University Villages" 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 would add 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 would add 2,400 or more daily trips or 150 or more peak hour trips in either direction.



SOURCE: CHEN RYAN ASSOCIATES 2014

FIGURE 5.3-1
Project Study Area

7000

UNIVERSITY VILLAGES PROJECT EIR

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As shown on Figure 5.3-1, a total of 78 study area intersections, including 66 in the City of Chula Vista and 12 in the City of San Diego, are included in the study area, as listed below (future intersections not yet existing are noted with an asterisk (*)) :

1. Paseo Ranchero / H Street
2. Otay Lakes Road / H Street
3. Paseo Rancher / Heritage Road / Telegraph Canyon Road
4. La Media Road / Telegraph Canyon Road / Otay Lakes Road
5. Hunte Parkway / Otay Lakes Road
6. Heritage Road / East Palomar Street
7. La Media Road / East Palomar Street
8. 3rd Avenue / Orange Avenue
9. Hilltop Drive / Orange Avenue
10. Melrose Avenue / Orange Avenue
11. I-805 SB Ramps / Olympic Parkway
12. I-805 NB Ramps / Olympic Parkway
13. Oleander Avenue / Olympic Parkway
14. Brandywine Avenue / Olympic Parkway
15. Heritage Road / Olympic Parkway
16. Santa Venetia Street / Olympic Parkway
17. La Media Road / Olympic Parkway
18. East Palomar Street / Olympic Parkway
19. SR-125 SB Ramps / Olympic Parkway
20. SR-125 NB Ramps / Olympic Parkway
21. EastLake Parkway / Olympic Parkway
22. Hunte Parkway / Olympic Parkway
23. Olympic Vista Road / Olympic Parkway
24. La Media Road / Santa Venetia Street
25. Heritage Road / Santa Victoria Road*
26. La Media Road / Birch Road

27. Magdalena Avenue / Birch Road
28. SR-125 SB Ramps / Birch Road
29. SR-125 NB Ramps / Birch Road
30. EastLake Parkway / Birch Road
31. 4th Avenue / Main Street
32. 3rd Avenue / Main Street
33. Hilltop Drive / Main Street
34. Melrose Avenue / Main Street
35. I-805 SB Ramps / Main Street
36. I-805 NB Ramps / Main Street
37. Oleander Avenue / Main Street
38. Brandywine Avenue / Main Street
39. Heritage Road / Main Street
40. La Media Road (SB) / Main Street (WB)*
41. La Media Road (NB) / Main Street (WB)*
42. La Media Road (SB) / Main Street (EB)*
43. La Media Road (NB) / Main Street (EB)*
44. Magdalena Avenue / Main Street – L-intersection
45. SR-125 SB Ramps / Main Street*
46. SR-125 NB Ramps / Main Street*
47. EastLake Parkway / Main Street/Hunte Parkway – L-intersection
48. Discovery Falls Drive / Hunte Parkway
49. Heritage Road / Avenida De Las Vistas (City of SD)
50. SR-125 SB Ramps / Lone Star Road (City of SD)*
51. SR-125 NB Ramps / Lone Star Road (City of SD)*
52. Ellis Road / Lone Star Road (City of SD)*
53. Ocean View Hills Parkway / Otay Mesa Road (City of SD)
54. Heritage Road / Otay Mesa Road (City of SD)
55. Cactus Road / Otay Mesa Road (City of SD)

56. Britannia Boulevard / Otay Mesa Road (City of SD)
57. La Media Road / Otay Mesa Road (City of SD)
58. SR-125 SB Ramps / Otay Mesa Road (City of SD)
59. SR-125 NB Ramps / Otay Mesa Road (City of SD)
60. Ellis Road / Otay Mesa Road (City of SD).*
64. Energy Way / Heritage Road*
65. Quarry Driveway / Main Street*
75. Village Nine Street "B" / Discovery Falls Drive*

Project Driveways

Project driveways do not currently exist. They will be constructed for access and frontage to the project in accordance with the phasing plan.

61. Santa Macheto @ Heritage Road*
62. Santa Picacho @ Heritage Road*
63. Santa Maya @ Heritage Road*
66. Village Three North R-20 Driveway @ Main Street*
67. La Media Road/Village Four Driveway @ Santa Luna Street*
68. Santa Tipu @ Main Street (one-way stop RT in/out)*
69. Santa Marisol @ Main Street*
70. Village Eight East R-16 Driveway #3 @ Main Street (one-way stop RT in/out)*
71. Village Eight East Community Park Driveway @ Otay Valley Road*
72. Cutter Avenue @ Otay Valley Road (one-way stop RT in/out)*
73. Santa Marisol @ Otay Valley Road*
74. Village Nine Street "B" @ Otay Valley Road*
76. Santa Julliard @ Discovery Falls Drive*
77. University Drive @ Discovery Falls Drive*
78. Santa Davis @ Discovery Falls Drive.*

Of the above study area intersections, 29 are not currently constructed; these intersections were included and analyzed as they will be constructed in future year phases because they either will

be constructed as part of the project or are planned for construction by others (City of Chula Vista TDIF, CIP, and/or as project design features or mitigation measures for other approved Otay Ranch project impacts). These intersections are denoted with an asterisk (*) in the above list. A total of 15 of the intersections will be constructed by the Project Applicant as part of the project. The remaining 14 intersections are identified in the Circulation Element of the respective jurisdiction's General Plan and will be constructed over the project buildout period, with some of the improvements constructed or 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]. Study area intersection lane geometrics under existing conditions within the study area are displayed in Figure 3-1A of EIR Appendix M.

The following is a description of the primary roadways in the study area.

East–West Roadway Facilities

City of Chula Vista

East H Street – East H Street is a six-lane roadway with a raised median, Class II bike lanes and a 50 mph posted speed limit west of Otay Lakes Road; and a four-lane roadway with a raised median, Class II bike lanes and a 35 mph posted speed limit east of Otay Lakes Road. East H Street is classified as a Six-Lane Prime Arterial west of Otay Lakes Road, and a Four-Lane Major Road east of Otay Lakes Road.

L Street/Telegraph Canyon Road – L Street is a four-lane roadway west of I-805. L Street becomes Telegraph Canyon Road at I-805, where it is a seven-lane roadway between I-805 and Oleander Avenue, and a six-lane roadway with a raised median and Class II bike lanes between Oleander Avenue and Otay Lakes Road. The posted speed limit is 35 to 50 mph. This facility is classified in the City of Chula Vista General Plan Circulation Element as a Four-Lane Major Road west of I-805, a Gateway Street between I-805 and Oleander Avenue, and a Six-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 six-lane roadway with a raised median and is classified as a Six-Lane Prime Arterial in the City of Chula Vista General Plan Circulation Element.

[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).

East Palomar Street – East Palomar Street is currently a four-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 between I-805 and Heritage Road is classified as a Four-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.

Orange Avenue / Olympic Parkway – Orange Avenue between Melrose Avenue and I-805 is a four-lane roadway with a raised median. Orange Avenue becomes Olympic Parkway at I-805 and widens to a six-lane roadway with a raised median until Hunte Parkway. Between Hunte Parkway and Wueste Drive, Olympic Parkway narrows to a four-lane roadway with a raised median. Orange Avenue is classified as a Four-Lane Major Road in the Chula Vista General Plan Circulation Element. Olympic Avenue is classified as a Gateway Street between I-805 and Oleander Avenue and SR-125 and EastLake Parkway, a Six-Lane Prime Arterial between Oleander Avenue and SR-125, a Six-Lane Prime Arterial between EastLake Parkway and Hunte Parkway, and a Four-Lane Major Road between Hunte Parkway and Wueste Road.

Birch Road – Birch Road is a six-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 Six-Lane Major Road between La Media Road and SR-125, and a Gateway Street between SR-125 and EastLake Parkway in the City of Chula Vista General Plan Circulation Element.

Main Street – Main Street is a four-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 six-lane roadway with a raised median and Class II bike lanes. 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 Six-Lane Prime Arterial with a couple of exceptions: just west of I-805 and SR-125 it is classified as a Gateway Street; and as couplets (two lanes each direction) at La Media Road.

Otay Valley Road – This road is not currently constructed, but is classified as a Four-Lane Major Road in the City of Chula Vista General Plan Circulation Element. As part of this project, Otay Valley Road between Village Nine Street "B" and EastLake Parkway/University Drive is proposed to be downgraded from a Four-Lane Major Road to a Class II Collector.

<u>City of San Diego</u>

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

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

North–South Roadway Facilities

City of Chula Vista

Hilltop Drive – Hilltop Drive is a four-lane roadway with a posted speed limit of 35 mph and on-street parallel parking on both sides within the study area. This facility is classified as a Class I Collector in the City of Chula Vista General Plan Circulation Element.

Medical Center Drive / Brandywine Avenue – Medical Center Drive runs north/south between Telegraph Canyon Road and East Palomar Street as a four-lane roadway with a raised median, Class II bike lanes, and no on-street parking on either side. This roadway has a posted speed of 35 mph. Medical Center Drive becomes Brandywine Avenue at East Palomar Street, continues to Main Street to the south. Brandywine Avenue is a four-lane roadway with a striped median (Class II bike lanes and no on-street parking), and then becomes a two-lane roadway with a striped median, Class II bikes lanes and on-street parallel parking south of Olympic Parkway. The posted speed on Brandywine Avenue is 35 mph south of Olympic Parkway and 40 mph north of Olympic Parkway. This facility is classified as a Class I Collector in the City of Chula Vista General Plan Circulation Element.

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 four-lane roadway with a continuous left-turn lane/striped median and Class II bike lanes, and Heritage Road is a six-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 two-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 Six-Lane Prime Arterial. As part of this project, Heritage Road is proposed to be realigned within Village Three North.

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 four-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 Six-Lane Prime Arterial. Otay Lakes Road between East H Street and Telegraph Canyon Road is currently under construction to be widened from a 4-lane roadway to a 6-lane Prime Arterial, the City of Chula Vista is expected to complete

the widening process by the end of 2013. La Media Road is a six-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 Six-Lane Prime Arterial in the City of Chula Vista General Plan Circulation Element, with the exception of the couplets (two lanes each direction) at Main Street.

Magdalena Avenue – Magdalena Avenue is generally a four-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 two-lane roadway with a raised median. The posted speed limit is 25 mph. This facility is not classified as a Circulation Element road in the City of Chula Vista General Plan.

EastLake Parkway – EastLake Parkway is a four-lane roadway with a raised median and Class II bike lanes between Otay Lakes Road and Clubhouse Drive, and a six-lane roadway with a raised median and Class II bike lanes between Clubhouse Drive and its current southern terminus at Hunte Parkway/Main Street. The posted speed limit is 40 mph. This roadway is classified as a Four-Lane Major Road between Otay Lakes Road and Clubhouse Drive, a Six-Lane Prime Arterial between Clubhouse Drive and Olympic Parkway, a Six-Lane Major Road between Olympic Parkway and Main Street, and a Four-Lane Major Road between Main Street/Hunte Parkway and Otay Valley Road. As part of this project, the southernmost section of the EastLake Parkway, south of Main Street/Hunte Parkway, is proposed to be renamed to "University Drive" and downgraded from a Four-Lane Major Road to a Class II Collector between the 1st University/RTP driveway and Discovery Falls Drive, and a non-Circulation Element road within the Village Ten boundaries.

Discovery Falls Drive – Discovery Falls Drive is currently a two-lane roadway with on-street parallel parking on both sides. It terminates just south of Hunte Parkway at High Tech High in Chula Vista. Discovery Falls Drive is not classified as a Circulation Element road in the City of Chula Vista General Plan. However, with the desire to downsize EastLake Parkway to a two-lane multi-modal facility, the Project Applicant is proposing to designate Discovery Falls Drive between Hunte Parkway and University/RTP Driveway #1 as a Four-Lane Major Street, as well as designated discovery Falls Drive between University/RTP Driveway #1 and Village Nine Street "B" as a Class II Collector.

Hunte Parkway – Hunte Parkway is currently a four-lane roadway with a raised median and Class II bike lanes between Otay Lakes Road and Olympic Parkway. The posted speed limit along this section of the facility is 45 mph. Hunte Parkway turns into a six-lane roadway with a raised median and Class II bike lanes between Olympic Parkway and Main Street/EastLake Parkway. The posted speed limit along this section of the facility is 50 mph. Hunte Parkway is classified in the City of Chula Vista General Plan Circulation Element as a Four-Lane Major

Road between Otay Lakes Road and Olympic Parkway, and a Six-Lane Prime Arterial between Olympic Parkway and Main Street/EastLake Parkway.

City of San Diego

Heritage Road – Heritage Road, from the Chula Vista city limit to Otay Mesa Road, is currently a two-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 Six-Lane Prime Arterial in the City of San Diego's currently adopted Community Plan Circulation Element.

La Media Road – La Media Road is currently a two-lane roadway at 30 mph north of Otay Mesa Road, and a five-lane (three SB and two NB) roadway with striped median south of Otay Mesa Road. This facility is classified as a Six-Lane Prime Arterial in the City of San Diego's currently adopted Community Plan Circulation Element.

Ellis Road – Ellis Road is not constructed currently, but is classified as a Four-Lane Major Arterial in the City of San Diego's currently adopted Community Plan Circulation Element.

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

Freeway and State Highway Facilities

Three 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 Avenue and SR-905 within the study area. Construction of two new High Occupancy Vehicle (HOV) lanes on I-805, between Home Avenue and East Palomar Street has been recently completed.

SR-125 – SR-125 is a four-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.

SR-905 –SR-905 within the project study area is a six-lane state highway, connecting I-805 and SR-125.

Existing Intersection and Roadway Volumes

Existing AM/PM peak hour traffic volumes for the study area intersections are shown in EIR Appendix M (Figure 3-2A). Average Daily Traffic (ADT) volumes for study area roadway and

freeway segments are also provided in EIR Appendix M (Figure 3-2B), as are the roadway segment and study area intersection counts.

Existing Level of Service Analysis

LOS analyses under existing conditions were conducted using the methodologies described in Section 5.3.1.1. Intersection, roadway segment, freeway segment, and freeway ramp intersection LOS results are each discussed separately below.

Intersection Analysis

Table 5.3-8 displays intersection LOS and average vehicle delay results for all study area intersections located in Chula Vista and San Diego under existing conditions. LOS calculation worksheets for existing conditions are provided in EIR Appendix M.

As shown in Table 5.3-8, 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.

Table 5.3-8
Peak Hour Intersection LOS Results – Existing Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*
1. Paseo Ranchero / H Street	39.0	D	27.4	C
2. Otay Lakes Road / H Street	25.1	C	26.5	C
3. Paseo Ranchero / Heritage Road / Telegraph Canyon Road	35.6	D	22.1	C
4. La Media Road / Telegraph Canyon Road / Otay Lakes Road	30.6	C	28.8	C
5. Hunte Parkway / Otay Lakes Road	22.7	C	20.1	C
6. Heritage Road / East Palomar Street	26.7	C	20.6	C
7. La Media Road / East Palomar Street	37.1	D	32.5	C
8. 3rd Avenue / Orange Avenue	21.1	C	24.9	C
9. Hilltop Drive / Orange Avenue	26.9	C	19.4	B
10. Melrose Avenue / Orange Avenue	18.2	B	31.3	C
11. I-805 SB Ramps / Olympic Parkway	26.5	C	51.7	D
12. I-805 NB Ramps / Olympic Parkway	43.2	D	28.7	C
13. Oleander Avenue / Olympic Parkway	48.7	D	35.7	D
14. Brandywine Avenue / Olympic Parkway	46.0	D	49.7	D
15. Heritage Road / Olympic Parkway	15.3	B	10.6	B
16. Santa Venetia Street / Olympic Parkway	3.5	A	1.6	A
17. La Media Road / Olympic Parkway	31.1	C	18.3	B
18. East Palomar Street / Olympic Parkway	27.7	C	24.2	C

Table 5.3-8 (Continued)
Peak Hour Intersection LOS Results – Existing Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*
19. SR-125 SB Ramps / Olympic Parkway	1.7	A	5.0	A
20. SR-125 NB Ramps / Olympic Parkway	0.9	A	2.6	A
21. EastLake Parkway / Olympic Parkway	16.9	B	20.7	C
22. Hunte Parkway / Olympic Parkway	19.2	B	21.0	C
23. Olympic Vista Road / Olympic Parkway	20.0	B	18.0	B
24. La Media Road / Santa Venetia Street	25.5	C	15.4	B
25. Heritage Road / Santa Victoria Road	Does Not Exist			
26. La Media Road / Birch Road	16.8	B	17.9	B
27. Magdalena Avenue / Birch Road	22.5	C	18.2	B
28. SR-125 SB Ramps / Birch Road	2.2	A	5.0	A
29. SR-125 NB Ramps / Birch Road	0.9	A	1.4	A
30. EastLake Parkway / Birch Road	22.7	C	25.3	C
31. 4th Avenue / Main Street	16.1	B	17.0	B
32. 3rd Avenue / Main Street	22.2	C	24.0	C
33. Hilltop Drive / Main Street	11.6	B	12.5	B
34. Melrose Avenue / Main Street	9.7	A	10.8	B
35. I-805 SB Ramps / Main Street	24.6	C	29.3	C
36. I-805 NB Ramps / Main Street	17.0	B	21.0	C
37. Oleander Avenue / Main Street	4.1	A	4.0	A
38. Brandywine Avenue / Main Street	16.5	B	21.6	C
39. Heritage Road / Main Street (one-way stop controlled)*	10.6	B	12.7	B
40. La Media Road (SB) / Main Street (WB)	Does Not Exist			
41. La Media Road (NB) / Main Street (WB)	Does Not Exist			
42. La Media Road (SB) / Main Street (EB)	Does Not Exist			
43. La Media Road (NB) / Main Street (EB)	Does Not Exist			
44. Magdalena Avenue / Main Street	Does Not Exist			
45. SR-125 SB Ramps / Main Street	Does Not Exist			
46. SR-125 NB Ramps / Main Street	Does Not Exist			
47. EastLake Parkway / Main Street/Hunte Parkway	Does Not Exist			
48. Discovery Falls Drive / Hunte Parkway	16.3	B	11.6	B
49. Heritage Road / Avenida De Las Vistas (SD) (all-way stop controlled)	48.7	E	19.1	C
50. SR-125 SB Ramps / Lone Star Road (SD)	Does Not Exist			
51. SR-125 NB Ramps / Lone Star Road (SD)	Does Not Exist			
52. Ellis Road / Lone Star Road (SD)	Does Not Exist			
53. Ocean View Hills Parkway / Otay Mesa Road (SD)	19.6	B	19.3	B
54. Heritage Road / Otay Mesa Road (SD)	18.5	B	20.8	C
55. Cactus Road / Otay Mesa Road (SD)	7.5	A	9.1	A
56. Britannia Boulevard / Otay Mesa Road (SD)	35.7	D	41.5	D
57. La Media Road / Otay Mesa Road (SD)	16.5	B	19.6	B

Table 5.3-8 (Continued)
Peak Hour Intersection LOS Results – Existing Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*
58. SR-125 SB Ramps / Otay Mesa Road (SD)	3.3	A	2.9	A
59. SR-125 NB Ramps / Otay Mesa Road (SD)	2.6	A	3.0	A
60. Ellis Road / Otay Mesa Road (SD)	Does Not Exist			
61. Santa Macheto @ Heritage Road	Does Not Exist			
62. Santa Picacho @ Heritage Road	Does Not Exist			
63. Santa Maya @ Heritage Road	Does Not Exist			
64. Energy Way / Heritage Road	Does Not Exist			
65. Quarry Driveway / Main Street	Does Not Exist			
66. Village Three North R-20 Driveway @ Main Street	Does Not Exist			
67. La Media Road / Village 4 Driveway @ Santa Luna Street	Does Not Exist			
68. Santa Tipu @ Main Street (one-way stop RT in/out)*	Does Not Exist			
69. Santa Marisol @ Main Street	Does Not Exist			
70. Village Eight East R-16 Driveway @ Main Street (one-way stop RT in/out)*	Does Not Exist			
71. Village Eight East Community Park Driveway @ Otay Valley Road	Does Not Exist			
72. Cutter Avenue @ Otay Valley Road (one-way stop RT in/out)*	Does Not Exist			
73. Santa Marisol @ Otay Valley Road	Does Not Exist			
74. Village Nine Street "B" / Otay Valley Road	Does Not Exist			
75. Village Nine Street "B" / Discovery Falls Drive	Does Not Exist			
76. Santa Julliard @ Discovery Falls Drive	Does Not Exist			
77. University Drive @ Discovery Falls Drive	Does Not Exist			
78. Santa Davis @ Discovery Falls Drive	Does Not Exist			

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: 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

Table 5.3-9 displays the LOS analysis results for the study area roadway segments located within the City of Chula Vista under existing conditions. As shown in Table 5.3-9, the following two study area roadway segments within the City of Chula Vista are operating at substandard LOS D under existing conditions:

- Olympic Parkway between Oleander Avenue and Brandywine Avenue (LOS D)
- Olympic Parkway between Brandywine Avenue and Heritage Avenue (LOS D).

Table 5.3-9
Roadway Segment LOS Results – Existing Conditions (City of Chula Vista)

Roadway	From	To	Cross Section	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	LOS
H Street	Tierra Del Rey	Paseo Ranchero	6-Ln w/RM	41,342	50,000	B
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	3rd Avenue	Hilltop Drive	4-Ln w/ TWLTL RM	18,996	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	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
Olympic Parkway	EastLake Parkway	Hunte Parkway	6-Ln w/RM	14,694	50,000	A
Olympic Parkway	Hunte Parkway	Olympic Vista Road	4-Ln w/RM	6,934	30,000	A
Olympic Parkway	Olympic Vista Road	Lake Crest Drive	4-Ln w/RM	1,527	30,000	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	4th Avenue	3rd Avenue	4-Ln w/TWLTL	20,350	30,000	A
Main Street	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL	22,530	30,000	B
Main Street	Hilltop Drive	Melrose Avenue	4-Ln w/TWLTL	24,393	30,000	B
Main Street	Melrose Avenue	I-805 SB Ramps	4-Ln w/TWLTL	26,942	30,000	C
Main Street	I-805 SB Ramps	I-805 NB Ramps	6-Ln	27,812	50,000	A
Main Street	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	31,341	50,000	A
Main Street	Oleander Avenue	Brandywine Avenue	6-Ln w/TWLTL	23,065	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	3-Ln	200	12,000	A

Table 5.3-9 (Continued)
Roadway Segment LOS Results – Existing Conditions (City of Chula Vista)

Roadway	From	To	Cross Section	Average Daily Traffic (ADT)	LOS Threshold (LOS C)	LOS
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist			
Main Street	SR-125 NB Ramps	EastLake Parkway / University Drive	Does Not Exist			
Otay Valley Road	Main Street	SR-125	Does Not Exist			
Otay Valley Road	SR-125	Village Nine Street "B"	Does Not Exist			
Hilltop Drive	Orange Avenue	Main Street	4-Ln	6,258	22,000	A
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	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	Santa Venetia Street	Birch Road	4-Ln	3,529	22,000	A
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
University Drive	Main Street / Hunte Parkway	Discovery Falls Drive	Does Not Exist			
University Drive	University Driveway #1	University Driveway #2	Does Not Exist			
University Drive	University Driveway #2	Discovery Falls Drive	Does Not Exist			
Discovery Falls Drive	Hunte Parkway	University / RTP Driveway	Does Not Exist			
Discovery Falls Drive	University / RTP Driveway	University Drive	Does Not Exist			
Discovery Falls Drive	University Drive	Village Nine Street "B"	Does Not Exist			
Hunte Parkway	Otay Lakes Road	Olympic Parkway	4-Ln w/RM	6,976	30,000	A
Hunte Parkway	Olympic Parkway	Discovery Falls Drive	6-Ln w/RM	3,201	50,000	A
Hunte Parkway	Discovery Falls Drive	EastLake Parkway / University Drive	6-Ln w/RM	3,704	50,000	A

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: 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.

Table 5.3-10 displays the LOS analysis results for the study area roadway segments located within the City of San Diego under existing conditions. As shown in Table 5.3-10, all study roadways in the City of San Diego are operating at acceptable LOS D or better under existing conditions.

Table 5.3-10
Roadway Segment LOS Results – Existing Conditions (City of San Diego)

Roadway	From	To	Cross Section	Average Daily Traffic (ADT)	LOS Threshold (LOS D)	LOS
Lone Star Road	La Media Road	Ellis Road	2-Ln	280	9,000	A
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
Otay Mesa Road	Britannia Boulevard	La Media Road	6-Ln w/RM	22,343	55,000	A
Otay Mesa Road	La Media Road	Ellis Road	6-Ln w/RM	10,200	55,000	A
Heritage Road	Avenida De Las Vistas	Otay Mesa Road	2-Ln	7,984	9,000	D
La Media Road	Lone Star Road	Otay Mesa Road	2-Ln	5,438	9,000	B
Ellis Road	Lone Star Road	Otay Mesa Road	Does Not Exist			

Source: Chen Ryan Associates 2014 (EIR Appendix M).
RM = raised median

Freeway / State Highway Segment Analysis

Table 5.3-11 displays freeway LOS analysis results for I-805, SR-125, and SR-905 under existing conditions. The freeway / state highway segment LOS analysis was performed utilizing the methodology presented in Section 5.3.1.1.

As shown in Table 5.3-11, all study area I-805 and SR-125 segments currently operate at acceptable LOS D or better under existing conditions. A majority of SR-905 is newly constructed and therefore no traffic counts were available from Caltrans or SANDAG.

Table 5.3-11
Freeway / State Highway Segment LOS 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 Avenue to SR-94	167,100	6.9%	11,530	0.51	4M**	0.97	4.2%	1,582	0.66	C
I-805	SR-94 to Market Street	162,200	8.0%	12,976	0.50	4M**	0.97	4.2%	1,745	0.73	C
I-805	Market Street to Imperial Avenue	162,200	8.0%	12,976	0.50	5M**	0.97	4.2%	1,396	0.58	B
I-805	Imperial Avenue to E Division Street	181,300	8.0%	14,504	0.50	5M**	0.97	4.2%	1,561	0.65	C
I-805	E Division Street to Plaza Boulevard	188,800	7.2%	13,594	0.51	5M**	0.95	3.8%	1,517	0.63	C
I-805	Plaza Boulevard to SR-54	191,500	8.1%	15,512	0.52	5M**	0.96	2.2%	1,718	0.72	C
I-805	SR-54 to Bonita Road	181,300	7.2%	13,054	0.52	4M+1Aux**	0.96	1.7%	1,598	0.67	C
I-805	Bonita Road to East H Street	181,300	7.8%	14,141	0.50	5M**	0.95	1.7%	1,514	0.63	C
I-805	East H Street to Telegraph Canyon Road	174,100	7.8%	13,580	0.50	5M**	0.95	1.9%	1,457	0.61	B
I-805	Telegraph Canyon Road to East Palomar Street	153,200	7.1%	10,877	0.51	4M+1Aux**	0.92	1.7%	1,363	0.57	B
I-805	East Palomar Street to Olympic Parkway	153,200	7.1%	10,877	0.51	4M+1Aux	0.92	1.7%	1,363	0.57	B
I-805	Olympic Parkway to Main Street	121,500	6.9%	8,384	0.51	4M+1Aux	0.93	5.4%	1,080	0.45	B
I-805	Main Street to Palm Avenue	116,300	7.1%	8,257	0.58	4M+1Aux	0.95	10.3%	1,249	0.52	B
I-805	Palm Avenue to SR-905	111,200	7.1%	7,895	0.58	4M+1Aux	0.95	10.3%	1,194	0.50	B
SR-125	Telegraph Canyon Road to Olympic Parkway	6,200*	7.0%	434	0.58	2M	0.95	10.3%	148	0.06	A
SR-125	Olympic Parkway to Birch Road	4,300*	7.0%	301	0.58	2M	0.95	10.3%	102	0.04	A
SR-125	Birch Road to Main Street	4,800*	7.0%	336	0.58	2M	0.95	10.3%	114	0.05	A
SR-125	Main Street to Lone Star Road	4,800*	7.0%	336	0.58	2M	0.95	10.3%	114	0.05	A

Table 5.3-11 (Continued)
Freeway / State Highway Segment LOS 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
SR-125	Lone Star Road to Otay Mesa Road	4,800	7.0%	336	0.58	2M	0.95	10.3%	111	0.046	A
SR-905	I-805 to Calliente Avenue	56,000	7.0%	3,920	0.60	2M	0.92	8.1%	1,335	0.556	B
SR-905	Calliente Avenue to Heritage Road	53,000	7.0%	3,710	0.60	3M	0.92	8.1%	837	0.349	A
SR-905	Heritage Road to Britannia Boulevard	49,500	7.0%	3,465	0.60	3M	0.92	8.1%	780	0.325	A
SR-905	Britannia Boulevard to La Media Road	49,500	7.0%	3,465	0.60	3M + 1Aux	0.92	8.1%	520	0.217	A
SR-905	La Media Road to SR-125	30,000	7.0%	2,100	0.60	3M	0.92	8.1%	475	0.198	A

Source: Chen Ryan Associates 2014 (EIR Appendix M).
* ADT was obtained from SANDAG base year (2008) Regional Transportation Model.
** 2 new HOV lanes have been constructed very recently, however freeway ADT information is not available for these HOV lanes. The existing conditions analysis is based on pre HOV freeway geometrics and traffic volumes. This should represent the worst case scenario.
M = Mainline.
Aux = Auxiliary Lane.

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 5.3.1.1. ILV analysis results are displayed in Table 5.3-12 and analysis worksheets for the existing conditions are provided in EIR Appendix M.

Table 5.3-12
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)
I-805 SB Ramps / Main Street	AM	986	<1200: (Under Capacity)
	PM	1,234	1200–1500: (At Capacity)
I-805 NB Ramps / Main Street	AM	763	<1200: (Under Capacity)
	PM	1,012	<1200: (Under 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		
SR-125 SB Ramps / Lone Star Road	AM	Does Not Exist	
	PM		
SR-125 NB Ramps / Lone Star Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Mesa Road	AM	430	<1200: (Under Capacity)
	PM	425	<1200: (Under Capacity)
SR-125 NB Ramps / Otay Mesa Road	AM	318	<1200: (Under Capacity)
	PM	390	<1200: (Under Capacity)

Source: Chen Ryan Associates 2014 (EIR Appendix M).

As shown in Table 5.3-12, all of the ramp intersections along I-805 operate under capacity and/or at capacity, with the following two exceptions:

- I-805 SB Ramps / Olympic Parkway – Over capacity during the PM peak hour

- I-805 NB Ramps / Olympic Parkway – Over capacity during the AM peak hour.

All of the existing SR-125 ramp intersections currently operate under capacity.

Ramp Metering Analysis

Table 5.3-13 displays the ramp metering analysis conducted at the I-805 northbound on-ramp at Olympic Parkway and the I-805 northbound on-ramp at Main Street 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 5:30 AM and 9:30 AM, and thus ramp metering analysis was conducted during the AM peak hour under the various study scenarios.

Both on-ramps currently have 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 5.3-13, the peak hour capacity expected to be processed through the ramp meter (Meter Rate) is greater than the peak hour demand (Demand) at both the I-805 northbound on-ramps at Olympic Parkway and Main Street. Therefore, there is no queuing issue at either of these on-ramps.

Table 5.3-13
Ramp Metering Analysis – Existing Conditions

Location	Peak Hour	P_{VOL}-Peak Hour VOL	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	1,851	741	887	0	0	0
I-805 NB On-Ramp @ Main Street	AM	729	292	413	0	0	0

Source: Chen Ryan Associates 2014 (EIR Appendix M).
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.
3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.
4 Delay = (excess demand / meter rate) × 60 min/hr.
5 Queue = (excess demand) × 29 ft/veh.

Existing Transit Service

The project study area is currently served by 10 Metropolitan Transit System 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 7 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.

5.3.2 Thresholds of Significance

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

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

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

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

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

E. Result in inadequate emergency access.

F. 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 criteria applied by the cities of Chula Vista and San Diego for determining the significance of an impact are outlined below.

City of Chula Vista

The proposed project would result in a direct impact or a cumulative impact under short-term and long-term conditions as follows:

Short-Term (Study Horizon Years 0–4)

For purposes of the short-term analysis roadway sections may be defined as either links or segments. A link is typically that section of roadway between two adjacent Circulation Element intersections and a segment is defined as that combination of contiguous links used in the Growth Management Plan Traffic Monitoring Program. Analysis of roadway links under

short-term conditions may require a more detailed analysis using the Growth Management Oversight Committee (GMOC) methodology if the typical planning analysis using volume to capacity ratios on an individual link indicates a potential impact to that link. The GMOC analysis uses the Highway Capacity Manual (HCM) methodology of average travel speed based on actual measurements on the segments as listed in the Growth Management Plan Traffic Monitoring Program.

1. Intersections
    a. A direct impact would result 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 would result if only criterion i is met.
2. Street Links/ Segments
3. If the ADT methodology indicates LOS C or better, the impact is not significant. If the ADT methodology indicates LOS D, E, or F, the GMOC criteria should be used, which includes the following:
    a. A direct impact would result if all of 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 5% or more of segment volume.
        iii. Project adds greater than 800 ADT to the segment.
    b. A cumulative impact would result if only criterion i is met.
4. Freeway Segments
    a. A direct impact would result if both the following criteria are met:
        i. Freeway segment LOS is E or F.
        ii. Project comprises 5% or more of total forecasted ADT on that freeway segment.
    b. A cumulative impact would result if only criterion i is met.

Long-Term (Study Horizon Year 5 or later)

1. Intersections
    a. A direct impact would result 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 would result if only criterion i is met.

2. Street Links/ Segments

a. A direct impact would result 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 total segment volume.

iii. Project adds greater than 800 ADT to the segment.

b. A cumulative impact would result if only criterion i is met. However, if the intersections along an LOS D or LOS E segment all operate at LOS D or better, the segment impact is not considered significant since the intersection analysis is more indicative of actual roadway system operations than street segment analysis. However, if the segment LOS is F, the impact is significant regardless of intersection LOS.

c. Notwithstanding the foregoing, if the impact identified in paragraph 2.a. occurs at study horizon Year 10 or later, and is off-site and not adjacent to the project, the impact is considered cumulative. However, study year 10 actually may be a SANDAG model year between 8 and 13 years in the future. For example, in the case of a traffic study performed in 2012, because the model will only evaluate traffic at years divisible by 5 (i.e. 2010, 2015, 2020 and 2025), study horizon year 10 would correspond to the SANDAG model for year 2020 and, thus, actually would be only 8 years in the future.

d. In the event a direct impact identified in paragraph 2.a. occurs at study horizon Year 5 or earlier and the impact is off-site and not adjacent to the 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 direct impact is no longer a direct impact, then the impact shall be considered cumulative.

3. Freeway Segments

a. A project-specific impact would result if both the following criteria are met:

i. Freeway segment LOS is LOS E or LOS F.

ii. Project comprises 5% or more of the total forecasted ADT on that freeway segment.

b. Cumulative impact if only criterion i is met.

4. 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.

City of San Diego

In general, a significant impact would be identified when the addition of project traffic results in a LOS dropping from D or better to a substandard LOS of E or F. Table 5.3-14 summarizes the allowable change in volume/capacity (V/C), speed and delay for freeways, roadway segments, intersections, and ramp metering attributable to project traffic. Increases above those identified would result in a significant impact.

Table 5.3-14
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: City of San Diego 2007.
* For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

5.3.3 Impacts

An analysis of the project's potential impacts relative to each of the CEQA Guidelines significance criteria, and incorporating the significance criteria utilized by the cities of Chula Vista and San Diego, is provided below.

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

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, Distribution, and Assignment

Project Trip Generation

Trip generation rates for the proposed project were developed utilizing SANDAG's Guide to Vehicular Traffic Generation Rates for the San Diego Region. EIR Appendix M, TIA Tables 4.3 through 4.6, illustrate the project land uses and corresponding trip rates utilized in the analysis. Table 5.3-15 displays daily cumulative, as well as AM and PM peak-hour project trip generation for each of the four development phases (2015, 2020, 2025, and 2030 buildout), respectively.

Table 5.3-15
Project Trip Generation

Land Use / Trip Rate	Year	Cumulative Daily Trips	AM Peak Hour Trips	PM Peak Hour Trips
Single-Family 10 / DU Multi-Family 8/DU Mixed-Use Commercial 110 / KSF Office 300 / AC Light Industrial 90 / AC CPF 30 / AC Elementary School 90 / AC Neighborhood Park 5 / AC Community Park 50 / AC	2015	6,110	488 (131 in / 357 out)	610 (427 in / 184 out)
	2020	40,736	3,724 (1,488 in / 2,237 out)	4,120 (2,535 in / 1,585 out)
	2025	64,308	5,474 (1,979 in / 3,494 out)	6,444 (4,069 in / 2,375 out)
	2030	77,663	6,819 (2,627 in / 4,192 out)	7,816 (4,831 in / 2,985 out)

Notes: DU = dwelling unit; KSF = thousand square feet; AC = acre

As shown in Table 5.3-15, by Year 2015, the proposed project would generate a total of 6,110 daily trips, including 488 AM peak hour trips and 610 PM peak hour trips, all of which would be generated by Village Three North. Note that no development is anticipated in Village Eight East, Village Ten, or the portion of Village Four that is part of the project (a Portion of Village Four), by 2015 (see Section 4.2.7 Construction Phasing in Chapter 4, Project Description).

As shown in Table 5.3-15, by Year 2020, the proposed project would generate a total of 40,736 daily trips, including 3,724 AM peak hour trips and 4,120 PM peak hour trips. The Portion of Village Four would be fully built out, and no development is anticipated in Village Ten by 2020. Village Three North and Village Eight East would be under construction in 2020. Of the total

trips generated in Year 2020, 50.5% would be generated by Village Three North, 2.2% would be generated by the Portion of Village Four, and 47.3% would be generated by Village Eight East.

As shown in Table 5.3-15, by Year 2025, the proposed project would generate a total of 64,308 daily trips, including 5,474 AM peak hour trips and 6,444 PM peak hour trips. The Portion of Village Four that is part of the project and non-community park portion of Village Eight East would be fully built out. Village Three North and Village Ten also would be under construction in 2025. Of the total trips generated in Year 2025, 34.6% would be generated by Village Three North, 1.4% would be generated by the Portion of Village Four, 54% would be generated by Village Eight East, and 10% would be generated by Village Ten.

By Year 2030, all of the proposed land uses would be fully developed. As shown in Table 5.3-15, the proposed project would generate a total of 77,663 daily trips, including 6,819 AM peak hour trips and 7,816 PM peak hour trips.

Given the nature of the project land uses, not all trips would leave the project site. For example, some shopping trips would be satisfied by the commercial uses within the project site, as would school trips and some recreational trips. Project trips were therefore disaggregated into those that would remain within the project site (internally captured), and those that would leave the project site (external trips); those that would remain within the project site effectively represent a reduction in the number of external trips. Estimates for internal versus external trip generation percentages were developed based upon likely origins/destinations of each land use type. Only external trips were distributed and assigned to the study area roadways. The proportion of internal and external project trips for each village under all study time frames is provided in the TIA (EIR Appendix M, Tables 4.7 through 4.10). As shown in the referenced tables, each village and associated land use has a different internal/external trip percentage due to the various land use mixes and related trip reduction characteristics. Based on the individual percentages, an overall internal capture rate for the entire project was calculated and applied for each analysis scenario. Specifically, an approximate 0% trip reduction was applied to Year 2015, 15% to Year 2020, 14% to Year 2025, and 15% to Year 2030 to reflect adjustments attributable to internal capture. A 0% internal trip reduction was applied to Year 2015 due to the lack of commercial land use types within Village Three North and the corresponding need to travel externally for commercial needs. The internal capture percentage increases to 15% by the Year 2020 due to an increase in the commercial to residential land uses ratio. However, this internal capture percentage reduced slightly to 14% in the Year 2025, due to an increase in residential units in Village Ten with no corresponding increase in commercial uses as the commercial land uses are not fully constructed at this development stage. The internal capture percentage increases back up to 15% by the Year 2030, when the built out commercial land uses provide additional incentive for residents to patronize businesses inside their individual villages. It also is noted that

the proposed project would be located in close proximity to both future BRT and local transit sites, further reducing vehicle trips generated by the project.

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, University Villages. Five different trip distribution patterns were developed in conjunction with the anticipated roadway network under the various analysis scenarios and timeframes, including existing, Year 2015, Year 2020, Year 2025, and Year 2030. The external project trip distribution patterns associated with each of these networks are provided in EIR Appendix M (Figures 4-1A.1 through 4-1E.4).

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. The following five separate sets of trip assignments were developed:

- 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 respective (existing, 2015, 2020, 2025, and 2030) roadway networks and study area intersections are displayed in EIR Appendix M (Figures 4-2A.1 through 4-2E.2).

A.1 Existing Plus Project (Buildout) Conditions

This section provides an analysis of traffic conditions on the existing environment with the addition of project trips from full buildout of the proposed University Villages project. Under this scenario, the proposed project's buildout traffic volumes are added to the existing traffic volumes and roadway configuration, and impacts are assessed. This scenario is regarded by traffic engineers as a hypothetical scenario when used in connection with a long-range development projects such as the proposed University Villages project, which is not anticipated to reach full buildout until approximately 2030. The scenario is hypothetical and ultimately misleading because it incorrectly assumes that a proposed project would be fully built out immediately and the corresponding full buildout traffic volumes added to existing roadway

volumes and infrastructure. This assumption is unlikely to occur because a long-range development project is constructed incrementally and full buildout is not realized until a future projected date at which time intervening changes will have occurred.

The existing plus project analysis also 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. As such, the analysis can result in *understating* project impacts because capacity that otherwise would be utilized by future development that precedes a proposed project buildout is now available to that project. For example, in this case, the project would have a direct impact to the segment of Heritage Road, between East Palomar Street and Olympic Parkway under the Year 2025 Plus Project scenario, whereas this roadway segment would operate at LOS A under the Existing Plus Project (Buildout) scenario and, as such, the impact is not identified.

Conversely, because the Existing Plus Project scenario does not account for future Circulation Element planned roadway network improvements that would increase roadway capacities, the analysis can potentially result in *overstating* project impacts. For example, in this case, Olympic Parkway between Oleander Avenue and Brandywine Avenue would operate at LOS E with 60,200 ADT under the Existing Plus Project (Buildout) conditions, whereas under the Horizon Year 2030 Plus Project (Buildout) conditions, this segment of Olympic Parkway would operate at LOS C with 48,700 ADT. The completion of Main Street, Heritage Road, and La Media Road would alleviate traffic from Olympic Parkway by providing alternative routes.

Furthermore, because the analysis does not account for future developments 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 example, the build-out of the University/RTP site would attract trips from the surrounding villages, regional trips, as well as trips generated by the proposed University Villages project, causing the intersection of Discovery Falls Drive / Hunte Parkway to degrade to LOS E under the Year 2030 Base Plus Project Buildout scenario. Without the University/RTP land uses (Existing Plus Project Buildout scenario), traffic would distribute differently, very few trips would travel south onto Discovery Falls Drive from Hunte Parkway. Hence, this intersection of Discovery Falls Drive and Hunte Parkway would operate at acceptable LOS C during both the AM and PM peak hours under the Existing Plus Project (Buildout) scenario.

For these reasons, an existing plus project analysis is provided below for the proposed project, but it is included for disclosure, information, and comparison purposes only.

Existing Plus Project (Buildout) Roadway Network and Traffic Volumes

This scenario includes existing traffic volumes with the addition of the University Villages project buildout traffic. Intersection and roadway geometrics under existing plus project conditions are 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 Three North – This facility was assumed as a Six-Lane Prime Arterial providing access to Village Three North.
- Main Street from Heritage Road to Village Three North R-20 driveway – this facility is included as a 2-lane roadway providing access to parcel R-20 of Village 3 North. The addition of this facility would also convert the intersection of Heritage Road / Main Street into a 4-legged intersection. Quarry Driveway @ Main Street (Int #65) would be constructed as an all-way stop controlled intersection providing access to the existing quarry.
- Main Street from La Media Road to SR-125 right-of-way (western boundary), Otay Valley Road from Main Street to SR-125 right-of-way (western boundary), and La Media Road from Santa Luna Street to Main Street – These three facilities were assumed as Four-Lane Major Roads providing access to Village Eight East, including the proposed community park.
- University Drive between Main Street / Hunte Parkway and Discovery Falls Drive, and Discovery Falls Drive between Hunte Parkway and east of Village Nine Street "B" (Int #75) – These two facilities were assumed to provide access to Village Ten. University Drive is included as a Class II Collector, while Discovery Falls Drive was assumed as a Four-Lane Major Road, both providing necessary access to Village Ten.

In addition, because the following 14 project driveways will be constructed as part of the project, they were analyzed under the "Plus Project" conditions:

- Santa Macheto @ Heritage Road – (Int #61)
- Santa Picacho @ Heritage Road – (Int #62)
- Santa Maya @ Heritage Road – (Int #63)
- Main Street / Quarry Driveway – all-way stop controlled intersection;
- Village Three North R-20 Driveway @ Main Street – (Int #66)
- La Media Road / Village Four Driveway @ Santa Luna Street – (Int #67)
- Santa Tipu @ Main Street (one way stop RT in/out) – (Int # 68)
- Santa Marisol @ Main Street – (Int # 69)
- Village Eight East R-16 Driveway @ Main Street (one way stop RT in/out) – (Int # 70)

- Village Eight East Community Park Driveway @ Otay Valley Road – (Int # 71)
- Cutter Avenue @ Otay Valley Road (one-way stop RT in/out) – (Int # 72)
- Santa Marisol @ Otay Valley Road – (Int #73)
- Village Nine Street "B" @ Otay Valley Road (Int # 74)
- Santa Julliard @ Discovery Falls Drive – Signalized intersection (Int # 76)
- University Drive @ Discovery Falls Drive – (Int #77)
- Santa Davis @ Discovery Falls Drive – (Int #78)

Intersection and roadway geometrics under existing plus project conditions are displayed in EIR Appendix M (Figures 5-1A and 5-1B).

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development.

Intersection Analysis

Table 5.3-16 displays the peak-hour intersection LOS results under existing plus project (buildout) conditions. LOS calculation worksheets for the existing plus project (buildout) conditions are provided in EIR Appendix M. As shown in the table, the proposed project would result in significant project-specific impacts at the following seven study intersections, including six in Chula Vista and one in San Diego:

<u>City of Chula Vista</u>

- I-805 SB Ramps / Olympic Parkway (signalized) – LOS F during the PM peak hour, and the project traffic would comprise more than 5% of the total intersection entering volume
- Brandywine Avenue / Olympic Parkway (signalized) – LOS E during the AM peak hour and LOS F during the PM peak hour, and the project traffic would comprise more than 5% of the total intersection entering volume
- Heritage Road / Main Street (all-way stop controlled) – LOS F during both the AM and the PM peak hours, and the project traffic would comprise more than 5% of the total intersection entering volume
- La Media Road (NB) / Main Street (WB) (all-way stop controlled) – LOS E during the AM peak hour, and the project traffic would comprise more than 5% of the total intersection entering volume

- La Media Road (SB) / Main Street (EB) (all-way stop controlled) – LOS E during the PM peak hour, and the project traffic would comprise more than 5% of the total intersection entering volume
- Magdalena Avenue / Main Street (one-way stop controlled) – LOS F during both the AM and PM peak hours, and the project traffic would comprise more than 5% of the total intersection entering volume.

As per Chula Vista significant impact criteria, the additional trips generated by buildout of the proposed project would result in project specific impacts at all of the above-identified intersections as the buildout project traffic would comprise more than 5% of the total entering volumes at these locations.

Table 5.3-16
Peak-Hour Intersection LOS Results – Existing Plus Project (Buildout) 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*					
1. Paseo Ranchero / H Street	38.0	D	32.3	C	N/A	N/A	0.9% / 1.1%	N/A	No
2. Otay Lakes Road / H Street	23.7	C	27.2	C	N/A	N/A	2.5% / 3.0%	N/A	No
3. Paseo Ranchero / Heritage Road / Telegraph Canyon Road	37.8	D	23.6	C	N/A	N/A	5.0% / 7.1%	N/A	No
4. La Media Road / Telegraph Canyon Road / Otay Lakes Road	33.7	C	30.5	C	N/A	N/A	8.9% / 10.9%	N/A	No
5. Hunte Parkway / Otay Lakes Road	22.5	C	20.5	C	N/A	N/A	2.9% / 4.5%	N/A	No
6. Heritage Road / East Palomar Street	27.4	C	30.1	C	N/A	N/A	7.4% / 11.5%	N/A	No
7. La Media Road / East Palomar Street	47.9	D	34.6	C	N/A	N/A	17.9% / 27.3%	N/A	No
8. 3rd Avenue / Orange Avenue	21.5	C	32.2	C	N/A	N/A	7.6% / 6.5%	N/A	No
9. Hilltop Drive / Orange Avenue	28.5	C	20.1	C	N/A	N/A	7.5% / 10.0%	N/A	No
10. Melrose Avenue / Orange Avenue	19.9	B	26.9	C	N/A	N/A	6.0% / 6.2%	N/A	No
11. I-805 SB Ramps / Olympic Parkway	36.8	D	84.9	**F**	N/A	N/A	8.9% / 10.6%	N/A	Yes (Direct)
12. I-805 NB Ramps / Olympic Parkway	49.3	D	51.9	D	N/A	N/A	11.2% / 13.8%	N/A	No
13. Oleander Avenue / Olympic Parkway	51.2	D	49.2	D	N/A	N/A	12.6% / 15.5%	N/A	No
14. Brandywine Avenue / Olympic Parkway	60.9	**E**	99.7	**F**	N/A	N/A	14.9% / 18.1%	N/A	Yes (Direct)
15. Heritage Road / Olympic Parkway	19.8	B	17.4	B	N/A	N/A	12.8% / 18.2%	N/A	No
16. Santa Venetia Street / Olympic Parkway	3.3	A	2.4	A	N/A	N/A	14.7% / 19.7%	N/A	No
17. La Media Road / Olympic Parkway	51.9	D	32.2	C	N/A	N/A	24.3% / 33.3%	N/A	No
18. East Palomar Street / Olympic Parkway	27.5	C	28.2	C	N/A	N/A	7.8% / 8.1%	N/A	No
19. SR-125 SB Ramps / Olympic Parkway	4.8	A	5.2	A	N/A	N/A	10.4% / 9.5%	N/A	No
20. SR-125 NB Ramps / Olympic Parkway	1.4	A	6.2	A	N/A	N/A	9.5% / 8.7%	N/A	No
21. EastLake Parkway / Olympic Parkway	18.2	B	22.7	C	N/A	N/A	17.4% / 16.7%	N/A	No
22. Hunte Parkway / Olympic Parkway	20.4	C	22.4	C	N/A	N/A	21.8% / 20.4%	N/A	No
23. Olympic Vista Road / Olympic Parkway	21.8	C	19.0	B	N/A	N/A	18.8% / 19.2%	N/A	No

Table 5.3-16 (Continued)
Peak-Hour Intersection LOS Results – Existing Plus Project (Buildout) 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*					
24. La Media Road / Santa Venetia Street	51.4	C	16.9	B	N/A	N/A	35.5% / 62.1%	N/A	No
25. Heritage Road / Santa Victoria Road	Does Not Exist								
26. La Media Road / Birch Road	36.5	D	29.0	C	N/A	N/A	62.4% / 80.1%	N/A	No
27. Magdalena Avenue / Birch Road	24.9	C	17.4	B	N/A	N/A	42.3% / 58.1%	N/A	No
28. SR-125 SB Ramps / Birch Road	5.6	A	11.8	B	N/A	N/A	54.0% / 62.8%	N/A	No
29. SR-125 NB Ramps / Birch Road	1.9	A	10.4	B	N/A	N/A	54.3% / 59.6%	N/A	No
30. EastLake Parkway / Birch Road	28.3	C	48.3	D	N/A	N/A	45.0% / 51.1%	N/A	No
31. 4th Avenue / Main Street	15.2	B	18.0	B	N/A	N/A	3.3% / 2.9%	N/A	No
32. 3rd Avenue / Main Street	22.6	C	25.3	C	N/A	N/A	4.6% / 4.1%	N/A	No
33. Hilltop Drive / Main Street	12.3	B	13.8	B	N/A	N/A	10.5% / 10.3%	N/A	No
34. Melrose Avenue / Main Street	12.8	B	12.5	B	N/A	N/A	12.8% / 11.9%	N/A	No
35. I-805 SB Ramps / Main Street	32.1	C	42.1	D	N/A	N/A	21.9% / 20.5%	N/A	No
36. I-805 NB Ramps / Main Street	18.7	B	24.7	C	N/A	N/A	30.4% / 28.4%	N/A	No
37. Oleander Avenue / Main Street	5.1	A	6.1	A	N/A	N/A	36.0% / 33.9%	N/A	No
38. Brandywine Avenue / Main Street	24.3	C	44.0	D	N/A	N/A	40.6% / 37.6%	N/A	No
39. Heritage Road / Main Street (all-way stop controlled)	66.6	**F**	69.3	**F**	N/A	N/A	99.7% / 99.8%	N/A	Yes (Direct)
40. La Media Road (SB) / Main Street (WB) (all-way stop controlled)	8.3	A	33.7	D	N/A	N/A	100.0% / 100.0%	N/A	No
41. La Media Road (NB) / Main Street (WB) (all-way stop controlled)	41.9	**E**	16.3	C	N/A	N/A	100.0% / 100.0%	N/A	Yes (Direct)
42. La Media Road (SB) / Main Street (EB) (all-way stop controlled)	13.0	B	44.9	**E**	N/A	N/A	100.0% / 100.0%	N/A	Yes (Direct)
43. La Media Road (NB) / Main Street (EB) (all-way stop controlled)	12.0	B	32.4	D	N/A	N/A	100.0% / 100.0%	N/A	No

Table 5.3-16 (Continued)
Peak-Hour Intersection LOS Results – Existing Plus Project (Buildout) 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*					
44. Magdalena Avenue / Main Street (one-way stop controlled)*	113.1	**F**	240.5	**F**	N/A	N/A	95.9% / 97.8%	N/A	Yes (Direct)
45. SR-125 SB Ramps / Main Street	Does Not Exist								
46. SR-125 NB Ramps / Main Street	Does Not Exist								
47. EastLake Parkway / Main Street/Hunte Parkway	12.9	B	8.7	A	N/A	N/A	45.3% / 78.3%	N/A	No
48. Discovery Falls Drive / Hunte Parkway	27.0	C	33.6	C	N/A	N/A	48.3% / 79.1%	N/A	No
49. Heritage Road / Avenida De Las Vistas (SD) (all-way stop controlled)	48.7	**E**	36.8	**E**	38.0 / 19.1	**E** / C	N/A	10.7 / 17.7	Yes (Direct)
50. SR-125 SB Ramps / Lone Star Road (SD)	Does Not Exist								
51. SR-125 NB Ramps / Lone Star Road (SD)	Does Not Exist								
52. Ellis Road / Lone Star Road (SD)	Does Not Exist								
53. Ocean View Hills Parkway / Otay Mesa Road (SD)	20.7	C	19.6	B	19.6 / 19.3	B / B	N/A	1.1 / 0.3	No
54. Heritage Road / Otay Mesa Road (SD)	26.7	C	30.7	C	18.5 / 20.8	B / C	N/A	8.2 / 9.9	No
55. Cactus Road / Otay Mesa Road (SD)	11.0	B	13.2	B	7.5 / 9.1	A / A	N/A	3.5 / 4.1	No
56. Britannia Boulevard / Otay Mesa Road (SD)	40.0	D	50.7	D	35.7 / 41.5	D / D	N/A	4.3 / 9.9	No
57. La Media Road / Otay Mesa Road (SD)	18.1	B	21.4	C	16.5 / 19.6	B / B	N/A	1.6 / 1.8	No
58. SR-125 SB Ramps / Otay Mesa Road (SD)	15.1	B	15.1	B	3.3 / 2.9	A / A	N/A	11.8 / 12.2	No
59. SR-125 NB Ramps / Otay Mesa Road (SD)	2.6	A	3.0	A	2.6 / 3.0	A / A	N/A	0.0 / 0.0	No
60. Ellis Road / Otay Mesa Road (SD)	Does Not Exist								
61. Santa Macheto @ Heritage Road	3.6	A	4.0	A	N/A	N/A	100.0% / 100.0%	N/A	No
62. Santa Picacho @ Heritage Road	14.7	B	17.0	B	N/A	N/A	100.0% / 100.0%	N/A	No

Table 5.3-16 (Continued)
Peak-Hour Intersection LOS Results – Existing Plus Project (Buildout) 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*					
63. Santa Maya @ Heritage Road	17.9	B	27.7	C	N/A	N/A	100.0% / 100.0%	N/A	No
64. Energy Way / Heritage Road	Does Not Exist								
65. Quarry Driveway / Main Street	7.0	A	7.0	A			61.0% / 86.2%		No
66. Village Three North Project R-20 Driveway @ Main Street	7.0	A	6.7	A			100.0% / 100.0%		No
67. La Media Road / Village Four Driveway @ Santa Luna Street	7.1	A	15.7	B	N/A	N/A	95.7% / 98.3%	N/A	No
68. Santa Tipu @ Main Street (one-way stop RT in/out)*	9.7	A	15.0	C			96.3% / 94.1%		No
69. Santa Marisol @ Main Street	30.5	C	16.9	B			97.0% / 98.5%		No
70. Village Eight East R-16 Driveway @ Main Street (one-way stop RT in/out)*	19.7	A	8.6	A	N/A	N/A	100.0% / 100.0%	N/A	No
71. Village Eight East Community Park Driveway @ Otay Valley Road	8.9	A	10.2	B	N/A	N/A	100.0% / 100.0%	N/A	No
72. Cutter Avenue @ Otay Valley Road (one-way stop RT in/out)*	Does Not Exist								
73. Santa Marisol @ Otay Valley Road	3.0	A	2.2	A	N/A	N/A	100.0% / 100.0%	N/A	No
74. Village Nine Street "B" / Otay Valley Road	Does Not Exist								
75. Village Nine Street "B" / Discovery Falls Drive	Does Not Exist								
76. Santa Julliard @ Discovery Falls Drive	8.2	A	7.3	A	N/A	N/A	100.0% / 100.0%	N/A	No
77. University Drive @ Discovery Falls Drive	11.0	B	24.0	C	N/A	N/A	100.0% / 100.0%	N/A	No
78. Santa Davis @ Discovery Falls Drive	12.0	B	9.2	A	N/A	N/A	100.0% / 100.0%	N/A	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
N/A = Information not applicable to the respective jurisdiction's impact analysis methodology.
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

City of San Diego

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

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

Roadway Segment Analysis

Tables 5.3-17 and 5.3-18 display the LOS analysis results for roadway segments under existing plus project (buildout) conditions in the City of Chula Vista and City of San Diego, respectively. As shown in the tables, the proposed project would result in significant impacts to the following five roadway segments, including four in Chula Vista and one in San Diego.

City of Chula Vista

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – Proposed project trips would comprise more than 5% of the total segment volume and would add more than 800 ADT. In addition, one of the intersections (I-805 SB Ramps / Olympic Parkway) along this segment would operate at substandard LOS F during the PM peak hour. Therefore, the proposed project would result in a significant direct 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. In addition, one of the intersections (Brandywine Avenue / Olympic Parkway) along this segment would operate at substandard LOS E during the AM peak hour and LOS F during the PM peak hour. Therefore, the proposed project would result in a direct impact at this location.
- Olympic Parkway, between Brandywine Avenue and Heritage Road (LOS F) – Proposed project trips would comprise more than 5% of the total segment volume and would add more than 800 ADT. In addition, one of the intersections (Brandywine Avenue / Olympic Parkway) along this segment would operate at substandard LOS E the AM peak hour and LOS F during the PM peak hour. Therefore, the proposed project would result in a direct impact at this location.
- Heritage Road, between Main Street and Avenida De Las Vistas (LOS ~~E~~D) – Proposed project trips would comprise more than 5% of the total segment volume and would add more than 800 ADT. In addition, one of the intersections (Heritage Road / Main Street) along this segment would operate at substandard LOS E/F during the peak hours. Therefore, the proposed project would result in a significant direct impact at this location.

Table 5.3-17
Roadway Segment LOS 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?
H Street	Tierra Del Rey	Paseo Ranchero	6-Ln w/RM	41,800	50,000	B	500	1.2%	—	No
Telegraph Canyon Road	Medical Center Drive	Heritage Road/ Paseo Ranchero	6-Ln w/RM	47,300	50,000	C	2,200	4.7%	—	No
Telegraph Canyon Road	Heritage Road/ Paseo Ranchero	La Media Road/ Otay Lakes Road	6-Ln w/RM	38,800	50,000	B	2,700	7.0%	—	No
Otay Lakes Road	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	29,500	30,000	C	3,200	10.8%	—	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	42,800	50,000	B	1,200	2.8%	—	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	16,100	30,000	A	2,700	16.8%	—	No
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	23,700	30,000	B	3,600	15.2%	—	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	13,200	30,000	A	800	6.1%	—	No
Orange Avenue	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL/RM	21,100	30,000	A	2,100	10.0%	—	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	24,200	30,000	B	1,100	4.5%	—	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	31,000	30,000	**D**	2,000	6.5%	No	Yes (Direct)
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	44,400	50,000	C	4,900	11.0%	—	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	56,000	50,000	**D**	7,500	13.4%	Yes	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	60,200	50,000	**E**	7,900	13.1%	No	Yes (Direct)
Olympic Parkway	Brandywine Avenue	Heritage Road	6-Ln w/RM	62,600	50,000	**F**	9,900	15.8%	No	Yes (Direct)
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln w/RM	57,700	50,000	**E**	9,500	16.5%	Yes	No

Table 5.3-17 (Continued)
Roadway Segment LOS 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	55,300	50,000	D	9,500	17.2%	Yes	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	33,500	50,000	A	2,500	7.5%	—	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	38,800	50,000	B	3,200	8.2%	—	No
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	36,800	70,000	A	3,000	8.2%	—	No
Olympic Parkway	SR-125 NB Ramps	EastLake Parkway	8-Ln w/RM	38,800	70,000	A	3,200	8.2%	—	No
Olympic Parkway	EastLake Parkway	Hunte Parkway	6-Ln w/RM	17,300	50,000	A	2,600	15.0%	—	No
Olympic Parkway	Hunte Parkway	Olympic Vista Road	4-Ln w/RM	8,400	30,000	A	1,500	17.9%	—	No
Olympic Parkway	Olympic Vista Road	Lake Crest Drive	4-Ln w/RM	2,200	30,000	A	700	31.8%	—	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	25,100	40,000	A	15,900	63.3%	—	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	27,000	40,000	A	16,300	60.4%	—	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	26,600	50,000	A	14,600	54.9%	—	No
Birch Road	SR-125 NB Ramps	EastLake Parkway	6-Ln w/RM	24,000	50,000	A	13,300	55.4%	—	No
Main Street	4th Avenue	3rd Avenue	4-Ln w/TWLTL	21,100	30,000	A	700	3.3%	—	No
Main Street	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL	23,600	30,000	B	1,100	4.7%	—	No
Main Street	Hilltop Drive	Melrose Avenue	4-Ln w/TWLTL	27,000	30,000	C	2,600	9.6%	—	No

Table 5.3-17 (Continued)
Roadway Segment LOS 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?
Main Street	Melrose Avenue	I-805 SB Ramps	4-Ln w/TWLTL	29,900	30,000	C	3,000	10.0%	—	No
Main Street	I-805 SB Ramps	I-805 NB Ramps	6-Ln	35,200	50,000	A	7,400	21.0%	—	No
Main Street	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	43,000	50,000	B	11,700	27.2%	—	No
Main Street	Oleander Avenue	Brandywine Avenue	6-Ln w/TWLTL	35,700	50,000	A	12,600	35.3%	—	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	27,300	50,000	A	16,400	60.1%	—	No
Main Street	Heritage Road	La Media Road	Does Not Exist							
Main Street	La Media Road	West of SR-125 @ Int #65	4-Ln w/RM*	18,600	30,000	A	18,400	98.9%	—	No
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist							
Main Street	SR-125 NB Ramps	EastLake Parkway / University Drive	Does Not Exist							
Otay Valley Road	Main Street	SR-125	4-Ln w/RM*	12,700	30,000	A	12,700	100.0%	—	No
Otay Valley Road	SR-125	Village Nine Street "B"	Does Not Exist							
Hilltop Drive	Orange Avenue	Main Street	4-Ln	7,500	22,000	A	1,200	16.0%	—	No
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	14,300	22,000	A	1,000	7.0%	—	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	19,900	50,000	A	900	4.5%	—	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	13,700	50,000	A	800	5.8%	—	No
Heritage Road	Olympic Parkway	Santa Victoria Road	Does Not Exist							

Table 5.3-17 (Continued)
Roadway Segment LOS 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	South of Santa Victoria Road @ Int #61	Main Street	6-Ln w/RM*	20,800	50,000	A	20,800	100.0%	—	No
Heritage Road	Main Street	Avenida De Las Vistas	2-Ln w/TWLTL	13,200	12,000	D	4,400	33.3%	No	Yes (Direct)
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	28,800	50,000	A	6,200	21.5%	—	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	24,600	50,000	A	9,900	40.2%	—	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	36,500	50,000	A	20,100	55.1%	—	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	32,600	50,000	A	21,100	64.7%	—	No
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	31,100	50,000	A	29,000	93.2%	—	No
La Media Road	Santa Luna Street	Main Street	4-Ln w/RM*	28,100	30,000	C	28,100	100.0%	—	No
Magdalena Avenue	Santa Venetia Street	Birch Road	4-Ln	5,200	22,000	A	1,700	32.7%	—	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	10,200	22,000	A	1,900	18.6%	—	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	4,900	12,000	A	1,600	32.7%	—	No
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	6,400	22,000	A	3,100	48.4%	—	No
EastLake Parkway	Corte Vista	Olympic Parkway	6-Ln w/RM	14,500	50,000	A	2,400	16.6%	—	No
EastLake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	16,900	40,000	A	5,100	30.2%	—	No

Table 5.3-17 (Continued)
Roadway Segment LOS 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	Birch Road	Main Street / Hunte Parkway	6-Ln w/RM	14,100	40,000	A	12,200	86.5%	—	No
University Drive	Main Street/Hunte Parkway	University Driveway #1	2-Ln w/RM*	9,000	12,000	B	9,000	100.0%	—	No
University Drive	University Driveway #1	University Driveway #2	2-Ln w/RM*	9,000	12,000	B	9,000	100.0%	—	No
University Drive	University Driveway #2	Discovery Falls Drive	2-Ln w/RM*	9,000	12,000	B	9,000	100.0%	—	No
Discovery Falls Drive	Hunte Parkway	University/RTP Driveway	4-Ln w/RM*	6,600	30,000	A	5,600	84.8%	—	No
Discovery Falls Drive	University/RTP Driveway	University Drive	2-Ln w/RM*	1,400	12,000	A	5,600	100.0%	—	No
Discovery Falls Drive	University Drive	Santa Julliard	2-Ln w/RM*	2,800	12,000	A	5,600	100.0%	—	No
Hunte Parkway	Otay Lakes Road	Olympic Parkway	4-Ln w/RM	9,100	30,000	A	2,100	23.1%	—	No
Hunte Parkway	Olympic Parkway	Discovery Falls Drive	6-Ln w/RM	6,600	50,000	A	3,400	51.5%	—	No
Hunte Parkway	Discovery Falls Drive	EastLake Parkway / University Drive	6-Ln w/RM	6,600	50,000	A	2,900	43.9%	—	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: 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 5.3-18
Roadway Segment LOS 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?
Lone Star Road	La Media Road	Ellis Road	2-Ln	300	9,000	A	280	A	0.002	No
Otay Mesa Road	Ocean View Hills Parkway	Heritage Road	6-Ln w/RM	36,200	55,000	C	35,212	C	0.016	No
Otay Mesa Road	Heritage Road	Cactus Road	6-Ln w/RM	34,000	55,000	B	31,682	B	0.039	No
Otay Mesa Road	Cactus Road	Britannia Boulevard	6-Ln w/RM	52,900	55,000	D	50,978	D	0.032	No
Otay Mesa Road	Britannia Boulevard	La Media Road	6-Ln w/RM	23,500	55,000	A	22,343	A	0.019	No
Otay Mesa Road	La Media Road	Ellis Road	6-Ln w/RM	10,800	55,000	A	10,200	A	0.010	No
Heritage Road	Avenida De Las Vistas	Otay Mesa Road	2-Ln	11,300	9,000	**F**	7,984	D	0.332	Yes (Direct)
La Media Road	Lone Star Road	Otay Mesa Road	2-Ln	5,400	9,000	B	5,438	B	0.000	No
Ellis Road	Lone Star Road	Otay Mesa Road	Does Not Exist							

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
RM = raised median

City of San Diego

- Heritage Road, between Avenida De Las Vistas and Otay Mesa Road (LOS F) – The proposed project traffic would cause the V/C ratio at this segment to increase by more than 0.01, thus resulting in a significant direct impact.

Freeway/State Highway Segment Analysis

The freeway / state highway segment LOS analysis was performed utilizing the methodology presented in Section 5.3.1.1. Table 5.3-19 displays the resulting LOS for I-805, SR-125, and SR-905 under existing plus project (buildout) conditions.

As shown in Table 5.3-19, the study area freeway / state highway segments would operate at acceptable LOS D or better under existing plus project (buildout) conditions. Based on the available information, the addition of trips generated by full development of the proposed project would not cause significant traffic impacts to the study area freeway / state highway segments.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements and for information purposes only, 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 5.3.1.1. ILV analysis results are displayed in Table 5.3-20 and analysis worksheets for the existing plus project (buildout) conditions are provided in EIR Appendix M.

As shown in Table 5.3-20, all of the I-805 ramp intersections would operate 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
- I-805 NB Ramps / Olympic Parkway – Over capacity during the AM peak hour.
- I-805 SB Ramps / Main Street – Over capacity during the PM peak hour

All of the SR-125 ramp intersections within the study area would operate under capacity during both the AM and PM peak hours under the existing plus project (buildout) conditions.

Ramp Metering Analysis

Table 5.3-21 displays the ramp metering analysis conducted at I-805 northbound on-ramps at Olympic Parkway and Main Street under existing plus project (buildout) conditions. Based on observed existing conditions, it is assumed that approximately 80% of the total arrival traffic (demand) would utilize the two non-HOV lanes.

As shown in Table 5.3-21, the peak hour capacity expected to be processed through the ramp meter (Meter Rate) would be greater than the peak hour demand (Demand) at the I-805 northbound on-ramps at Olympic Parkway and Main Street. Therefore, there would be no queuing issue at either of these on-ramps under the existing plus project (buildout) conditions.

Table 5.3-19
Freeway / State Highway Segment LOS 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 Avenue to SR-94	172,400	6.9%	11, 896	0.51	4M**	0.97	4.2%	1,600	0.667	C	3.1%	No
I-805	SR-94 to Market Street	167,500	8.0%	13,400	0.50	4M**	0.97	4.2%	1,768	0.737	C	3.2%	No
I-805	Market Street to Imperial Avenue	169,600	8.0%	13, 568	0.50	5M**	0.97	4.2%	1,432	0. 597	B	4.4%	No
I-805	Imperial Avenue to E Division Street	189,000	8.0%	15, 120	0.50	5M**	0.97	4.2%	1,589	0.662	C	4.1%	No
I-805	E Division Street to Plaza Boulevard	197, 300	7.2%	14, 206	0.51	5M**	0.95	3.8%	1,555	0.648	C	4.3%	No
I-805	Plaza Boulevard to SR-54	200,200	8.1%	16, 216	0.52	5M**	0.96	2.2%	1,780	0.742	C	4.3%	No
I-805	SR-54 to Bonita Road	192,800	7.2%	13, 882	0.52	4M+1Aux**	0.96	1.7%	1,681	0.700	C	6.0%	No
I-805	Bonita Road to East H Street	192,500	7.8%	15, 015	0.50	5M**	0.95	1.7%	1,592	0.663	C	5.8%	No
I-805	East H Street to Telegraph Canyon Road	185,900	7.8%	14,500	0.50	5M**	0.95	1.9%	1,541	0.642	C	6.3%	No
I-805	Telegraph Canyon Road to East Palomar Street	163,600	7.1%	11, 616	0.51	4M**+1Aux	0.92	1.7%	1,447	0.603	B	6.4%	No
I-805	East Palomar Street to Olympic Parkway	163,600	7.1%	11, 616	0.51	4M**+1Aux	0.92	1.7%	1,447	0.603	B	6.4%	No
I-805	Olympic Parkway to Main Street	129,100	6.9%	8, 908	0.51	4M**+1Aux	0.93	5.4%	1,115	0.465	B	5.9%	No
I-805	Main Street to Palm Avenue	120,500	7.1%	8,556	0.58	4M**+1Aux	0.95	10.3%	1,218	0. 508	B	3.5%	No
I-805	Palm Avenue to SR-905	115,400	7.1%	8, 193	0.58	4M**+1Aux	0.95	10.3%	1,173	0.489	B	3.6%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	10,000	7.0%	700	0.58	2M	0.95	10.3%	221	0.092	A	38.0%	No

Table 5.3-19 (Continued)
Freeway / State Highway Segment LOS 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	Olympic Parkway to Birch Road	8,500	7.0%	595	0.58	2M	0.95	10.3%	188	0.078	A	49.4%	No
SR-125	Birch Road to Main Street	7,800	7.0%	546	0.58	2M	0.95	10.3%	177	0.074	A	38.5%	No
SR-125	Main Street to Lone Star Road	7,800	7.0%	546	0.58	2M	0.95	10.3%	177	0.074	A	38.5%	No
SR-125	Lone Star Road to SR-905	7,800	7.0%	546	0.58	2M	0.95	10.3%	177	0.074	A	38.5%	No
SR-905	I-805 to Calliente Avenue	56,000	7.0%	3,920	0.60	2M	0.92	8.1%	1,335	0.556	B	0.0%	No
SR-905	Calliente Avenue to Heritage Road	53,000	7.0%	3,710	0.60	3M	0.92	8.1%	837	0.349	A	0.0%	No
SR-905	Heritage Road to Britannia Boulevard	49,500	7.0%	3,465	0.60	3M	0.92	8.1%	780	0.325	A	0.0%	No
SR-905	Britannia Boulevard to La Media Road	49,500	7.0%	3,465	0.60	3M + 1Aux	0.92	8.1%	520	0.217	A	0.0%	No
SR-905	La Media Road to SR-125	30,000	7.0%	2,100	0.60	3M	0.92	8.1%	475	0.198	A	0.0%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
M = mainline; Aux = auxiliary lane
** 2 new HOV lanes have been constructed very recently, however freeway ADT information is not available for these HOV lanes. The existing conditions analysis is based on pre HOV freeway geometrics and traffic volumes. This should represent the worst case scenario.

Table 5.3-20
Ramp Intersection Capacity Analysis – Existing Plus Project (Buildout) Conditions

Ramp Intersection	Peak Hour	ILV / Hour	Description
I-805 SB Ramps / Olympic Parkway	AM	1,244	1200-1500: (At Capacity)
	PM	1,657	>1500: (Over Capacity)
I-805 NB Ramps / Olympic Parkway	AM	2,287	>1500: (Over Capacity)
	PM	1,478	1200-1500: (At Capacity)
I-805 SB Ramps / Main Street	AM	1,148	<1200: (Under Capacity)
	PM	1,597	>1500: (Over Capacity)
I-805 NB Ramps / Main Street	AM	918	<1200: (Under Capacity)
	PM	1,170	<1200: (Under Capacity)
SR-125 SB Ramps / Olympic Parkway	AM	573	<1200: (Under Capacity)
	PM	646	<1200: (Under Capacity)
SR-125 NB Ramps / Olympic Parkway	AM	345	<1200: (Under Capacity)
	PM	455	<1200: (Under Capacity)
SR-125 SB Ramps / Birch Road	AM	411	<1200: (Under Capacity)
	PM	619	<1200: (Under Capacity)
SR-125 NB Ramps / Birch Road	AM	397	<1200: (Under Capacity)
	PM	537	<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		
SR-125 SB Ramps / Lone Star Road	AM	Does Not Exist	
	PM		
SR-125 NB Ramps / Lone Star Road	AM	Does Not Exist	
	PM		
SR-125 SB Ramps / Otay Mesa Road	AM	439	<1200: (Under Capacity)
	PM	436	<1200: (Under Capacity)
SR-125 NB Ramps / Otay Mesa Road	AM	329	<1200: (Under Capacity)
	PM	401	<1200: (Under Capacity)

Source: Chen Ryan Associates 2014 (EIR Appendix M).

Table 5.3-21
Ramp Metering Analysis – Existing Plus Project (Buildout) Conditions

Location	Peak Hour	P_{VOL} Peak Hour Volume	D_{VOL} Demand[1] (veh/hr per lane)	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	2,104	842	887	0	0	0	0	No
I-805 NB On-Ramp @ Main Street	AM	988	395	413	0	0	0	0	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
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.
3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.
4 Delay = (excess demand / meter rate) × 60 min/hr.
5 Queue = (excess demand) × 29 ft/veh

Summary of Existing Plus Project Conditions

In summary, under the existing plus project analysis, the proposed project would result in significant impacts at the following seven intersections and five roadway segments:

Intersections

- I-805 SB Ramps / Olympic Parkway
- Brandywine Avenue / Olympic Parkway
- Heritage Road / Main Street
- La Media Road (NB) / Main Street (WB)
- La Media Road (SB) / Main Street (EB)
- Magdalena Avenue / Main Street
- Heritage Road / Avenida De Las Vistas.

Roadway Segments

- Orange Avenue between Melrose Avenue and I-805 SB Ramps
- Olympic Parkway between Oleander Avenue and Brandywine Avenue
- Olympic Parkway between Brandywine Avenue and Heritage Road
- Heritage Road between Main Street and Avenida De Las Vistas
- Heritage Road between Avenida De Las Vistas and Otay Mesa Road.

Under this scenario, project impacts would be less than significant on freeways / state highways, and at all highway on-ramp meters.

In comparison, as addressed later in this section, under the 2030 Project Buildout scenario, which more accurately 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 two intersections, one roadway segment, eleven freeway / state highway segments, and one ramp meter:

Intersections

- I-805 SB Ramps / Olympic Parkway
- Discovery Falls Drive / Hunte Parkway.

Roadway Segment

- Orange Avenue, between Melrose Avenue and I-805 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
- SR-905 from I-805 to Caliente Avenue
- SR-905 from Caliente Avenue to Heritage Road
- SR-905 from Heritage Road to Britannia Boulevard
- SR-905 from Britannia Boulevard to La Media Road.

Ramp Meter

- I-805 NB On-Ramp at Main Street

Under the 2030 Project Buildout scenario, impacts to roadway segments would be less than significant.

Thus, in this case, the existing plus project analysis both overstates and understates project impacts. It understates impacts by failing to identify the significant impacts at the Discovery Falls Drive / Hunte Parkway intersection, the freeway segments along I-805 and SR-905and the I-805 ramp meter. It overstates impacts by identifying intersection and roadway segment impacts that effectively would be remedied during the years preceding project buildout either through mitigation measures implemented by the project or through planned infrastructure improvements constructed by the Project Applicant and others.

As such, it would be misleading to the public and decision makers 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.

A.2 Year 2015 Traffic Conditions

This section provides an analysis of the proposed project's impacts under Year 2015 traffic conditions. Project frontage, access, and their respective Equivalent Dwelling Units (EDU), are included in the PFFP discussion as provided in Chapter 13 of Appendix M. For comparison purposes, LOS operations under existing conditions were previously provided in Table 5.3-8, Peak-Hour Intersection LOS Results, and Table 5.3-9, Roadway Segment LOS Results. 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.

Year 2015 Roadway Network and Traffic Volumes

The Year 2015 roadway network was assumed to be identical to the existing network with the following exceptions:

Roadway improvements to be constructed by the project for access and frontage:

- Heritage Road along the frontage of Village Three North, between Santa Picacho and Main Street – This facility is included as a Six-Lane Prime Arterial providing frontage

and access for Village Three North (project access and frontage and the Public Facilities Financing Plan (PFFP) discussions are provided in EIR Appendix M).

- Santa Picacho @ Heritage Road (Int #62) – All-way stop controlled T-intersection (will provide necessary access to Village Three North, which will be partially developed by Year 2015).
- Santa Maya @ Heritage Road (Int #63) – All-way stop controlled T-intersection (will provide necessary access to Village Three North, which will be partially developed by Year 2015).

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development (See Table 4-3 in Chapter 4, Project Description).

Roadway improvements to be constructed by others (Assumed Built by Year 2015):

- I-805, 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. As originally approved, the I-805 South project would be constructed in two major phases:
    - Phase 1 (2012–2014) – Phase 1, currently under construction, includes building one HOV lane in each direction and the construction of a direct access ramp, and a 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 would have further expanded transportation choices by building out the HOV lanes into Express Lanes for a total of 4 lanes, 2 in each direction. Phase 2 also included the addition of in-line transit stations and freeway-to-freeway direct connectors.

  However, on December 16th, 2011, the SANDAG Board of Directors gave final approval to buy the lease to operate the SR-125 toll road from South Bay Expressway. SANDAG reported that following completion of the transaction, it expected to begin a process to lower tolls on SR-125 by 40% to 50% of the current rates, and that the reduced tolls are expected to attract more traffic to SR-125, relieving congestion on I-805 and reducing the need for certain planned improvements. Specifically, SANDAG reported that the acquisition of SR-125 will make it unnecessary to add the two additional carpool lanes that would have been constructed as part of Phase 2 of the I-805 South Project.

  In support of the Board's action, an Addendum to SANDAG's 2030 RTP EIR (State of California Clearinghouse #2002071059) was prepared pursuant to the California Environmental Quality Act (CEQA). The Addendum addressed the amendment to the

TransNet Extension Ordinance that would consist 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 a portion of the SR-125 toll road assets acquisition costs. Specific to future traffic conditions, the Addendum determined 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 Series 11 model included 4-HOV lanes on I-805, consistent with SANDAG's 2030 RTP (the 2050 RTP was not prepared until after the SANDAG Series 11 model was developed). No manual adjustments were made to the model outputs on I-805 or SR-125 because it was determined that it would be speculative to estimate the number of trips which would shift from I-805 to SR-125 due to (1) the loss of two HOV lanes on I-805 and (2) the SR-125 reduced toll amount.

Because SANDAG subsequently decided to use the funding previously identified to build two of these I-805 HOV lanes instead to purchase the SR-125 lease, the TIA analyzed potential impacts to I-805 with only 2-HOV lanes (because there is only identified funding for two HOV lanes due to the SR-125 purchase). Thus, the TIA conservatively estimates (over-estimates) potential impacts on I-805 because the modeling attracts more cars (due to the 4-HOV lanes scenario), but the analysis uses fewer lanes/less capacity (only 2-HOV lanes). Then, the TIA analysis relies on the SANDAG Addendum to the 2030 RTP EIR, which concluded that there would be no additional, un-analyzed impacts on SR-125 due to the corresponding reduction in tolls.

For additional information in regard to the I-805 South Project as well as SANDAG's 2030 RTP EIR Addendum, see EIR Appendix M.

- Heritage Road, south of Main Street to Chula Vista city limit – This facility is included as a Four-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 Six-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, TDIFs, and other miscellaneous transportation grants. For additional information, see EIR Appendix M.

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 assumed roadway improvements are not constructed by others and in place as modeled for the Year 2015 scenario, the Project Applicant and the City will take those steps necessary to either

construct the subject facilities or implement substitute measures to ensure adequate infrastructure as modeled is in place as detailed in TCA-2 and TCA-3.

Intersection Analysis

Table 5.3-22 displays peak-hour intersection LOS results for the study area intersections under Year 2015 project conditions. LOS calculation worksheets for the Year 2015 conditions are provided in EIR Appendix M. As shown in Table 5.3-22, all of the study area intersections would operate at acceptable LOS D or better under the Year 2015 conditions and, as such, the project would not result in significant intersection impacts.

Table 5.3-22
Peak Hour Intersection LOS Results – Year 2015 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
Paseo Ranchero / H Street	39.1	D	36.3	D	0.0% / 0.0%	No
Otay Lakes Road / H Street	25.9	C	29.1	C	0.0% / 0.0%	No
Paseo Ranchero / Heritage Road / Telegraph Canyon Road	44.5	D	28.9	C	0.2% / 0.3%	No
La Media Road / Telegraph Canyon Road / Otay Lakes Road	28.7	C	43.7	D	0.2% / 0.2%	No
Hunte Parkway / Otay Lakes Road	22.7	C	21.7	C	0.0% / 0.0%	No
Heritage Road / East Palomar Street	35.0	C	25.5	C	0.5% / 0.5%	No
La Media Road / East Palomar Street	48.5	D	45.7	D	0.0% / 0.0%	No
3rd Avenue / Orange Avenue	22.7	C	25.6	C	0.8% / 0.7%	No
Hilltop Drive / Orange Avenue	30.6	C	25.4	C	1.0% / 1.1%	No
Melrose Avenue / Orange Avenue	23.2	C	30.9	D	0.0% / 0.0%	No
I-805 SB Ramps / Olympic Parkway	41.1	D	52.5	D	0.0% / 0.0%	No
I-805 NB Ramps / Olympic Parkway	22.6	C	27.5	C	0.0% / 0.0%	No
Oleander Avenue / Olympic Parkway	31.0	C	38.7	D	0.0% / 0.0%	No
Brandywine Avenue / Olympic Parkway	47.3	D	53.4	D	1.1% / 1.2%	No
Heritage Road / Olympic Parkway	18.4	B	33.1	C	0.5% / 0.6%	No
Santa Venetia Street / Olympic Parkway	10.3	B	2.2	A	0.3% / 0.4%	No
La Media Road / Olympic Parkway	28.6	C	34.5	C	0.2% / 0.3%	No
East Palomar Street / Olympic Parkway	29.4	C	31.8	C	0.1% / 0.1%	No
SR-125 SB Ramps / Olympic Parkway	5.2	A	6.5	A	0.1% / 0.2%	No
SR-125 NB Ramps / Olympic Parkway	3.8	A	3.8	A	0.1% / 0.2%	No
EastLake Parkway / Olympic Parkway	21.3	C	30.1	C	0.1% / 0.1%	No
Hunte Parkway / Olympic Parkway	19.8	B	18.7	B	0.0% / 0.0%	No
Olympic Vista Road / Olympic Parkway	20.8	C	18.4	B	0.0% / 0.0%	No
La Media Road / Santa Venetia Street	43.2	D	26.2	C	0.2% / 0.3%	No
Heritage Road / Santa Victoria Road	Does Not Exist					
La Media Road / Birch Road	22.8	C	41.9	D	0.1% / 0.2%	No

Table 5.3-22 (Continued)
Peak Hour Intersection LOS Results – Year 2015 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
Magdalena Avenue / Birch Road	21.2	C	18.4	B	0.1% / 0.2%	No
SR-125 SB Ramps / Birch Road	4.1	A	6.2	A	0.2% / 0.2%	No
SR-125 NB Ramps / Birch Road	3.8	A	3.8	A	0.2% / 0.3%	No
EastLake Parkway / Birch Road	28.1	C	28.3	C	0.0% / 0.0%	No
4th Avenue / Main Street	19.3	B	26.4	C	0.4% / 0.3%	No
3rd Avenue / Main Street	30.2	C	36.3	D	0.6% / 0.6%	No
Hilltop Drive / Main Street	14.9	B	13.3	B	1.8% / 1.9%	No
Melrose Avenue / Main Street	18.5	B	23.8	C	1.7% / 1.9%	No
I-805 SB Ramps / Main Street	22.0	C	35.6	D	3.4% / 4.4%	No
I-805 NB Ramps / Main Street	30.3	C	26.9	C	6.0% / 6.0%	No
Oleander Avenue / Main Street	5.4	A	7.4	A	7.5% / 7.3%	No
Brandywine Avenue / Main Street	23.3	C	39.4	D	8.8% / 8.7%	No
Heritage Road / Main Street (all-way stop controlled)	34.5	D	19.1	C	30.0% / 36.4%	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					
EastLake Parkway / Main Street/Hunte Parkway	Does Not Exist					
Discovery Falls Drive / Hunte Parkway	18.0	B	19.6	B	0.0% / 0.0%	No
Santa Macheto @ Heritage Road	Does Not Exist					
Santa Picacho @ Heritage Road	8.2	A	7.7	A	100.0% / 100.0%	No
Santa Maya @ Heritage Road	10.9	B	10.7	B	100.0% / 100.0%	No
Energy Way / Heritage Road	Does Not Exist					
Quarry Driveway / Main Street	Does Not Exist					
Village Three North Project R-20 Driveway @ Main Street	Does Not Exist					
La Media Road / Village Four Driveway @ Santa Luna Street	Does Not Exist					
Santa Tipu @ Main Street (one-way stop RT in/out)*	Does Not Exist					
Santa Marisol @ Main Street	Does Not Exist					
Village Eight East R-16 Driveway @ Main Street (one-way stop RT in/out)*	Does Not Exist					
Village Eight East Community Park Driveway @ Otay Valley Road	Does Not Exist					
Cutter Avenue @ Otay Valley Road (one-way stop RT in/out)*	Does Not Exist					

Table 5.3-22 (Continued)
Peak Hour Intersection LOS Results – Year 2015 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
Santa Marisol @ Otay Valley Road	Does Not Exist					
Village Nine Street "B" / Otay Valley Road	Does Not Exist					
Village Nine Street "B" / Discovery Falls Drive	Does Not Exist					
Santa Julliard @ Discovery Falls Drive	Does Not Exist					
University Drive @ Discovery Falls Drive	Does Not Exist					
Santa Davis @ Discovery Falls Drive	Does Not Exist					

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Notes: Bold letter indicates unacceptable LOS E or F.
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches. City of San Diego intersections (#49-#60) are not analyzed for interim years

Roadway Segment Analysis

Table 5.3-23 displays the LOS analysis results for study area roadway segments within the City of Chula Vista under the Year 2015 conditions. As shown in Table 5.3-23, the following four roadway segments in the City of Chula Vista would operate at substandard LOS D, E, or F, although project traffic volumes would be less than the applicable threshold and, therefore, project impacts would be less than significant under the City's standard criteria.

- Telegraph Canyon Road, between Medical Center Drive and Heritage Road/Paseo Ranchero (LOS D) – The proposed 2015 project traffic would comprise approximately 0.2% (less than 5%) of the total segment volume and would add 100 ADT (less than 800 ADT).
- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – The proposed 2015 project traffic would comprise approximately 0.0% (less than 5%) of the total segment volume and would add 0 ADT (less than 800 ADT).
- Main Street, between Hilltop Drive and Melrose Avenue (LOS D) – The proposed 2015 project traffic would comprise approximately 2.1% (less than 5%) of the total segment volume and would add 700 ADT (less than 800 ADT).
- Main Street, between Melrose Avenue and I-805 SB Ramps (LOS D) – The proposed 2015 project traffic would comprise approximately 2.4% (less than 5%) of the total segment volume and would not add more than 800 ADT.

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

a. Direct impact if all of the following criteria are met:
    i. LOS is D for more than 2 hours or E/F for 1 hour.
    ii. Project trips comprise 5% or more of segment volume.
    iii. Project adds greater than 800 ADT to segment.
b. Cumulative impact if only criterion [a] is met.

Since project traffic would not comprise more than 5% of the total segment volume and would not add more than 800 ADT, direct impacts would not result along any of the roadway segments identified above. As to cumulative impacts, under the City's GMO, the threshold for a cumulative impact is LOS D for more than 2 hours.

Table 5.3-23
Roadway Segment LOS Results – Year 2015 Conditions

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?
H Street	Tierra Del Rey	Paseo Ranchero	6-Ln w/RM	45,500	50,000	C	0	0.0%	—	No
Telegraph Canyon Road	Medical Center Drive	Heritage Road / Paseo Ranchero	6-Ln w/RM	55,900	50,000	**D**	100	0.2%	Acceptable	No
Telegraph Canyon Road	Heritage Road / Paseo Ranchero	La Media Road / Otay Lakes Road	6-Ln w/RM	44,800	50,000	C	200	0.4%	—	No
Otay Lakes Road	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	27,700	30,000	A	100	0.4%	—	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	39,200	50,000	B	100	0.3%	—	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	24,300	30,000	B	100	0.4%	—	No
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	21,700	30,000	A	100	0.5%	—	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	21,800	30,000	A	0	0.0%	—	No
Orange Avenue	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL/RM	23,500	30,000	B	300	1.3%	—	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	27,100	30,000	C	0	0.0%	—	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	32,200	30,000	**D**	0	0.0%	Acceptable	No
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	41,200	50,000	B	0	0.0%	—	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	42,800	50,000	B	0	0.0%	—	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	35,300	50,000	A	0	0.0%	—	No
Olympic Parkway	Brandywine Avenue	Heritage Road	6-Ln w/RM	30,500	50,000	A	400	1.3%	—	No
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln w/RM	47,400	50,000	C	200	0.4%	—	No
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln w/RM	35,600	50,000	A	200	0.6%	—	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	25,200	50,000	A	100	0.4%	—	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	45,000	50,000	C	100	0.2%	—	No
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	45,700	70,000	A	100	0.2%	—	No

Table 5.3-23 (Continued)
Roadway Segment LOS Results – Year 2015 Conditions

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 NB Ramps	EastLake Parkway	8-Ln w/RM	47,200	70,000	A	100	0.2%	—	No
Olympic Parkway	EastLake Parkway	Hunte Parkway	6-Ln w/RM	31,300	50,000	A	100	0.3%	—	No
Olympic Parkway	Hunte Parkway	Olympic Vista Road	4-Ln w/RM	11,900	30,000	A	0	0.0%	—	No
Olympic Parkway	Olympic Vista Road	Lake Crest Drive	4-Ln w/RM	4,400	30,000	A	0	0.0%	—	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	20,200	40,000	A	100	0.5%	—	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	19,600	40,000	A	100	0.5%	—	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	20,800	50,000	A	100	0.5%	—	No
Birch Road	SR-125 NB Ramps	EastLake Parkway	6-Ln w/RM	23,100	50,000	A	0	0.0%	—	No
Main Street	4th Avenue	3rd Avenue	4-Ln w/TWLTL	21,700	30,000	A	100	0.5%	—	No
Main Street	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL	28,000	30,000	C	200	0.7%	—	No
Main Street	Hilltop Drive	Melrose Avenue	4-Ln w/TWLTL	32,700	30,000	**D**	700	2.1%	Acceptable	No
Main Street	Melrose Avenue	I-805 SB Ramps	4-Ln w/TWLTL	33,300	30,000	**D**	800	2.4%	Acceptable	No
Main Street	I-805 SB Ramps	I-805 NB Ramps	6-Ln	38,400	50,000	B	2,100	5.5%	—	No
Main Street	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	41,000	50,000	B	3,400	8.3%	—	No
Main Street	Oleander Avenue	Brandywine Avenue	6-Ln w/TWLTL	41,600	50,000	B	3,600	8.7%	—	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	30,400	50,000	A	4,800	15.8%	—	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 / University Drive	Does Not Exist							
Otay Valley Road	Main Street	SR-125	Does Not Exist							
Otay Valley Road	SR-125	Village Nine Street "B"	Does Not Exist							

Table 5.3-23 (Continued)
Roadway Segment LOS Results – Year 2015 Conditions

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?
Hilltop Drive	Orange Avenue	Main Street	4-Ln	7,800	22,000	A	400	5.1%	—	No
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	14,300	22,000	A	100	0.7%	—	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	19,200	50,000	A	100	0.5%	—	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	33,200	50,000	A	200	0.6%	—	No
Heritage Road	Olympic Parkway	Santa Victoria Road	Does Not Exist							
Heritage Road	South of Santa Victoria Road @ Int #62	Main Street	6-Ln w/RM*	6,100	50,000	A	6,100	100.0%	—	No
Heritage Road	Main Street	Avenida De Las Vistas	4-Ln w/RM**	15,000	30,000	A	1,300	8.7%	—	No
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	22,500	50,000	A	0	0.0%	—	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	17,300	50,000	A	0	0.0%	—	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	30,900	50,000	A	0	0.0%	—	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	29,400	50,000	A	100	0.3%	—	No
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	11,800	50,000	A	0	0.0%	—	No
La Media Road	Santa Luna Street	Main Street	Does Not Exist							
Magdalena Avenue	Santa Venetia Street	Birch Road	4-Ln	3,700	22,000	A	0	0.0%	—	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	9,000	22,000	A	0	0.0%	—	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	2,000	12,000	A	0	0.0%	—	No
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	4,600	22,000	A	0	0.0%	—	No
EastLake Parkway	Corte Vista	Olympic Parkway	6-Ln w/RM	17,600	50,000	A	0	0.0%	—	No
EastLake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	19,900	40,000	A	0	0.0%	—	No

Table 5.3-23 (Continued)
Roadway Segment LOS Results – Year 2015 Conditions

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?
EastLake Parkway	Birch Road	Main Street / Hunte Parkway	6-Ln w/RM	19,000	40,000	A	0	0.0%	—	No
University Drive	Main Street/Hunte Parkway	University Driveway #1	Does Not Exist							
University Drive	University Drive #1	University #2	Does Not Exist							
University Drive	University Driveway #2	Discovery Falls Drive	Does Not Exist							
Discovery Falls Drive	Hunte Parkway	University/RTP Driveway	Does Not Exist							
Discovery Falls Drive	University/RTP Driveway	University Drive	Does Not Exist							
Discovery Falls Drive	University Drive	Village Nine Street "B"	Does Not Exist							
Hunte Parkway	Otay Lakes Road	Olympic Parkway	4-Ln w/RM	13,500	30,000	A	0	0.0%	—	No
Hunte Parkway	Olympic Parkway	Discovery Falls Drive	6-Ln w/RM	9,800	50,000	A	0	0.0%	—	No
Hunte Parkway	Discovery Falls Drive	EastLake Parkway / University Drive	6-Ln w/RM	4,400	50,000	A	0	0.0%	—	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: 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 to be implemented by others, including City's CIP.

Based upon a review of the City's 2011 GMOC Annual Report (dated April 7, 2011) and discussion with the City Engineer, all four segments above are considered as 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 any project specific or cumulative impacts to the project study area roadway segments within Chula Vista.

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 (LLG 2011), to monitor new development in the East Planning Area[2] with respect to available capacity on Olympic Parkway east of I-805. The study addressed whether GMO thresholds are projected to be reached or exceeded, and whether mitigation measures are necessary in order 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 2,463rd dwelling unit (DU) threshold is used by the City to determine when cumulative impacts may occur along the corridor. Therefore, in the short-term (0-4 years), a significant impact could occur on Olympic Parkway between Heritage Road and Oleander Avenue during the AM peak Hour if the 2,463rd building permit for units east of the I-805 is issued.

Freeway / State Highway Segment Analysis

Table 5.3-24 displays freeway LOS analysis results for I-805, SR-125, and SR-905 under the Year 2015 conditions. As shown in Table 5.3-24, all study freeway / state highway segments along I-805, SR-125, and SR-905 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.

[2] The City of Chula Vista's previous General Plan had five Planning Areas, each with its own Area Plan. However, the 2005 General Plan combines some of the previous Planning Areas. The former Sweetwater and Eastern Territories have been integrated into the East Planning Area.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements and provided for information purposes only, 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 5.3.1.1. ILV analysis results are displayed in Table 5.3-25 and analysis worksheets for the Year 2015 conditions are provided in EIR Appendix M.

As shown in Table 5.3-25, all of the I-805 ramp intersections would operate at capacity and/or under capacity, with the following two exceptions:

- I-805 SB Ramps / Olympic Parkway – Over capacity during the PM peak hour
- I-805 SB Ramps / Main Street – Over capacity during the PM peak hour.

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

Ramp Metering Analysis

Table 5.3-26 displays the ramp metering analysis conducted at the I-805 northbound on-ramps at Olympic Parkway and Main Street under the Year 2015 conditions. Based on observed existing conditions, it is assumed that approximately 80% of the total arrival traffic (demand) would utilize the two non-HOV lanes.

As shown in Table 5.3-26, the peak hour demand (Demand) at both the I-805 northbound on-ramps (Olympic Parkway and Main Street) would be less than the capacity that the ramp meter (Meter Rate) provides. Therefore, the proposed project would not result in a significant impact at either on-ramp.

Table 5.3-24
Freeway / State Highway Segment LOS Results – Year 2015 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (> 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 Avenue to SR-94	228,300	6.9%	15,753	0.51	4+1HOV	0.97	4.2%	1, 695	0.706	C	227,800	C	0.2%	No
I-805	SR-94 to Market Street	227,500	8.0%	18,200	0.50	4+1HOV	0.97	4.2%	1,916	0.798	C	227,000	C	0.2%	No
I-805	Market Street to Imperial Avenue	299,800	8.0%	23,984	0.50	5+1HOV	0.97	4.2%	2,105	0.877	D	298,900	D	0.3%	No
I-805	Imperial Avenue to E Division Street	299,900	8.0%	23,992	0.50	5+1HOV	0.97	4.2%	2,105	0. 877	D	299,000	D	0.3%	No
I-805	E Division Street to Plaza Boulevard	288,200	7.2%	20,750	0.51	5+1HOV	0.95	3.8%	1,888	0.787	C	287,300	C	0.3%	No
I-805	Plaza Boulevard to SR-54	278,200	8.1%	22,534	0.52	5+1HOV	0.96	2.2%	2,054	0.856	D	277,200	D	0.4%	No
I-805	SR-54 to Bonita Road	303,200	7.2%	21,830	0.52	4+1Aux+1 HOV	0.96	1.7%	2,164	0.902	D	301,700	D	0.5%	No
I-805	Bonita Road to East H Street	260,100	7.8%	20,288	0.50	5+1HOV	0.95	1.7%	1,794	0.748	C	258,600	C	0.6%	No
I-805	East H Street to Telegraph Canyon Road	257,600	7.8%	20,093	0.50	5+1HOV	0.95	1.9%	1,775	0.740	C	255,900	C	0.7%	No
I-805	Telegraph Canyon Road to East Palomar Street	213,900	7.1%	15,187	0.51	4+1Aux+1 HOV	0.92	1.7%	1,546	0.644	C	212,200	C	0.8%	No

Table 5.3-24 (Continued)
Freeway / State Highway Segment LOS Results – Year 2015 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (> 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	195,300	7.1%	13,866	0.51	4M+1Aux	0.92	1.7%	1,721	0.717	C	193,500	C	0.9%	No
I-805	Olympic Parkway to Main Street	193,000	6.9%	13,317	0.51	4M+1Aux	0.93	5.4%	1,667	0.695	C	191,200	C	0.9%	No
I-805	Main Street to Palm Avenue	187,800	7.1%	13,334	0.58	4M+1Aux	0.95	10.3%	1,904	0.793	C	187,000	C	0.4%	No
I-805	Palm Avenue to SR-905	166,000	7.1%	11,786	0.58	4M+1Aux	0.95	10.3%	1,682	0.701	C	165,400	C	0.4%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	13,100	7.0%	917	0.60	2M	0.92	2.0%	307	0.128	A	13,100	A	0.0%	No
SR-125	Olympic Parkway to Birch Road	11,000	7.0%	770	0.60	2M	0.92	2.0%	253	0.105	A	11,000	A	0.0%	No
SR-125	Birch Road to Main Street	21,000	7.0%	1,470	0.60	2M	0.92	2.0%	483	0.201	A	21,000	A	0.0%	No
SR-125	Main Street to Lone Star Road	21,000	7.0%	1,470	0.60	2M	0.92	2.0%	483	0.201	A	21,000	A	0.0%	No
SR-125	Lone Star Road to Otay Mesa Road	21,000	7.0%	1,470	0.60	2M	0.92	2.0%	483	0.201	A	21,000	A	0.0%	No

Table 5.3-24 (Continued)
Freeway / State Highway Segment LOS Results – Year 2015 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (> 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 Mesa Road to SR-905	20,900	7.0%	1,463	0.60	2M	0.92	2.0%	483	0.201	A	21,000	A	0.0%	No
SR-905	I-805 to Calliente Avenue	94,800	7.0%	6,636	0.60	3M	0.92	5.0%	1,482	0.618	B	94,800	B	0.0%	No
SR-905	Calliente Avenue to Heritage Road	81,200	7.0%	5,684	0.60	3M	0.92	5.0%	1,270	0.529	B	81,200	B	0.0%	No
SR-905	Heritage Road to Britannia Boulevard	81,200	7.0%	5,684	0.60	3M	0.92	5.0%	1,270	0.529	B	81,200	B	0.0%	No
SR-905	Britannia Boulevard to La Media Road	76,400	7.0%	5,348	0.60	3M	0.92	5.0%	1,192	0.497	B	76,300	B	0.1%	No
SR-905	La Media Road to SR-125	58,100	7.0%	4,067	0.60	3M	0.92	5.0%	902	0.376	A	58,000	A	0.2%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
M = mainline; Aux = auxiliary lane; ML = managed lane

Table 5.3-25
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	1,236	1200–1500: (At Capacity)	1,228	1200–1500: (At Capacity)
	PM	1,683	>1500: (Over Capacity)	1,660	>1500: (Over Capacity)
I-805 NB Ramps / Olympic Parkway	AM	1,370	1200–1500: (At Capacity)	1,370	1200–1500: (At Capacity)
	PM	1,328	1200–1500: (At Capacity)	1,328	1200–1500: (At Capacity)
I-805 SB Ramps / Main Street	AM	1,310	1200–1500: (At Capacity)	1,282	1200–1500: (At Capacity)
	PM	1,789	>1500: (Over Capacity)	1,754	>1500: (Over Capacity)
I-805 NB Ramps / Main Street	AM	1,245	1200–1500: (At Capacity)	1,218	1200–1500: (At Capacity)
	PM	1,326	1200–1500: (At Capacity)	1,302	1200–1500: (At Capacity)
SR-125 SB Ramps / Olympic Parkway	AM	367	<1200: (Under Capacity)	366	<1200: (Under Capacity)
	PM	514	<1200: (Under Capacity)	513	<1200: (Under Capacity)
SR-125 NB Ramps / Olympic Parkway	AM	448	<1200: (Under Capacity)	448	<1200: (Under Capacity)
	PM	442	<1200: (Under Capacity)	441	<1200: (Under Capacity)
SR-125 SB Ramps / Birch Road	AM	536	<1200: (Under Capacity)	535	<1200: (Under Capacity)
	PM	692	<1200: (Under Capacity)	692	<1200: (Under Capacity)
SR-125 NB Ramps / Birch Road	AM	515	<1200: (Under Capacity)	515	<1200: (Under Capacity)
	PM	628	<1200: (Under Capacity)	627	<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				
SR-125 SB Ramps / Lone Star Road	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 NB Ramps / Lone Star Road	AM	Does Not Exist		Does Not Exist	
	PM				

Source: Chen Ryan Associates 2014 (EIR Appendix M).

Table 5.3-26
Ramp Metering Analysis – Year 2015 Conditions

Location	Peak Hour	With Project						Without Project					Significant Impact?
		P_{VOL} Peak Hour Volume	*Demand Vol1 (veh/hr per lane)*	*Meter Rate2 (veh/hr)*	*Excess Demand 3 (veh/hr)*	*Delay4 (min)*	*Queue 5 (ft)*	*P_{VOL} Peak Hour Volume*	*Demand Vol (veh/hr per lane)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	1,300	520	887	0	0	0	1,300	~~766~~ 520	0	0	0	No
I-805 NB On-Ramp @ Main Street	AM	1,020	408	413	0	0	0	925	~~368~~ 370	0	0	0	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).

1 Demand is the peak hour demand expected to use the on-ramp per lane.
2 Meter rate is the peak hour capacity expected to be processed through the ramp meter.
3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.
4 Delay = (excess demand / meter rate) × 60 min/hr.
5 Queue = (excess demand) × 29 ft/veh.

A.3 Year 2020 Traffic Conditions

This section provides an analysis of the proposed project's impacts under Year 2020 traffic conditions. For comparison purposes, LOS operations under existing conditions were previously provided in Table 5.3-8, Peak-Hour Intersection LOS Results, and Table 5.3-9, Roadway Segment LOS Results.

Year 2020 Roadway Network and Traffic Volumes

The Year 2020 roadway network was assumed to be identical to the Year 2015 network with the following additions:

Roadway improvements to be constructed by the project for access and frontage:

- Main Street from Heritage Road to Village Three North R-20 driveway – this facility is included as a 2-lane roadway providing access to parcel R-20 of Village Three North. The addition of this facility would also convert the intersection of Heritage Road / Main Street into a 4-legged intersection. Quarry Driveway @ Main Street (Int #65) would be constructed as an all-way stop controlled intersection providing access to the existing quarry.
- Main Street, from La Media Road to SR-125 right-of-way (western boundary) – This facility is included as a Six-Lane Prime Arterial providing frontage and access for Village Eight East.
- La Media Road, from Santa Luna Street to Main Street – This facility is included as a Four-Lane Major Road providing access for the community park in Village Four (project access and frontage, and the PFFP discussions are provided in Chapter 13 of EIR Appendix M).
- Quarry Driveway (Int #65) @ Main Street – As an all-way stop controlled intersection. The signalization of this intersection would occur in conjunction with the construction of Main Street between Heritage Road and La Media Road (City of Chula Vista CIP #STM357). Signalization would not be needed until completion of this Main Street segment.
- Heritage Road along the frontage of Village Three North, between the northern project boundary and Int #62 – this facility is included as a 6-lane Prime Arterial providing frontage and access for Village Three North.

In addition, the following 7 driveways to be constructed as part of the project are also included in the Year 2020 analysis:

- Santa Macheto @ Heritage Road (Int #61) – Signalized intersection
- Santa Picacho @ Heritage Road (Int # 62) – Signalized intersection (was modeled as all way stop controlled T-intersection in the 2015 scenario)
- Santa Maya @ Heritage Road (Int #63) – Signalized intersection (was modeled as all way stop controlled T-intersection in the 2015 scenario)
- Village Three North R-20 Driveway @ Main Street (Int #66) – all-way stop controlled intersection
- La Media Road / Village Four Driveway @ Santa Luna Street (Int # 67) – Signalized intersection
- Santa Tipu @ Main Street (Int #68) – one-way controlled intersection
- Santa Marisol @ Main Street (Int #69) – Signalized intersection.

According to Section 12.24 of the City's Municipal Code, potentially significant impacts would occur if access and frontage improvements are not provided concurrent with development (see Table 4-3 in Chapter 4, Project Description).

Roadway improvements to be constructed by others (Assumed Built by the Year 2020):

- Heritage Road, south of Main Street to Chula Vista City limit – This facility is included as its ultimate classification in 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 Six-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 CIP and will be funded by a mix of the Highway Bridge Program, TDIFs, and other miscellaneous transportation grants. For additional information, see EIR Appendix M.
- Otay Lakes Road, between H Street and Telegraph Canyon Road – This facility is included as widened from a Four-Lane Major Road to a Six-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 CIP and will be funded by the TDIFs. For additional information, see EIR Appendix M.
- ~~Quarry Driveway (Int #65) @ Main Street – As an all-way stop controlled intersection. The signalization of this intersection would occur in conjunction with the construction of Main~~

~~Street between Heritage Road and La Media Road (City of Chula Vista CIP #STM357). Signalization would not be needed until completion of this Main Street segment.~~

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. As previously noted, if the assumed roadway improvements are not constructed by others and in place as modeled for the Year 2020 scenario, the Project Applicant and the City will take those steps necessary to either construct the subject facilities or implement substitute measures to ensure adequate infrastructure as modeled is in place, as detailed in mitigation measure TCA-12.

Intersection Analysis

Table 5.3-27 displays the peak hour intersection LOS results for the study area intersections under Year 2020 project conditions. LOS calculation worksheets for the Year 2020 conditions are provided in EIR Appendix M.

As shown in Table 5.3-27, the proposed project would result in significant project-specific impacts at the following nine intersections:

- I-805 SB Ramps / Olympic Parkway – LOS E during the AM peak hour and LOS F during the PM peak hour. The 2020 project traffic would comprise approximately 6.5% and 7.2% 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 direct impact at this intersection.
- I-805 NB Ramps / Olympic Parkway – LOS E during the AM peak hour and LOS F during the PM peak hour. The 2020 project traffic would comprise approximately 11.1% of the total intersection-entering volume in both the AM and PM peak hours. Since the project contribution is more than 5%, the project would result in a direct impact at this intersection.
- Brandywine Avenue / Olympic Parkway (all-way stop controlled) – LOS F during both the AM and PM peak hours. The 2020 project traffic would comprise approximately 11.1% and 11.8% 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 direct impact at this intersection.
- Heritage Road / Main Street (all-way stop controlled) – LOS F~~E~~ during the AM peak hour and LOS F during the PM peak hour. The 2020 project traffic would comprise approximately 61.3% and 60.7% 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 direct impact at this intersection.

- La Media Road (SB) / Main Street (WB) (all-way stop controlled) – LOS E during the PM peak hour. The 2020 project traffic would comprise approximately 36.3% and 52.3% 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 direct impact at this intersection.
- La Media Road (NB) / Main Street (WB) (all-way stop controlled) – LOS E during the AM peak hour. The 2020 project traffic would comprise approximately 41.4% of the total intersection-entering volume in the AM peak hour. Since the project contribution is more than 5%, the project would result in a direct impact at this intersection.
- La Media Road (SB) / Main Street (EB) (all-way stop controlled) – LOS E during the PM peak hour. The 2020 project traffic would comprise approximately 59.0% of the total intersection-entering volume in the PM peak hour. Since the project contribution is more than 5%, the project would result in a direct impact at this intersection.
- La Media Road (NB) / Main Street (EB) (all-way stop controlled) – LOS E during the PM peak hour. The 2020 project traffic would comprise approximately 44.1% of the total intersection-entering volume in the PM peak hour. Since the project contribution is more than 5%, the project would result in a direct impact at this intersection.
- Magdalena Avenue / Main Street (one-way stop controlled) – LOS E during the PM peak hour. The 2020 project traffic would comprise approximately 90.2% of the total intersection-entering volume in the PM peak hour. Since the project contribution is more than 5%, the project would result in a direct impact at this intersection.

Table 5.3-27
Peak Hour Intersection LOS Results – Year 2020 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
1. Paseo Ranchero / H Street	50.0	D	37.6	D	1.8% / 2.1%	No
2. Otay Lakes Road / H Street	52.2	C	29.7	C	1.1% / 1.3%	No
3. Paseo Ranchero / Heritage Road / Telegraph Canyon Road	46.5	D	42.4	D	4.0% / 4.8%	No
4. La Media Road / Telegraph Canyon Road / Otay Lakes Road	35.8	C	47.9	D	3.7% / 3.7%	No
5. Hunte Parkway / Otay Lakes Road	23.3	C	31.6	C	0.0% / 0.0%	No
6. Heritage Road / East Palomar Street	37.8	D	30.2	C	8.0% / 9.2%	No
7. La Media Road / East Palomar Street	47.5	D	45.2	D	4.1% / 4.4%	No
8. 3rd Avenue / Orange Avenue	24.6	C	27.6	C	2.8% / 2.5%	No

Table 5.3-27 (Continued)
Peak Hour Intersection LOS Results – Year 2020 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
9. Hilltop Drive / Orange Avenue	32.7	C	26.3	C	2.8% / 3.0%	No
10. Melrose Avenue / Orange Avenue	31.5	C	48.4	D	1.0% / 0.9%	No
11. I-805 SB Ramps / Olympic Parkway	70.9	**E**	155.2	**F**	6.5% / 7.2%	Yes (Direct)
12. Oleander Avenue / Olympic Parkway	53.2	D	48.5	D	12.8% / 12.7%	No
13. Brandywine Avenue / Olympic Parkway	116.4	**F**	87.1	**F**	11.1% / 11.8%	Yes (Direct)
14. Heritage Road / Olympic Parkway	30.9	C	38.2	D	13.6% / 14.6%	No
15. Santa Venetia Street / Olympic Parkway	9.3	A	2.3	A	10.6% / 14.5%	No
16. I-805 NB Ramps / Olympic Parkway	60.0	**E**	97.8	**F**	11.1% / 11.1%	Yes (Direct)
17. La Media Road / Olympic Parkway	37.7	D	31.7	C	11.9% / 13.7%	No
18. East Palomar Street / Olympic Parkway	30.3	C	30.3	C	2.2% / 2.1%	No
19. SR-125 SB Ramps / Olympic Parkway	6.1	A	5.3	A	2.0% / 2.0%	No
20. SR-125 NB Ramps / Olympic Parkway	6.7	A	6.2	A	2.0% / 1.9%	No
21. EastLake Parkway / Olympic Parkway	23.1	C	25.5	C	1.2% / 1.2%	No
22. Hunte Parkway / Olympic Parkway	21.5	C	21.8	C	0.8% / 1.1%	No
23. Olympic Vista Road / Olympic Parkway	23.7	C	21.7	C	0.9% / 1.0%	No
24. La Media Road / Santa Venetia Street	45.7	D	34.2	C	15.2% / 18.9%	No
25. Heritage Road / Santa Victoria Road	Does Not Exist					
26. La Media Road / Birch Road	37.3	D	53.9	D	20.7% / 18.5%	No
27. Magdalena Avenue / Birch Road	29.6	C	29.6	C	9.1% / 10.5%	No
28. SR-125 SB Ramps / Birch Road	9.3	A	7.3	A	9.7% / 9.7%	No
29. SR-125 NB Ramps / Birch Road	8.0	A	4.7	A	8.1% / 8.0%	No
30. EastLake Parkway / Birch Road	30.7	C	35.2	D	4.2% / 4.5%	No
31. 4th Avenue / Main Street	24.1	C	28.7	C	1.7% / 1.6%	No
32. 3rd Avenue / Main Street	30.1	C	39.0	D	2.4% / 2.3%	No
33. Hilltop Drive / Main Street	18.4	B	17.5	B	4.9% / 4.7%	No
34. Melrose Avenue / Main Street	24.9	C	27.9	C	4.8% / 4.9%	No
35. I-805 SB Ramps / Main Street	37.7	D	51.2	D	13.3% / 15.5%	No
36. I-805 NB Ramps / Main Street	33.8	C	32.3	C	21.8% / 22.1%	No
37. Oleander Avenue / Main Street	11.0	B	8.9	A	24.9% / 26.0%	No
38. Brandywine Avenue / Main Street	42.4	D	47.4	D	23.7% / 24.9%	No
39. Heritage Road / Main Street (all-way stop controlled)	~~71.7~~ 50.0	**F**	~~70.7~~ 61.8	**F**	61.3% / 60.7%	Yes (Direct)

Table 5.3-27 (Continued)
Peak Hour Intersection LOS Results – Year 2020 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
40. La Media Road (SB) / Main Street (WB) (all-way stop controlled)	10.3	B	37.2	E	36.3% / 52.3%	Yes (Direct)
41. La Media Road (NB) / Main Street (WB) (all-way stop controlled)	41.4	E	23.8	C	40.0% / 29.0%	Yes (Direct)
42. La Media Road (SB) / Main Street (EB) (all-way stop controlled)	13.9	B	48.4	E	47.9% / 59.0%	Yes (Direct)
43. La Media Road (NB) / Main Street (EB) (all-way stop controlled)	13.4	B	38.8	E	20.9% / 44.1%	Yes (Direct)
44. Magdalena Avenue / Main Street (one-way stop controlled)*	15.5	C	35.9	E	89.7% / 90.2%	Yes (Direct)
45. SR-125 SB Ramps / Main Street	Does Not Exist					
46. SR-125 NB Ramps / Main Street	Does Not Exist					
47. EastLake Parkway / Main Street/Hunte Parkway	29.7	C	14.3	B	4.0% / 6.2%	No
48. Discovery Falls Drive / Hunte Parkway	28.5	C	35.2	D	2.5% / 3.4%	No
49. Santa Macheto @ Heritage Road	4.5	A	1.5	A	100.0% / 100.0%	No
50. Santa Picacho @ Heritage Road	12.1	B	11.0	B	100.0% / 100.0%	No
51. Santa Maya @ Heritage Road	11.3	B	17.8	B	100.0% / 100.0%	No
52. Energy Way / Heritage Road	Does Not Exist					
53. Quarry Driveway / Main Street	8.0	A	7.1	A	10.7% / 68.7%	No
54. Village Three North Project R-20 Driveway @ Main Street	7.0	A	6.7	A	100.0% / 100.0%	No
55. La Media Road / Village Four Driveway @ Santa Luna Street	5.2	A	9.4	A	25.6% / 41.1%	No
56. Santa Tipu @ Main Street (one-way stop RT in/out)*	9.8	A	15.1	C	96.5% / 96.9%	No
57. Santa Marisol @ Main Street	9.4	A	20.3	C	98.5% / 99.0%	No
58. Village Eight East R-16 Driveway @ Main Street (one-way stop RT in/out)*	Does Not Exist					
59. Village Eight East Community Park Driveway @ Otay Valley Road	Does Not Exist					
60. Cutter Avenue @ Otay Valley Road (one-way stop RT in/out)*	Does Not Exist					
61. Santa Marisol @ Otay Valley Road	Does Not Exist					
62. Village Nine Street "B" / Otay Valley Road	Does Not Exist					
63. Village Nine Street "B" / Discovery Falls Drive	Does Not Exist					
64. Santa Julliard @ Discovery Falls Drive	Does Not Exist					

Table 5.3-27 (Continued)
Peak Hour Intersection LOS Results – Year 2020 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
65. University Drive @ Discovery Falls Drive	Does Not Exist					
66. Santa Davis @ Discovery Falls Drive	Does Not Exist					

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.
City of San Diego intersections (#49-#60) are not analyzed for interim years

Roadway Segment Analysis

Table 5.3-28 displays the LOS analysis results for study area roadway segments within the City of Chula Vista under the Year 2020 conditions. As shown in Table 5.3-28, the proposed project would result in significant impacts to the following five roadway segments in the City of Chula Vista under Year 2020 conditions:

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – The proposed 2020 project traffic would comprise approximately 0.9% (less than 5%) of the total segment volume and would add 300 ADT (less than 800 ADT). However, one of the intersections (I-805 SB Ramps / Olympic Parkway) along this segment would operate at substandard LOS E/F during the AM/PM peak hours. Therefore, the project traffic would result in a significant cumulative impact at this location.
- Olympic Parkway, between I-805 SB Ramps and I-805 NB Ramps (LOS F) – The proposed 2020 project traffic would comprise approximately 6.6% (more than 5%) of the total segment volume and would add 4,200 ADT (more than 800 ADT). In addition, both ramps intersections along this segment would operate at substandard LOS E/F during the AM/PM peak hours. Therefore, the project traffic would result in a significant direct impact at this location.
- Olympic Parkway, between I-805 NB Ramps and Oleander Avenue (LOS F) – The proposed 2020 project traffic would comprise approximately 11.3% (more than 5%) of the total segment volume and would add 8,000 ADT (more than 800 ADT). In addition, one of the intersections (I-805 NB Ramps / Olympic Parkway) along this segment would operate at substandard LOS E/F during the AM/PM peak hours. Therefore, the project traffic would result in a significant direct impact at this location.

- Olympic Parkway, between Oleander Avenue and Brandywine Avenue (LOS F) – The proposed 2020 project traffic would comprise approximately 12.4% (more than 5%) of the total segment volume and would add 8,100 ADT (more than 800 ADT). In addition, one of the intersections (Brandywine Avenue / Olympic Parkway) along this segment would operate at substandard LOS E during both peak hours. Therefore, the project traffic would result in a significant direct impact at this location.
- Olympic Parkway, between Brandywine Avenue and Heritage Road (LOS E) – The proposed 2020 project traffic would comprise approximately 13.8% (more than 5%) of the total segment volume and would add 8,200 ADT (more than 800 ADT). In addition, one of the intersections (Brandywine Avenue / Olympic Parkway) along this segment would operate at substandard LOS E during both peak hours. Therefore, the project traffic would result in a significant direct impact at this location.

Table 5.3-28
Roadway Segment LOS Results – Year 2020 Conditions

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?
H Street	Tierra Del Rey	Paseo Ranchero	6-Ln w/RM	49,000	50,000	C	700	1.4%	—	No
Telegraph Canyon Road	Medical Center Drive	Heritage Road / Paseo Ranchero	6-Ln w/RM	56,800	50,000	**E**	800	1.4%	Yes	No
Telegraph Canyon Road	Heritage Road / Paseo Ranchero	La Media Road / Otay Lakes Road	6-Ln w/RM	48,300	50,000	C	1,100	2.3%	—	No
Otay Lakes Road	H Street	Telegraph Canyon Road	6-Ln w/RM**	30,000	50,000	A	1,400	4.7%	—	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	42,100	50,000	B	900	2.1%	—	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	24,600	30,000	B	1,300	5.3%	—	No
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	23,000	30,000	B	500	2.2%	—	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	22,500	30,000	B	200	0.9%	—	No
Orange Avenue	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL/RM	26,000	30,000	B	900	3.5%	—	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	28,600	30,000	C	200	0.7%	—	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	33,000	30,000	**D**	300	0.9%	No	Yes (Cumulative)
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	64,000	50,000	**F**	4,200	6.6%	No	Yes (Direct)
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	71,000	50,000	**F**	8,000	11.3%	No	Yes (Direct)
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	65,400	50,000	**F**	8,100	12.4%	No	Yes (Direct)
Olympic Parkway	Brandywine Avenue	Heritage Road	6-Ln w/RM	59,500	50,000	**E**	8,200	13.8%	No	Yes (Direct)

Table 5.3-28 (Continued)
Roadway Segment LOS Results – Year 2020 Conditions

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	46,200	50,000	C	6,500	14.1%	—	No
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln w/RM	38,300	50,000	B	6,500	17.0%	—	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	27,700	50,000	A	900	3.2%	—	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	47,200	50,000	C	700	1.5%	—	No
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	49,300	70,000	A	700	1.4%	—	No
Olympic Parkway	SR-125 NB Ramps	EastLake Parkway	8-Ln w/RM	51,800	70,000	A	700	1.4%	—	No
Olympic Parkway	EastLake Parkway	Hunte Parkway	6-Ln w/RM	34,400	50,000	A	400	1.2%	—	No
Olympic Parkway	Hunte Parkway	Olympic Vista Road	4-Ln w/RM	15,300	30,000	A	200	1.3%	—	No
Olympic Parkway	Olympic Vista Road	Lake Crest Drive	4-Ln w/RM	6,500	30,000	A	0	0.0%	—	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	27,500	40,000	A	900	3.3%	—	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	31,700	40,000	B	3,500	11.0%	—	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	32,700	50,000	A	2,800	8.6%	—	No
Birch Road	SR-125 NB Ramps	EastLake Parkway	6-Ln w/RM	33,900	50,000	A	1,800	5.3%	—	No
Main Street	4th Avenue	3rd Avenue	4-Ln w/TWLTL	22,300	30,000	A	500	2.2%	—	No
Main Street	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL	29,000	30,000	C	900	3.1%	—	No
Main Street	Hilltop Drive	Melrose Avenue	4-Ln w/TWLTL	34,000	30,000	**E**	1,700	5.0%	Yes	No

Table 5.3-28 (Continued)
Roadway Segment LOS Results – Year 2020 Conditions

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	Melrose Avenue	I-805 SB Ramps	4-Ln w/TWLTL	34,700	30,000	**E**	1,900	5.5%	Yes	No
Main Street	I-805 SB Ramps	I-805 NB Ramps	6-Ln	43,900	50,000	C	6,600	15.0%	—	No
Main Street	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	50,100	50,000	**D**	11,600	23.2%	Yes	No
Main Street	Oleander Avenue	Brandywine Avenue	6-Ln w/TWLTL	51,300	50,000	**D**	12,100	23.6%	Yes	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	39,200	50,000	B	13,100	33.4%	—	No
Main Street	Heritage Road	La Media Road	Does Not Exist							
Main Street	La Media Road	West of SR-125 @ Int #65	6-Ln w/RM*	18,500	50,000	A	7,300	39.5%	—	No
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist							
Main Street	SR-125 NB Ramps	EastLake Parkway/ University Drive	Does Not Exist							
Otay Valley Road	Main Street	SR-125	Does Not Exist							
Otay Valley Road	SR-125	Village Nine Street "B"	Does Not Exist							
Hilltop Drive	Orange Avenue	Main Street	4-Ln	7,500	22,000	A	700	9.3%	—	No
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	17,700	22,000	B	1,200	6.8%	—	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	24,700	50,000	A	2,900	11.7%	—	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	46,000	50,000	C	4,800	10.4%	—	No
Heritage Road	Olympic Parkway	Santa Victoria Road	Does Not Exist							

Table 5.3-28 (Continued)
Roadway Segment LOS Results – Year 2020 Conditions

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	South of Santa Victoria Road @ Int #61	Main Street	6-Ln w/RM	17,500	50,000	A	17,500	100.0%	—	No
Heritage Road	Main Street	Avenida De Las Vistas	6-Ln w/RM**	17,400	50,000	A	3,300	19.0%	—	No
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	26,700	50,000	A	1,800	6.7%	—	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	20,800	50,000	A	2,000	9.6%	—	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	34,600	50,000	A	7,900	22.8%	—	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	31,700	50,000	A	7,700	24.3%	—	No
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	20,700	50,000	A	8,000	38.6%	—	No
La Media Road	Santa Luna Street	Main Street	4-Ln w/RM*	19,500	30,000	A	7,400	37.9%	—	No
Magdalena Avenue	Santa Venetia Street	Birch Road	4-Ln	5,500	22,000	A	500	9.1%	—	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	15,400	22,000	A	3,300	21.4%	—	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	8,000	12,000	A	3,100	38.8%	—	No
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	15,500	22,000	A	5,800	37.4%	—	No
EastLake Parkway	Corte Vista	Olympic Parkway	6-Ln w/RM	20,000	50,000	A	400	2.0%	—	No
EastLake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	23,500	40,000	A	500	2.1%	—	No

Table 5.3-28 (Continued)
Roadway Segment LOS Results – Year 2020 Conditions

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	Birch Road	Main Street/Hunte Parkway	6-Ln w/RM	26,700	40,000	A	1,200	4.5%	—	No
University Drive	Main Street/Hunt e Parkway	University Driveway #1	Does Not Exist							
University Drive	University Driveway #1	University Driveway #2	Does Not Exist							
University Drive	University Driveway #2	Discovery Falls Drive	Does Not Exist							
Discovery Falls Drive	Hunte Parkway	University/RTP Driveway	Does Not Exist							
Discovery Falls Drive	University/RTP Driveway	University Drive	Does Not Exist							
Discovery Falls Drive	University Drive	Village Nine Street "B"	Does Not Exist							
University Drive	Main Street/Hunte Parkway	University Driveway #1	Does Not Exist							
Hunte Parkway	Otay Lakes Road	Olympic Parkway	4-Ln w/RM	16,000	30,000	A	200	1.3%	—	No
Hunte Parkway	Olympic Parkway	Discovery Falls Drive	6-Ln w/RM	13,900	50,000	A	200	1.4%	—	No
Hunte Parkway	Discovery Falls Drive	EastLake Parkway/ University Drive	6-Ln w/RM	12,500	50,000	A	1,300	10.4%	—	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: 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 to be implemented by others, including City's CIP.

Freeway / State Highway Segment Analysis

Table 5.3-29 displays freeway LOS analysis results for I-805, SR-125, and SR-905 under the Year 2020 conditions. As shown in the table, all study freeway/state highway segments along I-805, SR-125 and SR-905 would operate at acceptable LOS D or better under Year 2020 conditions, with the following two (2) exceptions:

- I-805, from Market Street to Imperial Avenue (LOS F) – The proposed project would comprise 1.0% (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 1.1% (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 and provided for information purposes only, 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 5.3.1.1. ILV analysis results are displayed in Table 5.3-30 and analysis worksheets for the Year 2020 conditions are provided in EIR Appendix M.

As shown in the table, all of the I-805 ramp intersections would operate "At Capacity" or "Under Capacity", with the following the four (4) exceptions:

- I-805 SB Ramps / Olympic Parkway – "Over Capacity" during both the AM and PM peak hour;
- I-805 NB Ramps / Olympic Parkway – "Over Capacity" during both the AM and PM peak hours; ~~and~~
- I-805 SB Ramps / Main Street – "Over Capacity" during both the AM and PM peak hour; and
- I-805 NB Ramps / Main Street – "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 2020 conditions.

Ramp Metering Analysis

Table 5.3-31 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 assumed that approximately 80% of the total arrival traffic (Demand) would utilize the two non-HOV lanes.

As shown in Table 5.3-31, the peak-hour capacity expected to be processed through the ramp meter (Meter Rate) would be greater than the peak-hour demand (Demand) at the I-805 northbound on-ramp at Olympic Parkway. In comparison, the peak-hour demand at the I-805 northbound on-ramp at Main Street would be greater than the capacity that the ramp meter provides under Year 2020 (with project) conditions. Moreover, based on the SANDAG CMP, the projected delay of 25.6 minutes would exceed the allowable threshold of 15 minutes (SANDAG 2008). Hence, the proposed project would result in a significant cumulative impact at the Main Street on-ramp in 2020.

Table 5.3-29
Freeway / State Highway Segment LOS Results – Year 2020 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 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 Avenue to SR-94	263,400	6.9%	18,175	0.51	4+1HOV	0.97	4.2%	1,621	0.811	D	260,700	D	1.0%	No
I-805	SR-94 to Market Street	259,200	8.0%	20,736	0.50	4+1HOV	0.97	4.2%	1,821	0.908	D	256,500	D	1.0%	No
I-805	Market Street to Imperial Avenue	330,300	8.0%	26,424	0.50	5+1HOV	0.97	4.2%	1,989	1.053	**F**	326,900	**F**	1.0%	Yes (Cumulative)
I-805	Imperial Avenue to E Division Street	329,100	8.0%	26,328	0.50	5+1HOV	0.97	4.2%	1,979	0.960	**E**	325,500	**E**	1.1%	Yes (Cumulative)
I-805	E Division Street to Plaza Boulevard	312,000	7.2%	22,464	0.51	5+1HOV	0.95	3.8%	1,759	0.854	D	308,300	D	1.2%	No
I-805	Plaza Boulevard to SR-54	301,100	8.1%	24,389	0.52	5+1HOV	0.96	2.2%	1,906	0.926	D	297,000	D	1.4%	No
I-805	SR-54 to Bonita Road	325,600	7.2%	23,443	0.52	4+1Aux+1 HOV	0.96	1.7%	1,975	0.889	D	320,100	D	1.7%	No
I-805	Bonita Road to East H Street	280,300	7.8%	21,863	0.50	5+1HOV	0.95	1.7%	1,656	0.805	D	275,000	C	1.9%	No
I-805	East H Street to Telegraph Canyon Road	277,700	7.8%	21,661	0.50	5+1HOV	0.95	1.9%	1,647	0.801	D	272,400	C	1.9%	No
I-805	Telegraph Canyon Road to East Palomar Street	232,500	7.1%	16,508	0.51	4+1Aux+1 HOV	0.92	1.70%	1,425	0.640	C	227,700	B	2.1%	No

Table 5.3-29 (Continued)
Freeway / State Highway Segment LOS Results – Year 2020 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 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	209,500	7.1%	14,875	0.51	4M+1Aux	0.92	1.70%	1,853	0.772	C	205,300	C	2.0%	No
I-805	Olympic Parkway to Main Street	229,600	6.9%	15,842	0.51	4M+1Aux	0.93	5.40%	1,988	0.828	D	220,200	C	4.1%	No
I-805	Main Street to Palm Avenue	220,100	7.1%	15,627	0.58	4M+1Aux	0.95	10.3%	2,225	0.927	D	217,200	D	1.3%	No
I-805	Palm Avenue to SR-905	196,700	7.1%	13,966	0.58	4M+1Aux	0.95	10.3%	1,992	0.830	D	194,300	D	1.2%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	18,000	7.0%	1,260	0.60	2M	0.92	2.0%	417	0.174	A	17,200	A	4.4%	No
SR-125	Olympic Parkway to Birch Road	15,400	7.0%	1,078	0.60	2M	0.92	2.0%	351	0.146	A	14,600	A	5.2%	No
SR-125	Birch Road to Main Street	25,800	7.0%	1,806	0.60	2M	0.92	2.0%	593	0.247	A	25,100	A	2.7%	No
SR-125	Main Street to Lone Star Road	25,800	7.0%	1,806	0.60	2M	0.92	2.0%	593	0.247	A	25,100	A	2.7%	No
SR-125	Lone Star Road to Otay Mesa Road	25,800	7.0%	1,806	0.60	2M	0.92	2.0%	593	0.247	A	25,100	A	3.5%	No

Table 5.3-29 (Continued)
Freeway / State Highway Segment LOS Results – Year 2020 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 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 Mesa Road to SR-905	25,100	7.0%	1,757	0.60	2M	0.92	2.0%	582	0.243	A	25,100	A	2.7%	No
SR-905	I-805 to Calliente Avenue	130,300	7.0%	9,121	0.60	3M	0.92	5.0%	2,028	0.845	D	130,000	D	1.2%	No
SR-905	Calliente Avenue to Heritage Road	107,500	7.0%	7,525	0.60	3M	0.92	5.0%	1,682	0.701	C	107,300	C	0.2%	No
SR-905	Heritage Road to Britannia Boulevard	95,500	7.0%	6,685	0.60	3M	0.92	5.0%	1,493	0.622	B	95,300	B	0.2%	No
SR-905	Britannia Boulevard to La Media Road	89,500	7.0%	6,265	0.60	3M	0.92	5.0%	1,393	0.580	B	89,200	B	0.2%	No
SR-905	La Media Road to SR-125	66,100	7.0%	4,627	0.60	3M	0.92	5.0%	1,036	0.432	B	65,800	B	0.3%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
M = mainline; Aux = auxiliary lane;
HOV = High Occupancy Vehicle lane.

Table 5.3-30
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	1,621	*>1500: (Over Capacity))*	1,443	*1200–1500: (At Capacity)*
	PM	2,198	*>1500: (Over Capacity)*	1,953	*>1500: (Over Capacity)*
I-805 NB Ramps / Olympic Parkway	AM	1,741	*>1500: (Over Capacity)*	1,528	*>1500: (Over Capacity)*
	PM	2,012	*>1500: (Over Capacity))*	1,714	*>1500: (Over Capacity))*
I-805 SB Ramps / Main Street	AM	1,539	*>1500: (Over Capacity))*	1,340	*1200–1500: (At Capacity)*
	PM	1,948	*>1500: (Over Capacity)*	1,848	*>1500: (Over Capacity)*
I-805 NB Ramps / Main Street	AM	1,254	*1200–1500: (At Capacity)*	1,192	*<1200: (Under Capacity)*
	PM	1,638	*>1500: (Over Capacity))*	1,435	*1200–1500: (At Capacity)*
SR-125 SB Ramps / Olympic Parkway	AM	696	*<1200: (Under Capacity)*	663	*<1200: (Under Capacity)*
	PM	622	*<1200: (Under Capacity)*	588	*<1200: (Under Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	631	*<1200: (Under Capacity)*	600	*<1200: (Under Capacity)*
	PM	708	*<1200: (Under Capacity)*	617	*<1200: (Under Capacity)*
SR-125 SB Ramps / Birch Road	AM	518	*<1200: (Under Capacity)*	506	*<1200: (Under Capacity)*
	PM	599	*<1200: (Under Capacity)*	590	*<1200: (Under Capacity)*
SR-125 NB Ramps / Birch Road	AM	432	*<1200: (Under Capacity)*	423	*<1200: (Under Capacity)*
	PM	740	*<1200: (Under Capacity)*	725	*<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				
SR-125 SB Ramps / Lone Star Road	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 NB Ramps / Lone Star Road	AM	Does Not Exist		Does Not Exist	
	PM				

Source: Chen Ryan Associates 2014 (EIR Appendix M).

Table 5.3-31
Ramp Metering Analysis – Year 2020 Conditions

Location	Peak Hour	With Project						Without Project						Significant Impact?
		P_{vol} Peak Hour Volume	*Demand Vol[1] (veh/hr per lane)*	*Meter Rate[2] (veh/hr)*	*Excess Demand[3] (veh/hr)*	*Delay[4] (min)*	*Queue[5] (ft)*	*P_{vol} Peak Hour Volume*	*Demand Vol (veh/hr per lane)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	1,439	576	887	0	0	0	1,390	~~782~~ 556	0	0	0	No
I-805 NB On-Ramp @ Main Street	AM	1,471	589	413	176	25.6	5,104	1,027	~~412~~ 411	0	0	0	**Yes**

Source: Chen Ryan Associates 2014 (EIR Appendix M).

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.
3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.
4 Delay = (excess demand / meter rate) × 60 min/hr.
5 Queue = (excess demand) × 29 ft/veh.

A.4 Year 2025 Traffic Conditions

This section provides an analysis of the proposed project's impacts under Year 2025 traffic conditions. For comparison purposes, LOS operations under existing conditions were previously provided in Table 5.3-8, Peak-Hour Intersection LOS Results, and Table 5.3-9, Roadway Segment LOS Results.

Year 2025 Roadway Network and Traffic Volumes

The Year 2025 roadway network was assumed to be identical to the Year 2020 network with the following additions provided for access or frontage impacts:

Roadway improvements to be constructed by the project for access and frontage:

- Main Street, from Santa Marisol to SR-125 right-of-way (western boundary) – this facility was included as a 6-lane Prime Arterial providing frontage and access for Village Eight East.
- Otay Valley Road, from Main Street to SR-125 right-of-way (western boundary)– This facility is included as a Four-Lane Major Road providing frontage and access for Village Eight East including the community park south of Otay Valley Road.
- Access road to the community park in Village Eight East (Community Park Driveway – This road is included as two lanes to provide access for the community park to Otay Valley Road.
- University Drive, between Main Street/Hunte Parkway and University Driveway #1 – This facility is included as a Class II Collector providing access for Village Ten.
- University Drive, between University Driveway #1 and Discovery Falls Drive – this facility is included as a Class II Collector providing access for Village Ten.
- Discovery Falls Drive, between Hunte Parkway and University / RTP Driveway – This facility is included as a Four-Lane Major Road providing frontage and access for Village Ten (project access and frontage, and the PFFP discussion are provided in Chapter 13 of EIR Appendix M).
- Discovery Falls Drive, between University / RTP Driveway and Village Nine Street "B" – this facility is included as a Class II Collector providing frontage and access for Village Ten.

In addition, the following seven driveways to be constructed as part of the project are also included in the 2025 analysis:

- Village Eight East R-16 Driveway @ Main Street (Int #70) – Right-turn in/out only
- Village Eight East Community Park Driveway @ Otay Valley Road (Int #71) – Signalized intersection
- Cutter Avenue @ Otay Valley Road (Int #72) – Right-turn in/out only

- Santa Marisol @ Otay Valley Road (Int #73) – Signalized intersection
- Santa Juilliard @ Discovery Falls Drive (Int #76) – Signalized intersection
- University Drive @ Discovery Falls Drive (Int #77) – Signalized intersection
- Santa Davis @ Discovery Falls Drive (Int #78) – Signalized intersection.

According to Section 12.24 of the City's Municipal Code, potentially significant impacts would occur if access and frontage improvements are not provided concurrent with development.

Roadway improvements to be constructed by others: None

Mitigation Being Carried Forward from 2020

As discussed in Section 5.3.5, Mitigation Measures, the following improvements would be implemented by the Project Applicant as mitigation measures under the 2020 scenario and, therefore, are included as part of the 2025 roadway network:

- Construction of Heritage Road, between Olympic Parkway and Main Street, as a Six-Lane Prime Arterial
- Heritage Road / Main Street – Signalized
- 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
- Magdalena Avenue / Main Street – Signalized.

Access and Frontage Improvements Being Carried Forward from 2020

- Main Street from Heritage Road to Village Three North R-20 driveway – this facility is included as a 2-lane roadway providing access to parcel R-20 of Village Three North. The addition of this facility would also convert the intersection of Heritage Road / Main Street into a 4-legged intersection. Quarry Driveway @ Main Street (Int #65) would be constructed as an all-way stop controlled intersection providing access to the existing quarry.
- Main Street, from La Media Road to SR-125 right-of-way (western boundary) – This facility is included as a Six-Lane Prime Arterial providing frontage and access for Village Eight East.
- La Media Road, from Santa Luna Street to Main Street – This facility is included as a Four-Lane Major Road providing access for the community park in Village Four (project access and frontage, and the PFFP discussions are provided in Chapter 13 of EIR Appendix M).

- Heritage Road along the frontage of Village Three North, between the northern project boundary and Int #62 – this facility is included as a 6-lane Prime Arterial providing frontage and access for Village Three North.
- Santa Macheto @ Heritage Road (Int #61) – Signalized intersection
- Santa Picacho @ Heritage Road (Int # 62) – Signalized intersection (was modeled as all way stop controlled T-intersection in the 2015 scenario)
- Santa Maya @ Heritage Road (Int #63) – Signalized intersection (was modeled as all way stop controlled T-intersection in the 2015 scenario)
- Village Three North R-20 Driveway @ Main Street (Int #66) – all-way stop controlled intersection
- La Media Road / Village Four Driveway @ Santa Luna Street (Int # 67) – Signalized intersection
- Santa Tipu @ Main Street (Int #68) – one-way controlled intersection
- Santa Marisol @ Main Street (Int #69) – Signalized intersection.

Circulation System Assumptions Being Carried Forward from 2020

- Heritage Road, south of Main Street to the Chula Vista city limit as a 6-lane Prime Arterial
- Otay Lakes Road between H Street and Telegraph Canyon Road as a 6-lane Prime Arterial
- Quarry Driveway (Int #65) @ Main Street as an all-way stop controlled intersection.

Intersection Analysis

Table 5.3-32 displays peak-hour intersection LOS results for the study area intersections under Year 2025 project conditions. LOS calculation worksheets for the Year 2025 conditions are provided in EIR Appendix M.

As shown in Table 5.3-32, under Year 2025 conditions the proposed project would result in significant impacts at the following three intersections 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 2.9% and 3.3% 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 14.7% and 16.4% 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 direct impact at this intersection.

- La Media Road/Olympic Parkway – LOS E during the AM peak hour. The 2025 project traffic would comprise approximately 16.0% ~~and 20.6%~~ of the total intersection-entering volume in the AM ~~and PM~~ peak hour~~s, respectively~~. Since the project contribution is more than 5%, the project would result in a significant direct impact at this intersection.

Table 5.3-32
Peak Hour Intersection LOS Results – Year 2025 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
1. Paseo Ranchero / H Street	52.2	D	43.4	D	2.4% / 2.7%	No
2. Otay Lakes Road / H Street	28.8	C	34.0	C	2.3% / 2.5%	No
3. Paseo Ranchero / Heritage Road / Telegraph Canyon Road	51.4	D	51.6	D	4.3% / 5.1%	No
4. La Media Road / Telegraph Canyon Road / Otay Lakes Road	36.6	D	49.0	D	4.9% / 5.1%	No
5. Hunte Parkway / Otay Lakes Road	27.5	C	32.0	C	0.8% / 1.0%	No
6. Heritage Road / East Palomar Street	43.1	D	31.4	C	8.6% / 10.5%	No
7. La Media Road / East Palomar Street	47.6	D	48.1	D	6.9% / 7.5%	No
8. 3rd Avenue / Orange Avenue	23.9	C	34.6	C	2.8% / 2.6%	No
9. Hilltop Drive / Orange Avenue	39.7	D	30.1	C	2.7% / 3.2%	No
10. Melrose Avenue / Orange Avenue	41.1	D	48.6	D	1.0% / 1.0%	No
11. I-805 SB Ramps / Olympic Parkway	43.8	D	121.2	**F**	2.9% / 3.3%	Yes (Cumulative)
12. I-805 NB Ramps / Olympic Parkway	30.3	C	36.7	D	4.9% / 5.4%	No
13. Oleander Avenue / Olympic Parkway	43.1	D	46.5	D	6.0% / 6.4%	No
14. Brandywine Avenue / Olympic Parkway	50.9	D	53.5	D	5.4% / 6.0%	No
15. Heritage Road / Olympic Parkway	61.8	**E**	58.6	**E**	14.7% / 16.4%	Yes (Direct)
16. Santa Venetia Street / Olympic Parkway	5.5	A	3.6	A	14.3% / 22.0%	No
17. La Media Road / Olympic Parkway	62.4	**E**	51.2	D	16.0% / 20.6%	Yes (Direct)
18. East Palomar Street / Olympic Parkway	28.7	C	34.6	D	3.4% / 4.0%	No
19. SR-125 SB Ramps / Olympic Parkway	6.2	A	7.0	A	3.9% / 4.6%	No
20. SR-125 NB Ramps / Olympic Parkway	7.8	A	6.8	A	4.0% / 4.6%	No
21. EastLake Parkway / Olympic Parkway	26.6	C	32.7	D	4.0% / 4.0%	No
22. Hunte Parkway / Olympic Parkway	25.3	C	34.4	D	3.8% / 3.4%	No
23. Olympic Vista Road / Olympic Parkway	30.7	C	21.9	C	2.4% / 2.5%	No
24. La Media Road / Santa Venetia Street	51.7	D	52.7	D	22.3% / 27.8%	No
25. Heritage Road / Santa Victoria Road	48.8	D	51.7	D	13.7% / 14.7%	No
26. La Media Road / Birch Road	49.3	D	51.8	D	26.5% / 29.6%	No
27. Magdalena Avenue / Birch Road	52.1	D	44.1	D	11.7% / 15.4%	No
28. SR-125 SB Ramps / Birch Road	10.5	B	7.1	A	12.7% / 16.5%	No

Table 5.3-32 (Continued)
Peak Hour Intersection LOS Results – Year 2025 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
29. SR-125 NB Ramps / Birch Road	10.8	B	9.9	A	11.7% / 15.0%	No
30. EastLake Parkway / Birch Road	48.4	D	41.7	D	9.9% / 11.5%	No
31. 4th Avenue / Main Street	26.8	C	36.4	D	1.9% / 1.9%	No
32. 3rd Avenue / Main Street	32.6	C	42.7	D	2.5% / 2.6%	No
33. Hilltop Drive / Main Street	18.3	B	17.3	B	5.0% / 5.4%	No
34. Melrose Avenue / Main Street	25.2	C	29.1	C	5.4% / 5.5%	No
35. I-805 SB Ramps / Main Street	34.7	C	42.4	D	9.4% / 9.9%	No
36. I-805 NB Ramps / Main Street	31.2	C	29.5	C	13.4% / 13.6%	No
37. Oleander Avenue / Main Street	10.5	B	9.8	B	16.6% / 16.1%	No
38. Brandywine Avenue / Main Street	36.4	D	50.3	D	16.2% / 15.5%	No
39. Heritage Road / Main Street	48.2	D	45.0	D	24.5% / 27.7%	No
40. La Media Road (SB) / Main Street (WB)	4.0	A	6.4	A	33.4% / 71.2%	No
41. La Media Road (NB) / Main Street (WB)	10.5	B	15.5	B	51.5% / 43.6%	No
42. La Media Road (SB) / Main Street (EB)	1.2	A	0.9	A	39.2% / 74.5%	No
43. La Media Road (NB) / Main Street (EB)	2.8	A	2.1	A	47.7% / 66.5%	No
44. Magdalena Avenue / Main Street	18.1	B	13.8	B	69.5% / 84.2%	No
45. SR-125 SB Ramps / Main Street	Does Not Exist					
46. SR-125 NB Ramps / Main Street	Does Not Exist					
47. EastLake Parkway / Main Street/Hunte Parkway	27.1	C	24.9	C	26.5% / 30.4%	No
48. Discovery Falls Drive / Hunte Parkway	30.2	C	35.2	D	31.3% / 35.5%	No
49. Santa Macheto @ Heritage Road	3.1	A	2.5	A	24.0% / 28.5%	No
50. Santa Picacho @ Heritage Road	16.9	B	17.6	B	28.2% / 32.1%	No
51. Santa Maya @ Heritage Road	13.2	B	29.3	C	30.0% / 35.7%	No
52. Energy Way / Heritage Road	Does Not Exist					
53. Quarry Driveway / Main Street	8.0	A	7.1	A	10.7% / 68.7%	No
54. Village Three North Project R-20 Driveway @ Main Street	7.0	A	6.8	A	100.0% / 100.0%	No
55. La Media Road / Village Four Driveway @ Santa Luna Street	10.5	B	32.1	C	95.0% / 90.3%	No
56. Santa Tipu @ Main Street (one-way stop RT in/out)*	10.5	B	15.0	C	98.7% / 98.9%	No
57. Santa Marisol @ Main Street	17.9	B	25.2	C	26.5% / 30.4%	No
58. Village Eight East R-16 Driveway @ Main Street (one-way stop RT in/out)*	9.7	A	9.3	A	100.0% / 100.0%	No
59. Village Eight East Community Park Driveway @ Otay Valley Road	1.8	A	3.0	A	31.3% / 35.5%	No
60. Cutter Avenue @ Otay Valley Road (one-way stop RT in/out)*	8.9	A	10.8	B	100.0% / 100.0%	No
61. Santa Marisol @ Otay Valley Road	11.2	B	15.0	B	100.0% / 100.0%	No

Table 5.3-32 (Continued)
Peak Hour Intersection LOS Results – Year 2025 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
62. Village Nine Street "B" / Otay Valley Road	Does Not Exist					
63. Village Nine Street "B" / Discovery Falls Drive	Does Not Exist					
64. Santa Julliard @ Discovery Falls Drive	9.6	A	7.2	A	100.0% / 100.0%	No
65. University Drive @ Discovery Falls Drive	19.7	B	13.0	B	100% / 100%	No
66. Santa Davis @ Discovery Falls Drive	14.4	B	5.8	A	100% / 100%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches
City of San Diego intersections (#49-#60) are not analyzed for interim years

Roadway Segment Analysis

Table 5.3-33 displays the LOS analysis results for study area roadway segments within the City of Chula Vista under the Year 2025 conditions. As shown in the table, the proposed project would result in significant impacts to the following three roadway segments:

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – The proposed 2025 project traffic would comprise approximately 1.2% (less than 5%) of the total segment volume and would add 400 ADT (less than 800 ADT). However, one of the intersections (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 Heritage Road and Santa Venetia Street (LOS D) – The proposed 2025 project traffic would comprise approximately 20.3% (more than 5%) of the total segment volume and would add 11,100 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 direct impact at this location.
- Heritage Road, between East Palomar Street and Olympic Parkway (LOS D) – The proposed 2025 project traffic would comprise approximately 12.2% (more than 5%) of the total segment volume and would add 6,300 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 direct impact at this location.

Table 5.3-33
Roadway Segment LOS Results – Year 2025 Conditions

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?
H Street	Tierra Del Rey	Paseo Ranchero	6-Ln w/RM	52,000	50,000	**D**	1,100	2.1%	Yes	No
Telegraph Canyon Road	Medical Center Drive	Heritage Road / Paseo Ranchero	6-Ln w/RM	58,900	50,000	**E**	1,600	2.7%	Yes	No
Telegraph Canyon Road	Heritage Road / Paseo Ranchero	La Media Road / Otay Lakes Road	6-Ln w/RM	51,500	50,000	**D**	1,400	2.7%	Yes	No
Otay Lakes Road	H Street	Telegraph Canyon Road	6-Ln w/RM	32,900	50,000	A	2,300	7.0%	—	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	45,200	50,000	C	1,200	2.7%	—	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	27,100	30,000	C	2,100	7.7%	—	No
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	23,900	30,000	B	800	3.3%	—	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	25,000	30,000	B	700	2.8%	—	No
Orange Avenue	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL/RM	26,100	30,000	B	1,100	4.2%	—	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	28,800	30,000	C	400	1.4%	—	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	33,100	30,000	**D**	400	1.2%	No	Yes (Cumulative)
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	42,300	50,000	B	1,800	4.3%	—	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	45,900	50,000	C	3,200	7.0%	—	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	39,700	50,000	B	3,200	8.1%	—	No

Table 5.3-33 (Continued)
Roadway Segment LOS Results – Year 2025 Conditions

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	Brandywine Avenue	Heritage Road	6-Ln w/RM	38,600	50,000	B	3,000	7.8%	—	No
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln w/RM	54,600	50,000	**D**	11,100	20.3%	No	Yes (Direct)
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln w/RM	46,700	50,000	C	11,100	23.8%	—	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	30,600	50,000	A	2,000	6.5%	—	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	51,200	50,000	**D**	2,300	4.5%	Yes	No
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	53,500	70,000	B	2,300	4.3%	—	No
Olympic Parkway	SR-125 NB Ramps	EastLake Parkway	8-Ln w/RM	55,900	70,000	B	2,100	3.8%	—	No
Olympic Parkway	EastLake Parkway	Hunte Parkway	6-Ln w/RM	38,100	50,000	B	800	2.1%	—	No
Olympic Parkway	Hunte Parkway	Olympic Vista Road	4-Ln w/RM	20,000	30,000	A	800	4.0%	—	No
Olympic Parkway	Olympic Vista Road	Lake Crest Drive	4-Ln w/RM	9,400	30,000	A	600	6.4%	—	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	41,200	40,000	**D**	6,200	15.0%	Yes	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	44,200	40,000	**D**	6,100	13.8%	Yes	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	45,500	50,000	C	5,100	11.2%	—	No
Birch Road	SR-125 NB Ramps	EastLake Parkway	6-Ln w/RM	46,200	50,000	C	3,600	7.8%	—	No
Main Street	4th Avenue	3rd Avenue	4-Ln w/TWLTL	24,000	30,000	B	700	2.9%	—	No
Main Street	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL	31,000	30,000	**D**	1,100	3.5%	Yes	No
Main Street	Hilltop Drive	Melrose Avenue	4-Ln w/TWLTL	35,400	30,000	**E**	1,800	5.1%	Yes	No

Table 5.3-33 (Continued)
Roadway Segment LOS Results – Year 2025 Conditions

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	Melrose Avenue	I-805 SB Ramps	4-Ln w/TWLTL	35,900	30,000	**E**	2,200	6.1%	Yes	No
Main Street	I-805 SB Ramps	I-805 NB Ramps	6-Ln	45,500	50,000	C	5,200	11.4%	—	No
Main Street	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	48,200	50,000	C	7,600	15.8%	—	No
Main Street	Oleander Avenue	Brandywine Avenue	6-Ln w/TWLTL	51,900	50,000	**D**	8,100	15.6%	Yes	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	37,900	50,000	B	9,400	24.8%	—	No
Main Street	Heritage Road	La Media Road	Does Not Exist							
Main Street	La Media Road	SR-125 SB Ramps	6-Ln w/RM	21,200	50,000	A	18,100	85.4%	—	No
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist							
Main Street	SR-125 NB Ramps	EastLake Parkway/ University Drive	Does Not Exist							
Otay Valley Road	Main Street	SR-125	4-Ln w/RM*	15,200	30,000	A	11,900	78.3%	—	No
Otay Valley Road	SR-125	Village Nine Street "B"	Does Not Exist							
Hilltop Drive	Orange Avenue	Main Street	4-Ln	8,400	22,000	A	700	8.3%	—	No
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	19,300	22,000	B	1,500	7.8%	—	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	26,900	50,000	A	3,600	13.4%	—	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	51,500	50,000	**D**	6,300	12.2%	No	Yes (Direct)
Heritage Road	Olympic Parkway	Santa Victoria Road	6-Ln w/RM	34,800	50,000	A	9,100	26.1%	—	No
Heritage Road	Santa Victoria Road	Main Street	6-Ln w/RM	41,200	50,000	B	22,000	53.4%	—	No
Heritage Road	Main Street	Avenida De Las Vistas	6-Ln w/RM	37,500	50,000	A	4,700	12.5%	—	No

Table 5.3-33 (Continued)
Roadway Segment LOS Results – Year 2025 Conditions

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	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	31,900	50,000	A	3,200	10.0%	—	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	25,600	50,000	A	3,500	13.7%	—	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	46,700	50,000	C	13,200	28.3%	—	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	43,300	50,000	B	13,300	30.7%	—	No
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	35,200	50,000	A	18,200	51.7%	—	No
La Media Road	Santa Luna Street	Main Street	4-Ln w/RM	34,300	30,000	**E**	18,200	53.1%	Yes	No
Magdalena Avenue	Santa Venetia Street	Birch Road	4-Ln	6,700	22,000	A	700	10.4%	—	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	16,600	22,000	B	800	4.8%	—	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	7,200	12,000	A	600	8.3%	—	No
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	19,800	22,000	C	6,000	30.3%	—	No
EastLake Parkway	Corte Vista	Olympic Parkway	6-Ln w/RM	22,800	50,000	A	800	3.5%	—	No
EastLake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	29,700	40,000	A	2,900	9.8%	—	No
EastLake Parkway	Birch Road	Main Street / Hunte Parkway	6-Ln w/RM	25,300	40,000	A	3,800	15.0%	—	No
University Drive	Main Street/Hunte Parkway	University Driveway #1	4-Ln w/RM*	20,500	30,000	A	3,100	15.1%	—	No
University Drive	University Driveway #1	University Driveway #2	2-Ln w/RM*	9,100	12,000	B	3,300	36.3%	—	No
University Drive	University Driveway #2	Discovery Falls Drive	2-Ln w/RM*	4,700	12,000	A	3,300	70.2%	—	No

Table 5.3-33 (Continued)
Roadway Segment LOS Results – Year 2025 Conditions

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?
Discovery Falls Drive	Hunte Parkway	University/RTP Driveway	4-Ln w/RM*	23,400	30,000	A	3,600	15.4%	—	No
Discovery Falls Drive	University/RTP Driveway	University Drive	2-Ln w/RM*	5,900	12,000	A	3,900	66.1%	—	No
Discovery Falls Drive	University Drive	Village Nine Street "B"	2-Ln w/RM*	2,100	12,000	A	2,100	100.0%	—	No
Hunte Parkway	Otay Lakes Road	Olympic Parkway	4-Ln w/RM	17,700	30,000	A	1,100	6.2%	—	No
Hunte Parkway	Olympic Parkway	Discovery Falls Drive	6-Ln w/RM	18,400	50,000	A	1,400	7.6%	—	No
Hunte Parkway	Discovery Falls Drive	EastLake Parkway / University Drive	6-Ln w/RM	19,800	50,000	A	2,700	13.6%	—	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: 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 to be implemented by others, including City's CIP.

Freeway / State Highway Segment Analysis

Table 5.3-34 displays freeway LOS analysis results for I-805, SR-125, and SR-905 under the Year 2025 conditions. As shown in the table, all study freeway / state highway segments along I-805, SR-125, and SR-905 would operate at acceptable LOS D or better under Year 2025 conditions, with the following five exceptions:

- I-805, from SR-94 to Market Street (LOS E) – The proposed project would comprise 1.6% (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 Market Street to Imperial Avenue (LOS F) – The proposed project would comprise 1.5% (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 1.4% (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 1.8% (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 SR-54 to Bonita 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 and provided for information purposes only, 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 Section 5.3.1.1. ILV analysis results are displayed in Table 5.3-35 and analysis worksheets for the Year 2025 conditions are

provided in EIR Appendix M. As shown in Table 5.3-35, 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 PM peak hour
- I-805 NB Ramps / Olympic Parkway - Over capacity during the AM and PM peak hour
- I-805 SB Ramps / Main Street – Over capacity during the PM peak hour.

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

Ramp Metering Analysis

Table 5.3-36 displays the ramp metering analysis conducted at the I-805 northbound on-ramps at Olympic Parkway and Main Street under the Year 2025 conditions. Based on observed existing conditions, it is assumed that approximately 80% of the total arrival traffic (Demand) would utilize the two non-HOV lanes. As shown in Table 5.3-36, the peak-hour capacity expected to be processed through the ramp meter (Meter Rate) would be greater than the peak hour demand (Demand) at the I-805 northbound on-ramp at Olympic Parkway. However, the peak hour demand at the I-805 northbound on-ramp at Main Street would be greater than the capacity provided by the ramp meter under Year 2025 conditions. Notwithstanding, based on the SANDAG CMP, the projected delay (with the proposed Year 2025 project traffic) of 11.3 minutes (less than 15 minutes) would be acceptable (SANDAG 2008). As such, the proposed project would not result in significant impacts at either on-ramp.

Table 5.3-34
Freeway / State Highway Segment LOS Results – Year 2025 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 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 Avenue to SR-94	280,200	6.9%	19,334	0.51	4+1HOV	0.97	4.2%	1,726	0.864	D	276,100	D	1.5%	No
I-805	SR-94 to Market Street	275,300	8.0%	22,024	0.50	4+1HOV	0.97	4.2%	1,937	0.965	**E**	271,000	**E**	1.6%	Yes (Cumulative)
I-805	Market Street to Imperial Avenue	348,900	8.0%	27,912	0.50	5+1HOV	0.97	4.2%	2,095	1.114	**F**	343,800	**F**	1.5%	Yes (Cumulative)
I-805	Imperial Avenue to E Division Street	347,300	8.0%	27,784	0.50	5+1HOV	0.97	4.2%	2,084	1.018	**F**	342,400	**F**	1.4%	Yes (Cumulative)
I-805	E Division Street to Plaza Boulevard	331,400	7.2%	23,861	0.51	5+1HOV	0.95	3.8%	1,866	0.907	D	326,000	D	1.6%	No
I-805	Plaza Boulevard to SR-54	321,100	8.1%	26,009	0.52	5+1HOV	0.96	2.2%	2,033	0.988	**E**	315,300	**E**	1.8%	Yes (Cumulative)
I-805	SR-54 to Bonita Road	347,000	7.2%	24,984	0.52	4+1Aux+ 1HOV	0.96	1.7%	2,101	0.950	**E**	339,300	D	2.2%	Yes (Cumulative)
I-805	Bonita Road to East H Street	301,100	7.8%	23,486	0.50	5+1HOV	0.95	1.7%	1,783	0.867	D	293,600	D	2.5%	No
I-805	East H Street to Telegraph Canyon Road	298,700	7.8%	23,299	0.50	5+1HOV	0.95	1.9%	1,764	0.859	D	291,000	D	2.6%	No

Table 5.3-34 (Continued)
Freeway / State Highway Segment LOS Results – Year 2025 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 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	251,700	7.1%	17,871	0.51	4+1Aux+ 1HOV	0.92	1.7%	1,535	0.694	C	244,800	C	2.7%	No
I-805	East Palomar Street to Olympic Parkway	225,900	7.1%	16,039	0.51	4+1Aux	0.92	1.7%	1,995	0.831	D	220,800	D	2.3%	No
I-805	Olympic Parkway to Main Street	219,300	6.9%	15,132	0.51	4+1Aux	0.93	5.4%	1,888	0.787	C	216,000	C	1.5%	No
I-805	Main Street to Palm Avenue	216,200	7.1%	15,350	0.58	4+1Aux	0.95	10.3%	2,192	0.913	D	213,400	D	1.3%	No
I-805	Palm Avenue to SR-905	193,100	7.1%	13,710	0.58	4+1Aux	0.95	10.3%	1,959	0.816	D	190,700	D	1.2%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	21,900	7.0%	1,533	0.60	2M	0.92	2.0%	505	0.210	A	20,500	A	6.4%	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	17,400	A	6.5%	No
SR-125	Birch Road to Main Street	32,600	7.0%	2,282	0.60	2M	0.92	2.0%	747	0.311	A	30,900	A	5.2%	No
SR-125	Main Street to Lone Star Road	32,600	7.0%	2,282	0.60	2M	0.92	2.0%	747	0.311	A	30,900	A	5.2%	No
SR-125	Lone Star Road to Otay Mesa Road	32,600	7.0%	2,282	0.60	2M	0.92	2.0%	747	0.311	A	30,900	A	5.2%	No
SR-125	Otay Mesa Road to SR-905	30,900	7.0%	2,163	0.60	2M	0.92	2.0%	714	0.298	A	30,200	A	2.3%	No

Table 5.3-34 (Continued)
Freeway / State Highway Segment LOS Results – Year 2025 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 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-905	I-805 to Calliente Avenue	124,800	7.0%	8,736	0.60	3M	0.92	5.0%	1,950	0.813	D	124,600	D	0.2%	No
SR-905	Calliente Avenue to Heritage Road	113,100	7.0%	7,917	0.60	3M	0.92	5.0%	1,760	0.733	C	112,900	C	0.2%	No
SR-905	Heritage Road to Britannia Boulevard	109,000	7.0%	7,630	0.60	3M	0.92	5.0%	1,705	0.710	C	108,600	C	0.4%	No
SR-905	Britannia Boulevard to La Media Road	104,100	7.0%	7,287	0.60	3M	0.92	5.0%	1,627	0.678	C	103,500	C	0.6%	No
SR-905	La Media Road to SR-125	79,900	7.0%	5,593	0.60	3M	0.92	5.0%	1,248	0.520	B	79,300	B	0.8%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
M = mainline; Aux = auxiliary lane;
HOV = High Occupancy Vehicle lane.

Table 5.3-35
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	1,336	*1200–1500: (At Capacity)*	1,273	*1200–1500: (At Capacity)*
	PM	1,915	*>1500: (Over Capacity)*	1,835	*>1500: (Over Capacity)*
I-805 NB Ramps / Olympic Parkway	AM	1,558	*>1500: (Over Capacity)*	1,445	*1200–1500: (At Capacity)*
	PM	1,514	*>1500: (Over Capacity))*	1,408	*1200–1500: (At Capacity)*
I-805 SB Ramps / Main Street	AM	1,343	*1200–1500: (At Capacity)*	1,265	*1200–1500: (At Capacity)*
	PM	1,782	*>1500: (Over Capacity)*	1,680	*>1500: (Over Capacity)*
I-805 NB Ramps / Main Street	AM	1,290	*1200–1500: (At Capacity)*	1,227	*1200–1500: (At Capacity)*
	PM	1,352	*1200–1500: (At Capacity)*	1,280	*1200–1500: (At Capacity)*
SR-125 SB Ramps / Olympic Parkway	AM	953	*<1200: (Under Capacity)*	889	*<1200: (Under Capacity)*
	PM	660	*<1200: (Under Capacity)*	564	*<1200: (Under Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	813	*<1200: (Under Capacity)*	745	*<1200: (Under Capacity)*
	PM	870	*<1200: (Under Capacity)*	705	*<1200: (Under Capacity)*
SR-125 SB Ramps / Birch Road	AM	586	*<1200: (Under Capacity)*	565	*<1200: (Under Capacity)*
	PM	675	*<1200: (Under Capacity)*	640	*<1200: (Under Capacity)*
SR-125 NB Ramps / Birch Road	AM	651	*<1200: (Under Capacity)*	625	*<1200: (Under Capacity)*
	PM	723	*<1200: (Under Capacity)*	697	*<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				
SR-125 SB Ramps / Lone Star Road	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 NB Ramps / Lone Star Road	AM	Does Not Exist		Does Not Exist	
	PM				

Source: Chen Ryan Associates 2014 (EIR Appendix M).

Table 5.3-36
Ramp Metering Analysis – Year 2025 Conditions

Location	Peak Hour	With Project						Without Project					Significant Impact?
		P_{Vol} Peak Hour Volume	*Demand Vol[1] (veh/hr per lane)*	*Meter Rate[2] (veh/hr)*	*Excess Demand[3] (veh/hr)*	*Delay[4] (min)*	*Queue[5] (ft)*	*P_{Vol} Peak Hour Volume*	*Demand Vol (veh/hr per lane)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	1,473	589	887	0	0	0	1,370	~~802~~ 548	0	0	0	No
I-805 NB On-Ramp @ Main Street	AM	1,228	491	413	78	11.3	2,262	1,075	~~432~~ 430	19	2.8	551	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).

1 Demand is the peak hour demand expected to use the on-ramp per lane.
2 Meter rate is the peak hour capacity expected to be processed through the ramp meter.
3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.
4 Delay = (excess demand / meter rate) × 60 min/hr.
5 Queue = (excess demand) × 29 ft/veh.

A.5 Year 2030 Traffic Conditions

This section provides an analysis of the proposed project's impacts at full buildout under Year 2030 traffic conditions. For comparison purposes, LOS operations under existing conditions were previously provided in Table 5.3-8, Peak-Hour Intersection LOS Results, and Table 5.3-9, Roadway Segment LOS Results. The analysis addresses all study area roadways and intersections in the cities of Chula Vista and San Diego.

Year 2030 Roadway Network and Traffic Volumes

The Year 2030 roadway network assumes buildout of the proposed City of Chula Vista General Plan Circulation Element and the City of San Diego's currently adopted Community Plan Circulation Element, with two exceptions including:

- The SR-125/Otay Valley Road interchange is analyzed as an overpass, as the interchange does not yet have an identified funding source. The interchange is not necessary to accommodate project and future traffic volumes. However, the project is not proposing to remove the SR-125/Otay Valley Road interchange from the General Plan. For informational purposes, a traffic analysis with "Interchange In" option was also conducted and included in EIR Appendix M.
- The SR-125/Lone Star Road intersection is analyzed as both "with" and "without" interchange scenarios. The interchange is included in both the SANDAG Series 11 model and the City of San Diego Otay Mesa Community Plan Circulation Element, but does not yet have an identified funding source.

When comparing to the Year 2025 network, the following additional roadway improvements would be constructed by the project for access and frontage:

- Village Nine Street "B" / Otay Valley Road (#74) – Signalized intersection.
- Village Nine Street "B" / Discovery Falls Drive (#75) – Signalized intersection, including construction of Discovery Falls Drive between Village Nine Street "B" and Santa Julliard.
- Heritage Road / Energy Way (Int #64) – Signalized intersection.

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development.

Roadway improvements to be constructed by others (Assumed Build by the Year 2030):

- Main Street, between SR-125 right-of-way (western boundary) and EastLake Parkway/University Drive – This facility is included as a Six-Lane Gateway Street, consistent with the currently adopted Circulation Element.
- SR-125 / Main Street interchange is included, consistent with the currently adopted Circulation Element.[3] The SR-125/Main Street interchange (overpass and ramps) is included as part of the City of Chula Vista's TDIF program and was approved by the City Council on July 22, 2014.
- Otay Valley Road, between subdivision boundary and Village Nine Street "B" (Int #74), is included providing an overpass at SR-125. The SR-125/Otay Valley Road overpass is included as part of the City of Chula Vista's TDIF program and was approved by the City Council on July 22, 2014.

  ~~Heritage Road / Energy Way (Int #64) is included as a signalized intersection. This intersection is not needed by the proposed project; however the intersection was analyzed as a signalized intersection per city staff request.~~\

As previously noted, if the assumed roadway improvements are not constructed by others and in place as modeled for the Year 2030 scenario, the Project Applicant and the City will take those steps necessary to either construct the subject facilities or implement substitute measures to ensure adequate infrastructure as modeled is in place, as detailed in mitigation measure TCA-16.

Mitigation Being Carried Forward from 2025

As discussed in Section 5.3.5, Mitigation Measures, the following improvement would be implemented as a mitigation measure under the 2025 scenario and, therefore, is included as part of the 2030 roadway network:

- Construction of Main Street, between Heritage Road and La Media Road, as a Six-Lane Prime Arterial including construction of Main Street Bridge.
- Signalization of Quarry Driveway / Main Street (Int #65) as part of Main Street construction.
- Signalization of Village Three North R-20 Driveway / Main Street (Int #66) as a part of Main Street construction.

If the assumed roadway improvements are not constructed and in place as modeled for the Year 2030 scenario, the Project Applicant and the City will take those steps necessary to either

[3] Potential configurations and associated traffic and safety operations at the SR-125 / Main Street interchange are addressed in the TIA, EIR Appendix M, Chapter 15.0.

construct the subject facilities or implement substitute measures to ensure adequate infrastructure as modeled is in place as detailed in TCA-16.

Access and Frontage Mitigation Being Carried Forward from 2025

- Main Street, from Santa Marisol to SR-125 right-of-way (western boundary) – this facility was included as a 6-lane Prime Arterial providing frontage and access for Village Eight East.
- Otay Valley Road, from Main Street to SR-125 right-of-way (western boundary) – This facility is included as a Four-Lane Major Road providing frontage and access for Village Eight East including the community park south of Otay Valley Road.
- Access road to the community park in Village Eight East (Community Park Driveway – This road is included as two lanes to provide access for the community park to Otay Valley Road.
- University Drive, between Main Street/Hunte Parkway and University Driveway #1 – This facility is included as a Class II Collector providing access for Village Ten.
- University Drive, between University Driveway #1 and Discovery Falls Drive – this facility is included as a Class II Collector providing access for Village Ten.
- Discovery Falls Drive, between Hunte Parkway and University / RTP Driveway – This facility is included as a Four-Lane Major Road providing frontage and access for Village Ten (project access and frontage, and the PFFP discussion are provided in Chapter 13 of EIR Appendix M).
- Discovery Falls Drive, between University / RTP Driveway and Village Nine Street "B" – this facility is included as a Class II Collector providing frontage and access for Village Ten.
- Hunte Parkway @ Eastlake Parkway (Int #47) – Signal modification
- Hunte Parkway @ Discovery Falls Drive (Int #48) – Signal modification
- Village Three North R-20 Driveway #4 @ Main Street (Int #66) – Signalized intersection (analyzed as an all-way stop controlled in 2020)
- Village Eight East R-16 Driveway @ Main Street (Int #66) – Signalized intersection (analyzed as AWSC in 2020)
- Village Eight East Community Park Driveway @ Otay Valley Road (Int #71) – Signalized intersection
- Cutter Avenue @ Otay Valley Road (Int #72) – Right-turn in/out only
- Santa Marisol @ Otay Valley Road (Int #73) – Signalized intersection
- Santa Juilliard @ Discovery Falls Drive (Int #76) – Signalized intersection

- University Drive @ Discovery Falls Drive (Int #77) – Signalized intersection
- Santa Davis @ Discovery Falls Drive (Int #78) – Signalized intersection.

Circulation System Assumptions Being Carried Forward from 2025

- Village Eight East R-16 Driveway @ Main Street (Int #66) – Signalized intersection (analyzed as AWSC in 2020)
- Quarry Driveway (Int #65) @ Main Street – Signalized Intersection

The signalization of these two (2) intersections would occur in conjunction with the construction of Main Street between Heritage Road and La Media Road (City of Chula Vista CIP # STM357). Signalization of these two (intersections) would not be needed until the completion of the Main Street connection between Heritage Road and La Media Road.

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 EIR Appendix M.

Intersection Analysis

Table 5.3-37 displays peak intersection LOS results for the study area intersections under Year 2030 project conditions. LOS calculation worksheets for the Year 2030 conditions are provided in EIR Appendix M. As shown in the table, the proposed project would result in significant impacts at the following two intersections located in the City of Chula Vista:

- I-805 SB Ramps / Olympic Parkway – LOS F during the PM peak hour. The buildout project traffic would comprise approximately 1.2% and 1.1% 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.

- Discovery Falls Drive / Hunte Parkway – LOS E during the AM and PM peak hours. The buildout project traffic would comprise approximately 11.3% and 14.2% 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 direct impact at this intersection.

Table 5.3-37
Peak Hour Intersection LOS 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*					
1. Paseo Ranchero / H Street	46.3	D	52.0	D	N/A	N/A	2.8% / 2.9%	N/A	No
2. Otay Lakes Road / H Street	48.3	D	45.6	D	N/A	N/A	0.6% / 0.9%	N/A	No
3. Paseo Ranchero/Heritage Road / Telegraph Canyon Road	54.0	D	53.7	D	N/A	N/A	3.4% / 3.9%	N/A	No
4. La Media Road / Telegraph Canyon Road/Otay Lakes Road	42.0	D	49.4	D	N/A	N/A	2.6% / 3.1%	N/A	No
5. Hunte Parkway / Otay Lakes Road	42.2	D	33.4	C	N/A	N/A	0.8% / 1.5%	N/A	No
6. Heritage Road / East Palomar Street	50.0	D	35.9	D	N/A	N/A	6.3% / 8.1%	N/A	No
7. La Media Road / East Palomar Street	53.6	D	52.4	D	N/A	N/A	3.1% / 4.1%	N/A	No
8. 3rd Avenue / Orange Avenue	24.6	C	49.2	D	N/A	N/A	2.5% / 2.1%	N/A	No
9. Hilltop Drive / Orange Avenue	40.6	D	32.3	C	N/A	N/A	3.0% / 3.2%	N/A	No
10. Melrose Avenue / Orange Avenue	37.5	D	52.1	D	N/A	N/A	0.8% / 0.8%	N/A	No
11. I-805 SB Ramps / Olympic Parkway	53.9	D	93.0	**F**	N/A	N/A	1.2% / 1.1%	N/A	Yes (Cumulative)
12. I-805 NB Ramps / Olympic Parkway	52.7	D	39.0	D	N/A	N/A	1.3% / 1.6%	N/A	No
13. Oleander Avenue / Olympic Parkway	52.9	D	46.2	D	N/A	N/A	1.4% / 1.9%	N/A	No
14. Brandywine Avenue / Olympic Parkway	53.3	D	52.2	D	N/A	N/A	1.8% / 2.2%	N/A	No
15. Heritage Road / Olympic Parkway	47.0	D	52.5	D	N/A	N/A	7.5% / 8.7%	N/A	No
16. Santa Venetia Street / Olympic Parkway	10.5	B	4.2	A	N/A	N/A	3.3% / 4.3%	N/A	No
17. La Media Road / Olympic Parkway	53.7	D	50.8	D	N/A	N/A	4.6% / 5.4%	N/A	No
18. East Palomar Street / Olympic Parkway	34.6	C	53.8	D	N/A	N/A	2.1% / 1.8%	N/A	No
19. SR-125 SB Ramps / Olympic Parkway	6.6	A	10.6	B	N/A	N/A	2.2% / 2.1%	N/A	No
20. SR-125 NB Ramps / Olympic Parkway	8.7	A	8.4	A	N/A	N/A	2.5% / 2.3%	N/A	No
21. EastLake Parkway / Olympic Parkway	30.7	C	32.4	C	N/A	N/A	2.5% / 2.4%	N/A	No
22. Hunte Parkway / Olympic Parkway	31.2	C	40.8	D	N/A	N/A	4.8% / 5.1%	N/A	No
23. Olympic Vista Road / Olympic Parkway	32.9	C	21.9	C	N/A	N/A	5.2% / 5.7%	N/A	No

Table 5.3-37 (Continued)
Peak Hour Intersection LOS 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*					
24. La Media Road / Santa Venetia Street	53.0	D	43.8	D	N/A	N/A	5.0% / 7.9%	N/A	No
25. Heritage Road / Santa Victoria Road	47.8	D	53.3	D	N/A	N/A	13.7% / 15.1%	N/A	No
26. La Media Road / Birch Road	51.7	D	51.5	D	N/A	N/A	7.2% / 8.7%	N/A	No
27. Magdalena Avenue / Birch Road	47.1	D	40.4	D	N/A	N/A	4.6% / 5.9%	N/A	No
28. SR-125 SB Ramps / Birch Road	11.8	B	6.7	A	N/A	N/A	1.0% / 1.3%	N/A	No
29. SR-125 NB Ramps / Birch Road	9.2	A	10.7	B	N/A	N/A	1.0% / 1.2%	N/A	No
30. EastLake Parkway / Birch Road	51.8	D	51.0	D	N/A	N/A	6.9% / 6.7%	N/A	No
31. 4th Avenue / Main Street	27.9	C	43.5	D	N/A	N/A	2.8% / 2.6%	N/A	No
32. 3rd Avenue / Main Street	40.8	D	50.7	D	N/A	N/A	3.1% / 2.8%	N/A	No
33. Hilltop Drive / Main Street	25.5	C	26.4	C	N/A	N/A	5.8% / 5.4%	N/A	No
34. Melrose Avenue / Main Street	26.8	C	29.6	C	N/A	N/A	6.0% / 6.0%	N/A	No
35. I-805 SB Ramps / Main Street	35.6	D	50.2	D	N/A	N/A	10.7% / 11.5%	N/A	No
36. I-805 NB Ramps / Main Street	43.3	D	37.7	D	N/A	N/A	16.4% / 16.2%	N/A	No
37. Oleander Avenue / Main Street	11.2	B	10.4	B	N/A	N/A	19.7% / 19.5%	N/A	No
38. Brandywine Avenue / Main Street	37.1	D	51.1	D	N/A	N/A	18.6% / 18.7%	N/A	No
39. Heritage Road / Main Street	46.1	D	53.8	D	N/A	N/A	25.3% / 26.4%	N/A	No
40. La Media Road (SB) / Main Street (WB)	4.1	A	16.0	B	N/A	N/A	29.1% / 30.4%	N/A	No
41. La Media Road (NB) / Main Street (WB)	4.5	A	7.7	A	N/A	N/A	31.6% / 27.0%	N/A	No
42. La Media Road (SB) / Main Street (EB)	2.6	A	16.3	B	N/A	N/A	19.9% / 33.1%	N/A	No
43. La Media Road (NB) / Main Street (EB)	12.6	B	6.4	A	N/A	N/A	29.6% / 26.2%	N/A	No
44. Magdalena Avenue / Main Street	28.9	C	25.9	C	N/A	N/A	22.3% / 26.8%	N/A	No
45. SR-125 SB Ramps / Main Street	~~8.5~~ 28.9	~~A~~ C	~~9.8~~ 24.3	~~A~~ C	N/A	N/A	28.0% / 30.5%	N/A	No
46. SR-125 NB Ramps / Main Street	~~9.6~~ 26.3	~~A~~ C	~~17.7~~ 37.2	~~B~~ D	N/A	N/A	23.6% / 29.6%	N/A	No
47. EastLake Parkway / Main Street/Hunte Parkway	33.1	C	33.8	C	N/A	N/A	13.9% / 15.8%	N/A	No
48. Discovery Falls Drive / Hunte Parkway	60.8	E	61.4	E	N/A	N/A	11.3% / 14.2%	N/A	Yes (Direct)

Table 5.3-37 (Continued)
Peak Hour Intersection LOS 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*					
49. Heritage Road / Avenida De Las Vistas (SD)	22.8	C	22.3	C	20.3 / 21.0	C / C	N/A	2.5 / 1.3	No
50. SR-125 SB Ramps / Lone Star Road (SD)	20.3	C	37.1	D	17.4 / 26.7	B / C	N/A	2.9 / 10.4	No
51. SR-125 NB Ramps / Lone Star Road (SD)	19.3	B	27.8	C	18.9 / 24.3	B / C	N/A	0.4 / 3.5	No
52. Ellis Road / Lone Star Road (SD)	27.0	C	29.7	C	25.7 / 27.1	C / C	N/A	1.3 / 2.6	No
53. Ocean View Hills Parkway / Otay Mesa Road (SD)	35.0	C	45.2	D	33.2 / 43.8	C / D	N/A	1.8 / 1.4	No
54. Heritage Road / Otay Mesa Road (SD)	35.9	D	42.2	D	30.6 / 38.7	C / D	N/A	5.3 / 3.5	No
55. Cactus Road / Otay Mesa Road (SD)	42.8	D	53.5	D	36.2 / 47.4	D / D	N/A	6.6 / 6.1	No
56. Britannia Boulevard / Otay Mesa Road (SD)	43.5	D	48.4	D	41.4 / 45.1	D / D	N/A	2.1 / 3.3	No
57. La Media Road / Otay Mesa Road (SD)	50.2	D	53.4	D	44.0 / 52.1	D / D	N/A	6.2 / 1.3	No
58. SR-125 SB Ramps / Otay Mesa Road (SD)	6.8	A	15.8	B	6.3 / 10.7	A / B	N/A	0.5 / 5.1	No
59. SR-125 NB Ramps / Otay Mesa Road (SD)	3.2	A	9.2	A	3.2 / 8.2	A / A	N/A	0.0 / 1.0	No
60. Ellis Road / Otay Mesa Road (SD)	43.0	D	39.0	D	38.3 / 36.2	D / D	N/A	4.7 / 2.8	No
61. Santa Macheto @ Heritage Road	1.9	A	4.8	A	N/A	N/A	28.3% / 31.3%	N/A	No
62. Santa Picacho @ Heritage Road	18.8	B	26.0	C	N/A	N/A	35.2% / 38.0%	N/A	No
63. Santa Maya @ Heritage Road	28.5	C	31.3	C	N/A	N/A	38.6% / 41.5%	N/A	No
64. Energy Way / Heritage Road	7.7	A	8.6	A	N/A	N/A	35.1% / 39.5%	N/A	No
65. Quarry Driveway / Main Street	9.0	A	1.0	A	N/A	N/A	24.5% / 27.8%	N/A	No
66. Village Three North Project R-20 Driveway @ Main Street	1.3	A	3.8	A	N/A	N/A	18.9% / 29.3%	N/A	No
67. La Media Road / Village Four Driveway @ Santa Luna Street	20.7	C	20.9	C	N/A	N/A	10.9% / 14.6%	N/A	No

Table 5.3-37 (Continued)
Peak Hour Intersection LOS 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*					
68. Santa Tipu @ Main Street (one-way stop RT in/out)*	30.9	D	32.2	D	N/A	N/A	33.6% / 36.5%	N/A	No
69. Santa Marisol @ Main Street	41.6	D	27.3	C	N/A	N/A	30.7% / 45.8%	N/A	No
70. Village Eight East R-16 Driveway @ Main Street (one-way stop RT in/out)*	30.9	D	32.4	D	N/A	N/A	31.3% / 35.3%	N/A	No
71. Village Eight East Community Park Driveway @ Otay Valley Road	2.6	A	4.0	A	N/A	N/A	58.1% / 58.1%	N/A	No
72. Cutter Avenue @ Otay Valley Road (one-way stop RT in/out)*	9.8	A	12.8	B	N/A	N/A	60.1% / 60.2%	N/A	No
73. Santa Marisol @ Otay Valley Road	19.3	B	31.0	C	N/A	N/A	62.9% / 61.3%	N/A	No
74. Village Nine Street "B" / Otay Valley Road	26.6	B	22.5	C	N/A	N/A	39.6% / 41.3%	N/A	No
75. Village Nine Street "B" / Discovery Falls Drive	7.2	A	9.3	A	N/A	N/A	4.7% / 4.8%	N/A	No
76. Santa Julliard @ Discovery Falls Drive	3.5	A	6.9	A	N/A	N/A	44.6% / 44.4%	N/A	No
77. University Drive @ Discovery Falls Drive	21.2	C	21.5	C	N/A	N/A	64.4% / 44.4%	N/A	No
78. Santa Davis @ Discovery Falls Drive	3.6	A	7.0	A	N/A	N/A	69.8% / 61.2%	N/A	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
N/A = information not applicable to the respective jurisdiction's impact analysis methodology
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

Roadway Segment Analysis

Table 5.3-38 displays the LOS analysis results for study area roadway segments within the City of Chula Vista under the Year 2030 project conditions, while Table 5.3-39 displays the results for the roadway segments within the City of San Diego under the same conditions. As shown in the tables, all study area roadway segments within the City of San Diego would operate at acceptable LOS D or better with project buildout. Therefore, the proposed project's impacts to roadway segments in the City of San Diego at project buildout would be less than significant.

As to the City of Chula Vista, while project buildout traffic would comprise only approximately 0.8% of the total segment volume and less than 300 ADT on the segment of Orange Avenue between Melrose and the I-805 SB Ramps, the intersection along this segment (I-805 SB Ramps / Olympic Parkway) would operate at LOS F during the PM peak hour. Therefore, project traffic would result in a significant cumulative impact at this location.

Table 5.3-38
Roadway Segment LOS 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?
H Street	Tierra Del Rey	Paseo Ranchero	6-Ln Prime	49,800	50,000	C	900	1.8%	—	No
Telegraph Canyon Road	Medical Center Drive	Heritage Road / Paseo Ranchero	6-Ln Prime	55,700	50,000	**D**	200	0.4%	Yes	No
Telegraph Canyon Road	Heritage Road / Paseo Ranchero	La Media Road / Otay Lakes Road	6-Ln Prime	46,600	50,000	C	600	1.3%	—	No
Otay Lakes Road	H Street	Telegraph Canyon Road	6-Ln Prime	30,300	50,000	A	1,000	3.3%	—	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln Prime	43,900	50,000	C	1,000	2.3%	—	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln Major	23,000	30,000	B	1,100	4.8%	—	No
East Palomar Street	Heritage Road	La Media Road	4-Ln Major	22,400	30,000	A	700	3.1%	—	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln Major	26,000	30,000	B	500	1.9%	—	No
Orange Avenue	3rd Avenue	Hilltop Drive	4-Ln Major	26,900	30,000	C	900	3.4%	—	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln Major	29,600	30,000	C	300	1.0%	—	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln Major	35,600	30,000	**E**	300	0.8%	No	Yes (Cumulative)
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln Prime	45,500	50,000	C	1,100	2.4%	—	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln Prime	56,500	50,000	**E**	1,100	2.0%	Yes	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln Prime	48,700	50,000	C	1,300	2.7%	—	No
Olympic Parkway	Brandywine Avenue	Heritage Road	6-Ln Prime	42,200	50,000	B	1,600	3.8%	—	No
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln Prime	36,100	50,000	A	2,900	8.0%	—	No
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln Prime	29,800	50,000	A	2,900	9.7%	—	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln Prime	27,100	50,000	A	1,300	4.8%	—	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln Prime	47,600	50,000	C	1,400	2.9%	—	No

Table 5.3-38 (Continued)
Roadway Segment LOS 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	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln Expressway	49,800	70,000	A	1,300	2.6%	—	No
Olympic Parkway	SR-125 NB Ramps	EastLake Parkway	8-Ln Expressway	51,700	70,000	A	1,500	2.9%	—	No
Olympic Parkway	EastLake Parkway	Hunte Parkway	6-Ln Prime	36,300	50,000	A	200	0.6%	—	No
Olympic Parkway	Hunte Parkway	Olympic Vista Road	4-Ln Major	29,300	30,000	C	1,400	4.8%	—	No
Olympic Parkway	Olympic Vista Road	Lake Crest Drive	4-Ln Major	13,800	30,000	A	900	6.5%	—	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln Major	31,300	40,000	B	1,500	4.8%	—	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln Major	31,000	40,000	B	700	2.3%	—	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln Prime	30,500	50,000	A	500	1.6%	—	No
Birch Road	SR-125 NB Ramps	EastLake Parkway	6-Ln Prime	31,100	50,000	A	1,500	4.8%	—	No
Main Street	4th Avenue	3rd Avenue	4-Ln Major	25,800	30,000	B	900	3.5%	—	No
Main Street	3rd Avenue	Hilltop Drive	4-Ln Major	31,900	30,000	**D**	1,100	3.5%	Yes	No
Main Street	Hilltop Drive	Melrose Avenue	4-Ln Major	36,900	30,000	**E**	2,200	6.0%	Yes	No
Main Street	Melrose Avenue	I-805 SB Ramps	4-Ln Major	36,500	30,000	**E**	2,400	6.6%	Yes	No
Main Street	I-805 SB Ramps	I-805 NB Ramps	6-Ln Prime	49,000	50,000	C	5,200	10.6%	—	No
Main Street	I-805 NB Ramps	Oleander Avenue	6-Ln Prime	51,100	50,000	**D**	8,500	16.6%	Yes	No
Main Street	Oleander Avenue	Brandywine Avenue	6-Ln Prime	54,900	50,000	**D**	9,400	17.1%	Yes	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln Prime	49,300	50,000	C	10,300	20.9%	—	No
Main Street	Heritage Road	La Media Road	6-Ln Prime	49,200	50,000	C	10,500	21.3%	—	No
Main Street	La Media Road	SR-125 SB Ramps	6-Ln Prime	54,800	50,000	**D**	20,700	37.8%	Yes	No
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln Gateway*	54,900	61,200	D	13,900	25.3%	—	No
Main Street	SR-125 NB Ramps	EastLake Parkway / University Drive	6-Ln Gateway*	60,500	61,200	D	11,800	19.5%	—	No
Otay Valley Road	Main Street	SR-125	4-Ln Major	22,900	30,000	B	16,200	70.7%	—	No
Otay Valley Road	SR-125	Village Nine Street "B"	4-Ln Major*	15,400	30,000	A	7,100	46.1%	—	No

Table 5.3-38 (Continued)
Roadway Segment LOS 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?
Hilltop Drive	Orange Avenue	Main Street	Class I Collector	11,300	22,000	A	800	7.1%	—	No
Paseo Ranchero	H Street	Telegraph Canyon Road	Class I Collector	22,200	22,000	**D**	1,700	7.7%	Yes	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln Prime	28,600	50,000	A	2,800	9.8%	—	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln Prime	53,600	50,000	**D**	4,300	8.0%	Yes	No
Heritage Road	Olympic Parkway	Santa Victoria Road	6-Ln Prime	36,500	50,000	A	5,400	14.8%	—	No
Heritage Road	Santa Victoria Road	Main Street	6-Ln Prime	45,600	50,000	C	21,800	47.8%	—	No
Heritage Road	Main Street	Avenida De Las Vistas	6-Ln Prime	60,700	50,000	**E**	6,300	10.4%	Yes	No
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln Prime	30,800	50,000	A	1,500	4.9%	—	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln Prime	27,600	50,000	A	1,800	6.5%	—	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln Prime	33,700	50,000	A	3,300	9.8%	—	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln Prime	33,900	50,000	A	3,400	10.0%	—	No
La Media Road	Birch Road	Santa Luna Street	6-Ln Prime	21,700	50,000	A	3,400	15.7%	—	No
La Media Road	Santa Luna Street	Main Street	4-Ln Town Center Arterial	21,100	30,000	A	3,600	17.1%	—	No
Magdalena Avenue	Santa Venetia Street	Birch Road	Class I Collector	8,100	22,000	A	800	9.9%	—	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	Class I Collector	13,100	22,000	A	1,800	13.7%	—	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	Class II Collector	4,900	12,000	A	1,700	34.7%	—	No

Table 5.3-38 (Continued)
Roadway Segment LOS 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	11,600	22,000	A	2,500	21.6%	—	No
EastLake Parkway	Corte Vista	Olympic Parkway	6-Ln Prime	24,600	50,000	A	600	2.4%	—	No
EastLake Parkway	Olympic Parkway	Birch Road	6-Ln Major	29,700	40,000	A	1,500	5.1%	—	No
EastLake Parkway	Birch Road	Main Street / Hunte Parkway	6-Ln Major	23,000	40,000	A	2,100	9.1%	—	No
University Drive	Main Street / Hunte Parkway	University Driveway #1	4-Ln Major	19,930	30,000	A	4,500	22.6%	—	No
University Drive	University Driveway #1	University Driveway #2	Class II Collector	9,250	12,000	B	4,800	51.9%	—	No
University Drive	University Driveway #2	Discovery Falls Drive	Class II Collector	6,440	12,000	A	5,100	79.2%	—	No
Discovery Falls Drive	Hunte Parkway	University/RTP Driveway	4-Ln Major	20,470	30,000	A	5,000	24.4%	—	No
Discovery Falls Drive	University/RTP Driveway	University Drive	Class II Collector	6,600	12,000	A	5,100	77.3%	—	No
Discovery Falls Drive	University Drive	Village Nine Street "B"	Class II Collector	5,910	12,000	A	3,000	50.8%	—	No
Hunte Parkway	Otay Lakes Road	Olympic Parkway	4-Ln Major	21,700	30,000	A	1,300	6.0%	—	No
Hunte Parkway	Olympic Parkway	Discovery Falls Drive	6-Ln Prime	31,500	50,000	A	3,200	10.2%	—	No
Hunte Parkway	Discovery Falls Drive	EastLake Parkway/ University Drive	6-Ln Prime	38,400	50,000	B	3,300	8.6%	—	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS (D), E, or F.
* Facility improvement is assumed to be implemented by others, including City's CIP.

Table 5.3-39
Roadway Segment LOS Results – Year 2030 Conditions (City of San Diego)

Roadway	From	To	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?
Lone Star Road	La Media Road	Ellis Road	4-Ln Major	31,600	35,000	D	30,000	D	0.040	No
Otay Mesa Road	Ocean View Hills Parkway	Heritage Road	6-Ln Prime	48,800	55,000	C	47,900	C	0.015	No
Otay Mesa Road	Heritage Road	Cactus Road	6-Ln Prime	45,200	55,000	C	42,800	C	0.040	No
Otay Mesa Road	Cactus Road	Britannia Boulevard	6-Ln Prime	48,300	55,000	C	47,000	C	0.022	No
Otay Mesa Road	Britannia Boulevard	La Media Road	6-Ln Prime	47,100	55,000	C	45,200	C	0.032	No
Otay Mesa Road	La Media Road	Ellis Road	6-Ln Prime	49,400	55,000	C	47,200	C	0.037	No
Heritage Road	Avenida De Las Vistas	Otay Mesa Road	6-Ln Prime	53,700	55,000	D	49,100	C	0.077	No
La Media Road	Lone Star Road	Otay Mesa Road	6-Ln Prime	16,600	55,000	A	15,300	A	0.022	No
Ellis Road	Lone Star Road	Otay Mesa Road	4-Ln Major	32,000	35,000	D	30,900	D	0.028	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).

Freeway / State Highway Segment Analysis

Table 5.3-40 displays freeway LOS analysis results for I-805, SR-125, and SR-905 under the Year 2030 conditions. As shown in the table, all study freeway / state highway segments along I-805, SR-125, and SR-905 would operate at acceptable LOS D or better under the Year 2030 conditions, with the following 11exceptions:

- I-805, from SR-94 to Market Street (LOS F) – The proposed project would comprise 0.8% (less than 5%) of the total freeway segment volume; 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 0.9% (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 1.0% (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 1.2% (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 1.4% (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 Bonita Road to East H Street (LOS E) – The proposed project would comprise 1.8% (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 1.7% (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.
- SR-905, from I-805 to Caliente Avenue (LOS F) – The proposed buildout project would comprise 0.3% (less than 5%) of the total freeway segment volume; therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F with the project, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- SR-905, from Caliente Avenue to Heritage Road (LOS F) – The proposed project would comprise 0.3% (less than 5%) of the total freeway segment volume; therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F with the project, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- SR-905, from Heritage Road to Britannia Boulevard (LOS F) – The proposed project would comprise 0.6% (less than 5%) of the total freeway segment volume; therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F with the project, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- SR-905, from Britannia Boulevard to La Media Road (LOS F) – The proposed project would comprise 0.9% (less than 5%) of the total freeway segment volume; therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F with the project, 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 and provided for information purposes only, 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 Section 5.3.1.1. ILV analysis results are displayed in Table 5.3-41 and analysis worksheets for the Year 2030 conditions are provided in EIR Appendix M. As shown in the table, all of the I-805 and SR-125 ramp intersections would operate “At Capacity” or “Under Capacity” during both the AM and PM peak hours under Year 2030 conditions, with the following four (4) exceptions:

- I-805 SB Ramps / Olympic Parkway – “Over Capacity” during the PM peak hour;
- I-805 NB Ramps / Olympic Parkway – “Over Capacity” during the AM peak hour;

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

Ramp Metering Analysis

Table 5.3-42 displays the ramp metering analysis conducted at the I-805 northbound on-ramps at Olympic Parkway and Main Street under the Year 2030 conditions. Based on observed existing conditions, it is assumed that approximately 80% of the total arrival traffic (Demand) would utilize the two non-HOV lanes.

As shown in the table, the peak hour capacity expected to be processed through the ramp meter (Meter Rate) would be greater than the peak hour demand (Demand) at the I-805 northbound on-ramp at Olympic Parkway. However, the peak hour demand at the I-805 northbound on-ramp at Main Street would be greater than the capacity that the ramp meter provides under the Year 2030 conditions and would result in 13.8 minutes of delay without the proposed project and 33.1 minutes with the proposed project. Therefore, based on the SANDAG CMP impact threshold (SANDAG 2008), the proposed project would result in a significant cumulative impact at the I-805 northbound on-ramp at Main Street.

Table 5.3-40
Freeway / State Highway Segment LOS Results – Year 2030 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 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 Avenue to SR-94	258,600	6.9%	17,843	0.51	4+1HOV	0.97	4.2%	1,600	0.798	C	256,400	C	0.9%	No
I-805	SR-94 to Market Street	286,400	8.0%	22,912	0.50	4+1HOV	0.97	4.2%	2,010	1.004	F	284,200	E	0.8%	Yes (Cumulative)
I-805	Market Street to Imperial Avenue	353,600	8.0%	28,288	0.50	5+1HOV	0.97	4.2%	2,126	1.127	F	35+0,400	F	0.9%	Yes (Cumulative)
I-805	Imperial Avenue to E Division Street	352,100	8.0%	28,168	0.50	5+1HOV	0.97	4.2%	2,116	1.031	F	348,600	F	1.0%	Yes (Cumulative)
I-805	E Division Street to Plaza Boulevard	339,400	7.2%	24,437	0.51	5+1HOV	0.95	3.8%	1,909	0.930	D	335,600	D	1.1%	No
I-805	Plaza Boulevard to SR-54	330,500	8.1%	26,771	0.52	5+1HOV	0.96	2.2%	2,096	1.018	F	326,400	F	1.2%	Yes (Cumulative)
I-805	SR-54 to Bonita Road	372,700	7.2%	26,834	0.52	4+1Aux+1 HOV	0.96	1.7%	2,259	1.020	F	367,300	F	1.4%	Yes (Cumulative)
I-805	Bonita Road to East H Street	329,500	7.8%	25,701	0.50	5+1HOV	0.95	1.7%	1,953	0.947	E	323,700	D	1.8%	Yes (Cumulative)
I-805	East H Street to Telegraph Canyon Road	328,200	7.8%	25,600	0.50	5+1HOV	0.95	1.9%	1,945	0.943	E	322,600	E	1.7%	Yes (Cumulative)
I-805	Telegraph Canyon Road to East Palomar Street	287,000	7.1%	20,377	0.51	4+1Aux+1 HOV	0.92	1.7%	1,754	0.790	C	281,400	C	2.0%	No

Table 5.3-40 (Continued)
Freeway / State Highway Segment LOS Results – Year 2030 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 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	272,000	7.1%	19,312	0.51	4+1Aux+ 1HOV	0.92	1.7%	1,666	0.818	D	267,000	D	1.8%	No
I-805	Olympic Parkway to Main Street	266,000	6.9%	18,354	0.51	4+1Aux+ 1HOV	0.93	5.4%	1,590	0.782	C	262,300	C	1.4%	No
I-805	Main Street to Palm Avenue	258,100	7.1%	18,325	0.58	4+1Aux+ 1HOV	0.95	10.3%	1,815	0.890	D	255,800	D	0.9%	No
I-805	Palm Avenue to SR-905	237,000	7.1%	16,827	0.58	4+1Aux+ 1HOV	0.95	10.3%	1,660	0.816	D	235,000	D	0.8%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	35,500	7.0%	2,485	0.60	2M	0.92	2.0%	823	0.343	A	34,300	A	3.4%	No
SR-125	Olympic Parkway to Birch Road	30,700	7.0%	2,149	0.60	2M	0.92	2.0%	703	0.293	A	29,800	A	2.9%	No
SR-125	Birch Road to Main Street	34,600	7.0%	2,422	0.60	2M	0.92	2.0%	801	0.334	A	33,700	A	2.6%	No
SR-125	Main Street to Lone Star Road	94,000	7.0%	6,580	0.60	2M	0.92	2.0%	2,163	0.901	D	82,500	C	12.2%	No
SR-125	Lone Star Road to Otay Mesa Road	82,700	7.0%	5,789	0.60	2M	0.92	2.0%	1,910	0.796	C	74,400	C	10.0%	No
SR-125	Otay Mesa Road to SR-905	47,800	7.0%	3,346	0.60	2M	0.92	2.0%	1,098	0.458	B	43,700	B	8.6%	No

Table 5.3-40 (Continued)
Freeway / State Highway Segment LOS Results – Year 2030 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 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-905	I-805 to Calliente Avenue	222,800	7.0%	15,596	0.60	3M	0.92	5.0%	3,476	1.448	**F**	222,200	**F**	0.3%	Yes (Cumulative)
SR-905	Calliente Avenue to Heritage Road	214,100	7.0%	14,987	0.60	3M	0.92	5.0%	3,342	1.393	**F**	213,400	**F**	0.3%	Yes (Cumulative)
SR-905	Heritage Road to Britannia Boulevard	196,400	7.0%	13,748	0.60	3M	0.92	5.0%	3,064	1.277	**F**	195,300	**F**	0.6%	Yes (Cumulative)
SR-905	Britannia Boulevard to La Media Road	171,200	7.0%	11,984	0.60	3M	0.92	5.0%	2,674	1.114	**F**	169,600	**F**	0.9%	Yes (Cumulative)
SR-905	La Media Road to SR-125	133,300	7.0%	9,331	0.60	3M	0.92	5.0%	3,476	1.448	D	131,700	D	1.2%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
M = mainline; Aux = auxiliary lane; HOV = High Occupancy Vehicle lane.

Table 5.3-41
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	1,352	*1200–1500: (At Capacity)*	1,340	*1200–1500: (At Capacity)*
	PM	1,895	*>1500: (Over Capacity)*	1,895	*>1500: (Over Capacity)*
I-805 NB Ramps / Olympic Parkway	AM	2,210	*>1500: (Over Capacity)*	2,183	*>1500: (Over Capacity)*
	PM	1,448	*1200–1500: (At Capacity)*	1,420	*1200–1500: (At Capacity)*

Table 5.3-41 (Continued)
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 / Main Street	AM	1,597	*>1500: (Over Capacity)*	1,493	*1200–1500: (At Capacity)*
	PM	1,853	*>1500: (Over Capacity)*	1,733	*>1500: (Over Capacity)*
I-805 NB Ramps / Main Street	AM	1,429	*1200–1500: (At Capacity)*	1,352	*1200–1500: (At Capacity)*
	PM	1,664	*>1500: (Over Capacity))*	1,564	*>1500: (Over Capacity))*
SR-125 SB Ramps / Olympic Parkway	AM	566	*<1200: (Under Capacity)*	563	*<1200: (Under Capacity)*
	PM	552	*<1200: (Under Capacity)*	549	*<1200: (Under Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	520	*<1200: (Under Capacity)*	513	*<1200: (Under Capacity)*
	PM	668	*<1200: (Under Capacity)*	663	*<1200: (Under Capacity)*
SR-125 SB Ramps / Birch Road	AM	643	*<1200: (Under Capacity)*	632	*<1200: (Under Capacity)*
	PM	874	*<1200: (Under Capacity)*	850	*<1200: (Under Capacity)*
SR-125 NB Ramps / Birch Road	AM	653	*<1200: (Under Capacity)*	645	*<1200: (Under Capacity)*
	PM	785	*<1200: (Under Capacity)*	773	*<1200: (Under Capacity)*
SR-125 SB Ramps / Main Street	AM	684	*<1200: (Under Capacity)*	536	*<1200: (Under Capacity)*
	PM	820	*<1200: (Under Capacity)*	543	*<1200: (Under Capacity)*
SR-125 NB Ramps / Main Street	AM	665	*<1200: (Under Capacity)*	657	*<1200: (Under Capacity)*
	PM	688	*<1200: (Under Capacity)*	625	*<1200: (Under Capacity)*
SR-125 SB Ramps / Lone Star Road	AM	843	*<1200: (Under Capacity)*	763	*<1200: (Under Capacity)*
	PM	1,020	*<1200: (Under Capacity)*	935	*<1200: (Under Capacity)*
SR-125 NB Ramps / Lone Star Road	AM	986	*<1200: (Under Capacity)*	915	*<1200: (Under Capacity)*
	PM	1,218	*1200–1500: (At Capacity)*	1,004	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Mesa Road	AM	762	*<1200: (Under Capacity)*	755	*<1200: (Under Capacity)*
	PM	1,020	*<1200: (Under Capacity)*	935	*<1200: (Under Capacity)*
SR-125 NB Ramps / Otay Mesa Road	AM	622	*<1200: (Under Capacity)*	615	*<1200: (Under Capacity)*
	PM	1,001	*<1200: (Under Capacity)*	948	*<1200: (Under Capacity)*

Source: Chen Ryan Associates 2014 (EIR Appendix M).

Table 5.3-42
Ramp Metering Analysis – Year 2030 Conditions

Location	Peak Hour	With Project						Without Project					Significant Impact?
		P_{vol} Peak Hour Volume	*Demand Vol[1] (veh/hr per lane)*	*Meter Rate[2] (veh/hr)*	*Excess Demand[3] (veh/hr)*	*Delay[4] (min)*	*Queue[5] (ft)*	*P_{vol} Peak Hour Volume*	*Demand Vol (veh/hr per lane)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	2,152	861	887	0	0	0	2,125	~~852~~ 850	0	0	0	No
I-805 NB On-Ramp @ Main Street	AM	1,603	641	413	228	33.1	6,612	1,365	~~508~~ 546	~~95~~ 133	~~13.8~~ 19.32	~~2,755~~ 3,857	**Yes (Cumulative)**

Source: Chen Ryan Associates 2014 (EIR Appendix M).
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.
3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.
4 Delay = (excess demand / meter rate) × 60 min/hr.
5 Queue = (excess demand) × 29 ft/veh.

A.6 Without SR-125/Lone Star Road Interchange

As discussed in Section A.5 above, the SR-125 / Lone Star Road interchange is included in the SANDAG Series 11 Model and the City of San Diego Otay Mesa Community Plan Circulation Element, but it is not a funded project in the City of San Diego FBA. Therefore, the analysis in Section A.5 assumes that the interchange is in. However, in the event the SR-125/Lone Star Road interchange is not constructed by Year 2030, this section discusses traffic operations and potential impacts associated with the "without interchange" scenario on the influenced surrounding roadway network.

Without the SR-125/Lone Star Road interchange, project traffic would utilize the SR-125/Otay Mesa Road interchange to/from Otay Mesa. This change in travel pattern would result in the addition of two intersections and four roadway segments located within the County of San Diego to the study area since the proposed project would contribute more than 25 peak hour trips (County criteria) to these facilities:

- Enrico Fermi Drive / Lone Star Road (Int #79)
- Enrico Fermi Drive / Otay Mesa Road (Int #80)
- Lone Star Road, between Ellis Road and Enrico Fermi Drive;
- Lone Star Road, east of Enrico Fermi Drive;
- Otay Mesa Road, between Ellis Road and Enrico Fermi Drive; and
- Otay Mesa Road, east of Enrico Fermi Drive.

Intersection Analysis

Table 5.3-43 displays intersection level of service and average vehicle delay results for the focused study area intersections under Year 2030 without the SR-125/Lone Star Road interchange conditions. Level of service calculation worksheets for Year 2030 without the SR-125/Lone Star Road interchange conditions are provided in EIR Appendix M.

As shown in the table, all of the focused study area intersections are projected to operate at acceptable levels under Year 2030 without the construction of the SR-125 / Lone Star Road interchange conditions and, therefore, the project would not result in any additional significant traffic impacts to the study area intersections under this scenario.

Table 5.3-43
Peak Hour Intersection LOS Results – Year 2030 Conditions
Without SR-125 / Lone Star Road Interchange

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*				
57. La Media Road / Otay Mesa Road (City of SD)	52.0	D	53.6	D	51.1 / 52.6	D / D	0.9 / 1.0	No
58. SR-125 SB Ramps / Otay Mesa Road (City of SD)	13.1	B	37.7	D	9.4 / 29.9	A / C	3.7 / 7.8	No
59. SR-125 NB Ramps / Otay Mesa Road (City of SD)	13.0	B	20.6	C	9.9 / 13.8	A / B	3.1 / 6.8	No
60. Ellis Road / Otay Mesa Road (City of SD)	42.5	D	50.9	D	/ 45.1	D / D	3.5 / 5.8	No
79. Enrico Fermi Drive / Otay Mesa Road (County)	19.5	B	25.2	C	18.4 / 23.2	B / C	1.1 / 2.0	No
80. Enrico Fermi Drive / Otay Mesa Road (County)	45.3	D	45.4	D	42.6 / 45.1	D / D	2.7 / 0.3	No

Source: Chen Ryan Associates 2014 (EIR Appendix M)

Roadway Segment Analysis

Table 5.13-44 displays level of service analysis results for the focused study area roadway segments under Year 2030 without the SR-125/Lone Star Road interchange conditions. As shown in the table, all of the roadway segments (both City and County of San Diego) within the focused study area are projected to operate at acceptable levels under Year 2030 without the construction of the SR-125 / Lone Star Road interchange conditions and, therefore, the project would not result in any additional significant traffic impacts along study roadway segments under this scenario.

Table 5.3-44
Roadway Segment LOS Results – Year 2030 Conditions
Without SR-125 / Lone Star Road Interchange

Roadway	From	To	Jurisdiction	Classification	LOS Threshold (LOS D)	With Project		Without Project		Change in V/C	Significant Impact?
						ADT	*LOS*	*ADT*	*LOS*		
Lone Star Road	La Media Road	Ellis Road	City of SD	4-ln Major	35,000	26,500	C	26,500	C	0.00	No
Lone Star Road	Ellis Road	Enrico Fermi Drive	County	4.1A*	55,000	47,100	C	45,200	C	0.03	No
Lone Star Road	Enrico Fermi Drive	East of Enrico Fermi Drive	County	4.1A*	55,000	54,500	D	50,700	C	0.06	No
Otay Mesa Road	Britannia Boulevard	La Media Road	City of SD	6-ln Prime	55,000	47,100	C	45,200	C	0.03	No
Otay Mesa Road	La Media Road	Ellis Road	City of SD	6-ln Prime	55,000	54,500	D	50,700	C	0.06	No
Otay Mesa Road	Ellis Road	Enrico Fermi Drive	County	6.2*	33,400	32,500	D	30,900	D	0.05	No
Otay Mesa Road	Enrico Fermi Drive	East of Enrico Fermi Drive	County	4.1A*	33,400	19,500	B	18,800	B	0.02	No
La Media Road	Lone Star Road	Otay Mesa Road	City of SD	6-ln Prime	55,000	13,100	A	11,800	A	0.02	No

Source: Chen Ryan Associates 2014 (EIR Appendix M)
Note: *County of San Diego General Plan Update, August 2011 and County of San Diego Public Road Standards; March 2012.

Freeway/State Highway Segment Analysis

Table 5.13-45 displays level of service analysis results for the SR-125 segments within the focused study area under Year 2030 without the SR-125/Lone Star Road interchange conditions.

As shown in the table, all three (3) segments of SR-125 are projected to operate at acceptable levels under Year 2030 without the construction of the SR-125 / Lone Star Road interchange and, therefore, the project would not result in any additional significant traffic impacts along freeway/state highway segments under this scenario.

Table 5.3-45
Freeway/State Highway Segment LOS Results – Year 2030 Conditions
Without SR-125 / Lone Star Road Interchange

Freeway / State Highway	Segment	With Project										Without Project		Project Contribution (> 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	Main Street to Lone Star Road	94,000	7.0%	6,580	0.60	2M	0.92	2.0%	2,163	0.901	D	82,500	C	12.2%	No
SR-125	Lone Star Road to Otay Mesa Road	94,000	7.0%	6,580	0.60	2M	0.92	2.0%	2,163	0.901	D	82,500	C	12.2%	No
SR-125	Otay Mesa Road to SR-905	47,800	7.0%	3,346	0.60	2M	0.92	2.0%	1,098	0.458	B	43,700	B	8.6%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M)
Note: M = Mainline.

A.7 Plan-to-Plan (Proposed vs. Adopted) Analysis

The following discussion provides a plan-to-plan analysis assessing potential impacts to the City's General Plan Circulation Element roadways within the project study area that would result from changes in the transportation network, land uses, densities, and/or intensities associated with the proposed project (i.e., the Proposed Plan).

Adopted Plan

Amendments to the City of Chula Vista General Plan (GPA-09-01) and Otay Ranch GDP (PCM-09-11), as reflected in the Circulation Element shown in EIR Appendix M (Figure 1-4), were adopted by the City Council in 2013. Thus, the Circulation Element shown in the TIA prepared for the proposed project (Appendix M, Figure 1-4) is assumed to be the adopted Circulation Element (Adopted Plan). ADT volumes for study area roadway and freeway segments under the Adopted Plan were obtained from the TIA prepared in connection with the adopted amendments by LLG Engineers, dated May 11, 2012.

Plan-to-Plan Impact Assessments

Roadway Segment Analysis

Table 5.3-46 displays the LOS analysis results for study area roadway segments within the City of Chula Vista under both the Adopted and Proposed Plans, while Table 5.3-47 displays the analysis results for roadway segments within the City of San Diego.

Based upon the impact criteria discussed in Section 5.3.2, the Proposed Plan would have a significant cumulative impact to the roadway segment of Orange Avenue between Melrose Avenue and I-805 SB Ramps when compared to the Adopted Plan. Under the Proposed Plan, an additional 1,300 ADT would be generated (a 3.8% increase), resulting in an unacceptable LOS E. This impact also was identified previously under the existing plus project, Year 2020, 2025, and 2030 scenarios. As discussed in Section 5.3.5., Mitigation Measures, the recommended improvements would require widening of Orange Avenue/Olympic Parkway; however, there are right-of-way constraints that would make such improvements infeasible. An engineering right-of-way assessment was conducted and included in EIR Appendix M. Therefore, mitigation is considered infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Freeway / State Highway Segment Analysis

Table 5.3-48 displays freeway LOS analysis results for I-805, SR-125, and SR-905 under both the Adopted and Proposed Plans. Based upon the impact criteria discussed in Section 5.3.2, the Proposed Plan would have a cumulative impact to the following seven freeway 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.

These impacts also were identified previously under the Year 2030 scenario. As explained in Section 5.3.5, Mitigation Measures, because neither Caltrans nor SANDAG will construct Phase 2 of the I-805 South Project, which would have provided the necessary additional capacity on the I-805 to accommodate project traffic, mitigation is infeasible and the model-identified impacts are determined to be significant and unavoidable. However, also as noted above and in Section 5.3.5, SANDAG has determined that freeway operations on I-805 would remain acceptable without implementation of Phase 2 as a result of the expected shift in traffic to SR-125. The Addendum to the *Transportation Plan for the San Diego Region* Final EIR (December 2011), determined that decreased tolls on SR-125 would attract more traffic to SR-125 and relieve congestion on I-805, eliminating the need for Phase 2 (SANDAG 2011) (this Addendum can be found in Appendix M).

Table 5.3-46
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	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*				
H Street	Tierra Del Rey to Paseo Ranchero	6-Ln Prime	49,800	50,000	C	6-Ln Prime	49,000	50,000	C	800	1.6%		No
Telegraph Canyon Road	Medical Center Drive to Heritage Road / Paseo Ranchero	6-Ln Prime	55,700	50,000	**D**	6-Ln Prime	54,400	50,000	**D**	1,300	2.4%	Yes	No
Telegraph Canyon Road	Heritage Road / Paseo Ranchero to La Media Road/Otay Lakes Road	6-Ln Prime	46,600	50,000	C	6-Ln Prime	47,100	50,000	C	−500	-1.1%		No
Otay Lakes Road	H Street to Telegraph Canyon Road	6-Ln Prime	30,300	50,000	A	6-Ln Prime	29,800	50,000	A	500	1.7%		No
Otay Lakes Road	La Media Road to Rutgers Avenue	6-Ln Prime	43,900	50,000	C	6-Ln Prime	41,100	50,000	B	2,800	6.8%		No
East Palomar Street	Medical Center Drive to Heritage Road	4-Ln Major	23,000	30,000	B	4-Ln Major	21,000	30,000	A	2,000	9.5%		No
East Palomar Street	Heritage Road to La Media Road	4-Ln Major	22,400	30,000	A	4-Ln Major	22,500	30,000	B	−100	−0.4%		No
East Palomar Street	La Media Road to Olympic Parkway	4-Ln Major	26,000	30,000	B	4-Ln Major	24,700	30,000	A	1,300	5.3%		No
Orange Avenue	3rd Avenue to Hilltop Drive	4-Ln Major	26,900	30,000	C	4-Ln Major	27,000	30,000	C	−100	−0.4%		No
Orange Avenue	Hilltop Drive to Melrose Avenue	4-Ln Major	29,600	30,000	C	4-Ln Major	28,200	30,000	C	1,400	5.0%		No
Orange Avenue	Melrose Avenue to I-805 SB Ramps	4-Ln Major	35,600	30,000	**E**	4-Ln Major	34,300	30,000	**E**	1,300	3.8%	No	Yes (Cumulative)

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	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	I-805 SB Ramps to I-805 NB Ramps	6-Ln Prime	45,500	50,000	C	6-Ln Prime	42,500	50,000	B	3,000	7.1%		No
Olympic Parkway	I-805 NB Ramps to Oleander Avenue	6-Ln Prime	56,500	50,000	**E**	6-Ln Prime	50,700	50,000	**D**	5,800	11.4%	Yes	No
Olympic Parkway	Oleander Avenue to Brandywine Avenue	6-Ln Prime	48,700	50,000	C	6-Ln Prime	42,800	50,000	B	5,900	13.8%		No
Olympic Parkway	Brandywine Avenue to Heritage Road	6-Ln Prime	42,200	50,000	B	6-Ln Prime	34,800	50,000	A	7,400	21.3%		No
Olympic Parkway	Heritage Road to Santa Venetia Street	6-Ln Prime	36,100	50,000	A	6-Ln Prime	33,300	50,000	A	2,800	8.4%		No
Olympic Parkway	Santa Venetia Street to La Media Road	6-Ln Prime	29,800	50,000	A	6-Ln Prime	27,500	50,000	A	2,300	8.4%		No
Olympic Parkway	La Media Road to East Palomar Street	6-Ln Prime	27,100	50,000	A	6-Ln Prime	24,800	50,000	B	2,300	9.3%		No
Olympic Parkway	East Palomar Street to SR-125 SB Ramps	6-Ln Prime	47,600	50,000	C	6-Ln Prime	43,900	50,000	C	3,700	8.4%		No
Olympic Parkway	SR-125 SB Ramps to SR-125 NB Ramps	8-Ln Expressway	49,800	70,000	A	8-Ln Expressway	46,400	70,000	A	3,400	7.3%		No
Olympic Parkway	SR-125 NB Ramps to EastLake Parkway	8-Ln Expressway	51,700	70,000	A	8-Ln Expressway	49,400	70,000	A	2,300	4.7%		No
Olympic Parkway	EastLake Parkway to Hunte Parkway	6-Ln Prime	36,300	50,000	A	6-Ln Prime	34,200	50,000	A	2,100	6.1%		No
Olympic Parkway	Hunte Parkway to Olympic Vista Road	4-Ln Major	29,300	30,000	C	4-Ln Major	30,100	30,000	**D**	−800	−2.7%		No

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	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	Olympic Vista Road to Lake Crest Drive	4-Ln Major	13,800	30,000	A	4-Ln Major	14,100	30,000	A	−300	−2.1%		No
Birch Road	La Media Road to Magdalena Avenue	6-Ln Major	31,300	40,000	B	6-Ln Major	26,200	40,000	A	5,100	19.5%		No
Birch Road	Magdalena Avenue to SR-125 SB Ramps	6-Ln Major	31,000	40,000	B	6-Ln Major	26,000	40,000	A	5,000	19.2%		No
Birch Road	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln Prime	30,500	50,000	A	6-Ln Prime	27,400	50,000	A	3,100	11.3%		No
Birch Road	SR-125 NB Ramps to EastLake Parkway	6-Ln Prime	31,100	50,000	A	6-Ln Prime	28,500	50,000	A	2,600	9.1%		No
Main Street	4th Avenue to 3rd Avenue	4-Ln Major	25,800	30,000	B	4-Ln Major	26,100	30,000	B	−300	−1.1%		No
Main Street	3rd Avenue to Hilltop Drive	4-Ln Major	31,900	30,000	**D**	4-Ln Major	32,200	30,000	**D**	−300	−0.9%		No
Main Street	Hilltop Drive to Melrose Avenue	4-Ln Major	36,900	30,000	**E**	4-Ln Major	37,500	30,000	**E**	−600	−1.6%		No
Main Street	Melrose Avenue to I-805 SB Ramps	4-Ln Major	36,500	30,000	**E**	4-Ln Major	37,400	30,000	**E**	−900	−2.4%		No
Main Street	I-805 SB Ramps to I-805 NB Ramps	6-Ln Prime	49,000	50,000	C	6-Ln Prime	54,200	50,000	**D**	−5,200	−9.46%		No
Main Street	I-805 NB Ramps to Oleander Avenue	6-Ln Prime	51,100	50,000	**D**	6-Ln Prime	59,300	50,000	**E**	−8,200	−13.8%		No
Main Street	Oleander Avenue to Brandywine Avenue	6-Ln Prime	54,900	50,000	**D**	6-Ln Prime	57,600	50,000	**E**	−2,700	−4.7%		No

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	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	Brandywine Avenue to Heritage Road	6-Ln Prime	49,300	50,000	C	6-Ln Prime	50,200	50,000	**D**	−900	−1.8%		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	9.6%		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	65.6%	Yes	No
Main Street	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln Gateway*	54,900	61,200	D	6-Ln Gateway*	35,000	61,200	A	19,900	56.9%		No
Main Street	SR-125 NB Ramps to EastLake Parkway / University Drive	6-Ln Gateway*	60,500	61,200	D	6-Ln Gateway*	43,400	61,200	B	17,100	39.4%		No
Otay Valley Road	Main Street to SR-125	4-Ln Major	22,900	30,000	B	4-Ln Major	31,400	30,000	**D**	−8,500	−27.1%		No
Otay Valley Road	SR-125 to Street "B"	4-Ln Major	15,400	30,000	A	4-Ln Major	38,500	30,000	**D**	−23,100	−60.0%		No
Hilltop Drive	Orange Avenue to Main Street	Class I Collector	11,300	22,000	A	Class I Collector	11,500	22,000	A	−200	−1.7%		No
Paseo Ranchero	H Street to Telegraph Canyon Road	Class I Collector	22,200	22,000	**D**	Class I Collector	22,200	22,000	**D**	0	0.0%	Yes	No
Heritage Road	Telegraph Canyon Road to East Palomar Street	6-Ln Prime	28,600	50,000	A	6-Ln Prime	26,600	50,000	A	2,000	7.5%		No
Heritage Road	East Palomar Street to Olympic Parkway	6-Ln Prime	53,600	50,000	**D**	6-Ln Prime	50,700	50,000	**D**	2,900	5.7%	Yes	No

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	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	Olympic Parkway to Santa Victoria Road	6-Ln Prime	36,500	50,000	A	6-Ln Prime	38,600	50,000	B	−2,100	−5.4%		No
Heritage Road	Santa Victoria Road to Main Street	6-Ln Prime	45,600	50,000	C	6-Ln Prime	42,300	50,000	B	3,300	7.8%		No
Heritage Road	Main Street to Avenida De Las Vistas	6-Ln Prime	60,700	50,000	**E**	6-Ln Prime	61,400	50,000	**E**	−700	−1.1%		No
La Media Road	Telegraph Canyon Road to East Palomar Street	6-Ln Prime	30,800	50,000	A	6-Ln Prime	29,900	50,000	A	900	3.0%		No
La Media Road	East Palomar Street to Olympic Parkway	6-Ln Prime	27,600	50,000	A	6-Ln Prime	26,600	50,000	A	1,000	3.8%		No
La Media Road	Olympic Parkway to Santa Venetia Street	6-Ln Prime	33,700	50,000	A	6-Ln Prime	27,500	50,000	A	6,200	22.5%		No
La Media Road	Santa Venetia Street to Birch Road	6-Ln Prime	33,900	50,000	A	6-Ln Prime	28,300	50,000	A	5,600	19.8%		No
La Media Road	Birch Road to Santa Luna Street	6-Ln Prime	21,700	50,000	A	6-Ln Prime	18,000	50,000	A	3,700	20.6%		No
La Media Road	Santa Luna Street to Main Street	4-Ln Town Center Arterial	21,100	30,000	A	4-Ln Town Center Arterial	18,000	50,000	A	3,100	17.2%		No
Magdalena Avenue	Santa Venetia Street to Birch Road	Class I Collector	8,100	22,000	A	Class I Collector	6,600	22,000	A	1,500	22.7%		No
Magdalena Avenue	Birch Road to Wolf Canyon Loop	Class I Collector	13,100	22,000	A	Class I Collector	12,300	22,000	A	800	6.5%		No

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	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	Wolf Canyon Loop to Santa Luna Street	Class II Collector	4,900	12,000	A	Class II Collector	5,000	12,000	A	−100	−2.0%		No
Magdalena Avenue	Santa Luna Street to Main Street	Class I Collector	11,600	22,000	A	Class I Collector	11,100	22,000	A	500	4.5%		No
EastLake Parkway	Corte Vista to Olympic Parkway	6-Ln Prime	24,600	50,000	A	6-Ln Prime	24,000	50,000	A	600	2.5%		No
EastLake Parkway	Olympic Parkway to Birch Road	6-Ln Major	29,700	40,000	A	6-Ln Major	27,600	40,000	A	2,100	7.6%		No
EastLake Parkway	Birch Road to Main Street/Hunte Parkway	6-Ln Major	23,000	40,000	A	6-Ln Major	22,800	40,000	A	200	0.9%		No
University Drive	Main Street/Hunte Parkway to University Driveway #1	4-Ln Major	19,930	30,000	A	4-Ln Major	18,600	30,000	A	200	0.9%		No
University Drive	University Driveway #1 to University Driveway #2	Class II Collector	9,250	12,00	B	4-Ln Major	18,600	30,000	A	1,330	7.2%		No
University Drive	University Driveway #2 to Discovery Falls Drive	Class II Collector	6,440	*12,000*	A	*4-Ln Major*	*18,600*	*30,000*	*A*	−9,350	-50.3%		No
Discovery Falls Drive	Hunte Parkway to University/RTP Driveway	4-Ln Major	20,470	*30,000*	A	2-Ln non-CE	*16,200*	*7,500*	***F***	-12,160	-65.4%		No
Discovery Falls Drive	University/RTP Driveway to University Drive	Class II Collector	6,600	*12,000*	A	2-Ln non-CE	*16,200*	*7,500*	***F***	4,270	26.4%		No

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	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*				
Discovery Falls Drive	University Drive to Street "B"	*Class II Collector*	5,910	*12,000*	A	2-Ln non-CE	*16,200*	*7,500*	***F***	-9,600	-59.3%		
Hunte Parkway	Otay Lakes Road to Olympic Parkway	4-Ln Major	21,700	30,000	A	4-Ln Major	20,700	30,000	A	1,000	4.8%		No
Hunte Parkway	Olympic Parkway to Discovery Falls Drive	6-Ln Prime	31,500	50,000	A	6-Ln Prime	31,600	50,000	A	−100	−0.3%		No
Hunte Parkway	Discovery Falls Drive to EastLake Parkway /University Drive	6-Ln Prime	38,400	50,000	B	6-Ln Prime	40,000	50,000	B	−1,600	−4.0%		No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS (D), E, or F.
* LOS D is considered acceptable for a six-lane Gateway.

Table 5.3-47
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of San Diego)

Roadway	Segment	Proposed Plan				Adopted Plan				Change in V/C	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS D)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS D)*	*LOS*		
Lone Star Road	La Media Road to Ellis Road	4-Ln Major	31,600	35,000	D	4-Ln Major	31,500	35,000	D	0.00	No
Otay Mesa Road	Ocean View Hills Parkway to Heritage Road	6-Ln Prime	48,800	55,000	C	6-Ln Prime	49,300	55,000	B	−0.01	No
Otay Mesa Road	Heritage Road to Cactus Road	6-Ln Prime	45,200	55,000	C	6-Ln Prime	45,600	55,000	C	-0.01	No
Otay Mesa Road	Cactus Road to Britannia Boulevard	6-Ln Prime	48,300	55,000	C	6-Ln Prime	45,600	55,000	C	0.05	No
Otay Mesa Road	Britannia Boulevard to La Media Road	6-Ln Prime	47,100	55,000	C	6-Ln Prime	47,300	55,000	C	0.00	No
Otay Mesa Road	La Media Road to Ellis Road	6-Ln Prime	49,400	55,000	C	6-Ln Prime	33,200	55,000	B	0.29	No
Heritage Road	Avenida De Las Vistas to Otay Mesa Road	6-Ln Prime	53,700	55,000	D	6-Ln Prime	52,600	55,000	C	0.02	No
La Media Road	Lone Star Road to Otay Mesa Road	6-Ln Prime	16,600	55,000	A	6-Ln Prime	16,400	55,000	A	0.00	No
Ellis Road	Lone Star Road to Otay Mesa Road	4-Ln Major	32,000	35,000	D	4-Ln Major	31,700	35,000	D	0.01	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.

Table 5.3-48
Freeway / State Highway Segment LOS 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	258,600	C	256,400	C	0.85%	No
I-805	SR-94 to Market Street	4M+1ML	286,400	**F**	284,200	**E**	0.77%	Yes (Cumulative)
I-805	Market Street to Imperial Avenue	5M+1ML	353,600	**F**	351,700	**F**	0.54%	Yes (Cumulative)
I-805	Imperial Avenue to E Division Street	5M+1ML	352,100	**F**	350,200	**F**	0.54%	Yes (Cumulative)
I-805	E Division Street to Plaza Boulevard	5M+1ML	339,400	D	337,300	D	0.62%	No
I-805	Plaza Boulevard to SR-54	5M+1ML	330,500	**F**	328,300	**F**	0.67%	Yes (Cumulative)
I-805	SR-54 to Bonita Road	4M+1Aux+1ML	372,700	**F**	370,500	**F**	0.59%	Yes (Cumulative)
I-805	Bonita Road to East H Street	5M+1ML	329,500	**E**	327,400	**E**	0.64%	Yes (Cumulative)
I-805	East H Street to Telegraph Canyon Road	5M+1ML	328,200	**E**	325,800	**E**	0.73%	Yes (Cumulative)
I-805	Telegraph Canyon Road to East Palomar Street	4M+1Aux+1ML	287,000	C	285,800	C	0.42%	No
I-805	East Palomar Street to Olympic Parkway	4M+1Aux+1ML	272,000	D	272,200	D	−0.07%	No
I-805	Olympic Parkway to Main Street	4M+1Aux+1ML	266,000	C	268,000	C	−0.75%	No
I-805	Main Street to Palm Avenue	4M+1Aux+1ML	258,100	D	258,100	D	0.00%	No
I-805	Palm Avenue to SR-905	4M+1Aux+1ML	237,000	D	201,800	C	14.85%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	2M	35,500	A	34,500	A	2.82%	No
SR-125	Olympic Parkway to Birch Road	2M	30,700	A	28,100	A	8.47%	No
SR-125	Birch Road to Main Street	2M	34,600	A	30,200	A	12.72%	No
SR-125	Main Street to Otay Valley Road	2M	94,000	D	90,700	D	3.51%	No
SR-125	Otay Valley Road to Lone Star Road	2M	82,700	C	80,600	C	2.54%	No
SR-125	Lone Star Road to SR-905	2M	47,800	B	33,700	A	29.50%	No
SR-905	I-805 to Calliente Avenue	3M	222,800	**F**	223,600	**F**	−0.36%	No
SR-905	Calliente Avenue to Heritage Road	3M	214,100	**F**	214,900	**F**	−0.37%	No
SR-905	Heritage Road to Britannia Boulevard	3M	196,400	**F**	197,500	**F**	−0.56%	No
SR-905	Britannia Boulevard to La Media Road	3M	171,200	**F**	171,400	**F**	−0.12%	No
SR-905	La Media Road to SR-125	3M	133,300	D	133,200	D	0.08%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
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

A consistency analysis of the proposed project with applicable General Plan transportation and transit policies is provided in EIR Appendix B, Project Consistency with General Plan Policies. As shown in the table (Appendix B), and summarized below, the project would be consistent with applicable transportation policies, taking into account all modes of transportation.

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 cores in Villages Three North, Eight East, and Ten. 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 to Villages Three North, Eight East, and Ten 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, OVRP 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). A pedestrian bridge over SR-125 would connect directly to Campus Boulevard and the University/RTP site.

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 2005a, page IV-21).

As described above, a traffic analysis was conducted for the proposed project, which is summarized in detail in this section (Section 5.3). Mitigation measures are identified in Section 5.3.5 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 Otay Ranch 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 Otay Ranch 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, Otay Ranch GDP, ordinances, and policies establishing measures of effectiveness for the performance of the circulation system. Therefore, impacts would be **less than significant**.

A.8 Construction Phasing

Construction of the proposed project is anticipated to begin with Village Three North in late 2014[4]. Construction of the residential portion of Village Three North is anticipated to be complete in September 2018 and the non-residential portion (Industrial) is anticipated to be complete by 2025. Generally, Village Three North is expected to phase from northwest to southeast. Construction of Village Eight East is anticipated to begin in February 2016 and to be complete in September 2024. Village Eight East is expected to phase from north to south. Lastly, construction of Village Ten is anticipated to begin in August 2023 and to be complete in September 2029. Village Ten is expected to phase from north to south. Phasing dates are different between the Traffic Impact Analysis (Appendix M) and the EIR, because the TIA only analyzes the project in 5-year increments.

The proposed project is analyzed in accordance with the assumed phasing schedule identified above, and further refined in Table 4-3. In the event that the proposed project is not constructed in accordance with the assumed phasing schedule then a **potentially significant** impact could occur.

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

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. Impacts are as designated under Threshold (A).

[4] The original construction schedule beginning in March 2014 is analyzed for the proposed project; however, as identified above, construction would start at a later date. The construction scenario and schedule analyzed as part of the proposed project analysis is considered conservative.

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

The proposed project is the development of a mixed-use residential and commercial project that does not include a change in air traffic patterns. While the proposed project would result in a population increase of approximately 23,594 people at buildout, which could result in an increase in demand for air travel at the San Diego International Airport, this increase is not anticipated to result in any changes in air traffic patterns that would result in substantial safety risks. Therefore, impacts would be **less than significant**.

D. 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 County 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 EIR Appendix M, Chapter 12.

E. Result in inadequate emergency access.

The proposed project would result in the development of a currently undeveloped area, including the development of site access for each village, as described below. The project circulation system would be consistent with County Street Design Standards and all applicable emergency access standards that would facilitate emergency vehicle access to all areas of the villages.

Village Three North

Site access to Village Three North is proposed via three driveways, each accessing Heritage Road. Each of the three project driveways would be signalized, based on signal warrant, and would operate at LOS D or better during the peak hours with full development of the project.

A Portion of Village Four

Site access to the Portion of Village Four is proposed via La Media Road to form a four- legged intersection with Santa Luna Street. The project driveway would be signalized and would operate at LOS D or better during the peak hours with full development of the project.

Village Eight East

Site access to Village Eight East is proposed via five driveways: two accessing Main Street and three accessing Otay Valley Road. The proposed community park will be accessed from a separate roadway that connects to Otay Valley Road just west of the Village Eight East project site. The driveway off of Main Street and the middle driveway off of Otay Valley Road would be signalized, while the other driveways would be stop controlled right-turn in/out only. All of the driveways providing access to Village Eight East would operate at LOS D or better during the peak hours with full development of the project.

Village Ten

Site access to Village Ten is proposed via four driveways: three accessing Discovery Falls Drive and one accessing Otay Valley Road. Each of the four driveways would be signalized, based on signal warrants, and would operate at LOS D or better during the peak hours with full development of the project.

The proposed project would provide adequate access throughout the project area, including access for emergency vehicles. In addition, the project includes Emergency Disaster Plans within the SPA plans for each village that would ensure the project is incorporated into the existing emergency disaster programs to allow for adequate emergency access. Therefore, the proposed project would not result in inadequate emergency access and impacts would be **less than significant**.

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

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. 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 (See Figures 4-5, 4-10, and 4-15). The proposed project would also implement the City's Trail Plan, through compliance with the regional trail program on major arterials, the OVRP Trails Plan, and the Greenbelt Master Plan (See Figures 4-8, 4-13, and 4-18). Bicycle lanes would also be provided consistent with the designated bicycle routes as identified in the City's adopted Bikeway Master Plan (See Figures 4-7, 4-12, and 4-17).

Public transportation is an integral part of the Otay Ranch Community, including the proposed University Villages 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 5.3.1, the Metropolitan Transit System 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 SR-125 from the Otay Mesa border crossing, then west through eastern Chula Vista, head north on I-805 utilizing the carpool, or High Occupancy Vehicle (HOV), lanes, and then travel west on SR-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 5.3.1, 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**.

5.3.4 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 mitigation measures.

Growth Management Ordinance Compliance (Section 19.09 of the CVMC)

In the short-term (0-4 years), a significant impact could occur on Olympic Parkway between Heritage Road and Oleander Avenue during the AM peak Hour if the 2,463rd building permit for units east of the I-805 is issued.

Year 2015 Conditions

Intersections

None of the study area intersections would be significantly impacted.

Roadway Segments

None of the study area roadway segments would be significantly impacted.

Freeways/State Highways

None of the study area freeway / state highway facilities would be significantly impacted.

Ramp Metering

Neither the I-805 northbound on-ramps at Olympic Parkway nor the ramps at Main Street would be significantly impacted.

Access and Frontage

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development. Therefore, a potentially significant impact would occur.

Circulation System Assumptions

The traffic analysis assumed certain roadway improvements to be in place prior to commencement of each study scenario. These assumed roadways were taken into account due to other Otay Ranch communities planned improvements or City of Chula Vista and City of San Diego Circulation Element funded improvements in the project study area. If these improvements are not in place prior to each traffic scenario as assumed, additional traffic impacts would occur resulting in a potentially significant impact.

Year 2020 Conditions

Intersections

Under Year 2020 conditions, the proposed project would have significant project-specific/direct impacts at the following nine study area intersections, all of which are located in the City of Chula Vista:

- I-805 SB Ramps / Olympic Parkway
- I-805 NB Ramps / Olympic Parkway
- Brandywine Avenue / Olympic Parkway (all-way stop controlled)
- Heritage Road / Main Street (all-way stop controlled)
- La Media Road (SB) / Main Street (WB) (all-way stop controlled)
- La Media Road (NB) / Main Street (WB) (all-way stop controlled)
- La Media Road (SB) / Main Street (EB) (all-way stop controlled)
- La Media Road (NB) / Main Street (EB) (all-way stop controlled)
- Magdalena Avenue / Main Street (one-way stop controlled)

Roadway Segments

The following roadway segments in the City of Chula Vista would be significantly impacted by the proposed project traffic under the Year 2020 conditions (impacts are identified as direct or cumulative):

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (cumulative)
- Olympic Parkway, between I-805 SB Ramps and I-805 NB Ramps (direct)
- Olympic Parkway, between I-805 NB Ramps and Oleander Avenue (direct)
- Olympic Parkway, between Oleander Avenue and Brandywine Avenue (direct)
- Olympic Parkway, between Brandywine Avenue and Heritage Road (direct)

Freeways / State Highways

The following two freeway / state highway segments would be cumulatively impacted by the proposed project in the Year 2020.

- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E. Division Street

Ramp Metering

The Year 2020 project traffic would have a significant cumulative impact at the I-805 northbound on-ramp at Main Street.

Access and Frontage

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development. Therefore, a potentially significant impact would occur.

Circulation System Assumptions

The traffic analysis assumed certain roadway improvements to be in place prior to commencement of each study scenario. These assumed roadways were taken into account due to other Otay Ranch communities planned improvements or City of Chula Vista and City of San Diego Circulation Element funded improvements in the project study area. If these improvements are not in place prior to each traffic scenario as assumed, additional traffic impacts would occur resulting in a potentially significant impact.

Year 2025 Conditions

Intersections

Under Year 2025 conditions, the proposed project would have significant impacts (two project-specific and one cumulative) at the following three study area intersections in the City of Chula Vista:

- Heritage Road / Olympic Parkway (direct)
- La Media Road / Olympic Parkway (direct)
- I-805 SB Ramps / Olympic Parkway (cumulative)

Roadway Segments

The following roadway segments in the City of Chula Vista would be significantly impacted by the proposed project traffic under the Year 2025 conditions:

- Olympic Parkway between Heritage Road and Santa Venetia Street (direct)
- Heritage Road between East Palomar Street and Olympic Parkway (direct)
- Orange Avenue between Melrose Avenue and I-805 SB Ramps (cumulative)

Freeways/State Highways

The following five freeway / state highway segments would be cumulatively impacted under Year 2025 conditions.

- 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

Ramp Metering

None of the I-805 northbound on-ramps at Olympic Parkway or at Main Street would be significantly impacted under Year 2025 conditions.

Access and Frontage

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development. Therefore, a potentially significant impact would occur.

Circulation System Assumptions

The traffic analysis assumed certain roadway improvements to be in place prior to commencement of each study scenario. These assumed roadways were taken into account due to other Otay Ranch communities planned improvements or City of Chula Vista and City of San Diego Circulation Element funded improvements in the project study area. If these improvements are not in place prior to each traffic scenario as assumed, additional traffic impacts would occur resulting in a potentially significant impact.

Year 2030 Conditions

Intersections

The proposed project would have significant impacts at the following two study area intersections in the City of Chula Vista:

- Discovery Falls Drive / Hunte Parkway (direct)
- I-805 SB Ramps / Olympic Parkway (cumulative)

Roadway Segments

The following roadway segment in the City of Chula Vista would be significantly cumulatively impacted by the proposed project traffic under the Year 2030 conditions:

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

Freeways/State Highways

The following eleven freeways / state highway segments would be significantly cumulatively impacted by the buildout of the proposed project under Year 2030 conditions:

- 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
- SR-905 from I-805 to Caliente Avenue
- SR-905 from Caliente Avenue to Heritage Road
- SR-905 from Heritage Road to Britannia Boulevard
- SR-905 from Britannia Boulevard to La Media Road

Ramp Metering

Project buildout traffic would have a significant cumulative impact at the I-805 northbound on-ramp at Main Street under Year 2030 conditions.

Access and Frontage

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development. Therefore, a potentially significant impact would occur.

Circulation System Assumptions

The traffic analysis assumed certain roadway improvements to be in place prior to commencement of each study scenario. These assumed roadways were taken into account due to other Otay Ranch communities planned improvements or City of Chula Vista and City of San Diego Circulation Element funded improvements in the project study area. If these improvements are not in place prior to each traffic scenario as assumed, additional traffic impacts would occur resulting in a potentially significant impact.

Construction Phasing

In the event that the proposed project is not constructed in accordance with the assumed phasing schedule as identified in Section 4.0, Project Description, Table 4.3, a potentially significant impact would occur and mitigation is required.

5.3.5 Mitigation Measures

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 5.3-49. The mitigation triggers are derived based on the PFFP Assessment presented in EIR Appendix M, Chapter 13.0.

In addition, in accordance with CVMC Chapter 15.51, the project is also required to contribute to the Traffic Signal Fee Program.

Growth Management Ordinance Compliance (Section 19.09 of the CVMC)

To ensure that the segment of Olympic Parkway between Heritage Road and Oleander Avenue continues to operate within acceptable GMO threshold standards, the following mitigation measure is provided:

MM TCA-1 Prior to the issuance of the building permit for the 2,463rd DU 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. The City's determination

regarding the adequacy of the circulation system shall be based on whether the quality of life threshold standards for traffic set for in the City of Chula Vista GMO (Chapter 19.09 of the Chula Vista Municipal Code) are met; The current traffic threshold is to maintain LOS "C" or better as measured by observed average travel speed on all signalized arterial segments, except, that during peak hours a LOS "D" can occur for no more than two hours; 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. The City's determination regarding the scope and timing of the alternative method shall be based on demonstrated compliance with the GMO traffic thresholds; 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, and a timeline for such construction, as well as providing assurances for construction, in accordance with the City's customary requirements, for said infrastructure.

If GMO compliance cannot be achieved through 1a, 1b, 1c, or 1d, then the City ~~may, in its sole discretion,~~shall stop issuing new building permits within the project area, after building permits for 2,463 DU 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.

These measures shall constitute full compliance with growth management objectives and policies in accordance with the requirements of the General Plan, Chapter 10, and with regard to traffic thresholds set forth in the GMO.

Access and Frontage

To ensure the access and frontage improvements assumed as part of the traffic analysis are constructed concurrent with development, the following mitigation measure is provided:

MM TCA-2 Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 to the satisfaction of the Development Services Director and the City Engineer.

Year 2015 Conditions

Intersections and Roadway Segments

None of the study area intersections or roadway segments would be significantly impacted under Year 2015 conditions; therefore, no mitigation measures are required under this scenario.

Freeways / State Highways

None of the study area freeway / state highway facilities would be significantly impacted under Year 2015 conditions; therefore, no mitigation measures would be required under this scenario.

Ramp Metering

Neither the I-805 northbound on-ramps at Olympic Parkway nor the ramps at Main Street would be significantly impacted under Year 2015 conditions; therefore no mitigation measures would be required under this scenario.

Circulation System Assumptions

To ensure the circulation system improvements assumed in the University Villages Traffic Impact Analysis dated ~~June~~ October 2014, are constructed and operational in accordance with the assumed circulation system improvements, the following mitigation measure is provided:

MM TCA-3 The year 2015 scenario assumes the following intersection and roadway improvements are in place:

- Phase 1 of the I-805 South Project, including improvements to I-805 between Home Avenue and East Palomar Street
- Heritage Road, south of Main Street to the Chula Vista city limit as a 4-lane Major Road with Raised Median

If the first final map containing the 611th EDU is submitted for approval ~~If the project equivalent dwelling unit limit of 611th EDU is exceeded~~ prior to these improvements being constructed and open to traffic, then one of the following steps shall be taken, each to the satisfaction of the City Engineer:

i. Development in Village Three and the Portion of Village Four ~~and Village Eight East~~ shall stop until those assumed future roadways are constructed by others as presently planned; or

ii. City and the Applicant shall meet to determine the need for the incomplete roadway segments. Because a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch,

the Applicant shall submit to the City additional traffic analysis of the roadway network and levels of service ~~assessment may be necessary~~ at that time to determine: (i) if such improvements ~~are~~ in fact are necessary; and (ii) the scope and timing of additional circulation improvements, if any. The City's determination of whether such improvements are necessary, or the scope and timing of additional improvements, shall be based on whether the City's traffic quality of life threshold standards are met, consistent with the performance standards set forth in the City of Chula Vista Growth Management Ordinance (GMO) (Chapter 19.09 of the Chula Vista Municipal Code). The current traffic threshold is to maintain LOS "C" or better as measured by observed average travel speed on all signalized arterial segments; except, that during peak hours, a LOS "D" can occur for no more than two hours; or

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

iv. An alternative measure is selected by the City that is demonstrated to ensure that the applicable GMO quality of life thresholds are met for traffic. ~~in accordance with the City of Chula Vista Growth Management Ordinance.~~

Year 2020 Conditions

Unless otherwise noted, the following mitigation measures would reduce the identified impacts to less than significant (the applicable jurisdiction is noted in (parentheticals)):

Intersections and Roadway Segments

Direct Impact Mitigation

MM TCA-4 **Intersections**: I-805 SB Ramps / Olympic Parkway (CV), I-805 NB Ramps / Olympic Parkway (CV), and Brandywine Avenue / Olympic Parkway (CV); **Roadways**: Olympic Parkway, between I-805 SB Ramps and I-805 NB Ramps (CV); Olympic Parkway, between I-805 NB Ramps and Oleander Avenue (CV); Olympic Parkway, between Oleander Avenue and Brandywine Avenue (CV); and Olympic Parkway, between Brandywine Avenue and Heritage Road (CV) – Prior to issuance of the Final Map that contains the 956th equivalent dwelling unit (EDU) in Village Three North, the Project Applicant shall construct Heritage Road, between Olympic Parkway and Main Street, as a Six-Lane Prime Arterial.

This connection will provide an important linkage and alleviate traffic congestion along Olympic Parkway, between I-805 and Heritage Road. As a result, the impacts identified at the intersections

of I-805 NB Ramps / Olympic Parkway, and Brandywine Avenue / Olympic Parkway would be reduced to less than significant by this mitigation measure. Additionally, the impacts identified on Olympic Parkway between the I-805 SB Ramps and I-805 NB Ramps; Olympic Parkway between the I-805 NB Ramps and Oleander Avenue; Olympic Parkway between Oleander Avenue and Brandywine Avenue; and, Olympic Parkway between Brandywine Avenue and Heritage Road also would be reduced to less than significant with implementation of this mitigation measure.

However, as to the I-805 SB Ramps /Olympic Parkway intersection, while construction of the segment of Heritage Road between Olympic Parkway and Main Street as identified in the mitigation measure would reduce the identified significant *direct* impact to less than significant, the resulting change in traffic distribution and traffic volumes due to the opening of this segment of Heritage Road would result in a residual significant cumulative impact at the I-805 SB Ramps / Olympic Parkway intersection; that is, with the opening of Heritage Road, the project would now trigger a significant *cumulative* impact at the intersection.

However, to mitigate the remaining cumulative impact, construction of an additional left-turn lane at the I-805 southbound off-ramp, as well as a third through lane along the Olympic Parkway eastbound approach, would be required. These improvements would require widening of Orange Avenue / Olympic Parkway; however, there are right-of-way constraints that would make such improvements infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). The right-of-way constraints which make widening infeasible are due to existing structures located north and south of Orange Avenue, as well as retaining walls supporting the structures. Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition to the proximity of existing residences, another limiting factor is the fixed width of the bridge over I-805. Any widening of Orange Avenue would require a corresponding widening of the bridge over I-805 and there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements.

Furthermore, 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. There are no other feasible physical improvements that would reduce the remaining cumulative impact to less than significant. Therefore, the impact at the intersection of I-805 SB Ramps / Olympic Parkway (CV) will remain significant and unavoidable at this location.

Impacts identified at the intersections of I-805 NB Ramps / Olympic Parkway (CV), and Brandywine Avenue / Olympic Parkway (CV) would be reduced to less than significant with implementation of TCA-4.

MM TCA-5 Heritage Road / Main Street (all-way stop controlled) (CV) – Prior to issuance of the Final Map that contains the 751st EDU in Village Three North, the Project Applicant shall signalize Heritage Road / Main Street intersection.

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 880th EDU in Village Eight East, the Project Applicant shall signalize the La Media Road (SB) /Main Street (WB) intersection.

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 880th EDU in Village Eight East, the Project Applicant shall signalize the La Media Road (NB) /Main Street (WB) intersection.

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 880th EDU in Village Eight East, the Project Applicant shall signalize the La Media Road (SB) /Main Street (EB) intersection.

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 880th EDU in Village Eight East, the Project Applicant shall signalize the La Media Road (NB) / Main Street (EB) intersection.

MM TCA-10 Magdalena Avenue / Main Street (one-way stop controlled) (CV) – Prior to issuance of the Final Map that contains the 1,693rd EDU in Village Eight East, the Project Applicant shall signalize the Magdalena Avenue / Main Street intersection.

Cumulative Impact Mitigation

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps. The improvement necessary to mitigate the significant cumulative impact on Orange Avenue between Melrose Avenue and I-805 SB Ramps is to widen this segment from 4 lanes to 6 lanes. However, there are right-of-way constraints that would make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). The right-of-way constraints which make widening infeasible are due to existing structures located north and south of Orange Avenue, as well as retaining walls supporting the structures. Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition to the proximity of existing residences, another limiting factor is the fixed width of the bridge over I-805. Any widening of Orange Avenue would require a corresponding widening of the bridge over I-805 and there is no

plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements.

Furthermore, 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. There are no other feasible physical improvements that would reduce the remaining cumulative impact to less than significant. Therefore, the impact will remain cumulatively significant and unavoidable at this location.

Freeways/State Highways

As previously discussed, the traffic modeling identified that the proposed project would result in significant cumulative impacts at the following two freeway/state highway segments under the Year 2020 scenario:

- I-805, between Market Street and Imperial Avenue; and
- I-805, between Imperial Avenue and E. Division Street

As explained above, previously planned Phase 2 of the I-805 South Project included buildout of the HOV lanes constructed as part of Phase 1 into Express lanes for a total of four lanes, two in each direction. Phase 2 also would have included the addition of in-line transit stations and freeway-to-freeway direct connectors. With the previously planned Phase 2 improvements in place, impacts to freeways/state highways would be less than significant.

However, also as explained above, SANDAG has determined not to proceed with Phase 2 of the I-805 South Project because SANDAG's Addendum showed that the reduction in tolls on SR-125 will result in a shift of traffic from I-805 to SR-125 and, as such, freeway operations on both facilities would remain acceptable without implementation of Phase 2. (See EIR Appendix M (TIA), Appendix K.) Nonetheless, the Project traffic model did not account for the shift of traffic from I-805 to SR-125, so it continues to reflect a significant impact at the above two I-805 segments; that is, the analysis utilized the traffic model volumes (with four HOV lanes) with a reduced capacity (two HOV lanes). Because neither Caltrans nor SANDAG will construct Phase 2 of the I-805 South Project, and because there is no longer any plan or program in place to construct the Phase 2 improvements, mitigation is infeasible and the model-identified impacts are determined to be significant and unavoidable. However, as noted above, SANDAG has determined that freeway operations on both the I-805 and SR-125 facilities would remain acceptable without implementation of Phase 2 of the I-805 South Project.

Circulation System Assumptions

To ensure the circulation system improvements assumed in the University Villages Traffic Impact Analysis dated June 2014, are constructed and operational in accordance with the assumed, the following mitigation measure is provided:

MM TCA-11 The year 2020 scenario assumes the following intersection and roadway improvements are in place:

- Heritage Road, south of Main Street to the Chula Vista city limit as a 6-lane Prime Arterial
- Otay Lakes Road between H Street and Telegraph Canyon Road as a 6-lane Prime Arterial
- ~~Quarry Driveway (Int #65) @ Main Street as an all-way stop controlled intersection~~

If the project equivalent dwelling unit of 4,070th EDU is exceeded prior to these improvements being constructed and open to traffic, then one of the following steps shall be taken each to the satisfaction of the City Engineer:

i. Development in Village Three and the Portion of Village Four and Village Eight East shall stop until those assumed future roadways are constructed by others as presently planned; or

ii. City and the Applicant shall meet to determine the need for the incomplete roadway segments. Because a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch, the Applicant shall submit to the City additional traffic analysis of the roadway network and levels of service ~~assessment may be necessary~~ at that time to determine: (i) if such improvements ~~are~~ in fact are necessary; and (ii) the scope and timing of additional circulation improvements, if any. The City's determination of whether such improvements are necessary, or the scope and timing of additional improvements, shall be based on whether the City's traffic quality of life threshold standards are met, consistent with the performance standards set forth in the City of Chula Vista Growth Management Ordinance (GMO) (Chapter 19.09 of the Chula Vista Municipal Code). The current traffic threshold is to maintain LOS "C" or better as measured by observed average travel speed on all signalized arterial segments; except, that during peak hours, a LOS "D" can occur for no more than two hours; or

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

iv. An alternative measure is selected by the City that is demonstrated to ensure that the applicable GMO quality of life thresholds are met for traffic~~in accordance with the City of Chula Vista Growth Management Ordinance.~~

Year 2025 Conditions

Unless otherwise noted, the following improvements would mitigate the identified significant impacts to less than significant.

Intersections and Roadway Segments

Direct Impact Mitigation

MM TCA-12 **Intersections**: Heritage Road / Olympic Parkway (CV) and La Media Road / Olympic Parkway (CV); **Roadways**: Olympic Parkway, between Heritage Road and Santa Venetia Street (CV); and Heritage Road, between East Palomar Street and Olympic Parkway (CV) – Prior to the issuance of each building permit, the Project Applicant shall pay the appropriate Transportation Development Impact Fees (TDIF) for the construction of Main Street, between Heritage Road and La Media Road, as a Six-Lane Prime Arterial, including the construction of Main Street bridge, the signalization of Quarry Driveway / Main Street (Int #65), and the signalization of Village Three North R-20 Driveway / Main Street (Int #66). The project will signalize the intersection of Village Three North R-20 Driveway / Main Street (Int #66) in conjunction with the construction of Main Street, while the TDIF program will signalize the intersection of Quarry Driveway / Main Street (Int #65). The analysis shows the need for Main Street from the Heritage Road to La Media Road is triggered by the 4,737th EDU. If the project equivalent dwelling unit limit of 4,736 EDU is reached prior to this roadway segment being constructed and open to traffic, then one of the following steps shall be taken as determined by the City Engineer:

i. Development in Villages Three, Eight East and Ten shall stop until the future roadway is constructed by the City; or

ii. City and the Applicant shall meet to determine the need for the incomplete roadway segments. Because a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch, the Applicant shall submit to the City additional traffic analysis of the roadway network and levels of service at that time to determine: (i) if such

improvements in fact are necessary; and (ii) the scope and timing of additional circulation improvements, if any. The City's determination of whether such improvements are necessary, or the scope and timing of additional improvements, shall be based on whether the City's traffic quality of life threshold standards are met, consistent with the performance standards set forth in the City of Chula Vista Growth Management Ordinance (GMO) (Chapter 19.09 of the Chula Vista Municipal Code). The current traffic threshold is to maintain LOS "C" or better as measured by observed average travel speed on all signalized arterial segments; except, that during peak hours, a LOS "D" can occur for no more than two hours; or

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

iv. An alternative measure is selected by the City that is demonstrated to ensure that the applicable GMO quality of life thresholds are met for traffic.

~~Prior to the Final Map containing the 4,737th EDU, the Project Applicant shall pay the appropriate Transportation Development Impact Fees (TDIF) for the construction of Main Street, between Heritage Road and La Media Road, as a Six-Lane Prime Arterial, including the construction of Main Street bridge, the signalization of Quarry Driveway / Main Street (Int #65), and the signalization of Village Three North R-20 Driveway / Main Street (Int #66). The project will signalize the intersection of Village Three North R-20 Driveway / Main Street (Int #66) in conjunction with the construction of Main Street, while the TDIF program will signalize the intersection of Quarry Driveway / Main Street (Int #65).~~

The segment of Main Street between Heritage Road and La Media Road will provide an important direct east-west linkage and reduce traffic along Heritage Road – Olympic Parkway – La Media Road, thereby improving operations at the Heritage Road / Olympic Parkway intersection to acceptable levels and reducing the identified impact to less than significant. The construction of this segment of Main Street is included within the City's TDIF program. The first phase of construction, as well as the preparation of subsequent environmental compliance documents, are included in the City's CIP Program for 2013-2016 (STM357).

The construction of Main Street between Heritage Road and La Media Road will also significantly reduce traffic on Olympic Parkway between Heritage Road and Santa Venetia Street, Heritage Road between Olympic Parkway and Main Street, and Olympic Parkway between Heritage Road and La Media Road. These reductions would improve the intersection

operations at Heritage Road /Olympic Parkway to acceptable levels, hence, would mitigate the impact at the segment of Heritage Road between East Palomar Street and Olympic Parkway.

Potential impacts associated with the Main Street extension previously were addressed in several environmental documents, including the *Chula Vista Vision 2020 General Plan Update* (GPU) *Final Environmental Impact Report* (EIR) (2005b), the City's *Multiple Species Conservation Plan* (MSCP) *Subarea Plan* (2003), the *Otay Ranch Resource Management Plan* (RMP) (1993), and the *Otay Ranch Resource Management Plan Phase 2* (2002). The extension and the bridge are not required until 2025; therefore, assessing the design and impacts to resources would be speculative at this time. However, 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. A preliminary analysis of the potential effects is provided in EIR Appendix M.5

Cumulative Impact Mitigation

- I-805 SB Ramps / Olympic Parkway (CV) – The improvement necessary to mitigate the significant cumulative impact at the intersection of I-805 SB Ramps and Olympic Parkway is to construct an additional left-turn lane at the I-805 southbound off-ramp, as well as a third through lane along the Olympic Parkway eastbound approach. However, there are right-of-way constraints that would make the recommended widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements. Therefore, impacts related to the I-805 interchange at Olympic parkway are infeasible due to specific constraints.

  Furthermore, 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. There are no other feasible physical improvements that would reduce the remaining cumulative impact to less than significant. Therefore, mitigation is infeasible and the impact at this location will remain cumulatively significant and unavoidable at this location.

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (CV) – The improvement necessary to mitigate the significant cumulative impact on Orange Avenue between Melrose Avenue and I-805 SB Ramps is to widen this segment from 4 lanes to 6

[5] Traffic operations at the quarry access off of Main Street under conditions with and without the Main Street connection over Wolf Canyon are addressed in EIR Appendix M, Chapter 14.0, Quarry Access.

lanes. However, as previously noted, there are right-of-way constraints that would make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). The right-of-way constraints which make widening infeasible are due to existing structures located north and south of Orange Avenue, as well as retaining walls supporting the structures. Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition to the proximity of existing residences, another limiting factor is the fixed width of the bridge over I-805. Any widening of Orange Avenue would require a corresponding widening of the bridge over I-805 and there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements.

Furthermore, 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. There are no other feasible physical improvements that would reduce the remaining cumulative impact to less than significant. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Freeways/State Highways

As previously discussed, the traffic modeling determined that the proposed project would result in significant cumulative impacts at the following five freeway/state highway segments under the Year 2025 scenario:

- I-805, between SR-94 and Market Street;
- I-805, between Market Street and Imperial Avenue;
- I-805, between Imperial Avenue and E. Division Street;
- I-805, between Plaza Boulevard and SR-54; and
- I-805, between SR-54 and Bonita Road

As explained above, previously planned Phase 2 of the I-805 South Project included buildout of the HOV lanes constructed as part of Phase 1 into Express lanes for a total of four lanes, two in each direction. Phase 2 also would have included the addition of in-line transit stations and freeway-to-freeway direct connectors. With the previously planned Phase 2 improvements in place, impacts to freeways/state highways would be less than significant.

However, also as explained above, SANDAG has determined not to proceed with Phase 2 of the I-805 South Project because SANDAG's Addendum (State of California Clearinghouse #2002071059) showed that the reduction in tolls on SR-125 will result in a shift of traffic from I-

805 to SR-125 and, as such, freeway operations on both facilities would remain acceptable without implementation of Phase 2. (See EIR Appendix M (TIA), Appendix K.) Nonetheless, the Project traffic model did not account for the shift of traffic from I-805 to SR-125, so it continues to reflect a significant impact at the above five I-805 segments; that is, the analysis utilized the traffic model volumes (with four HOV lanes) with a reduced capacity (two HOV lanes). Because neither Caltrans nor SANDAG will construct Phase 2 of the I-805 South Project, and because there is no longer any plan or program in place to construct the Phase 2 improvements, mitigation is infeasible and the model-identified impacts are determined to be significant and unavoidable. However, as noted above, SANDAG has determined that freeway operations on both the I-805 and SR-125 facilities would remain acceptable without implementation of Phase 2 of the I-805 South Project.

Year 2030 Conditions

Unless otherwise noted, the following mitigation measures would reduce the identified impacts to less than significant.

Intersections and Roadway Segments

Direct Impact Mitigation

MM TCA-13 **Intersection**: Discovery Falls Drive / Hunte Parkway (CV) – Prior to approval of the Final Map containing the 1,295th EDU of Village Ten, the Project Applicant shall construct a dedicated right-turn lane at the northbound Discovery Falls Drive approach to the Discovery Falls Drive/Hunte Parkway intersection.

Cumulative Impact Mitigation

- I-805 SB Ramps / Olympic Parkway (CV) – The improvement necessary to mitigate the identified significant cumulative impact at the I-805 SB Ramps / Olympic Parkway intersection is to construct an additional left-turn lane at the I-805 southbound off-ramp, as well as a third through lane along the Olympic Parkway eastbound approach prior to issuance of building permits. However, there are right-of-way constraints that would make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements. Therefore, impacts related to the I-805 interchange at Olympic parkway are infeasible due to specific constraints.

  Furthermore, 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. There are no other feasible physical improvements that would reduce the identified cumulative impact to less than significant. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (CV)– The improvement necessary to mitigate the identified significant cumulative impact on Orange Avenue, between Melrose Avenue and I-805 SB Ramps is to widen Orange Avenue between Melrose Avenue and the I-805 SB Ramps from four lanes to six lanes (Major Road). However, there are right-of-way constraints that would make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). The right-of-way constraints which make widening infeasible are due to existing structures located north and south of Orange Avenue, as well as retaining walls supporting the structures. Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition to the proximity of existing residences, another limiting factor is the fixed width of the bridge over I-805. Any widening of Orange Avenue would require a corresponding widening of the bridge over I-805 and there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements.

  Furthermore, 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. There are no other feasible physical improvements that would reduce the identified cumulative impact to less than significant. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Freeways/State Highways

As previously discussed, the traffic modeling identified that the proposed project would result in significant cumulative impacts at the following eleven freeway/state highway segments under the Year 2030 scenario:

- I-805, between SR-94 and Market Street;
- I-805, between Market Street and Imperial Avenue;
- I-805, between Imperial Avenue and E. Division Street;
- I-805, between Plaza Boulevard and SR-54;
- I-805, between SR-54 and Bonita Road;

- I-805, between Bonita Road and East H Street;
- I-805, between East H Street and Telegraph Canyon Road;
- SR-905, between I-805 and Caliente Avenue;
- SR-905, between Caliente Avenue and Heritage Road;
- SR-905, between Heritage Road and Britannia Boulevard; and
- SR-905, between Britannia Boulevard and La Media Road.

As explained above, previously planned Phase 2 of the I-805 South Project included buildout of the HOV lanes constructed as part of Phase 1 into Express lanes for a total of four lanes, two in each direction. Phase 2 also would have included the addition of in-line transit stations and freeway-to-freeway direct connectors. With the previously planned Phase 2 improvements in place, impacts to freeways/state highways would be less than significant.

However, also as explained above, SANDAG has determined not to proceed with Phase 2 of the I-805 South Project because SANDAG's Addendum showed that the reduction in tolls on SR-125 will result in a shift of traffic from I-805 to SR-125 and, as such, freeway operations on both facilities would remain acceptable without implementation of Phase 2. (See EIR Appendix M (TIA), Appendix K.) Nonetheless, the Project traffic model did not account for the shift of traffic from I-805 to SR-125, so it continues to reflect a significant impact at these I-805 segments. That is, the analysis utilized the traffic model volumes (with four HOV lanes) with a reduced capacity (two HOV lanes). Because neither Caltrans nor SANDAG will construct Phase 2 of the I-805 South Project, and because there is no longer any plan or program in place to construct the Phase 2 improvements, mitigation is infeasible and the model-identified impacts are determined to be significant and unavoidable. However, as noted above, SANDAG has determined that freeway operations on both the I-805 and SR-125 would remain acceptable without implementation of Phase 2.

With respect to SR-905, neither Caltrans nor SANDAG has any plans at this time to construct additional lanes on SR-905, nor is there a plan or program in place into which the Project Applicant could pay its fair-share towards the cost of any such improvements. Therefore, mitigation is infeasible and the impacts to SR-905 also are determined to be significant and unavoidable.

Ramp Metering

<u>Cumulative Impact Mitigation</u>

MM TCA-14 I-805 Northbound On-Ramp at Main Street - Prior to project buildout, the Project Applicant shall work with Caltrans to<u>, and Caltrans can and should,</u> adjust the ramp meter rate at the I-805 northbound on ramp at Main Street such that the ramp meter reflects the additional vehicle traffic attributable to the project.

Transportation Demand Management Program

To reduce vehicle generated trips to the extent feasible, the Project Applicant proposes implementation of a Transportation Demand Management (TDM) program to reduce vehicle trips in favor of alternative modes of transportation. The TDM program will facilitate increased opportunities for transit, bicycling, and pedestrian travel.

MM TCA-15 The Project Applicant shall incorporate the following measures as part of the project design and development, consistent with the identified triggers, to the satisfaction of the Development Services Director:

- Implement pedestrian circulation improvements to improve the internal pedestrian circulation and encourage the usage of public transportation (concurrent with the approval of improvement plans for each village).
- Implement bicycle circulation improvements to improve internal bicycle circulation and encourage the usage of bicycles (concurrent with the approval of improvement plans for each village).
- Participate in car sharing and bike sharing programs through HOA noticing, should such programs become available.
- Promote Carpool/Vanpool programs by providing preferential parking for carpools and vanpools (concurrent with the approval of site plans for each village core).
- Promote available websites providing transportation options for residents and businesses (concurrent with issuance of certificate of occupancy).
- Create and distribute a “new resident” information packet addressing alternative modes of transportation (concurrent with issuance of certificate of occupancy).
- Promote programs to encourage workplace peak hour trip reduction, including staggered work hours, regional ride-matching services, and telecommuting (concurrent with issuance of certificate of occupancy).
- Orient buildings to the main street or activity area, such that they are not separated from the street by vast parking areas or fences, thereby encouraging pedestrian traffic (concurrent with the approval of site plans for each village core).
- Where transit is available on-site, participate in providing the necessary transit facilities, such as bus pads, shelters, signs, lighting, and trash receptacles (concurrent with the approval of improvement plans for each village).
- Coordinate with the MPO as to the future siting of transit stops/stations within the project site (concurrent with the approval of improvement plans, and/or site plans, for each village).

Circulation System Assumptions

To ensure the circulation system improvements assumed in the University Villages Traffic Impact Analysis dated June 2014, are constructed and operational in accordance with the assumed, the following mitigation measure is provided:

MM TCA-16 The year 2030 scenario assumes the following intersection and roadway improvements are in place:

- Main Street between SR-125 right-of-way (western boundary) and Eastlake Parkway/University Drive is constructed as a 6-lane Gateway Street (6,432nd EDU)
- SR-125 / Main Street interchange constructed (6,432nd EDU)
- Otay Valley Road constructed between SR-125 right-of-way (western boundary) and Village Nine Street "B" (Int #74), including an overpass at SR-125 (7,767th EDU)
- ~~Heritage Road / Energy Way (Int #64) is included as a signalized intersection~~

If the project equivalent dwelling unit limit of the EDUs identified above are exceeded prior to the respective improvements being constructed and open to traffic, then one of the following steps shall be taken each to the satisfaction of the City Engineer:

i. Development in Village Three and the Portion of Village Four, Village Eight East, and Village Ten shall stop until those assumed future roadways are constructed by others as presently planned; or

ii. City and the Applicant shall meet to determine the need for the incomplete roadway segments. Because a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch, the Applicant shall submit to the City additional traffic analysis of the roadway network and levels of service ~~assessment may be necessary~~ at that time to determine: (i) if such improvements ~~are~~ in fact are necessary; and (ii) the scope and timing of additional circulation improvements, if any. The City's determination of whether such improvements are necessary, or the scope and timing of additional improvements, shall be based on whether the City's traffic quality of life threshold standards are met, consistent with the performance standards set forth in the City of Chula Vista Growth Management Ordinance (GMO) (Chapter 19.09 of the Chula Vista Municipal Code). The current traffic threshold is to maintain LOS "C" or

better as measured by observed average travel speed on all signalized arterial segments; except, that during peak hours, a LOS "D" can occur for no more than two hours; or

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

iv. An alternative measure is selected by the City that is demonstrated to ensure that the applicable GMO quality of life thresholds are met for traffic~~in accordance with the City of Chula Vista Growth Management Ordinance.~~

Note: Potential secondary impacts as a result of the mitigation measures described above have been analyzed in this EIR as off-site improvement areas.

MM TCA-17 The proposed project shall be implemented, or phased, consistent with the development timeframe set forth in Project Description Table 4-3. In the event that project development substantially deviates from the phasing set forth in Table 4-3 (e.g., Village Three being built first, followed by Village Eight East and then Village Ten), the Applicant, or its designee, shall conduct additional environmental analysis consistent with the requirements of CEQA and as approved by the Development Services Director, or designee. Additional analysis may include a supplemental traffic study that analyzes the potential traffic circulation impacts associated with the phasing deviation, and identifies new circulation improvements or other mitigation measure(s), if needed.

Table 5.3-49
Summary of Significant Impacts and Mitigation Measures[6]

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Intersection					
I-805 SB Ramps / Olympic Parkway	Type of Impact	None	Direct	Cumulative	Cumulative
	Mitigation Measure	N/A	Construction of Heritage Road between Olympic Parkway and Main Street - reduce direct impact to cumulative impact. No feasible mitigation for the cumulative impact, impact remains cumulatively significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable
	Trigger	N/A	956th EDU of V3N	N/A	N/A
I-805 NB Ramps / Olympic Parkway	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Construction of Heritage Road between Olympic Parkway and Main Street	N/A	N/A
	Trigger	N/A	956th EDU of V3N	N/A	N/A
Brandywine Avenue / Olympic Parkway	Type of Impact	None	Direct	None	None
	Mitigation Measure	—	Construction of Heritage Road between Olympic Parkway and Main Street	N/A	N/A
	Trigger	N/A	956th EDU of V3N	N/A	N/A

[6] Existing Plus Project impacts are not included in this table. Existing Plus Project analysis is included for disclosure, information, and comparison purposes only. For additional information see Section A.1.

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Heritage Road / Olympic Parkway	Type of Impact	None	None	Direct	N/A
	Mitigation Measure	N/A	N/A	Payment towards TDIF for the construction of Main Street between Heritage Road and La Media Road including Main Street Bridge	N/A
	Trigger	N/A	N/A	Prior to issuance of building permits	N/A
La Media Road / Olympic Parkway	Type of Impact	None	—	Direct	None
	Mitigation Measure	N/A	N/A	Payment towards TDIF for the construction of Main Street between Heritage Road and La Media Road Including Main Street Bridge	N/A
	Trigger	N/A	N/A	Prior to issuance of building permits	—
Heritage Road / Main Street	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	751st EDU of V3N	N/A	N/A
La Media Road (SB) / Main Street (WB) (all-way stop controlled)	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	880th EDU of V8E	N/A	N/A
La Media Road (NB) / Main Street (WB)	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	880th EDU of V8E	N/A	N/A

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
La Media Road (SB) / Main Street (EB)	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	880th EDU of V8E	N/A	N/A
La Media Road (NB) / Main Street (EB)	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	880th EDU of V8E	N/A	N/A
Magdalena Avenue / Main Street	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	1,693rd EDU of V8E	N/A	N/A
Discovery Falls Drive / Hunte Parkway	Type of Impact	None	None	None	Direct
	Mitigation Measure	N/A	N/A	N/A	+1NBR
	Trigger	N/A	N/A	N/A	1,295th EDU of V10
Heritage Road / Avenida De Las Vistas (SD) (all-way stop controlled)	Type of Impact	DNE	DNE	DNE	None
	Mitigation Measure	DNE	DNE	DNE	N/A
	Trigger	DNE	DNE	DNE	N/A
Roadway Segment					
Orange Avenue, between Melrose Avenue and I-805 SB Ramps	Type of Impact	None	Cumulative Impact	Cumulative Impact	Cumulative Impact
	Mitigation Measure	N/A	No feasible mitigation, impact remains significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable
	Trigger	N/A	N/A	N/A	N/A

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Olympic Parkway, between I-805 SB Ramps and I-805 NB Ramps	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Construction of Heritage Road between Olympic Parkway and Main Street	N/A	N/A
	Trigger	N/A	956th EDU of V3N	N/A	N/A
Olympic Parkway, between I-805 NB Ramps and Oleander Avenue	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Construction of Heritage Road between Olympic Parkway and Main Street	N/A	N/A
	Trigger	N/A	956th EDU of V3N	N/A	N/A
Olympic Parkway, between Oleander Avenue and Brandywine Avenue	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Construction of Heritage Road	N/A	N/A
	Trigger	N/A	956th EDU of V3N	N/A	N/A
Olympic Parkway, between Brandywine Avenue and Heritage Road	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Construction of Heritage Road between Olympic Parkway and Main Street	None	None
	Trigger	N/A	956th EDU of V3N	None	None
Olympic Parkway, between Heritage Road and Santa Venetia Street	Type of Impact	None	None	Direct	None
	Mitigation Measure	N/A	N/A	Payment towards TDIF for the construction of Main Street between Heritage Road and La Media Road including Main Street Bridge	N/A
	Trigger	N/A	N/A	Prior to issuance of each building permit	N/A

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Heritage Road, between East Palomar Street and Olympic Parkway	Type of Impact	None	None	Direct	None
	Mitigation Measure	N/A	N/A	Payment towards TDIF prior to the issuance of each building permit for the construction of Main Street between Heritage Road and La Media Road	N/A
	Trigger	N/A	N/A	Prior to issuance of each building permit	N/A
Heritage Road, between Main Street and Avenida De Las Vistas	Type of Impact	None	None	None	None
	Mitigation Measure	N/A	N/A	N/A	N/A
	Trigger	N/A	N/A	N/A	N/A
Heritage Road, between Avenida De Las Vistas and Otay Mesa Road (SD)	Type of Impact	DNE	DNE	DNE	None
	Mitigation Measure	DNE	DNE	DNE	N/A
	Trigger	DNE	DNE	DNE	N/A
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 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	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	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
I-805, from East H Street to Telegraph Canyon Road	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
SR-905 from I-805 to Calliente Avenue	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
SR-905 from Calliente Avenue to Heritage Road	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
SR-905 from Heritage Road to Britannia Boulevard	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
SR-905 from Britannia Boulevard to La Media Road	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
Freeway / State Highway Ramp Metering					
I-805 NB On-Ramp @ Main Street	—	—	—	—	Cumulative Impact: Adjust meter rate
Access and Frontage					
Access and Frontage	—	Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 to the satisfaction of the Development Services Director and the City Engineer.	Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 to the satisfaction of the Development Services Director and the City Engineer.	Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 to the satisfaction of the Development Services Director and the City Engineer.	Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 to the satisfaction of the Development Services Director and the City Engineer.

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
*Circulation System Assumptions **					
I-805 South Project	None	Phase 1: Improvements to I-805 between Home Avenue and East Palomar Street, including 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	None	None	Widened of I-805 between East Palomar Street and SR-905
Heritage Road	None	Widen from South of Main Street to City Limit from a 2-lane Road to a 4-Lane Major Road	Widen from South of Main Street to City Limit from a 4-lane Major Road to a 6-lane Prime Arterial	None	None
Otay Lakes Road	None	None	Widen Otay Lakes Road between H Street to Telegraph Canyon Road from a 4-lane Major Road to a 6-Lane Prime Arterial	None	None

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Main Street	None	None	~~Construction of Quarry Driveway @ Main Street (Int #65) as an All Way Stop Control~~ Construction of Village Three R-30 Driveway @ Main Street (Int #66) as an All Way Stop Control Main Street, constructed as a 2-Lane collector between Heritage Road and R-20 driveway	None	Construction of Main Street as a 6-lanes Gateway between SR-125 SB Ramps and East Lake Parkway/University Drive Signalization of Quarry Driveway @ Main Street (Int #65) and R-20 driveway and R-20 driveway @ Main Street (Int #66) Main Street, constructed as a 6-Lane Prime Arterial between Heritage Road and La Media Road
SR-125/Main Street Interchange	None	None	None	None	Construction of SR-125/Main Street Interchange
Otay Valley Road	None	None	None	None	Construction of Otay Valley Road between West of SR-125 and Street "B", including overpass.
Heritage Road/Energy Way Intersection	None	None	None	None	Signalization of intersection.

Source: Chen Ryan Associates 2014 (EIR Appendix M).
* For details regarding circulation system assumptions, please refer to EIR Appendix M.

5.3.6 Level of Significance After Mitigation

Year 2015 Conditions

No significant impacts to study area intersections, roadway segments, freeways/state highways, or freeway ramps would occur under the Year 2015 conditions; therefore, impacts would remain **less than significant**.

Year 2020 Conditions

Intersections

Table 5.3-50 displays LOS analysis results for the significantly impacted intersections under Year 2020 conditions. As shown in the table, after implementation of the identified improvements, all of the project-impacted intersections would operate at acceptable LOS D or better during both the AM and PM peak hours, with the exception of the intersection of I-805 SB Ramps / Olympic Parkway. The identified project-specific impact would be reduced to a cumulative impact; however, the cumulative impact would remain **significant and unavoidable**.

Table 5.3-50
Mitigated Intersection LOS – Year 2020 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*
11. I-805 SB Ramps / Olympic Parkway	70.9	**E**	155.2	**F**	No Feasible Mitigation			
12. I-805 NB Ramps / Olympic Parkway	60.0	**E**	97.8	**F**	50.8	D	36.9	D
14. Brandywine Avenue / Olympic Parkway	116.4	**F**	87.1F	**F**	51.8	D	48.5	D
39. Heritage Road / Main Street	71.7	**F**	70.7	**F**	27.0	C	47.9	D
40. La Media Road (SB) / Main Street (WB)	10.3	B	37.2	**E**	4.8	A	4.6	A
41. La Media Road (NB) / Main Street (WB)	41.4	**E**	23.8	C	3.3	A	3.8	A
42. La Media Road (SB) / Main Street (EB)	13.9	B	48.4	**E**	0.9	A	0.4	A
43. La Media Road (NB) / Main Street (EB)	13.4	B	38.8	**E**	2.3	A	1.7	A
44. Magdalena Avenue / Main Street	15.5	C	35.9	**E**	7.9	A	9.3	A

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.

Roadway Segments

Direct Impacts

Table 5.3-51 displays LOS analysis results for the significantly impacted roadway segments under Year 2020 conditions. As shown in the table, after implementation of the identified improvements, all four directly impacted roadway segments would operate at acceptable LOS C or better in Year 2020. Therefore, impacts would be **less than significant** after mitigation.

Table 5.3-51
Mitigated Roadway Segment LOS – Year 2020 Conditions

Roadway Segment	Before Mitigation			After Mitigation		
	ADT	*Cross Section*	*LOS*	*ADT*	*Cross Section*	*LOS*
Olympic Parkway, between I-805 SB Ramps and I-805 NB Ramps	64,000	6-Ln	**F**	41,500	No Change	B
Olympic Parkway, between I-805 NB Ramps and Oleander Avenue	71,000	6-Ln w/RM	**F**	45,100	No Change	C
Olympic Parkway, between Oleander Avenue and Brandywine Avenue	65,400	6-Ln w/RM	**F**	38,400	No Change	B
Olympic Parkway, between Brandywine Avenue and Heritage Road	59,500	6-Ln w/RM	**E**	31,500	No Change	A

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS D, E, or F.

Cumulative Impact

With respect to Orange Avenue between Melrose Avenue and the I-805 SB ramps, the recommended improvements would require widening Orange Avenue/Olympic Parkway; however, there are right-of-way constraints that would make such improvements infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvement. Therefore, the impact will remain **cumulatively significant and unavoidable** at this location.

Freeways/State Highways

As previously noted, mitigation to reduce the identified significant cumulative impacts to the following freeway / state highway segments is infeasible:

- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E Division Street

Therefore, the impacts would remain **significant and unavoidable**.

Ramp Metering

The Year 2020 project traffic would have a significant impact at the I-805 northbound on-ramp at Main Street. As previously noted, the construction of Heritage Road, between Olympic Parkway and Main Street, previously identified as a required mitigation measure, would provide traffic from Village Three North with a more direct route to the north and east of the project site, and hence reduce traffic utilizing the northbound on-ramp at Main Street. Table 5.3-52 displays the mitigated ramp metering analysis conducted at the I-805 northbound on-ramps at Main Street under the Year 2020 conditions with the Heritage Road connection between Olympic Parkway and Main Street.

Table 5.3-52
Mitigated Ramp Metering Analysis – 2020 Conditions With Heritage Road

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 @ Main Street	AM	404	413	0	0	0

Source: Chen Ryan Associates 2014 (EIR Appendix M).
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.
3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.
4 Delay = (excess demand / meter rate) × 60 min/hr.
5 Queue = (excess demand) × 29 ft/veh.

As shown in Table 5.3-52, the peak hour capacity expected to be processed through the ramp meter (Meter Rate) would be greater than the peak hour demand (Demand) at the I-805 northbound on-ramp at Main Street with the construction of Heritage Road, between Olympic Parkway and Main Street. Hence, the project impact to this on-ramp would be mitigated by the Heritage Road connection. Therefore, impacts would be **less than significant**.

Year 2025 Conditions

Intersections

Direct Impacts

Table 5.3-53 displays LOS analysis results for the significantly impacted intersections under Year 2025 conditions. As shown in the table, after implementation of the identified improvements, both impacted intersections would operate at acceptable LOS D or better during both the AM and PM peak hours. Therefore, these impacts would be **less than significant** after mitigation.

Table 5.3-53
Mitigated Intersection LOS – 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*
15. Heritage Road / Olympic Parkway	61.8	**E**	58.6	**E**	46.9	D	52.3	D
17. La Media Road / Olympic Parkway	62.4	**E**	51.2	D	51.5	D	50.6	D

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.

Cumulative Impact

As previously noted, there are right-of-way constraints that would make widening the I-805 SB Ramps/Olympic Parkway intersection infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward such improvement. Therefore, mitigation is infeasible and the impact will remain **cumulatively significant and unavoidable** at this location.

Roadway Segments

Direct Impacts

Table 5.3-54 displays LOS analysis results for the significantly impacted 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 be **less than significant** after mitigation.

Table 5.3-54
Mitigated Roadway Segment LOS – 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	54,600	6-Ln w/RM	**D**	40,300	No Change	B
Heritage Road, between East Palomar Street and Olympic Parkway	51,500	6-Ln w/RM	**D**	51,500	No Change	**D**

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS D, E, or F.

Cumulative Impact

The recommended improvements to Orange Avenue, between Melrose Avenue and I-805 SB Ramps, 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 (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward such improvement. Therefore, mitigation is infeasible and the impact will remain **cumulatively significant and unavoidable** at this location.

Freeways/State Highways

As previously noted, mitigation to reduce the identified significant cumulative impacts to the following freeway / state highway segments is infeasible:

- 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 SR-54 to Bonita Road.

Therefore, impacts are determined to be **significant and unavoidable.**

Ramp Metering

None of the I-805 northbound on-ramps at Olympic Parkway or at Main Street would be significantly impacted, and therefore no mitigation measures would be required under Year 2025 conditions and impacts would be **less than significant**.

Year 2030 Conditions

Intersections

Direct Impacts

Table 5.3-55 displays LOS analysis results for the significantly impacted intersection under Year 2030 conditions. As shown in the table, after implementation of the identified improvement, the project-impacted intersection of Discovery Falls Drive/Hunte Parkway would operate at acceptable LOS D during both the AM and PM peak hours.

Table 5.3-55
Mitigated Intersection LOS – Year 2030 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*
Discovery Falls Drive / Hunte Parkway	60.8	**E**	61.4	**E**	52.5	D	50.5	D

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.

Cumulative Impact

As previously noted, there are right-of-way constraints that would make widening the intersection of I-805 SB Ramps / Olympic Parkway infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward such improvement. Therefore, mitigation is infeasible and the impact will remain **cumulatively significant and unavoidable** at this location.

Roadway Segments

The recommended improvements to Orange Avenue between Melrose Avenue and I-805 SB Ramps would require widening Orange Avenue/Olympic Parkway; however, as previously noted, there are right-of-way constraints that would make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward such improvement. Therefore, mitigation is infeasible and the impact will remain **cumulatively significant and unavoidable** at this location.

Freeways/State Highways

As previously noted, mitigation to reduce the identified significant cumulative impacts to the following freeway / state highway segments is infeasible:

- 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
- SR-905 from I-805 to Caliente Avenue
- SR-905 from Caliente Avenue to Heritage Road
- SR-905 from Heritage Road to Britannia Boulevard
- SR-905 from Britannia Boulevard to La Media Road.

Therefore, impacts are determined to be **significant and unavoidable.**

Ramp Metering

Implementation of MM TCA-14 would reduce previously identified significant impacts to the I-805 northbound on-ramp at Main Street to **less than significant**.

Construction Phasing

Implementation of MM TCA-17 would reduce previously identified significant impacts associated with construction phasing to **less than significant**.

5.3.7 Off-Site Project Frontage and Access

Table 5.3-56 summarizes the roadway segments and intersection to be constructed by the project for Frontage and Access, their cross-section/geometric configuration, as well as their associated EDU threshold.

Table 5.3-56
University Villages Frontage and Access Threshold

Street	Segment	Classification	EDU threshold[1]	Year assumed build in TIA
Heritage Road	Village Three Northern Boundary to Santa Macheto	6-Ln w/RM	612th EDU of Village Three	2020
Heritage Road	Santa Macheto to Santa Picacho	6-Ln w/RM	201st EDU of Village Three	2015
Heritage Road	Santa Picacho to Santa Maya	6-Ln w/RM	121st EDU of Village Three	2015
Heritage Road	Santa Maya to Main Street	6-Ln w/RM	prior to the first Final Map of Village Three	2015
Main Street	Heritage Road to Village Three R-20 Driveway (Int #66)	2-Ln w/ RM 6-Ln w/RM	prior to the first Final Map of Village Three R-20 widen to 6-Ln w/ RM in conjunction with the construction of Main Street Bridge	2020 2025
Main Street	La Media Road to Magdalena Avenue	6-Ln w/RM	prior to the first Final Map of Village Eight East	2020
Main Street	Magdalena Avenue to Santa Tipu	6-Ln w/RM	prior to the first Final Map of Village Eight East	2020
Main Street	Santa Tipu to Santa Marisol	6-Ln w/RM	121st EDU of Village Eight East	2020
Main Street	Santa Marisol to SR-125 right-of-way	6-Ln w/RM	prior to the first Final Map of Village Eight East R-16	2020
La Media Road	Santa Luna Street to Main Street	6-Ln w/RM	prior to the first Final Map of Village Eight East	2020
Otay Valley Road	Main Street to Community Park Driveway (Int #71)	4-Ln w/RM	1929th EDU of Village Eight East	2025
Otay Valley Road	Community Park Driveway (Int #71) to Santa Marisol	4-Ln w/RM	1929th EDU of Village Eight East	2025
Otay Valley Road	Santa Marisol to SR-125 right-of-way	4-Ln w/RM	1929th EDU of Village Eight East	2025
Village Eight East Community Park Driveway	Otay Valley Road / Community Park (P-2)	2-Ln	1929th EDU of Village Eight East	2025
University Drive	Hunte Parkway to University Driveway #1	2-Ln w/RM 4-Ln w/RM	prior to the first Final Map of Village Ten Widen to 4-Lanes in conjunction with the construction of the University/RTP site	2025

Table 5.3-56 (Continued)
University Villages Frontage and Access Threshold

Street	Segment	Classification	EDU threshold	Year assumed build in TIA
University Drive	University Driveway #1 to Discovery Falls Drive	2-Ln w/RM	prior to the first Final Map of Village Ten	2025
Discovery Falls Drive	Hunte Parkway to University/RTP Driveway	2-Ln w/RM 4-Ln w/RM	642nd EDU of Village Ten Widen to 4-Lanes in conjunction with the construction of the University/RTP site	2025
Discovery Falls Drive	University/RTP Driveway to Santa Davis	2-Ln w/RM	642nd EDU of Village Ten	2025
Discovery Falls Drive	Santa Davis to University Drive	2-Ln w/RM	121st EDU of Village Ten	2025
Discovery Falls Drive	University Drive to Santa Julliard	2-Ln w/RM	201st EDU of Village Ten	2025
Community Park Driveway	Otay Valley Road to Village Eight Community Park	2-Ln	1929th EDU of Village 8 East (Prior to the 1313th EDU in Village 8 East, the Applicant shall submit and obtain approval for improvement plans and appropriate security for the construction of the Village 8 East community park access road to the satisfaction of the Director of Development Services.)	2025
Discovery Falls Drive	Santa Julliard to Village Nine Street "B"	2-Ln w/RM	After Village Nine Street B is built	2025
Otay Valley Road	SR-125 right-of-way (western boundary) to Village Nine Street "B" including freeway overpass	2-Ln w/RM	Prior to the Final Map containing the 1,553rd EDU of Village Ten	2030
Village Ten - #47	Hunte Parkway / Eastlake Parkway	Signal Mod	prior to the first Final Map of Village Ten	2025
Village Ten - #48	Hunte Parkway / Discovery Falls Drive	Signal Mod	prior to the first Final Map of Village Ten	2025
Village Three - #61	Santa Macheto / Heritage Road	Signal	201st EDU of Village Three 612th EDU of Village Three	2020
Village Three – #62	Santa Picacho / Heritage Road	AWSC Signal	121st EDU of Village Three 612th EDU of Village Three	2015 2020
Village Three – #63	Santa Maya / Heritage Road	AWSC Signal	prior to the first Final Map of Village Three 612th EDU of Village Three	2015 2020

Table 5.3-56 (Continued)
University Villages Frontage and Access Threshold

Street	Segment	Classification	EDU threshold	Year assumed build in TIA
Village Three – #65	Quarry Driveway / Main Street	AWSC Signal	prior to the first Final Map of Village Three R-20 Signalized in conjunction with the construction of Main Street Bridge	2020 2025
Village Three - #66	Village Three North R-20 Driveway / Main Street	AWSC Signal	prior to the first Final Map of Village Three R-20 Signalized in conjunction with the construction of Main Street Bridge	2020
Village Four - #67	La Media Road / Village Four Driveway/Santa Luna Street	Signal	prior to the first Final Map of Village Four	2020
Village Eight E - #68	Santa Tipu / Main Street (one-way stop RT in/out)	OWSC	prior to the first Final Map of Village Eight East	2020
Village Eight E – #69	Santa Marisol / Main Street	Signal	121st EDU of Village Eight East	2020
Village Eight E - #70	Village Eight East R-16 Driveway / Main Street (one-way stop RT in/out)	OWSC	prior to the first Final Map of Village Eight East – R16	2025
Village Eight E – #71	Village Eight East Community Park Driveway / Otay Valley Road	Signal	1929th EDU of Village Eight East	2025
Village Eight E – #72	Cutter Avenue / Otay Valley Road (one-way stop RT in/out)	OWSC	1929th EDU of Village Eight East	2025
Village Eight E - #73	Santa Marisol / Otay Valley Road	Signal	1929th EDU of Village Eight East	2025
Village Ten - #74	Village Nine Street "B" / Otay Valley Road	Signal	Prior to the Final Map containing the 1,553rd EDU of Village Ten	2030
Village Ten - #75	Village Nine Street "B" / Discovery Falls Drive	Signal	After Village Nine Street B is built	2030
Village Ten - #76	Santa Julliard / Discovery Falls Drive	Signal	201st EDU of Village Ten	2025
Village Ten - #77	University Drive / Discovery Falls Drive	Signal	prior to the first Final Map of Village Ten	2025
Village Ten - #78	Santa Davis / Discovery Falls Drive	Signal	121st EDU of Village Ten	2025

1 Project residential street system to comply with Chula Vista Subdivision Manual Section 3-403.2(7) Design Criteria for Streets.

5.4 AIR QUALITY

This section of the EIR addresses the potential air quality impacts resulting from the proposed University Villages project. The discussion found in this section is primarily based on the Air *Quality and Global Climate Change Technical Report for the Otay Ranch University Villages Project* that was prepared by Dudek in June 2014. The complete report is contained in Appendix D, Part I of this EIR. Health risk impact analysis provided in this section is based on the *Air Toxics Health Risk Assessment for Otay Ranch Village 3 North* prepared by SCS Engineers in June 2014, included as Appendix D, Part II; and the *Air Toxics Health Risk Assessment for the Otay Ranch Village 8 East Project* prepared by Scientific Resources Associated (SRA) in April 2014, included as Appendix D, Part III. Odor impact analysis provided in this section is based on the *Otay Ranch Village 3 North Nuisance Study* prepared by SCS Engineers in June 2014, included as Appendix D, Part IV.

This section tiers from the 1993 Otay Ranch GDP Program EIR, because that Program EIR analyzed air quality impacts for the entire Otay Ranch including the project site. The Otay Ranch GDP Program EIR concluded that potentially significant air quality impacts would occur with implementation of the Otay Ranch GDP. Potentially significant impacts would occur because air quality impacts would exceed the State Implementation Plan (SIP) air quality attainment regulations which are based on SANDAG Series 7 growth projections. This EIR determined that the mitigation measures would substantially lessen the impacts on air quality, but the impacts would still remain significant.

This section also tiers from the 2005 GPU/GDPA Program EIR, because air quality conditions for the entire Otay Ranch area, including the project site, were analyzed at a programmatic level. The 2005 GPU/GDPA Program EIR found that potentially significant impacts to air quality could occur as a result of planned development, because development would not be consistent with the Regional Air Quality Standards (RAQS) and because operational emissions resulting from particulates for which the region is not in conformance would occur. Therefore, impacts were determined to be significant and unavoidable.

Additionally, this section incorporates by reference mitigation measure 5.8-1 as identified in the 2005 GPU. Mitigation measure 5.8-1 states, that the City shall continue to implement the Energy Strategy and Action Plan that addresses demand side management, energy efficient and renewable energy outreach programs for businesses and residents, energy acquisition, power generation, and distribution energy resources and legislative actions, and continue to implement the CO_2 Reduction Plan to lessen the impacts on energy.

5.4.1 Existing Conditions

5.4.1.1 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, state attainment plan approvals, 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 5.4-1, Ambient Air Quality Standards.

Table 5.4-1
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/m³)	—	Same as Primary Standard
	8 hour	0.070 ppm (137 μg/m³)	0.075 ppm (147 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	—
	8 hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
NO_2[6]	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
SO_2[7]	1 hour	0.25 ppm (655 μg/m³)	0.75 ppm (196 μg/m³)	—
	3 hour	—	—	0.5 ppm (1300 μg/m³)
	24 hour	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)[7]	
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)[7]	—
PM_{10}[8]	24 hour	50 μg/m³	150 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m³	—	
$PM_{2.5}$[8]	24 hour	—	35 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 μg/m³	12.0 μg/m³	15.0 μg/m³
Lead[9,10]	30-day Average	1.5 μg/m³	—	—
	Calendar Quarter	—	1.5 μg/m³ (for certain areas)[10]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 μg/m³)	—	—
Vinyl chloride[9]	24 hour	0.01 ppm (26 μg/m³)	—	—
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/m³ = micrograms per cubic meter mg/m³ = milligrams per cubic meter

Source: CARB 2013b.

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 PM_{10} 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 µg/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. Since 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.
- **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 and 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 1997 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 the *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County*, the San Diego Air Basin did not reach attainment of the federal 1997 standard until 2011 (SDAPCD 2012a). This plan demonstrates the region's attainment of the 1997 ozone NAAQS and outlines the plan for maintaining attainment status.

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).

City of Chula Vista

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 improving local air quality. Specifically, Objective-E 6 is intended to 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 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); not placing a sensitive receptor within 1,000 feet of a major toxic emitter (E 6.4); 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.

Part II, Chapter 6, Section 6 of the Otay Ranch General Development Plan (GDP) establishes goals to minimize the adverse air quality impacts of development, including creating a safe and efficient multi-modal transportation network that serves to minimize the number and length of single-passenger vehicle trips. Specifically, the GDP provides as follows:

- **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.

5.4.1.2 Existing Setting

5.4.1.2.1 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 proposed project site is topographically diverse. At Village Three North/Portion of Village Four, elevations range from approximately 150 feet above mean sea level along the south/southwestern boundary of the site to 470 feet to the north. At Village Eight East, elevations range from approximately 190 feet in the south/southwest portion of the site to 600 feet in the

northern/north-central portion of the site. At Village Ten, elevations range from approximately 280 feet in the very south to 500 feet along the northern boundary of the site.

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.

5.4.1.2.2 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.

5.4.1.2.3 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.

The project site is currently vacant, and the nearest existing residences are located directly north of the project site across Olympic Parkway. Residences are currently being built within Village Two as well, adjacent to the project site. Additionally, Otay Ranch High School and Olympian High School are located northeast and north of the project site, respectively. Table 5.4-2 shows sensitive receptors and respective distances from Village Three, Village Four, Village Eight East and Village Ten including sensitive receptors located near proposed off-site improvements.

Table 5.4-2
Sensitive Receptors

Village Three/Village Four		Village Eight East		Village Ten	
Receptor Type	*Distance*	*Receptor Type*	*Distance*	*Receptor Type*	*Distance*
Single-Family Residences	0.6 mile southwest	East Hills Academy/Olympian High School	North adjacent	High Tech High	Adjacent/0.4 mile north
Single-Family Residences	0.7 mile south	Single-Family Residences	0.1 mile northeast	Single-Family Residences	Adjacent/0.5 mile north
Single-Family Residences	1.1 mile north	Wolf Canyon Elementary School	0.4 mile north	Concordia Church and School	0.9 mile north
Single-Family Residences	1.6 miles north	Single-Family Residences	0.4 mile north	Olympic Training Center	1.2 mile northeast
—	—	—	—	Future University	North adjacent

5.4.1.2.4 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 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

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1 The following descriptions of health effects for each of the criteria air pollutants associated with project construction and operation are based on the U.S. EPA's Six Common Air Pollutants (EPA 2010) and CARB's Glossary of Air Pollutant Terms (CARB 2013a).

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.

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 noncancer 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.

5.4.1.2.5 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, 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 5.4-3, SDAB Attainment Classification, summarizes the SDAB's federal and state attainment designations for each of the criteria pollutants.

Table 5.4-3
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 (where the project site is located) 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 ten 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 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 5.4-4, Ambient Air Quality Data. The number of days exceeding the respective ambient air quality standards is shown in Table 5.4-5, 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 5.4-4
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	0.083	0.057	0.079	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	45.0 µg/m³	46.0 µg/m³	38.0 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	—	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	0.057	0.18 [2]	
CO	8 hour	1.87	1.43	1.56	1.46	1.85	9.0	Chula Vista
	1 hour [4]	3	2	2	1.7	2.2	20	
SO_2	Annual	0.002	0.002	0.001	NA	NA	0.030	Chula Vista
	24 hour	0.004	0.003	0.002	NA	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 5.4-5
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.

5.4.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), are utilized here to 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 nonattainment 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 sets 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 that 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 5.4-6, City of Chula Vista Air Quality Significance Thresholds, are exceeded. For these pollutants, if emissions exceed the thresholds shown in Table 5.4-6, the project also 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 5.4-6
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

5.4.3 Impacts

A. Conflict with or obstruct implementation of the applicable air quality plan or General Plan policies.

The air quality plans relevant to this discussion are the SIP and RAQS.[3] The SIP includes a demonstration that current strategies and tactics will 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 SIP and RAQS is assessed via two lines of inquiry: (1) whether the proposed project exceeds the growth assumptions contained in the SIP and RAQS; and, (2) if the growth assumptions are exceeded, whether the proposed project (a) 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, or (b) results in failure to maintain attainment under the SIP.

As to the first line of inquiry: The SIP and RAQS rely 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

[3] For the purpose of this discussion, the relevant federal air quality plan is the ozone maintenance plan (SDAPCD 2012a). The RAQS is the applicable plan for purposes of state air quality planning. Both plans reflect growth projections in the SDAB.

anticipated in the local plan and SANDAG's growth projections, the project might conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality.

Through previous planning efforts, the project area was allocated a total of 1,570 residential units, including 928 units in Village Eight East and 642 units in Village Ten. Village Three North and the Portion of Village Four were not allocated any residential units. The proposed project includes a total of 6,897 residential units. As such, the proposed project would result in an additional 5,327 residential units above the planned/allocated 1,570 residential units. This increase in land use intensity and associated increase in vehicle trips has not been anticipated in applicable air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the SIP and RAQS.[4]

As to the second line of inquiry: As shown in Tables 5.4-8 and 5.4-9, project-related emissions of VOCs (construction and operation), NO_x (construction and operation), CO (operation), PM_{10} (construction and operation), and $PM_{2.5}$ (construction and operation) would be significant, and thereby may lead to air quality violations. The specific number of future daily exceedances of the CAAQS or NAAQS, however, attributable to emissions from any singular project are difficult, if not impossible, to predict at this time because of the many variables influencing air pollutant concentrations (e.g., background concentrations, meteorology and weather patterns, effectiveness of regulatory programs, and availability of predictive computer models).

Because the proposed project exceeds the growth projections in the SIP and RAQS and would exceed the significance thresholds for certain criteria air pollutants during construction and operation, the proposed project may conflict with or obstruct implementation of applicable air quality plans; as such, impacts would be **significant and unavoidable**.

Despite the significance of the proposed project in this regard, for informational purposes, the proposed project would be consistent with all applicable transportation and area source control measures proposed in the RAQS to reduce emissions in the region, as shown in Table 5.4-7, due to its inclusion of pedestrian and bicycle facilities, smart growth principles, transit improvements, and traffic calming techniques.

[4] 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. Although the proposed project would conflict with currently adopted growth forecasts as developed by SANDAG, growth forecasts associated with San Diego Forward are expected to accommodate population growth and trip generation resulting from the proposed project.

Table 5.4-7
Project Consistency with RAQS Control Measures

RAQS Control Measure	Project Consistency
Transit Improvements	The proposed project would include the following transit improvements: • Otay Ranch GDP provides for the expansion of the regional transit-way system into Otay Ranch. A transit stop/station is planned within the mixed use village core area of Village Three North. An additional transit stop/station is located at the intersection of Main Street and Heritage Road. • Within Village Eight East, an east–west bus rapid transit (BRT) commuter service line is planned to be located along Main Street. A potential local bus stop is conceptually planned within and/or adjacent to Village Eight East. • A north–south BRT route is planned through the Eastern Urban Center, connecting to Village Nine adjacent to Village Ten.
Park-and-Ride Facilities	The proposed project does not specifically include park-and-ride facilities, and park-and-ride facilities are not included in the SPA plan; however, the proposed project would locate transit stops throughout the project area as described in *Transit Improvements* above. Bicycle and pedestrian facilities would be designed to improve non-motorized access to these transit stops to reduce automobile dependence and increase transit ridership in the area.
Bicycle Facilities	The circulation plan for the proposed project encourages the use of bicycles through the provision of the Village Pathway, an off-street paved path, and bike lanes. Bicycle facilities, bike lanes, and bike paths would be provided throughout the proposed project area and would be designed to improve non-motorized access to designated bus transit stops.
Smart Growth Development	The proposed project includes village development supported by mixed-use centers, transit service, pedestrian and bicycle facilities, and planned open spaces, all of which promote smart growth development. Higher-density residential development would be located toward the village cores, and lower-density development would occur at the periphery to support smart growth practices.

Table 5.4-7 (Continued)
Project Consistency with RAQS Control Measures

RAQS Control Measure	Project Consistency
Pedestrian Facilities	The circulation plan encourages pedestrian activity. Design of all village streets includes sidewalks and landscaped parkways to promote pedestrian circulation. The preferred design for all village streets provides for minimum five-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. The Modified Residential Promenade Street includes a wider sidewalk on one side flanked by a double row of street trees and special pedestrian lighting. This Promenade Trail links the residential neighborhoods to the village activity core and pedestrian network.
Traffic Calming Practices	The proposed project would include 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 SPA Plan for each village includes discussion about traffic calming features and the tentative maps show selected locations.
Support and Bus Rapid Transit	See *Transit Improvements* above.

The City's General Plan includes the objective to "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." (General Plan Objective-E 6.) The General Plan also includes a policy to "not site sensitive receptors within 1,000 feet of major toxic air emitters." (General Plan, Policy E 6.4 as ~~will be~~ corrected).

The proposed project has been designed to limit the exposure of people to air pollutant and toxic air contaminant emissions. To demonstrate consistency with the referenced General Plan objective and policy, the proposed project analyzed air quality impacts in the Air Quality and Global Climate Change Technical Report (EIR, Appendix D, Part I). It also evaluated potential air pollutant and toxic air contaminant emissions in Village Three North and Village Eight East due to their proximity to the Otay Landfill and SR-125, respectively. Additionally, the proposed project includes Energy Conservation Plans and AQIPs. As previously discussed, the proposed project is consistent with all applicable transportation and area source control measures proposed in the RAQS.

In terms of the proposed project's consistency with General Plan Policy E 6.4, the proposed Village Three North residential land uses are considered "sensitive receptors," and the existing Otay Landfill to the north of Village Three is considered a "toxic emitter" by the City. However,

the proposed project's residential units are approximately 700 feet from the waste containing portion of the landfill (i.e. – the portion of the landfill eligible to accept waste). While that distance is about 300 feet less than called for in General Plan Policy E 6.4, the project's HRA (EIR, Appendix D) analyzed the landfill gas (LFG)-derived odors from air pollutant and toxic air contaminant emissions emitted from the Otay Landfill, and determined that the toxicity of such emissions are below the threshold for each respective receptor within the development; therefore, such emissions are not considered significant under CEQA.

In addition, in response to the above General Plan objective and policy, the EIR's alternatives section identified and evaluated a "Nuisance Easement Alternative." This alternative, if adopted, would remove residential land uses within 1,000 feet from the active portion of the existing Otay Landfill. The alternative also presents the City Council, as the final decision-making body, with an alternative evaluated at the project-level in the event it determines that further consistency between the project and its General Plan (Objective-E 6) is preferred or more desirable.

Based on the above HRA determinations, the EIR's alternatives analysis (i.e., Nuisance Easement Alternative), and the Otay Landfill requirements to control and minimize such emissions (e.g., routing LFG to flares to destroy such emissions), all of which is documented in the project's Nuisance Study (EIR, Appendix D), the proposed project is considered consistent with General Plan Objective-E 6.

Additionally, the project would not conflict with or obstruct implementation of any other General Plan policies or Otay Ranch GDP policies as shown in Appendix B, with the potential exception of General Plan Policy E 6.4 (as ~~will be~~ corrected). As discussed in Section 5.1 of this EIR, an inconsistency may occur if any residential units in Village Three North shall be located within 1,000 feet from the then active solid waste disposal areas of the Otay Landfill at the time of approval of building permits for those units within Village Three North. A potentially significant land use impact was identified in Section 5.1 and MM LU-4 has been provided to reduce potential impacts to a less than significant level.

The proposed project includes village development supported by mixed-use centers, transit service, pedestrian and bicycle facilities, and planned open spaces, all of which promote reduced vehicle use and air emission sources. A detailed analysis of the proposed project's consistency with the General Plan and Otay Ranch GDP is provided in Appendix B.

As indicated in Appendix B, the land plans were designed to create village cores to accommodate transit stops by locating adjacent to high density housing and/or mixed use retail/commercial. Future transit stops could be located adjacent to or within the village cores in Village Three North and a Portion of Village Four, Village Eight East and Village Ten.

The proposed project also includes (1) Energy Conservation Plans, consistent with the requirement of the Otay Ranch GDP, and (2) an AQIP, consistent with the City's Growth Management Program.

Therefore, the proposed project would result in a **less than significant impact** as it relates to consistency with the General Plan and the Otay Ranch GDP with implementation of MM LU-4.

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

Construction Emissions

Construction of the proposed project would result in a temporary, short-term addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Emission resulting from construction of the proposed project would be temporary because construction activities would occur intermittently over the construction phase of the project, and construction activities and associated emissions would cease following project built-out. Construction emissions can vary substantially from day to day depending on the level of activity, the specific type of operation and, for dust, prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts. For the purposes of modeling, a worst-case maximum daily emission scenario for proposed project construction activities is analyzed. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from grading and site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles.

Emissions from the construction phase of the project were estimated through the use of emission factors from the URBEMIS 2007, Version 9.2.4, land use and air emissions model (Jones and Stokes 2007). Construction of the proposed project is anticipated to begin with Village Three North and a Portion of Village Four in March 2014. Project construction would end with buildout of Village Ten, which is anticipated to occur in July 2029[5]. A detailed description of construction subphases (mass grading, fine grading, trenching, paving, building construction, and

[5] The original construction schedule beginning in March 2014 is analyzed for the Proposed Project; however, construction would start at a later date. The construction scenario and schedule analyzed as part of the Proposed Project analysis is considered conservative because over time, emissions for both the construction and operational scenario would decrease due to more stringent air quality standards implemented over time, vehicle fleet turnover to more efficient engines, fuel mix, etc. As the duration of construction would not change (i.e., construction would occur over a 16-year period regardless of start date), the scenario analyzed as part of this analysis is considered conservative for the purposes of quantitatively analyzing air quality impacts.

architectural coatings), as well as other assumptions made for the purposes of modeling, is included in Appendix D, Part I.

Total construction is expected to take approximately 16 years. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. During grading activities, a maximum of 15 acres per day would be graded. URBEMIS model assumptions for construction equipment were used in calculating construction emissions as equipment and machinery mix would be typical of residential development. The equipment mix is meant to represent a reasonably conservative estimate of construction activity. Additional project-specific assumptions regarding vehicle trips, construction schedule, soil import/export, and architectural coatings are included in Appendix D, Part I.

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 reduce 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 two times daily, resulting in an approximately 55% reduction of particulate matter.

The proposed project is also subject to SDAPCD Rule 67.0 – Architectural Coatings. This rule 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.

Table 5.4-8, Estimated Maximum Daily Construction Emissions (Unmitigated and Mitigated), shows the estimated maximum daily construction emissions associated with the construction phase of the proposed project. As shown in Table 5.4-8, unmitigated daily construction emissions for CO and SO_x, would not exceed the City's significance thresholds. However, the VOC, NO_x, PM_{10} and $PM_{2.5}$ emissions associated with project construction without mitigation would exceed the City of Chula Vista's emission threshold.

Mitigation Measures AQ-1 and AQ-2 are provided in Section 5.4.5 to reduce the NO_x, PM_{10} and $PM_{2.5}$ emissions to the extent feasible. Table 5.4-8 also shows construction emissions following implementation of identified mitigation measures.

Table 5.4-8
Estimated Maximum Daily Construction Emissions (Unmitigated and Mitigated) (pounds/day)[1]

	VOC[2]	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Proposed Project Emissions (not compliant with SDAPCD Rules 55 and 67)						
2014	14.99	94.29	108.02	0.10	603.75	128.74
2015	64.44	86.18	107.19	0.11	305.47	67.40
2016	103.46	155.79	202.89	0.20	908.02	195.04
2017	101.83	141.79	194.88	0.20	608.89	132.94
2018	91.99	80.71	145.21	0.19	305.44	67.14
2019	37.55	58.04	89.20	0.10	303.62	65.62
2020	36.83	52.86	86.18	0.10	303.34	65.46
2021	36.46	51.57	76.23	0.10	303.31	65.44
2022	36.46	51.57	76.23	0.10	303.31	65.44
2023	62.99	94.48	130.40	0.16	905.29	192.55
2024	58.65	62.29	104.74	0.16	304.29	66.17
2025	28.75	51.33	68.63	0.07	303.12	65.33
2026	28.59	50.83	64.86	0.07	303.11	65.33
2027	28.59	50.83	64.86	0.07	303.11	65.33
2028	28.59	50.83	64.86	0.07	303.11	65.33
2029	21.88	12.18	25.06	0.06	0.97	0.72
Proposed Project Emissions (compliant with SDAPCD Rules 55 and 67)						
2014	14.99	94.29	108.02	0.10	273.75	59.82
2015	47.65	86.18	107.19	0.11	140.47	32.94
2016	77.50	155.79	202.89	0.20	413.02	91.66
2017	75.87	141.79	194.88	0.20	278.89	64.02
2018	66.03	80.71	145.21	0.19	140.44	32.69
2019	28.38	58.04	89.20	0.10	138.62	31.26
2020	27.66	52.86	86.18	0.10	138.34	31.01
2021	27.29	51.57	76.23	0.10	138.31	30.98
2022	27.29	51.57	76.23	0.10	138.31	30.98
2023	47.22	94.48	130.40	0.16	410.29	89.17
2024	42.88	62.29	104.74	0.16	139.29	31.71
2025	22.15	51.33	68.63	0.07	138.12	30.88
2026	21.99	50.83	64.86	0.07	138.11	30.87
2027	21.99	50.83	64.86	0.07	138.11	30.87
2028	21.99	50.83	64.86	0.07	138.11	30.87
2029	15.28	12.18	25.06	0.06	0.97	0.72
Maximum Daily Emissions (Unmitigated)	*103.46*	*155.79*	*202.89*	*0.20*	*908.02*	*195.04*
Maximum Daily Emissions (Mitigated)	*77.50*	*155.79*	*202.89*	*0.20*	*413.02*	*91.66*

Table 5.4-8 (Continued)
Estimated Maximum Daily Construction Emissions (Unmitigated and Mitigated)
(pounds/day)[1]

	VOC[2]	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
City of Chula Vista Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	Yes	Yes	No	No	Yes	Yes

Source: URBEMIS 2007 Version 9.2.4. See Appendix D, Part I for complete results.
Note: Construction emissions shown include emissions from construction of all Villages analyzed under the proposed project, including Village Three and a Portion of Village Four, Village Eight East, and Village Ten.

1 Construction emissions that would be generated under the Village Eight East Alternative Development Scenario would be essentially the same to those shown in Table 5.4-8. Although the construction footprint under the Alternative Development Scenario would be slightly greater than that of the proposed Village Eight East, construction emissions would be essentially the same on a daily basis, as construction equipment fleet, daily equipment and construction crew operations, and daily construction trips to and from the site would be the same as those analyzed under the proposed project. A pounds/per day daily threshold is the only threshold numerically considered for criteria pollutants; therefore, the quantitative analysis under both the proposed project and alternative scenario would be essentially the same.

2 "Unmitigated" PM_{10} and $PM_{2.5}$ emissions as shown in Table 5.4-8 do not reflect compliance with SDAPCD Rule 55, which restricts visible fugitive dust emissions beyond the property line. Similarly, "Unmitigated" VOC emissions as shown do not reflect compliance with SDAPCD Rule 67 which restricts the VOC content in architectural coatings. "Mitigated" emissions as shown, account for compliance with these rules.

There is no feasible mitigation that would reduce construction-related VOC emissions to a level that is less than significant. This impact, therefore, is considered **significant and unavoidable**.

Mitigation Measure AQ-1 would reduce construction-related NO_x emissions; however, even with incorporation of this mitigation measure, NO_x emissions are anticipated to be above the threshold. (Note that the mitigation available for the reduction of NO_x emissions (as described in mitigation measure AQ-1) is not quantifiable; therefore, emission reductions for NO_x are not shown in Table 5.4-8.) There are no other feasible mitigation measures that would reduce the identified significant impacts to less than significant. This impact, therefore, is considered **significant and unavoidable**.

Mitigation Measure AQ-2 would reduce construction-related PM_{10} and $PM_{2.5}$ emissions; however, even with incorporation of this mitigation measure, PM_{10} and $PM_{2.5}$ emissions are anticipated to be above the threshold. There are no other feasible mitigation measures that would reduce the identified significant impacts to less than significant. This impact, therefore, is considered **significant and unavoidable**.

Dust from construction activities would also have the potential to impact sensitive biological resources in the Multiple Species Conservation Program Preserve area. However, the Biological Technical Report prepared for the project (Dudek 2014, included as Appendix E to this EIR) includes mitigation for potential indirect impacts to biological resources, including dust from construction (see Mitigation Measure BIO-6).

Operational Emissions

Following the completion of construction activities, the proposed project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from project land uses, as well as mobile and stationary sources including vehicular traffic from residents, space heating and cooling, water heating, and fireplace (hearth) use.

The proposed project would impact air quality through the vehicular traffic generated by project residents. According to the project's Traffic Impact Analysis (Chen Ryan Associates 2014, included as Appendix M to this EIR), total project-generated daily traffic is estimated to be 77,663 trips per day at full buildout (2030). The URBEMIS 2007 model was utilized to estimate daily emissions from proposed vehicular sources (refer to Appendix D, Part I).

In addition to estimating mobile source emissions, the URBEMIS 2007 model was also used to estimate emissions from the project area stationary sources, which include natural gas appliances, hearths, landscaping (which would not produce winter emissions), and consumer products. All residential units would be constructed with natural gas fireplaces and no wood-burning fire places would be constructed. Similar to construction-related architectural coating emission estimates, VOC emissions generated from architectural coatings were estimated based on the number of multifamily dwelling units and square footage of retail space for each development phase, the calculation method in URBEMIS 2007, and VOC content per SDAPCD Rule 67.0 to determine the VOC emission rate in pounds per day (see Appendix D, Part I, "Emissions of Architectural Coatings").

The estimation of proposed operational emissions is based upon typical residential, retail, and industrial uses, and the analysis is considered a reliable estimate of the project's likely emissions. Table 5.4-9, Estimated Daily Maximum Operational Emissions, presents the maximum daily emissions associated with the operation of the proposed project after all phases of construction have been completed. The values shown are the maximum summer and winter daily emissions results from URBEMIS 2007. Complete details of the emissions calculations are provided in Appendix D, Part I of this document.

Table 5.4-9
Estimated Daily Maximum Operational Emissions – 2030 (pounds/day)

Proposed Project Emissions	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Summer						
Motor Vehicles	248.06	242.40	2,753.76	8.32	1,349.61	261.83
Area Sources	396.82	87.52	168.02	0.01	0.52	0.52
Total	644.88	329.92	2,921.78	8.33	1,350.13	262.35

Table 5.4-9 (Continued)
Estimated Daily Maximum Operational Emissions – 2030 (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**	**Yes**	**No**	**Yes**	**Yes**
Winter						
Motor Vehicles	266.89	291.97	2,576.56	6.92	1,349.61	261.83
Area Sources	377.07	131.50	56.44	0.29	3.84	3.80
Total	643.96	423.47	2,633	7.21	1,353.45	265.63
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**

Source: URBEMIS 2007 Version 9.2.4 (Jones and Stokes 2007). See Appendix D, Part I for complete results.
"Summer" emissions are representative of the conditions that may occur during the ozone season (May 1 to October 31) and "Winter" emissions are representative of the conditions that may occur during the balance of the year (November 1 to April 30).

As shown, daily operational emissions for SO_x would not exceed the City's significance thresholds. However, the VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions associated with operation of the project would exceed the City of Chula Vista's significance thresholds. Project design features identified in Appendix D, Part I, including general design standards, transit planning principles, and non-motorized transportation features, would help to reduce operational emissions; however, significant reductions in VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ 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. Therefore, even with incorporation of these design features, criteria pollutant emissions for VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ are anticipated to be above the thresholds. This impact, therefore, is considered **significant and unavoidable**.

C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment 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 nonattainment 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 nonattainment area for the CAAQS for PM_{10} and $PM_{2.5}$.

Construction of cumulative projects simultaneously with the proposed project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance and hauling activities, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials and worker vehicular trips. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles, the latter of which would generally be dispersed over a large area where the vehicles are traveling. The closest cumulative projects to be constructed in the vicinity of the project site are Village Two located northeast of Village Three North and north of Village Four, the remaining segments of Village Four located immediately east of Village Three, Village Eight West located immediately west of Village Eight East, Village Nine located east of Village Eight East, and Planning Area-12. The construction of surrounding villages would employ similar construction practices, equipment fleets, and construction schedules as the proposed project; therefore, the potential exists for various construction phases of these projects to occur concurrently, resulting in cumulatively considerable air emissions.

As discussed previously, the emissions of VOC, NO_x, PM_{10} and $PM_{2.5}$ would exceed the applicable significance threshold levels during construction. Emissions of PM_{10}, $PM_{2.5}$, NO_x, and/or VOCs generated during project construction would be localized to the proposed project site. Additionally, the proposed project would be required to comply with SDAPCD Rule 55. However, PM_{10} emissions would exceed the threshold. The VOC and NO_x emissions from the proposed project would exceed the significance threshold and project design features included as part of the project would not substantially reduce those emissions from the proposed project. Accordingly, generation of these criteria pollutant emissions when combined with other cumulative projects, particularly those occurring simultaneously during various construction periods of the proposed project, would result in a temporary significant cumulative impact to air quality. As such, the project's contribution to cumulative construction emissions would be **significant and unavoidable**.

Regarding operational emissions, as stated under Threshold (A), 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. Through previous planning efforts, the project area was allocated a total of 1,570 residential units, including 928 units in Village Eight East and 642 units in Village Ten. Village Three North and the Portion of Village Four were not allocated any residential units. The proposed project includes a total of 6,897 residential units. As such, the proposed project would result in an additional 5,327 residential units above the planned/allocated 1,570 residential units.

This increase in land use intensity and associated increase in vehicle trips has not been anticipated in local air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the RAQS. Furthermore, as discussed under Threshold (B), the emissions VOCs and NO_x (precursors of O_3), as well as those of PM_{10} and $PM_{2.5}$, would exceed operational significance thresholds. The health effects attributed to criteria air pollutants emitted by any singular project, however, cannot be accurately predicted at this time because of the numerous variables that influence public health (e.g., background air pollutant concentrations, meteorology and weather patterns, diet, preexisting conditions, genetic predispositions, and personal habits such as smoking). Nonetheless, operation of the proposed project would result in a cumulatively considerable contribution to regional O_3, PM_{10}, and $PM_{2.5}$ concentrations. Impacts would be **significant and unavoidable**.

D. Expose sensitive receptors to substantial pollutant concentrations.

Construction Impacts

The greatest potential for TAC emissions during construction would be diesel particulate emissions from heavy equipment operations and heavy-duty trucks.

The project site is currently vacant. The nearest existing sensitive receptors are generally located north of the project site. Residences are currently being built within Village Two, located north of Village Three North. Additionally, Otay Ranch High School and Olympian High School are located northeast and north of the project site, respectively. Table 5.4-2 shows sensitive receptors and respective distances from Village Three, Village Four, Village Eight East and Village Ten, including sensitive receptors located near proposed off-site improvements.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SDAPCD recommends an incremental cancer risk threshold of 10 in 1 million. "Incremental Cancer Risk" is the likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 70-year lifetime will contract cancer based on the use of standard risk-assessment methodology.

The project would require use of (i) heavy-duty construction equipment, which is subject to a CARB Airborne Toxics Control Measure (ATCM) for in-use diesel construction equipment to reduce diesel particulate emissions, and (ii) diesel trucks, which are also subject to an ATCM. Total construction of the proposed project would last for approximately 16 years, after which time project-related TAC emissions would cease. A majority of the TAC emissions would occur during site grading activities from large grading equipment. These emissions would be distributed over the entire site and not concentrated in a particular area for extended periods. The grading phases for each village would last for 7 months. Thus, the proposed project would not result in a long-term (i.e., 70 years) source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction. As such, the exposure of project-related TAC emission impacts to sensitive receptors (including nearby residential development) during construction would be **less than significant**.

Operational Impacts

Project Operation – On-Site Land Uses

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005) lists land uses that are considered major air toxic emitters. These land uses are generally industrial and processing land uses that require a permit from the SDAPCD to operate, though CARB also considers dry cleaning facilities and gas stations to be stationary sources of TAC emissions that should not be located near sensitive receptors.

Here, the proposed project contemplates that light industrial uses, and gas stations and/or dry cleaners could be located on the project site in order to accommodate the other residential and non-residential development. Provided that on-site development conforms to the siting standards of CARB's above-mentioned handbook and SDAPCD permitting standards, as required by Mitigation Measure AQ-3, impacts would be **less than significant with mitigation**.

Project Operation – Village Three and a Portion of Village Four

The Village Three and Portion of Village Four SPA Plan allows for a variety of uses. The development of Village Three and a Portion of Village Four would occur within an existing 1,000-foot nuisance easement area around the Otay Landfill currently designated for industrial uses. The Otay Ranch Planned Community District Regulations for the Industrial Park identify specific industrial uses permitted within the landfill buffer zone. Uses include manufacturing, storage and wholesale trades, services such as cleaning and dying plants and distribution, commercial and retail uses, high-technology uses, bio-technical uses, bio-medical uses, public and semi-public uses, and various industrial temporary uses.

A health risk assessment (HRA) was prepared by SCS Engineers (SCS 2014a) to evaluate the potential health impacts resulting from the emission of TACs by the Otay Landfill (see Appendix D, Part II). The results of the HRA show that chronic and acute noncancer health effects would be less than significant for all off-site locations based on the hazard index threshold of one (1.0) for adverse noncancer health effects. Specifically, the calculated chronic hazard index is 0.128, and the calculated acute hazard index is 0.003.

As for cancer risk, the calculated cancer risk for residential receptors does not exceed the threshold of 1.0 in 1 million for areas proposed for residential development. An area beyond the Landfill's property boundary exceeds the referenced threshold, but that location is proposed for industrial use; thus, the residential receptor threshold is not applicable. Further, carcinogenic risks to commercial and industrial receptors do not exceed the conservative 1.0 in 1 million risk threshold at any location outside the Landfill's property boundary.

As such, the proposed development area does not exceed the health effect thresholds. Impacts would be **less than significant.**

Project Operation – Village Eight East

The Village Eight East portion of the project site is located on the west side of State Route 125 (SR-125). Due to the project site's location within 500 feet of the SR-125 freeway, an HRA was conducted in accordance with Policy EE 6.10 of the City of Chula Vista General Plan, which states:

> The siting of new sensitive receivers within 500 feet of highways resulting from development or redevelopment projects shall require the preparation of a health risk assessment as part of the CEQA review of the project. Attendant health risks identified in the Health Risk Assessment (HRA) shall be feasibly mitigated to the maximum extent practicable, in accordance with CEQA, in order to help ensure that applicable federal and state standards are not exceeded.

The Village Eight East HRA was prepared by Scientific Resources Associated (SRA 2014), and focuses on traffic-generated TAC emissions from SR-125, specifically diesel particulate matter, which is designated by CARB as a carcinogen (see Appendix D, Part III).

Average annual daily trips on the freeway segment adjacent to the project site were estimated from the project's Traffic Impact Analysis (Chen Ryan Associates 2014, included as Appendix M to this EIR), which projected approximately 94,000 ADT on the segment of SR-125 between Main Street and Lone Star Road in 2030. This represents the highest segment volume within the project study area and, therefore, presents a worse-case scenario. Of the 94,000 trips, it was estimated that the percentage of truck traffic would be 4.4%, for a total of 4,136 truck trips based on Caltrans data for SR-125 between Interstate 8 and SR-94.

Mobile source emission factors were modeled using CARB's motor vehicle emission inventory model, EMFAC2011. Mobile source emission estimates were derived by averaging SR-125 vehicle emissions along the project freeway segment over a 9-year and 70-year period.

The American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) air dispersion model was used to calculate ground-level concentrations at the project site associated with diesel particulate matter emissions from SR-125. Surface and upper air profile meteorological data from the Otay Mesa monitoring station were used in the AERMOD model.

Cancer Risk

The highest individual excess cancer risk for the point of maximum impact, calculated on the basis of residential risk, is 11.5 in 1 million, based on a 70-year residential exposure scenario where the residents are assumed to be present 24 hours per day, 7 days per week for 70 years. This maximum risk level is predicted at a receptor located in the eastern portion Village Eight East, adjacent to SR-125 in the open space area located next to the proposed pedestrian bridge across SR-125. There are no residences proposed to be located at this point.

The highest individual excess cancer risk for the maximally exposed individual resident is 10.3 in 1 million, based on a 70-year residential exposure scenario. This point occurs in the mixed-use area MU-1d adjacent to the SR-125 freeway. For the 30-year residential exposure scenario, the maximum individual excess cancer risk at the MEIR is 9.9 in 1 million. For the 9-year residential exposure scenario, the highest individual excess cancer risk at the maximally exposed individual resident is 3.0 in 1 million for adults and 4.0 in 1 million for children. Because it is unlikely that an individual would reside in this location for the entire 70-year exposure period, the 30- and 9-year exposure scenarios present a more realistic estimate of the potential excess cancer risk to an individual residing at this point. Therefore, impacts specific to TACs, including diesel particulate matter generated from traffic volumes on SR-125, would be below the 10 in 1 million significance threshold, are **less than significant**, and no mitigation is required (SRA 2014).

Also of note, according to a Federal Highway Administration analysis, on a nationwide basis, even if vehicle miles traveled increase by 64%, reductions of 57% to 87% in mobile source air toxics are projected, with the 87% referring to diesel particulate matter. Based on these estimates of substantial future reductions, which are not accounted for in the HRA, the HRA results of 10.3 in 1 million cancer risk for residents near the SR-125 segment adjacent to the project are likely overstated and would contribute to a low amount of risk (approximately 2.4% of the estimated existing risk) to the overall risk predicted by CARB in San Diego County (SRA 2014).

Noncancer Risk

The chronic noncancer hazard index associated with diesel particulate matter predicted at the project site was 0.008. This is below the level of 1.0 at which adverse noncancer health effects would be anticipated. Impacts would be **less than significant**.

CO Hotspots

Mobile source impacts occur on two scales of motion. Regionally, project-related travel will add to regional trip generation and increase the vehicle-miles traveled within the SDAB. Locally, project traffic will be added to the City of Chula Vista roadway system in the vicinity of the proposed project. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and is operating on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO "hotspots" in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SDAB is steadily decreasing.

Carbon monoxide transport is extremely limited and disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors. Typically, high CO concentrations are associated with roadways or intersections operating at an unacceptable level of service. Projects contributing to adverse traffic impacts may result in the formation of CO hotspots.

To verify whether the proposed project would cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hotspots was conducted. The project's Traffic Impact Analysis (Chen Ryan 2014, included as Appendix M to this EIR) evaluated whether there would be a decrease in the level of service (LOS) (e.g., congestion) at the intersections potentially affected by the project. The potential for CO hotspots was evaluated based on the results of the Traffic Impact Analysis. The California Department of Transportation (Caltrans) Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) (Caltrans 1997) was followed. In accordance with the CO Protocol, CO hotspots are typically evaluated when (1) the LOS of an intersection or roadway decreases to a LOS E or worse; (2) signalization and/or channelization is added to an intersection; and (3) sensitive receptors such as residences, schools, and hospitals are located in the vicinity of the affected intersection or roadway segment.

To analyze a maximum, or worst-case, CO hotspot scenario, a site-specific CO hotspot analysis was performed for the intersection of the 805 Southbound Ramps and Olympic Parkway during the Year 2020 Plus Project scenario. The potential impact of the proposed project on local CO

levels was assessed at this intersection with the Caltrans CL4 interface based on the California LINE Source Dispersion Model (CALINE4), which allows microscale CO concentrations to be estimated along each roadway corridor or near intersections.

Six receptor locations were modeled to determine CO ambient concentrations. A receptor was assumed on the sidewalk at each corner of the modeled intersection, for a total of four receptors adjacent to the intersection, to represent the possibility of extended outdoor exposure. CO concentrations were modeled at these locations to assess the maximum potential CO exposure that could occur in 2020. Additional nearby sensitive receptors (i.e., residences located northwest and southwest of the intersection) were modeled. A receptor height of 1.8 meters (5.9 feet) was used in accordance with EPA recommendations for all receptor locations.

The maximum 1-hour CO background concentration of 2.5 ppm, as measured in 2008, was assumed in the CALINE4 model (see Table 5.4-4, which presented 2008 concentration rounded up to 3.0 ppm). The model provides predicted concentrations in ppm at each of the receptor locations. To estimate an 8-hour average CO concentration, a persistence factor of 0.7, as is recommended for urban locations, was applied to the output values.

The results of the model are shown in Table 5.4-10, CALINE4 Predicted CO Concentrations. Model input and output data are contained in Appendix D, Part I.

Table 5.4-10
CALINE4 Predicted CO Concentrations

Intersection	Maximum Modeled Impact Year 2020 with Project	
	1 hour (ppm)	*8 hour (ppm)1*
I-805 SB Ramps / Olympic Parkway	3.2	2.2

Source: CALINE4 (Caltrans 1998). See Appendix D, Part I.
[1] 8-hour concentrations were obtained by multiplying the 1-hour concentration by a factor of 0.7, as referenced in Caltrans 1997, Table B.15.

As shown in Table 5.4-10, maximum CO concentrations predicted for the 1-hour averaging period would be 3.2 ppm, which is below the state 1-hour CO standard of 20 ppm (see Table 5.4-1 for state standards). Maximum predicted 8-hour CO concentrations of 2.2 ppm would be below the state CO standard of 9.0 ppm. As neither the state 1-hour standard nor the 8-hour standard would be equaled or exceeded at any of the intersections studied, potential CO hotspot impacts would be **less than significant.**

E. Create objectionable odors affecting a substantial number of people.

Land uses and industrial operations that are associated with objectionable odors typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding.

The proposed project involves residential and mixed use communities that would not generate objectionable odors. However, the proposed project, specifically Village Three North and a Portion of Village Four, would be constructed in the vicinity of the Otay Landfill. This facility could occasionally produce odors that can be detected outside of the landfill boundary. The 2005 GPU/GDPA included a mitigation measure (5.11-2), which indicated that no residential use shall be permitted within 1,000 feet of the Otay Landfill unless a project specific analysis is completed demonstrating that odor effects fall below odor thresholds for common compounds. Therefore, a site-specific odor nuisance study for the Otay Landfill was conducted by SCS Engineers (SCS Engineers 2014b) and is included as part of Appendix D of this EIR[6].

The Village Three North development would include approximately 1,597 additional residential units, and approximately 5,174 residents. Of these 5,174 residents, 259 would be located in the 200% to 400% zone (compared to zero residents currently) and 3,904 would be located in the 100% to 200% zone (compared to 39 residents currently). These two zones represent exposure to the maximum current odor exposure for an existing resident or greater exposure. 1,011 residents would be located in the 50% to 100% zone (compared to 7,128 residents currently), meaning they would be exposed to expected odor impacts equal to or below the current maximally exposed resident. As stated in the Village Three North Nuisance Study (Appendix D), the proposed development will not result in a change in odor emissions from the Landfill; thus, no additional or new impacts are expected.

As determined in the case *Ballona Wetlands Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, "An EIR must identify and analyze the significant environmental impacts that may result from the project (PRC Section § 21100(a)(b); Guidelines,§§ 15126.2(a), 15143). It must include facts and analysis sufficient to allow the decision makers and the public to understand the environmental consequences of the project. The analysis need not be exhaustive, but it must be reasonably complete and reflect a good faith effort at full disclosure (*Ballona Wetlands Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473-474)." The purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project. Therefore, the Village Three North Nuisance Study is included herein for disclosure purposes only. Additional information regarding the Village Three North HRA and Nuisance Study can be found in Section 5.1 Land Use.

In addition to odors generated as a result of landfill operations, odors would be generated from vehicles and/or equipment exhaust emissions during construction of the proposed project. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons

[6] The site-specific nuisance study conducted by SCS Engineers is provided for informational and disclosure purposes only, as a study of this nature is beyond the scope of CEQA. Under CEQA, only the project's impacts on the environment are required to be analyzed; not the impacts of the environment on the project. However, for disclosure purposes, an odor analysis pertaining to the Otay Landfill is provided.

from tailpipes of construction equipment and architectural coatings. Such odors are temporary and generally occur at magnitudes that would not affect substantial numbers of people. Additionally, SDAPCD Rule 67.0 limits the amount of VOCs from coatings and solvents. Therefore, impacts associated with odors during construction would be considered **less than significant**.

Lastly, the proposed project entails residential, commercial, office, parks, schools and light industrial uses and would not result in the creation of a land use that is commonly associated with odors; however, commercial uses such as restaurants would be permitted under the zoning identified in the Planned Community District Regulations and could generate objectionable odors related to facility exhaust. Such odors would be subject to SDAPCD Rule 51 – Nuisance, which would ensure odors generated on site would not adversely affect sensitive receptors including residential units. Moreover, sensitive receptors would be located away from such uses to reduce odor-related land use conflicts. Therefore, project operations would result in a **less-than-significant** odor impact.

5.4.4 Level of Significance Prior to Mitigation

As discussed in Section 5.1 of this EIR, and under Threshold (A) an inconsistency may occur if any residential units in Village Three North shall be located within 1,000 feet from the then active solid waste disposal areas of the Otay Landfill at the time of approval of building permits for those units within Village Three North. A potentially significant land use impact was identified in Section 5.1 and MM LU-4 has been provided to reduce potential impacts to a **less than significant** level.

As described under Threshold (A), the proposed project would result in an increase in land use intensity and associated increase in vehicle trips that have not been anticipated in the applicable air quality plans. Therefore, the proposed project would be not be consistent with the SIP and RAQS, and impacts would be **significant and unavoidable**.

As described under Threshold (B), daily construction emissions for CO and SO_x, would not exceed the City's significance thresholds. However, the VOC, NO_x, PM_{10} and $PM_{2.5}$ emissions associated with project construction would exceed the City of Chula Vista's emission threshold and impacts would be **significant and unavoidable**.

As described under Threshold (B), daily operational emissions for SO_x would not exceed the City's significance thresholds. However, the VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions associated with operation of the project would exceed the City of Chula Vista's significance thresholds. Project design features identified in Appendix D, Part I, including general design standards, transit planning principles, and non-motorized transportation features, would help to reduce operational emissions; however, significant reductions in VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ 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. Therefore, even with incorporation of these design features, criteria pollutant emissions for VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ 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 and operational emissions of VOC, NO_x, PM_{10} and $PM_{2.5}$ and would be **significant and unavoidable**.

As described under Threshold (D), during construction, the grading phases for each village would last for 7 months. Thus, the proposed project would not result in a long-term (i.e., 70 years) source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction. For Village Eight East, the excess cancer risk based on the 70-year exposure period is less than 10 in 1 million; therefore, impacts specific to TACs, including diesel particulate matter generated from traffic volumes on SR-125, would be **less than significant**.

As to the development of on-site land uses, impacts arising from the emission of TACs would be **potentially significant** if the site is developed to accommodate any light industrial uses, gas stations, or dry cleaning facilities in close proximity to sensitive receptors.

For Village Three North and a Portion of Village Four, the area where the risk exceeds 1 in 1 million is proposed for industrial development, so the residential risk calculation is not applicable. Cancer risk for commercial and industrial receptors does not exceed 1 in 1 million at any off-site location. Therefore, the proposed industrial land use and all proposed residential and industrial land uses are outside the area of their respective 1 in 1 million cancer risk. As such, the proposed development area does not exceed the threshold for risk. Impacts would be **less than significant.**

Regarding CO hotspots, maximum CO concentrations predicted for the 1-hour averaging period would be 3.2 ppm, which is below the state 1-hour CO standard of 20 ppm (see Table 5.4-1 for state standards). Maximum predicted 8-hour CO concentrations of 2.2 ppm would be below the state CO standard of 9.0 ppm. As neither the state 1-hour standard nor the 8-hour standard would be equaled or exceeded at any of the intersections studied, potential CO hotspot impacts would be **less than significant.**

As described under Threshold (E), impacts associated with odors during construction and operations, would be less than significant. Additionally, odor impacts from the Otay Landfill on the proposed project would be **less than significant**.

5.4.5 Mitigation Measures

MM AQ-1 Prior to approval of any grading permits, the Project Applicant or its designee shall place the following on all grading plans to the satisfaction of the Development Services Director and City Engineer, and these requirements shall be implemented during grading of each phase of the project to minimize NO_x emissions:

- Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall turn their engines off when not in use to reduce vehicle emissions;
- All construction equipment shall be outfitted with best available control technology (BACT) devices certified by CARB. A copy of each unit's BACT documentation shall be provided at the time of mobilization of each applicable unit of equipment;
- All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications;
- All diesel-fueled, on-road construction vehicles shall meet the emission standards applicable to the most current year to the greatest extent possible. To achieve this standard, new vehicles shall be used, or older vehicles shall use post-combustion controls that reduce pollutant emissions to the greatest extent feasible;
- The effectiveness of the latest diesel emission controls is highly dependent on the sulfur content of the fuel. Therefore, diesel fuel used by on- and off-road construction equipment shall be low sulfur (less than 15 ppm) or other alternative, low-polluting diesel fuel formulation;
- The use of electrical construction equipment shall be employed where feasible;
- The use of catalytic reduction for gasoline-powered equipment shall be employed where feasible;
- The use of injection timing retard for diesel-powered equipment shall be employed where feasible.

MM AQ-2 Prior to approval of any grading permits, the Project Applicant or its designee shall place the following Standard Construction Best Management Practices (BMPs) on all grading plans to the satisfaction of the Development Services Director and City Engineer and shall implement these BMPs during project construction to minimize PM_{10} and $PM_{2.5}$ emissions, including:

- Water, or utilize another acceptable SDAPCD dust control agent on, the grading areas at least twice daily to minimize fugitive dust;
- Stabilize grading areas as quickly as possible to minimize fugitive dust;
- Apply chemical stabilizer or pave the last 100 feet of internal travel path within the construction site prior to public road entry;
- Install wheel washers adjacent to a paved apron prior to vehicle entry on public roads;
- Remove any visible track-out into traveled public streets within 30 minutes of occurrence;
- Wet wash the construction access point at the end of the workday if any vehicle travel on unpaved surfaces has occurred;
- Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads;
- Cover haul trucks or maintain at least 12 inches of freeboard to reduce blow-off during hauling;
- Suspend all soil disturbance and travel on unpaved surfaces if winds exceed 25 miles per hour (mph);
- Cover/water on-site stockpiles of excavated material;
- Enforce a 20 mph speed limit on unpaved surfaces;
- Pave permanent roads as quickly as possible to minimize dust;
- During construction, site grading activities within 500 feet of a school in operation shall be discontinued or all exposed surfaces shall be discontinued or all exposed surfaces shall be watered to minimize dust transport off site to the maximum degree feasible, when the wind velocity is greater than 15mph in the direction of the school;
- During blasting, utilize control measures to minimize fugitive dust. Control measures may include, but are not limited to, blast enclosures, vacuum blasters, drapes, water curtains or wet blasting.

MM AQ-3 Prior to approval of the building permit for any uses that are regulated for TACs by the SDAPCD, the Project Applicant shall demonstrate to the satisfaction of the Development Services Director (or their designee) that the use complies with established criteria (such as those established by SDAPCD Rule 1200 and CARB). Also, gas stations shall not be located within 50 feet of a sensitive receptor, in accordance with CARB's siting recommendations.

5.4.6 Level of Significance After Mitigation

The potentially significant impacts arising from the possible siting of residential units in Village Three North within 1,000 feet from the then active solid waste disposal areas of the Otay Landfill at the time of approval of building permits for those units within Village Three would be reduced to **less than significant** with implementation of MM LU-4.

As the proposed project exceeds the growth projections in the SIP and RAQS, and the construction and operational emission limits for the pollutants specified above, the project would result in a **significant and unavoidable** impact due to its conflict with applicable air quality plans.

Implementation of Mitigation Measure AQ-1 and AQ-2 would reduce construction-related NO_x, PM_{10} and $PM_{2.5}$ emissions generated by the proposed project. There is no feasible mitigation, however, to reduce construction-related VOC emissions. Even with incorporation of these mitigation measures, VOC, NO_x, PM_{10} and $PM_{2.5}$ emissions are anticipated to be above the threshold. Therefore, project construction would result in a **significant and unavoidable** impact at the project and cumulative levels, even with incorporation of all feasible mitigation measures.

Additionally, daily operational emissions for VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$ would remain **significant and unavoidable** at the project and cumulative levels 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 reduced to **less than significant** with implementation of MM AQ-3.

Odor impacts would remain **less than significant**. No mitigation is required.

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5.5 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 University Villages Project* that was prepared by Dudek in May 2014. The complete report is contained in Appendix L.

This section tiers from the 1993 Otay Ranch GDP Program EIR, because that Program EIR analyzed noise impacts for the entire Otay Ranch including the project site. The Otay Ranch GDP Program EIR concluded that potentially significant impacts regarding noise levels would occur with implementation of the Otay Ranch GDP. This EIR determined that development would exceed the 60dBA CNEL standard for residential uses as well as exceed the standard for Least Bell's viero and California Gnatcatcher habitat. Mitigation measures were incorporated, which would substantially lessen the identified noise impacts, but not to below a level of significance.

This section also tiers from the 2005 GPU/GDPA Program EIR, because noise impacts for the entire Otay Ranch area, including the project site, were analyzed at a programmatic level. The 2005 GPU/GDPA Program EIR found that potentially significant noise impacts could occur as a result of planned development. This EIR determined that impacts would be potentially significant because noise impacts require a project level analysis, which is infeasible at the General Plan stage. Therefore impacts were found to be significant and unavoidable.

5.5.1 Existing Conditions

5.5.1.1 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, 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. However, as a matter of practice the City of Chula Vista applies a 45 dB CNEL standard to single-family homes.

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.

2013 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 40 for building locations within the 65 dB CNEL noise contour of an airport or of a freeway or expressway, railroad, industrial source or fixed-guideway source as determined by the Noise Element of the General Plan. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have a sound transmission class of at least 40.

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 5.5-1. 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.

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 5.5-1.

Table 5.5-1
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						

For off-site 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 standards are shown in Table 5.5-2. The noise standards in Table 5.5-2 do not apply to construction activities.

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.

Table 5.5-2
Exterior 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) If 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

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 2010).

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 MSCP 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.

5.5.1.2 Existing Setting

The project area is generally located along the southern boundary of the City of Chula Vista, east of Interstate 805, north of State Route 905, and roughly bisected by State Route 125 (SR-125). Main Street and Olympic Parkway have existing interchanges on Interstate 805; Olympic Parkway also currently extends to, and has an interchange with SR-125. Regional access to the project is generally provided by the roadway facilities described immediately above. Major local roadways providing direct access to each village area are described below. Traffic along these major local roadways would be the dominant source of noise contributing to the future community noise level within each village.

5.5.1.3 Ambient Noise

Typical Conditions (Undeveloped Land)

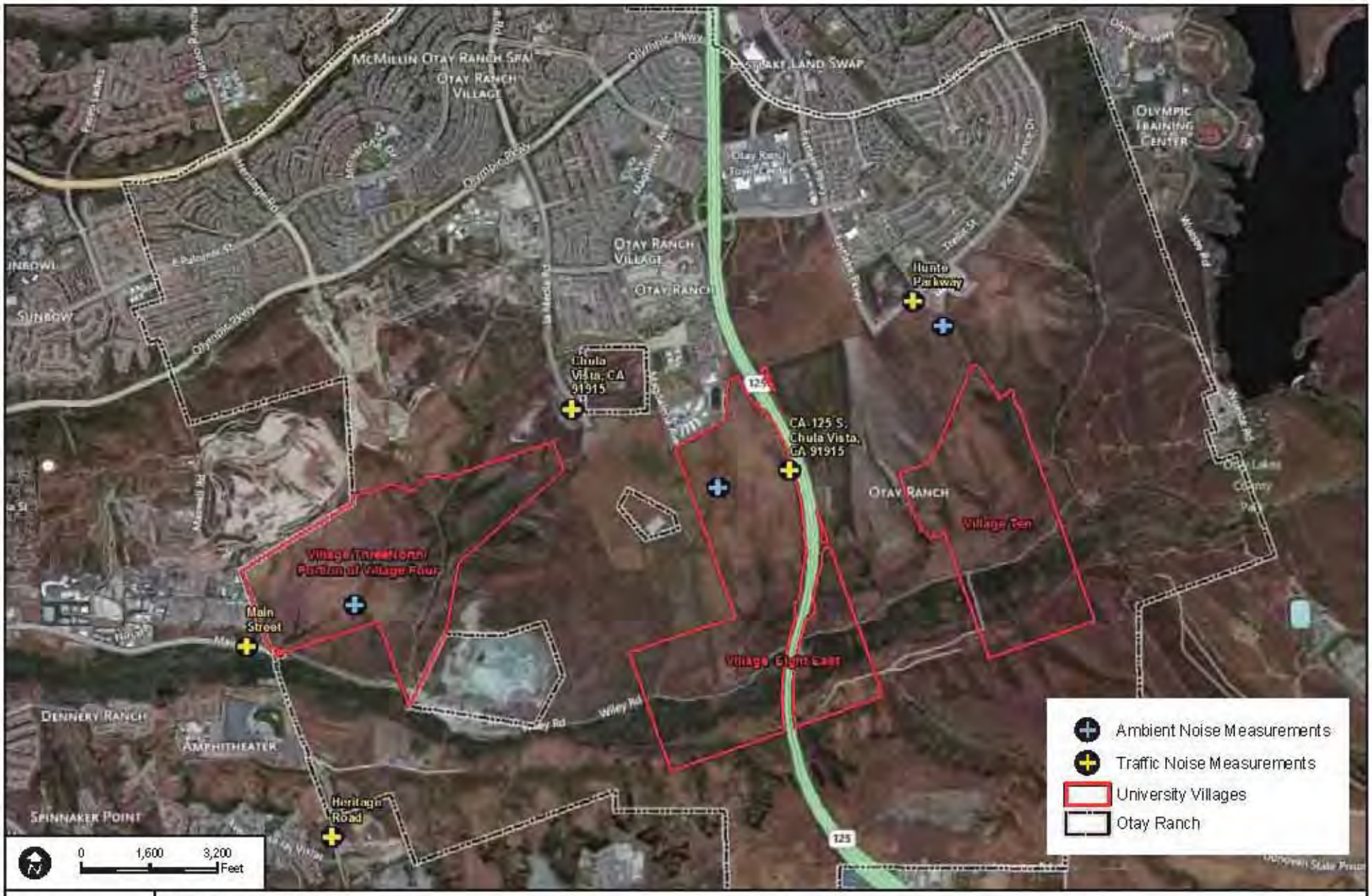
Currently, much of the project site exists as undeveloped open space. Areas within each proposed village that are not located immediately adjacent to an existing roadway would be expected to have ambient noise levels less than typical levels found in the urban environment. In order to characterize the baseline conditions representative of the undeveloped areas within the proposed project site, one short-term noise measurement was conducted each for Village Three North, Eight East, and Ten (refer to Figure 5.5-1).

Table 5.5-3 provides the results of the noise measurements. If the noise measurement is assumed to represent 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 5.5-3 provides a calculated existing CNEL level, based on the approach of employing the measured L_{EQ} value as the hourly average noise level.

Table 5.5-3
Existing Community Noise Equivalent Level (CNEL) Distant from Existing Roadways

Description	Date/Time	L_{EQ}	CNEL
Village Three	11/02/12 9:00–9:20 a.m.	39 dB	46 dB
Village Eight	11/02/12 10:00–10:20 a.m.	43 dB	50 dB
Village Ten	11/02/12 11:30–11:50 a.m.	45 dB	52 dB

Source: Dudek 2014



AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 5.5-1

Location of Field Noise Measurements

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Transportation Noise Sources

Existing Roadway Related Noise and Modeled Calibration Results

No paved roadways currently exist on the project site. A few dirt roads are located on the project site which experience occasional vehicle trips. Vehicular traffic along roadways in the vicinity contributes to the overall noise environment on the project site. Noise measurements were conducted along existing segments of the major roadways described for each Village. In instances where these major roadways do not exist today, noise measurements were conducted along existing roadway segments with the same characteristics (section width, number of lanes, pavement type, shoulder geometry) as the target future roadway. Please refer to Figure 5.5-1, which depicts the location of noise measurements conducted for the assessment of roadway traffic noise. Table 5.5-4 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 5.5-4, the difference between the measured and modeled traffic noise levels was found to be 1 to 2 decibels for each of the measurements, which is regarded in the state of the practice as an acceptable degree of tolerance between measured and modeled (California Department of Transportation 2009). As such, the model is properly calibrated and no corrections or K-factors[1] were applied to any of the subsequent traffic modeling results.

Table 5.5-4
Existing Measured Average Sound Levels Associated with Local Roadways Near Proposed Project and Calibration Results

Site	Description	Date/Time	Measured L_{eq}[1]	Cars	MT[2]	HT[3]	MC[4]	MPH[5]	Corresponding Model Calibration Result (L_{eq}[1])	Difference (Measured – Modeled)
1	Approximately 40 feet to center line of Main Street	04/10/12 12:00–12:20 p.m.	71 dB	191	15	15	4	55	70 dB	1 dB
2	Approximately 40 feet to center line of Heritage Road	04/10/12 12:45–1:05 p.m.	68 dB	142	3	5	5	45	67 dB	1 dB

[1] Peak hour volumes are estimated from the application of design hour ("K"), directional ("D") and truck ("T") factors to Average Daily Traffic (ADT) volumes (Chen Ryan 2014).

Table 5.5-4 (Continued)
Existing Measured Average Sound Levels Associated with Local Roadways Near Proposed Project and Calibration Results

Site	Description	Date/Time	Measured L_{eq}[1]	Cars	MT[2]	HT[3]	MC[4]	MPH[5]	Corresponding Model Calibration Result (L_{eq}[1])	Difference (Measured – Modeled)
3	Approximately 300 feet to center line of SR-125	04/10/12 1:45–2:05 p.m.	55 dB	125	5	3	0	55	53 dB	2 dB
4	Approximately 40 feet to center line of Hunte Parkway	04/10/12 2:45–3:05 p.m.	60 dB	145	1	0	0	35	59 dB	1 dB
5	Approximately 40 feet to center line of La Media Road	04/10/12 3:30–3:50 p.m.	56 dB	64	8	0	0	35	55 dB	1 dB

Source: Dudek 2014
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 70 degrees, clear sky, calm wind.

Traffic Noise Modeling – Existing Conditions

The existing CNEL along major roadways anticipated to affect future noise levels within each of the Villages was determined based on the ambient noise measurement, 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 5.5-5.

It should be noted the dB values in Table 5.5-5 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 5.5-4). The measured L_{eq} values simply reflect actual traffic occurring during the short term measurement, which is used to calibrate the traffic noise model. The noise level (CNEL) from existing traffic volume is then calculated using the calibrated traffic noise model.

Table 5.5-5
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 40 feet to center line of Main Street	Existing Conditions	10,860	55 MPH	70 dB
Approximately 40 feet to center line of Heritage Road	Existing Conditions	8,800	50 MPH	69 dB
Approximately 300 feet to center line of SR-125	Existing Conditions	4,800	55 MPH	54 dB
Approximately 40 feet to center line of Hunte Parkway	Existing Conditions	1,880	40 MPH	60 dB
Approximately 40 feet to center line of La Media Road	Existing Conditions	2,080	35 MPH	57 dB

Source: Dudek 2014

Olympian High School is a source of operational noise. Noise sources associated with Olympian High School includes 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 east side of the campus, approximately 150 feet west of the Village Eight East northern boundary.

The Noise Technical Report for Otay Ranch Villages 2 and 3, Planning Area 1B, and a Portion of Village Four (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 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. Otay Ranch High School has a maximum stadium capacity of 5,500 people. The maximum capacity of the Olympian High School stadium is 3,071 people; therefore, this estimate is conservative for Olympian High School (SUHSD 2011). 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 43 dBA at the Village Eight East site when speakers are in use, and 39 dBA when crowd noise is the noise source, and thus do not exceed city noise standards. However, large events may occasionally be audible in the northeastern area of the SPA.

Village Eight West and Village Nine are planned for mixed-use and residential development in the Otay Ranch GDP. Future land uses planned for Village Four, to the south of the Portion of Village Four, include residential development. However, these areas have not yet been developed and do not generate operational noise. The Otay Valley Regional Park (OVRP) and the Otay River Valley form the southerly boundary of the project site and are proposed to remain undeveloped.

Otay Valley Quarry is a mining and resource extraction site which produces rock products for construction material. The quarry is located southwest of Village Four, adjacent to the project site. Intermittent noise from particularly loud operations, such as blasting, is occasionally audible on the project site. The Otay Valley Quarry Reclamation Plan Amendment was approved, and the accompanying EIR certified, in June 2011.

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. There are no NSLU currently located on the project site. The nearest NSLU to the project site is Olympian High School, located approximately 150 feet north of the northern edge of Village Eight East. Other NSLU in the project vicinity are the Wolf Canyon Elementary school and residences located north of the high school. The elementary school is located approximately 875 feet (0.2 mile) northeast of the project site, and the nearest residence is located approximately 1,500 feet (0.3 mile) northeast of the project site. Residences are also located 1,750 feet (0.3 mile) north of the project site. 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.

Based upon the modeled CNEL values presented in Table 5.5-5, Main Street and Heritage Road currently generate noise levels in excess of 65 dB CNEL beyond the roadway rights-of-way (i.e., approximately 40 feet or 300 feet from the centerline, as applicable).

Aviation

The nearest airport to the project site is Brown Field, located approximately 1.5 miles to the southwest. 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. Due to distance and the orientation of the runway, the project area is not located within 60 dBA CNEL noise contour for the airport, 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 6 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 currently undeveloped. The lands surrounding the project site are described above. The only developed area adjacent to the project site is Village Seven, to the north of the Village Eight East project site. Olympian High School and Main Street border the northern corner of Village Eight East. Land uses north of the high school include an elementary school and residences. Village Seven has been planned in accordance with the traditional village model consisting of predominantly low-medium village residential neighborhoods, a small mixed use village core, and limited multi-family uses adjacent to SR-125.

5.5.2 Thresholds of Significance

The following significance criteria, adapted from 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. Result in the exposure of 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. Result in the exposure of 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. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

G. 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.

5.5.3 Impacts

A. Expose persons to or generate 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 each village area would be the predominant source of noise contributing to the future community noise level within each village. 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 proposed project. Figure 5.5-2 shows the roadway segments analyzed within the proposed project as well as the regional roadway network.

AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 5.5-2

Modeled Roadway Segments

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Acoustical calculations were made for buildout (2030) traffic volumes along roadway segments using the CadnaA noise prediction model (using FHWA's (1997) TNM version 2.5 emission levels). The modeling calculations take into account the posted vehicle speed, traffic volume, the estimated vehicle mix, and site topography. The traffic volumes are based upon data from the traffic study prepared for the project by Chen Ryan Associates (Chen Ryan 2014). The "Year 2030 Plus Project" scenario represents the worst-case condition for off-site roadway noise impacts.

Noise levels were modeled for a series of receiver locations throughout the project area to determine the future noise traffic noise levels at locations where NSLU have been proposed according to the TMs for Villages Three North, Eight East and Ten (October 2013). In areas where individual lots have not been planned yet, receptor locations were placed along the roadways. 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 photographs, and receiver numbers were assigned for each modeled sensitive receptor. Noise levels were modeled for ground level and upper story receptors at each location. See Figure 5.5-1 for ambient and traffic noise measurement locations, and Figure 5.5-2 for modeled roadway segments.

Village Three North

As shown on Figure 5.5-2, Main Street provides access from Interstate 805 to the immediate vicinity of Village Three North, and is aligned along the southern boundary of the development portion of the Village. Main Street under the Year 2030 Plus Project scenario would carry up to 49,200 ADTs adjacent to Village Three North. Modeled noise levels for representative noise-sensitive receptors are summarized in Table 5.5-6. There are residences at the southern boundary of the development area, which are adjacent to Main Street. The first row of homes aligned closest to Main Street could be exposed to noise levels ranging to 67 dB CNEL from future traffic along Main Street. This noise level associated with future Main Street traffic volumes would exceed the exterior noise criterion of 65 dB CNEL, and is considered a **potentially significant impact**. Mitigation for this potentially significant impact is provided which includes construction of a sound wall along the top of the slope on the side of the lots adjacent to Main Street (see Mitigation Measure NOI-1). Table 5.5-6 and Figure 5.5-3 depict the resulting noise levels and corresponding noise contours with placement of the recommended sound walls.

Heritage Road would extend northward from Main Street through Village Three North, at the western end of the Village. Heritage Road is a major arterial forecast to carry 45,600 ADT through Village Three North in 2030. As shown on Table 5.5-6, the first row of homes aligned closest to Heritage Road could be exposed to noise levels ranging to 67 dB CNEL from future traffic along Heritage Road. This noise level associated with future Heritage Road traffic volumes would exceed the exterior noise criterion of 65 dB CNEL, and is considered a

potentially significant impact. Mitigation for this potentially significant impact is provided which includes construction of a sound wall along the easterly or southerly frontage of Heritage Road (see Mitigation Measure NOI-1). Table 5.5-6 and Figure 5.5-3 show the noise levels and corresponding noise contours with the recommended sound walls.

Table 5.5-6
Traffic Noise Modeling Results - Village Three North

Receiver #	Receiver Location	Year 2030 w Project (CNEL)	Greater than 65 dBA CNEL?	Year 2030 w Project w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V3-1	Main Street	67	Yes	61	No
V3-1-2	Main Street	67	Yes	67	Yes
V3-2	Main Street	64	No	59	No
V3-2-2	Main Street	67	Yes	66	Yes
V3-3	Main Street	59	No	58	No
V3-3-2	Main Street	63	No	63	No
V3-4	Main Street	61	No	52	No
V3-4-2	Main Street	64	No	64	No
V3-5	Main Street	58	No	53	No
V3-5-2	Main Street	61	No	61	No
V3-6	Main Street	57	No	52	No
V3-6-2	Main Street	63	No	63	No
V3-7	Main Street	57	No	54	No
V3-7-2	Main Street	59	No	59	No
V3-8	Heritage Road	58	No	55	No
V3-8-2	Heritage Road	59	No	59	No
V3-9	Heritage Road	60	No	55	No
V3-9-2	Heritage Road	61	No	61	No
V3-10	Heritage Road	59	No	57	No
V3-10-2	Heritage Road	63	No	63	No
V3-11	Heritage Road	65	No	63	No
V3-11-2	Heritage Road	66	Yes	66	Yes
V3-12	Heritage Road	67	Yes	60	No
V3-12-2	Heritage Road	67	Yes	67	Yes
V3-13	Heritage Road	64	No	59	No
V3-13-2	Heritage Road	65	No	65	No
V3-14	Heritage Road	64	No	64	No
V3-14-2	Heritage Road	64	No	64	No

Note: Receiver numbers ending in "-2" (V3-8-2, etc.) represent second-story noise exposures; otherwise, reported noise levels represent ground-floor noise exposures.

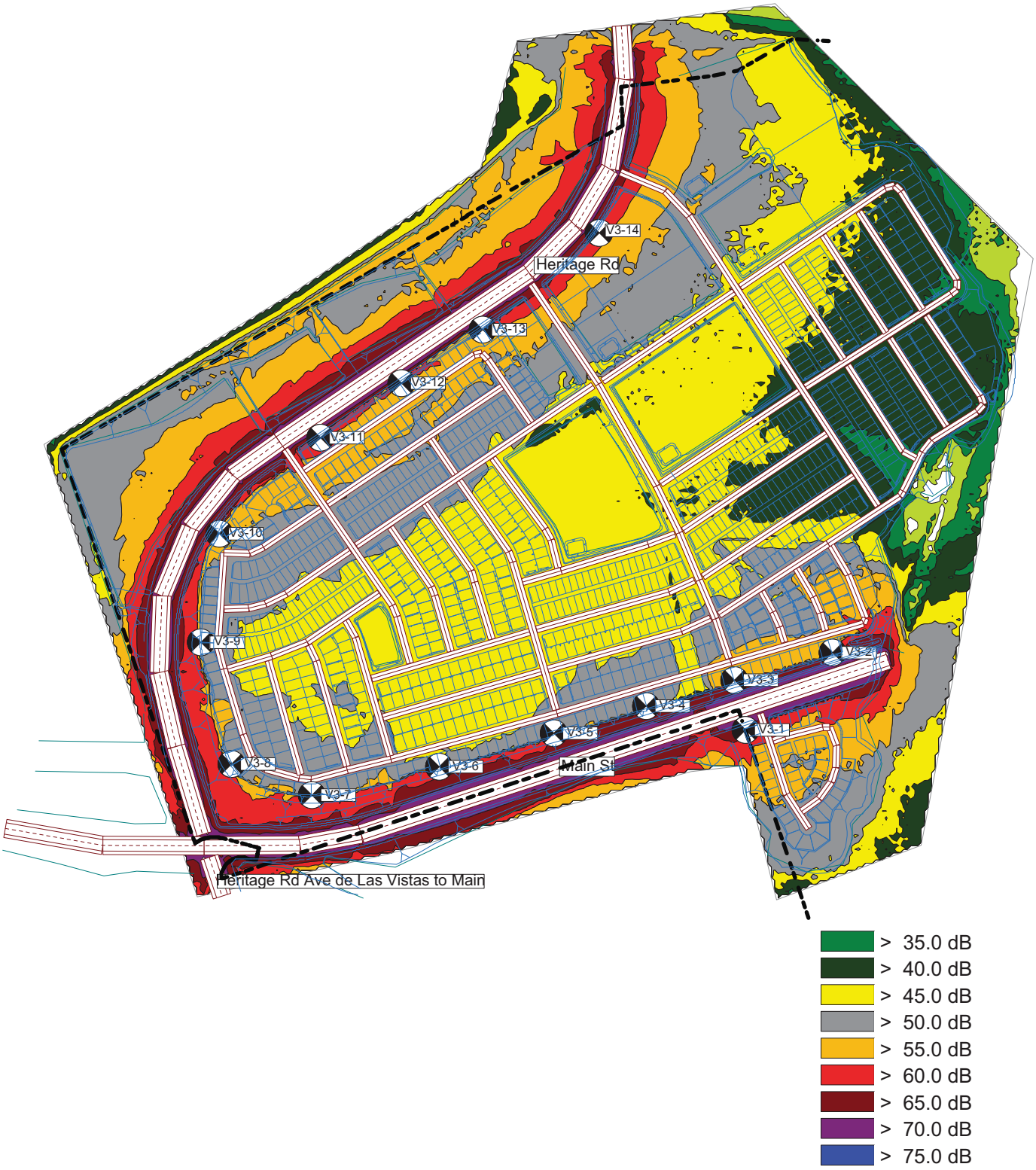

FIGURE 5.5-3

Village Three North Predicted Traffic Noise Contours (dB CNEL)
Future (Year 2030) with Project with Walls

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With respect to non-residential uses, receiver V3-14 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 5.5-6, 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

Interior noise levels at residences adjacent to Main Street and Heritage Road would have the potential to exceed 45 dBA CNEL; therefore, a **potentially significant impact** related to interior noise levels would also occur.

With respect to the potential impacts to on-site noise sensitive land uses due to increased traffic noise levels attributable to the project, an analysis of these increased noise levels as measured against existing ambient noise levels is presented below (Existing Plus Project Conditions). However, the results of this type of traffic-related analysis are misleading when used in connection with the University Villages project, which is a long-term development project not anticipated to reach full buildout until approximately 2030. The results are misleading because the analysis incorrectly assumes that the project would be built out immediately and the corresponding full buildout traffic volumes added to the existing roadway volumes and infrastructure. As such, the analysis does not take into account future increases in cumulative traffic, nor changing land uses and infrastructure and, therefore, the analysis both understates and overstates impacts. For that reason, the analysis of the proposed project's impacts as measured against existing conditions presented below is provided for disclosure, information, and comparison purposes only; the identification of significant impacts and corresponding mitigation measures, if any, are based on the long-term Year 2030 analysis that follows thereafter.

In addition to the Year 2030 analysis described above, traffic noise modeling was also conducted for the Existing Plus Project scenario for Village Three North for informational purposes. The same modeled noise receivers and model configurations were used, with the Existing Plus Project volumes from the Traffic Impact Assessment. As shown in Table 5.5-7, modeled noise levels for the Existing Plus Project scenario would range up to 62 dBA CNEL, at homes adjacent to Heritage Road. This noise level would not exceed the City's exterior noise criterion of 65 dB CNEL, and is therefore considered a less than significant impact.

Interior noise levels at residences adjacent to Main Street and Heritage Road would have the potential to exceed 45 dBA CNEL; therefore, a potentially significant impact related to interior noise levels would occur under the Existing Plus Project scenario. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Table 5.5-7
Traffic Noise Modeling Results - Village Three Existing Plus Project Conditions

Receiver #	Receiver Location	Exist w Project (CNEL)	Greater than 65 dBA CNEL?	Exist w Proj w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V3-1	Main Street	61	No	55	No
V3-1-2	Main Street	61	No	61	No
V3-2	Main Street	58	No	53	No
V3-2-2	Main Street	61	No	60	No
V3-3	Main Street	53	No	52	No
V3-3-2	Main Street	57	No	57	No
V3-4	Main Street	55	No	46	No
V3-4-2	Main Street	58	No	57	No
V3-5	Main Street	52	No	47	No
V3-5-2	Main Street	55	No	55	No
V3-6	Main Street	51	No	46	No
V3-6-2	Main Street	56	No	56	No
V3-7	Main Street	51	No	49	No
V3-7-2	Main Street	51	No	51	No
V3-8	Heritage Road	52	No	49	No
V3-8-2	Heritage Road	54	No	54	No
V3-9	Heritage Road	55	No	49	No
V3-9-2	Heritage Road	55	No	55	No
V3-10	Heritage Road	54	No	52	No
V3-10-2	Heritage Road	56	No	56	No
V3-11	Heritage Road	60	No	58	No
V3-11-2	Heritage Road	61	No	61	No
V3-12	Heritage Road	62	No	55	No
V3-12-2	Heritage Road	62	No	62	No
V3-13	Heritage Road	59	No	54	No
V3-13-2	Heritage Road	60	No	60	No
V3-14	Heritage Road	59	No	59	No
V3-14-2	Heritage Road	59	No	59	No

Source: Dudek 2014

The results of an analysis of the project's impacts as measured against future Year 2030 conditions, which takes into account future increases in cumulative traffic levels, and changing infrastructure and land uses and, therefore, more accurately depicts potential impacts, is provided in Table 5.5-7 above.

Village Eight East

As shown on Figure 5.5-2, Main Street provides access from SR-125 to the immediate vicinity of Village Eight East, and is aligned along the northern boundary of the development portion of the Village. Main Street under the Year 2030 Plus Project scenario would carry up to 54,800 ADTs adjacent to Village Eight East. There are residences at the northern boundary of the development area that are adjacent to Main Street. Modeled noise levels for representative noise-sensitive receptors are summarized in Table 5.5-8. As shown, the first row of homes closest to Main Street could be exposed to noise levels ranging to 66 dB CNEL from future traffic along Main Street. This noise level associated with future Main Street traffic volumes would exceed the exterior noise criterion of 65 dB CNEL, and is considered a **potentially significant impact**. Mitigation for this potentially significant impact is provided which includes construction of a sound wall (see Mitigation Measure NOI-1). Table 5.5-8 and Figure 5.5-4 depict the resulting noise levels and corresponding noise contours with placement of the recommended sound walls.

Table 5.5-8
Traffic Noise Modeling Results – Village Eight East

Receiver #	Receiver Location	Yr2030 w Project (CNEL)	Greater than 65 dBA CNEL?	Yr2030 w Project w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL or greater?
V8-1	Main Street	65	No	60	No
V8-1-2	Main Street	65	No	64	No
V8-2	Main Street	65	No	63	No
V8-2-2	Main Street	66	Yes	65	No
V8-3	Main Street	63	No	63	No
V8-3-2	Main Street	64	No	63	No
V8-4	SR-125	61	No	61	No
V8-4-2	SR-125	63	No	63	No
V8-5	SR-125	57	No	57	No
V8-5-2	SR-125	57	No	57	No
V8-6	SR-125	58	No	58	No
V8-6-2	SR-125	65	No	65	No
V8-7	SR-125	57	No	57	No
V8-7-2	SR-125	60	No	60	No
V8-8	SR-125	59	No	59	No
V8-8-2	SR-125	60	No	60	No
V8-9	SR-125	57	No	57	No
V8-9-2	SR-125	56	No	56	No
V8-10	Otay Valley Road	61	No	57	No
V8-10-2	Otay Valley Road	62	No	62	No
V8-11	Otay Valley Road	61	No	56	No
V8-11-2	Otay Valley Road	61	No	61	No
V8-12	Otay Valley Road	61	No	56	No

Table 5.5-8 (Continued)
Traffic Noise Modeling Results – Village Eight East

Receiver #	Receiver Location	Yr2030 w Project (CNEL)	Greater than 65 dBA CNEL?	Yr2030 w Project w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL or greater?
V8-12-2	Otay Valley Road	62	No	62	No
V8-13	Otay Valley Road	60	No	53	No
V8-13-2	Otay Valley Road	61	No	61	No
V8-14	Otay Valley Road	59	No	53	No
V8-14-2	Otay Valley Road	60	No	60	No
V8-15	Otay Valley Road	61	No	55	No
V8-15-2	Otay Valley Road	61	No	61	No
V8-16	Otay Valley Road	61	No	56	No
V8-16-2	Otay Valley Road	61	No	61	No
V8-17	Otay Valley Road	65	No	55	No
V8-17-2	Otay Valley Road	65	No	65	No
V8-18	Otay Valley Road	61	No	58	No
V8-18-2	Otay Valley Road	63	No	63	No
V8-19	Otay Valley Road	62	No	59	No
V8-19-2	Otay Valley Road	62	No	63	No
V8-20	Otay Valley Road	61	No	58	No
V8-20-2	Otay Valley Road	63	No	63	No
V8-21	Otay Valley Road	60	No	59	No
V8-21-2	Otay Valley Road	62	No	62	No

Source: Dudek 2014
Note: Receiver numbers ending in "-2" (V8-8-2, etc.) represent second-story noise exposures; otherwise, reported noise levels represent ground-floor noise exposures.

Also as shown on Figure 5.5-2, SR-125 is located adjacent to the eastern boundary of Village Eight East and is also located immediately adjacent to the planned Community Park (P-2) as well as the Active Recreation Area (AR-11). South of Otay Valley Road, SR-125 is substantially lower in elevation than future residential lots, which provides for some attenuation of traffic noise, along with the distance between the proposed residences and the freeway. The elevation difference decreases somewhat between SR-125 and residential development areas within Village Eight East, north of Otay Valley Road. Under the 2030 Plus Project Scenario, SR-125 is predicted to carry approximately 94,000 ADT on the segment adjacent to Village Eight East.

For residential areas north of Otay Valley Road, the row of homes closest to SR-125 could be exposed to noise levels ranging up to 61 dB CNEL at ground level / first floor elevations and up to 65 dB CNEL at second-floor elevations from future traffic along SR-125. The ground level noise levels associated with future SR-125 traffic volumes would not exceed the exterior noise criterion of 65 dB CNEL, as shown in Table 5.5-8. Impacts would be considered **less than significant**.

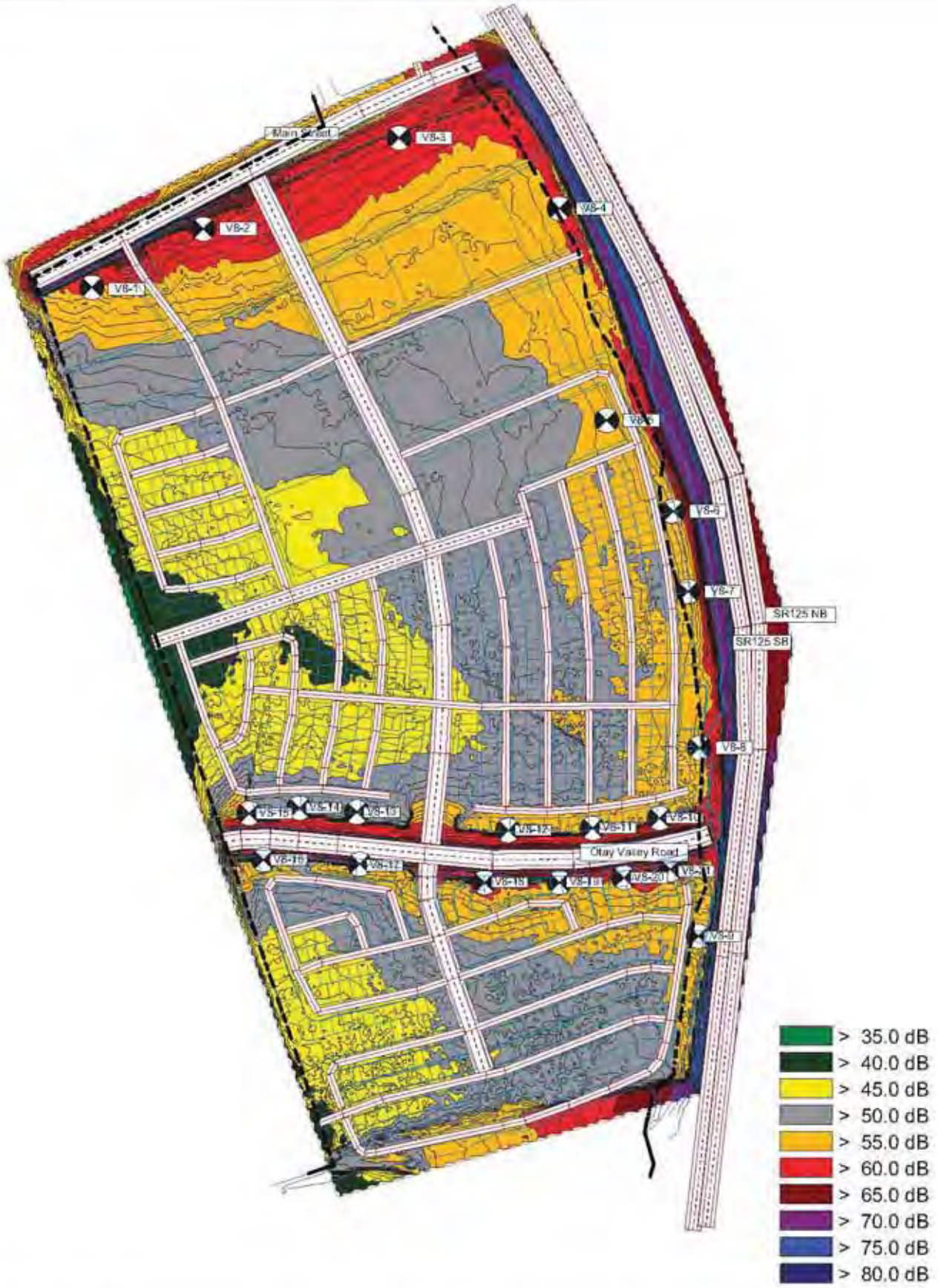

FIGURE 5.5-4

Village Eight East Predicted Traffic Noise Contours (dB CNEL)
Future (Year 2030) with Project with Walls

7000

UNIVERSITY VILLAGES PROJECT EIR

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Also as shown on Figure 5.5-2, Otay Valley Road bisects Village Eight East in an east/west direction. Otay Valley Road would carry approximately 22,900 ADT under the Year 2030 Plus Project scenario. Residences are proposed along the north and south sides of Otay Valley Road in Village Eight East. As shown on Table 5.5-8, the first row of homes closest to Otay Valley Road could be exposed to noise levels ranging to 65 dB CNEL from future traffic along Otay Valley Road. This noise level associated with future Otay Valley Road traffic volumes would equal, but not exceed, the exterior noise criterion of 65 dB CNEL; therefore, impacts would be **less than significant**.

Regarding interior noise impacts, with standard construction practices common in California, typical buildings achieve outdoor to indoor noise reductions of 20 dB with the windows closed. Thus, because exterior noise levels at certain locations could exceed 65 dBA CNEL, even with closed windows, the interior noise levels at residences adjacent to Main Street, SR-125 and Otay Valley Road could exceed California's Title 24 Interior Noise Standard of 45 dBA CNEL. Therefore, a **potentially significant impact** related to interior noise levels would also occur.

Similar to Village Three North, in addition to the Year 2030 analysis described above, traffic noise modeling was also conducted for the Existing Plus Project scenario for Village Eight East for informational purposes only. The same modeled noise receivers and model configurations were used, with the Existing Plus Project volumes from the Traffic Impact Assessment (Chen Ryan 2014). As shown in Table 5.5-9, modeled noise levels for the Existing Plus Project scenario would range up to 60 dBA CNEL, at homes adjacent to Main Street and Otay Valley Road. This noise level would not exceed the City's exterior noise criterion of 65 dB CNEL, and is therefore considered a less than significant impact.

Interior noise levels at residences adjacent to Main Street and Otay Valley Road would have the potential to exceed 45 dBA CNEL; therefore, a potentially significant impact related to interior noise levels would occur under the Existing Plus Project scenario. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Table 5.5-9
Traffic Noise Modeling Results - Village Eight East Existing Plus Project Conditions

Receiver #	Receiver Location	Exist w Project (CNEL)	Greater than 65 dBA CNEL?	Exist w Proj w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL or greater?
V8-1	Main Street	59	No	53	No
V8-1-2	Main Street	59	No	58	No
V8-2	Main Street	59	No	57	No
V8-2-2	Main Street	60	No	59	No
V8-3	Main Street	56	No	56	No
V8-3-2	Main Street	57	No	57	No

Table 5.5-9 (Continued)
Traffic Noise Modeling Results - Village Eight East Existing Plus Project Conditions

Receiver #	Receiver Location	Exist w Project (CNEL)	Greater than 65 dBA CNEL?	Exist w Proj w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL or greater?
V8-4	SR-125	50	No	50	No
V8-4-2	SR-125	53	No	53	No
V8-5	SR-125	46	No	46	No
V8-5-2	SR-125	47	No	47	No
V8-6	SR-125	47	No	47	No
V8-6-2	SR-125	54	No	54	No
V8-7	SR-125	46	No	46	No
V8-7-2	SR-125	49	No	49	No
V8-8	SR-125	49	No	49	No
V8-8-2	SR-125	50	No	49	No
V8-9	SR-125	50	No	50	No
V8-9-2	SR-125	50	No	50	No
V8-10	Otay Valley Road	58	No	52	No
V8-10-2	Otay Valley Road	59	No	59	No
V8-11	Otay Valley Road	57	No	51	No
V8-11-2	Otay Valley Road	57	No	57	No
V8-12	Otay Valley Road	57	No	53	No
V8-12-2	Otay Valley Road	58	No	57	No
V8-13	Otay Valley Road	55	No	50	No
V8-13-2	Otay Valley Road	57	No	57	No
V8-14	Otay Valley Road	54	No	50	No
V8-14-2	Otay Valley Road	55	No	54	No
V8-15	Otay Valley Road	56	No	52	No
V8-15-2	Otay Valley Road	56	No	56	No
V8-16	Otay Valley Road	58	No	52	No
V8-16-2	Otay Valley Road	58	No	58	No
V8-17	Otay Valley Road	60	No	53	No
V8-17-2	Otay Valley Road	60	No	60	No
V8-18	Otay Valley Road	57	No	55	No
V8-18-2	Otay Valley Road	59	No	59	No
V8-19	Otay Valley Road	57	No	56	No
V8-19-2	Otay Valley Road	59	No	59	No
V8-20	Otay Valley Road	58	No	55	No
V8-20-2	Otay Valley Road	60	No	60	No
V8-21	Otay Valley Road	57	No	55	No
V8-21-2	Otay Valley Road	60	No	60	No

Source: Dudek 2014

Village Ten

As shown on Figure 5.5-2, Eastlake Parkway would be extended southward from Hunte Parkway into Village Ten, where it would become University Drive. University Drive is a major arterial oriented north/south, which is forecast to carry approximately 9,600 ADT between Hunte Parkway and Discovery Falls Drive under the Year 2030 Plus Project scenario. This portion of University Drive is outside the Village Ten boundary and would not be anticipated to significantly impact Village Ten land uses. However, Discovery Falls Drive would also be extended southward from Hunte Parkway, and would form the northern boundary of Village Ten. Discovery Falls Drive is forecast to carry approximately 27,900 ADT between Hunte Parkway and Street "B" in the Year 2030 Plus Project scenario. Residences and a neighborhood park are proposed along the southern side of Discovery Falls Drive in Village Ten. Modeled noise levels for representative noise-sensitive receptors are summarized in Table 5.5-10. As shown, the first row of homes closest to Discovery Falls Drive could be exposed to noise levels ranging to 68 dB CNEL from future traffic along Discovery Falls Drive and University Drive. This noise level would exceed the exterior noise criterion of 65 dB CNEL, and is considered a **potentially significant impact**. Mitigation for this potentially significant impact is provided which includes construction of a sound wall (see Mitigation Measure NOI-1). Table 5.5-10 and Figure 5.5-5 present the traffic noise levels and corresponding noise contours (Year 2030 with Project) for Village Ten with the recommended sound walls.

Also as shown on Figure 5.5-2, Otay Valley Road would approximately bisect Village Ten in an east/west direction. Otay Valley Road would eventually extend from Eastlake Parkway on the east to a north/south extension of La Media Road on the west. Within Village Ten, Otay Valley Road would carry approximately 4,900 ADT under the Year 2030 Plus Project scenario. Residences are proposed along the north and south sides of Otay Valley Road in Village Ten. As shown on Table 5.5-10, noise levels along Otay Valley Road, based upon Year 2030 Plus Project traffic, would range up to 63 dB CNEL at proposed noise-sensitive land uses. These noise levels would be less than the exterior noise criterion of 65 dB CNEL. Therefore Otay Valley Road noise levels within Village Ten would not generate significant noise levels upon adjacent land uses, and the impact would be **less than significant**.

Table 5.5-10
Traffic Noise Modeling Results – Village Ten

Receiver #	Receiver Location	Yr2030 w Project (CNEL)	Greater than 65 dBA CNEL?	Yr2030 w Project w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V10-1	Discovery Falls Drive	66	Yes	60	No
V10-1-2	Discovery Falls Drive	66	Yes	66	Yes
V10-2	Discovery Falls Drive	66	Yes	60	No
V10-2-2	Discovery Falls Drive	67	Yes	67	Yes

Table 5.5-10 (Continued)
Traffic Noise Modeling Results – Village Ten

Receiver #	Receiver Location	Yr2030 w Project (CNEL)	Greater than 65 dBA CNEL?	Yr2030 w Project w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V10-3	Discovery Falls Drive	67	Yes	62	No
V10-3-2	Discovery Falls Drive	68	Yes	68	Yes
V10-4	Discovery Falls Drive	66	Yes	61	No
V10-4-2	Discovery Falls Drive	66	Yes	66	Yes
V10-5	Otay Valley Road	62	No	62	No
V10-5-2	Otay Valley Road	63	No	63	No
V10-6	Otay Valley Road	61	No	61	No
V10-6-2	Otay Valley Road	62	No	62	No
V10-7	Otay Valley Road	62	No	62	No
V10-7-2	Otay Valley Road	63	No	63	No
V10-8	Otay Valley Road	61	No	61	No
V10-8-2	Otay Valley Road	62	No	62	No
V10-9	Otay Valley Road	61	No	61	No
V10-9-2	Otay Valley Road	61	No	61	No
V10-10	Discovery Falls Drive	56	No	54	No
V10-10-2	Discovery Falls Drive	58	No	57	No
V10-11	Discovery Falls Drive	54	No	51	No
V10-11-2	Discovery Falls Drive	55	No	53	No
V10-12	Otay Valley Road	60	No	60	No
V10-12-2	Otay Valley Road	62	No	62	No
V10-13	Discovery Falls Drive	52	No	51	No
V10-13-2	Discovery Falls Drive	53	No	53	No
V10-14	Discovery Falls Drive	49	No	48	No
V10-14-2	Discovery Falls Drive	51	No	50	No
V10-15	Discovery Falls Drive	47	No	46	No
V10-15-2	Discovery Falls Drive	49	No	48	No

Source: Dudek 2014
Note: Receiver numbers ending in "-2" (V10-8-2, etc.) represent second-story noise exposures; otherwise, reported noise levels represent ground-floor noise exposures.

FIGURE 5.5-5
Village Ten Predicted Traffic Noise Contours (dB CNEL)
Future (Year 2030) with Project with Walls

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Regarding interior noise impacts, with standard construction practices common in California, typical buildings achieve outdoor to indoor noise reductions of 20 dB with the windows closed. Thus, because exterior noise levels at certain locations could exceed 65 dBA CNEL, even with closed windows, the interior noise levels at residences adjacent to Discovery Falls Drive and Otay Valley Road would have the potential to exceed California's Title 24 Interior Noise Standard of 45 dBA CNEL. Therefore, a **potentially significant** impact related to interior noise levels would occur. Mitigation for this potentially significant impact is provided (see Mitigation Measures NOI-2 and NOI-3).

In addition to the Year 2030 analysis described above, traffic noise modeling was also conducted for the Existing Plus Project scenario for Village Ten for informational purposes. The same modeled noise receivers and model configurations were used, with the Existing Plus Project volumes from the Traffic Impact Assessment. As shown in Table 5.5-11, modeled noise levels for the Existing Plus Project scenario would range up to 63 dBA CNEL at homes adjacent to Discovery Falls Drive. This noise level would not exceed the City's exterior noise criterion of 65 dB CNEL, and is therefore considered a less than significant impact.

Interior noise levels at residences adjacent to Discovery Drive and Otay Valley Road would have the potential to exceed 45 dBA CNEL; therefore, a potentially significant impact related to interior noise levels would occur under the Existing Plus Project scenario. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Table 5.5-11
Traffic Noise Modeling Results - Village Ten Existing Plus Project Conditions

Receiver #	Receiver Location	Exist w Project (CNEL)	Greater than 65 dBA CNEL?	Exist w Proj w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V10-1	Discovery Falls Drive	59	No	53	No
V10-1-2	Discovery Falls Drive	59	No	59	No
V10-2	Discovery Falls Drive	59	No	54	No
V10-2-2	Discovery Falls Drive	60	No	60	No
V10-3	Discovery Falls Drive	62	No	57	No
V10-3-2	Discovery Falls Drive	63	No	63	No
V10-4	Discovery Falls Drive	59	No	54	No
V10-4-2	Discovery Falls Drive	59	No	59	No
V10-5	Otay Valley Road	61	No	61	No
V10-5-2	Otay Valley Road	61	No	61	No
V10-6	Otay Valley Road	59	No	59	No
V10-6-2	Otay Valley Road	60	No	60	No
V10-7	Otay Valley Road	61	No	61	No
V10-7-2	Otay Valley Road	61	No	61	No

Table 5.5-11 (Continued)
Traffic Noise Modeling Results - Village Ten Existing Plus Project Conditions

Receiver #	Receiver Location	Exist w Project (CNEL)	Greater than 65 dBA CNEL?	Exist w Proj w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V10-8	Otay Valley Road	59	No	59	No
V10-8-2	Otay Valley Road	60	No	60	No
V10-9	Otay Valley Road	59	No	59	No
V10-9-2	Otay Valley Road	59	No	59	No
V10-10	Discovery Falls Drive	50	No	49	No
V10-10-2	Discovery Falls Drive	52	No	51	No
V10-11	Discovery Falls Drive	49	No	47	No
V10-11-2	Discovery Falls Drive	50	No	49	No
V10-12	Otay Valley Road	59	No	59	No
V10-12-2	Otay Valley Road	60	No	60	No
V10-13	Discovery Falls Drive	48	No	48	No
V10-13-2	Discovery Falls Drive	50	No	50	No
V10-14	Discovery Falls Drive	46	No	45	No
V10-14-2	Discovery Falls Drive	46	No	46	No
V10-15	Discovery Falls Drive	41	No	41	No
V10-15-2	Discovery Falls Drive	44	No	44	No

Source: Dudek 2014

Noise Generation – Commercial and Industrial Land Uses

Two commercial mixed use sites are designated for Village Three North, while one mixed use site is designated for Village Eight East. 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 commercial sites for Village Three North are centrally located between multiple family residences and the school and park site. The mixed use site for Village Eight East is also centrally located, adjacent to the north-south arterial road, adjacent to multi-family residences on the west, and across the street from the school 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. Future uses in the CPF sites located within the mixed use village core areas are unknown at this time; as such, it would speculative to analyze the potential noise generated by a specific use at the CPF location. However, it can reasonably be assumed the CPF would include a structure for community use that would involve HVAC equipment. Therefore, the CPF is included in the discussion of commercial HVAC equipment below.

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 Leq at 50 feet (City of Santa Ana 2010). For a single point source such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA for each doubling of distance from the source. Therefore, it is assumed that HVAC equipment would generate noise levels that exceed 45 dBA within 500 feet for the equipment, 50 dBA within approximately 275 feet of the equipment, and 55 dBA within 155 feet of the equipment. Consequently, residences or other NSLU located in or in close proximity to a mixed-use building or other building that requires an HVAC system could result in a **potentially significant impact**. To reduce such impacts, mitigation is provided (see Mitigation Measure NOI-4).

An industrial zone is designated along the north side of Heritage Road, and occupying the area between Heritage Road and the northerly boundary of Village Three North. The proposed industrial areas are encompassed within the buffer for the municipal landfill located north of the project boundaries. Because of the presence of the landfill along the northerly property boundary 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.

As to future noise sensitive land uses that would be built as part of the project, 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), and 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. To avoid any potential impacts related to industrial use noise, mitigation is provided (see Mitigation Measure NOI-5).

Noise sources from parking lots include car alarms, door slams, radios, tire squeals. These sources typically range from about 30 to 66 dBA at a distance of 100 feet (Gordon Bricken & Associates 1996), and are generally short-term and intermittent. Parking lots have the potential to generate noise levels that exceed 65 dBA depending on the location of the source; however, noise sources from the parking lot would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect noise-

sensitive receptors at the same time. Therefore, noise generated from parking lots would be less than significant.

Additionally, the existing landfill currently exercises noise-generating activities such as horns, amplified sound or explosive-noise devices to deter avian vectors as a result of landfill operations. These noise sources are part of the existing ambient noise environment, and would be buffered by the proposed industrial development that would be located at the northerly property boundary along the proposed industrial use zone. Moreover, a review of available documents, including recent LEA inspection reports and the landfill expansion EIR, shows that vectors have not been a problem at the landfill; however, there were some "Area of Concern" notes regarding proper waste coverage. Since proper waste coverage is the primary control mechanism for vectors, maintaining proper waste coverage should continue to prevent vector issues from occurring (SCS 2014).

Community Park/Neighborhood Park

One community park is located in Village Three and a Portion of Village Four (Community Park (P-2)), and one is located in Village Eight East (Community Park (P-2)). Visitors to the community parks would participate in active and passive recreational activities. As such, visitors and recreational activity participants are expected to generate a range of noise levels typical of recreational activities. Potential community park amenities and facilities would include, but are not limited to, play equipment, seating areas, athletic fields, a skate park, sport courts, multi-purpose fields, a gymnasium, a recreation complex building, and walking trails. Passive recreational activities such as walking, reading, and dining in open turf areas and group picnic areas will typically generate lower noise levels as compared to active sports play. Normal park operating hours would be daily from 6:30 a.m. to 10:30 p.m.; however, indoor use areas (such as the gymnasium or recreation complex building at the Village Four Community Park (P-2)) may be in use past 10:30 p.m.

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 number of players and spectators, the location of people and the amount and level of conversation and cheering. However, to determine the approximate noise levels that would be generated at ball fields/other recreational activities and predict potential noise impacts, noise measurements conducted by Dudek staff at several existing recreational parks, including Stagecoach Park in Carlsbad, Cardiff Sports Park in Encinitas, and Vista National Little League in Vista, were utilized. The proposed project could have similar ball fields as these facilities. The results of these measurements indicate that ball field activities (including use of a public address system) generate a one-hour average noise level of approximately 55–65 dB at a distance of 50 feet from the stands and/or spectator areas.

The Village Three and a Portion of Village Four Community Park (P-2) is part of a larger proposed community park. The remaining park area is immediately adjacent to the Community Park (P-2), located in Village Four. The EIR for the Otay Ranch Village Two, Three, and Portion of Four SPA Plan (SCH #2003091012) included an analysis of noise that would potentially be generated by activity at the Village Four Community Park (P-2) (City of Chula Vista 2006). The analysis determined that multi-purpose fields would have the potential to generate noise levels of approximately 54 dBA at 50 feet, and a skate park facility would have the potential to generate noise levels of 70 dBA at 50 feet. The locations of any potential community park uses are not known at this time. However, consistent with the Village Four Community Park analysis in the EIR for the Villages 2, 3, and Portion of 4 SPA Plan, skate park noise is considered the worst-case noise level that could be generated at 50 feet from the Village Four Community Park (P-2). Therefore, the Village Four Community Park (P-2) would have the potential to exceed the daytime one-hour 60 dBA Leq limit if the loudest noise sources are placed within 100 feet of sensitive habitat. Because the Portion of Village Four is located on the very western edge of the Community Park (P-2), the adjacent noise sensitive land use would be the MSCP Preserve. Therefore, this impact would be considered **potentially significant**. To avoid potential impacts related to park use noise, mitigation is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-6).

Similarly, the Village Eight East Community Park (P-2) would generate a one-hour average noise level of approximately 55–65 dB at a distance of 50 feet from the stands and/or spectator areas, which is comparable to the Community Park (P-2) noise levels located within Village Four. The Village Eight East Community Park (P-2) would have the potential to exceed the daytime one-hour 60 dBA Leq limit if the loudest noise sources are placed within approximately 100 feet of sensitive habitat. Therefore, this impact would be considered **potentially significant**. To avoid potential impacts related to park use noise, mitigation is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-6).

Regarding electronic amplification systems, such systems may be used in conjunction with active sport activities such as skating, softball, soccer, court sports, and swimming. Public events may also occur that required amplified noise. Activities that would include amplified noise or other temporary noise generating equipment would be required to obtain a permit from the City of Chula Vista Director of Library and Recreation. If a permit is not obtained, Section 2.66.185 of the Chula Vista Municipal Code prohibits any park or recreation center user to operate a radio, television, stereo or any similar electronic or mechanical device capable of producing or emitting sound at a volume where the sound is audible at a distance greater than 100 feet from the point of emission. Activities that require permitted amplified noise would be limited to normal park operation hours. Additionally, amplified noise would not be a continuous source of noise. Activities would occur on various dates and times, and at varied locations. Permitted uses would still be subject to the city hourly exterior noise level limits established in the municipal code. The

Chula Vista Police Department enforces the nuisance noise provisions of the city municipal code and the Development Services Department enforces the remaining provisions of the noise ordinance. Therefore, nuisance noise and permitted amplified noise from events at a Community Park would result in a **less than significant** impact.

Scheduled maintenance by maintenance crews would occur at these park sites. Maintenance activities would include the use of gasoline-powered mowers, trimmers, blowers, and edgers resulting in intermittent short-term temporary noise increases. Maintenance activities are permitted uses and would be subject to the one-hour Leq noise limits of 60 dBA in multi-family neighborhoods. Additionally, maintenance equipment would not be operating at any one location for more than a few minutes, and all equipment would not be operating simultaneously. Due to the limited amount of time equipment would be operating in one location, operation of landscape equipment would generally not exceed the hourly noise level limit at a particular receptor. Therefore, landscape maintenance would result in a **less than significant** impact.

Neighborhood Park

One neighborhood park site is planned for each of the three Villages. Based upon the most recent conceptual design drawings, each of the park sites is surrounded on all four sides by a street having a minimum 58 foot wide right of way. Thus, noise levels from the proposed parks would be approximately 64 dB (i.e., slightly less than 65 dB) during park operating hours. 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. It is reasonable to assume that noise levels would generally be lower between 10:00 p.m. and 10:30 p.m. than those occurring during peak park activity hours. Noise levels from Neighborhood Parks would not be expected to exceed nighttime noise standards between 10:00 p.m. and 10:30 p.m.; however the noise threshold after 10:00 p.m. is lower and therefore there could be significant impacts after 10 p.m. Therefore, impacts would be potentially significant and mitigation is provided limiting park hours to 10:00 p.m. (see Mitigation Measure NOI-6).

Other Recreation Facilities

Private Recreation Facilities would be located throughout each Village. In addition, trails, and playgrounds are a permitted use throughout the SPA. The proposed trails throughout the project site and the off-site trail connection to the OVRP would be used for walking and bicycling and would generally not support activities that would generate noise levels higher than normal conservation. The PRFs would not include athletic fields or other major active use facilities. Playgrounds would generate noise levels less than the Neighborhood Park noise level of 54.3 dBA at 50 feet. The neighborhood playgrounds would generally not be in use after dark, and nighttime activity would be expected to be limited to normal conversation levels. Therefore,

these facilities would not generate noise levels that exceed the City's noise level limits and significant impacts would not occur.

School-Related Noise

One elementary school each is designated for Village Three North, Village Eight East, and Village Ten. 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.

In Village Three North, the proposed school site is located approximately at the center of the development area, bounded on all four sides by local roads. Traffic volume projections are not available for the roads bordering this school site; 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 site.

In Village Eight East, the elementary school site is bounded along the south side by Street "B" and along the east side by Street "A," a road connecting to Main Street on the north and Otay Valley Road on the south. Traffic volume projections are not available for the two roads bounding the school site; however, given the arterial road represents a north-south access spine for Village Eight East, and connects two major east/west arterial roadways, it is likely that future traffic volumes along the arterial road bounding the east side of the school would have a 65 dB CNEL contour that extends to the school site.

In Village Ten, the elementary school site would abut Street "C" to the north, while Street "B" would border the west side of the site. Traffic volume projections are not available for the roads bordering this school site; therefore, future noise contours from roadway operation 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 site.

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 and mitigation is provided (see Mitigation Measure NOI-7). Consistent with the recommended mitigation, the *School Site Selection and Approval Guide* prepared by the California Department of Education provides that if a school district is considering a potential school site near a freeway or other source of noise, it should hire an acoustical engineer to determine the level of sound that location is subject to and also assist in designing the school site that should be chosen.

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 impacts 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 addressed in Section 5.4. Therefore, the schools would have the potential to generate noise levels up to 65 dBA at 50 feet.

The elementary school sites in Village Three North, Village Eight East and Village Ten have a roadway on each frontage of the school site, separating the school site from adjacent residential properties. These 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 should not be greater than 65 dB (Leq) at the edge of the road right-of-way adjacent to residential property boundaries (the right-of-way edge is 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, and impacts would be **less than significant**.

Olympian High School is an existing source of operational noise, and is located north of Village Eight East. Noise sources associated with Olympian 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 east side of the campus, approximately 200 feet west of the proposed multi-family residential uses in Neighborhood R-16 of Village Eight East.

The Noise Technical Report for Otay Ranch Villages Two and Three, Planning Area 1B, and a Portion of Village Four (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 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. Otay Ranch High School has a maximum stadium capacity of 5,500 people. The maximum capacity of the Olympian High School stadium is 3,071 people; therefore, this estimate is conservative for Olympian High School. 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 59 dB at the proposed multi-family residential use in Neighborhood R-16 when speakers are in use, and 53 dB when crowd noise is the noise source. Therefore, recreational activities at Olympian High School would not exceed the City's noise standards at the proposed project site, and impacts would be **less than significant**.

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 (FTA 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 two miles from the project site. At two miles 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. Therefore, 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 or demolition activities are anticipated as part of this project. Blasting may be required for a small portion of the project and is addressed in the following section. Should these activities (as well as the operation of heavy, large machinery such as excavators and large graders) be necessary as part of the project, they would take place during the early phases of the project, when the site would be unoccupied. 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[2].

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 Eight West 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 is **less than significant**.

Blasting

Blasting may be required in the Village Four Community Park (P-2)area. At this time, it is unknown how much quantity of rock and therefore how much blasting may be required, if at all. Rock material is generally located in areas identified for fill; however, because of the potential for some blasting, the following analysis has been prepared.

Rock blasting is typically done as a single event to break up rock material which can then be processed. The duration is very brief (fractions of a second) for a blasting event, and typically only one blast occurs per day. Neither the City of Chula Vista nor the City of San Diego have a threshold for this type of temporary, impulsive and intermittent construction-related noise. The U.S. Bureau of Mines Report of Investigations 8485 recommends a maximum safe overpressure of 0.013 pound per square inch (133 dB peak) for impulsive airblast (Siskind et al. 1980). Typical rock blasting operations generate approximately 119–123 dB at 600 feet (City of Riverside 2009). Given that the location of the Village Four Community Park (P-2)is within approximately 3,000 feet of existing sensitive receptors, this would result in a potential peak noise level of approximately 104 dB Peak. A peak noise level of this magnitude would fall within the range (90–120 dB Peak) of strongly perceptible to mildly unpleasant, and would be well below the threshold of damage to physical property. Although this would not exceed any City thresholds, blasting, if determined to be necessary, is considered to have a **potentially significant impact** and, therefore, mitigation is provided (see Mitigation Measure NOI-9)

As part of ongoing activities at the Otay Valley Quarry, occasional blasting operations may occur within 1,600 feet for the Village Three North. However, the proposed residential land uses along the eastern edge of Village Three North and park uses along the southern edge of Village Four are not vibration sensitive. Additionally, according to the Declaration of Covenants of

[2] 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.

Operation for the quarry, blasting would be limited to the hours between 10:00 a.m. and 4:00 p.m. and would not disturb residences' sleep.

The Mining Operator is also required to retain a qualified blasting specialist to develop a site specific blasting program report to assess, control, and monitor ground vibration from blasting, for any residences located within 1,000 feet of the mining operation. The Mine Operator is required to provide public notification of the blasting schedule for residents within 1,000 feet of blasting. The Mine Operator will give a monthly blasting schedule in writing to residences within 1,000 feet of potential blast locations. The notice will disclose the anticipated blasting schedule and provide a contact phone number for the blasting contractor. Unscheduled changes to the blasting schedule will require the blasting schedule to be reissued no less than 24 hours prior to the blasting. Therefore, groundborne vibration impacts would be **less than significant**.

C. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

As shown in Figure 5.5-6, numerous off-site improvements would be constructed as part of this project to provide adequate circulation and public utilities to the project site; these are described in detail in Section 4.2.3 of this EIR. The off-site improvements would consist primarily of roadway realignments, widening and off-site grading activities. Potential noise impacts during construction of these improvements is addressed in responses (B) and (D). None of the off-site improvements would have long-term (operational) noise impacts because once constructed, all of the improvements excepting the roadway improvements would be passive in nature (i.e., no mechanical equipment that would produce noise). The potential effects of the roadway improvements are addressed in Chapter 6, Cumulative Impacts. Noise effects of the project would, for the most part, be confined to the project area and are evaluated on a project-specific basis.

With respect to the potential impacts to off-site noise sensitive land uses due to increased traffic noise levels attributable to the project, an analysis of these increased noise levels as measured against existing ambient noise levels is presented below. However, as discussed above and in EIR Section 5.3, Transportation, Circulation and Access, the results of this type of traffic-related analysis are misleading when used in connection the University Villages project, which is a long-term development project not anticipated to reach full buildout until approximately 2030. Accordingly, the analysis of the proposed project's impacts as measured against existing conditions presented below is provided for disclosure, information, and comparison purposes only; the identification of significant impacts and corresponding mitigation measures, if any, are based on the long-term Year 2030 analysis that follows thereafter. See Threshold (A) above for analysis regarding Existing Plus Project conditions.

As previously noted, Table 5.5-12, below, presents the results of an analysis of the project's impacts as measured against future Year 2030 conditions, which takes into account future increases in cumulative traffic levels, and changing infrastructure and land uses and, therefore, more accurately depicts potential impacts. The methodology to assess these cumulative impacts again uses noise traffic modeling to compare the resulting noise levels from Year 2030 traffic volumes alone, or without the project, versus Year 2030 Plus Project, or with project, traffic volumes.

Table 5.5-12
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*
SR-125 Telegraph to Olympic	1-1	52	53	1
	1-2	55	55	0
	1-3	62	62	0
	1-4	63	63	0
	1-5	60	60	0
	1-6	66	66	0
	1-7	66	66	0
	1-8	65	65	0
	1-9	67	67	0
	1-10	62	62	0
SR-125 Olympic to Birch	2-1	53	53	0
	2-2	56	56	0
	2-3	57	57	0
	2-4	59	60	1
	2-5	60	61	1
	2-6	64	64	0
	2-7	61	61	0
	2-8	60	60	0
	2-9	63	63	0
	2-10	62	62	0
	2-11	60	61	1
	2-12	58	58	0
SR-125 Birch to Main	3-1	57	57	0
	3-2	59	59	0
	3-3	60	60	0
	3-4	60	60	0
	3-5	63	63	0
	3-6	61	61	0
	3-7	63	64	1
	3-8	56	56	0
SR-125 Main to Lone Star	4-1	61	62	1

Table 5.5-12 (Continued)
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 Olympic Vista Road to Lake Center Drive	5-1	38	38	0
	5-2	53	53	0
	5-3	52	52	0
	5-4	57	57	0
	5-5	55	55	0
	5-6	48	48	0
	5-7	45	45	0
	5-8	47	47	0
	5-9	47	47	0
	5-10	50	50	0
	5-11	50	51	1
Birch Rd La Media to SR-125	6-1	59	59	0
	6-2	57	57	0
	6-3	58	59	1
	6-4	58	58	0
	6-5	57	57	0
	6-6	54	54	0
	6-7	61	62	1
	6-8	60	61	1
	6-9	57	57	0
	6-10	56	56	0
	6-11	55	56	1
	6-12	53	53	0
	6-13	53	53	0
	6-14	53	54	1
	6-15	55	55	0
	6-16	56	56	0
	6-17	55	56	1
	6-18	55	55	0
	6-19	56	56	0
	6-20	58	58	0
	6-21	57	57	0
	6-22	56	56	0
	6-23	62	63	1
	6-24	61	62	1
	6-25	62	62	0
Birch Rd SR-125 to Eastlake	7-1	60	60	0

Table 5.5-12 (Continued)
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*
Main Street Brandywine to Heritage	8-1	56	57	1
	8-2	56	57	1
	8-3	53	54	1
	8-4	53	54	1
	8-5	54	55	1
	8-6	54	55	1
	8-7	55	56	1
Heritage Rd Olympic to Santa Victoria	9-1	59	60	1
	9-2	51	52	1
	9-3	59	59	0
	9-4	54	54	0
	9-5	52	53	1
Heritage Road Main St to Ave de las Vistas	10-1	52	52	0
	10-2	55	55	0
La Media Rd E Palomar to Santa Venetia	11-1	62	62	0
	11-2	63	63	0
	11-3	62	62	0
	11-4	59	60	1
	11-5	58	58	0
	11-6	57	57	0
	11-7	55	55	0
	11-8	59	59	0
	11-9	58	58	0
	11-10	56	57	1
	11-11	56	56	0
	11-12	59	59	0
	11-13	58	59	1
	11-14	57	58	1
	11-15	62	62	0
	11-16	63	64	1

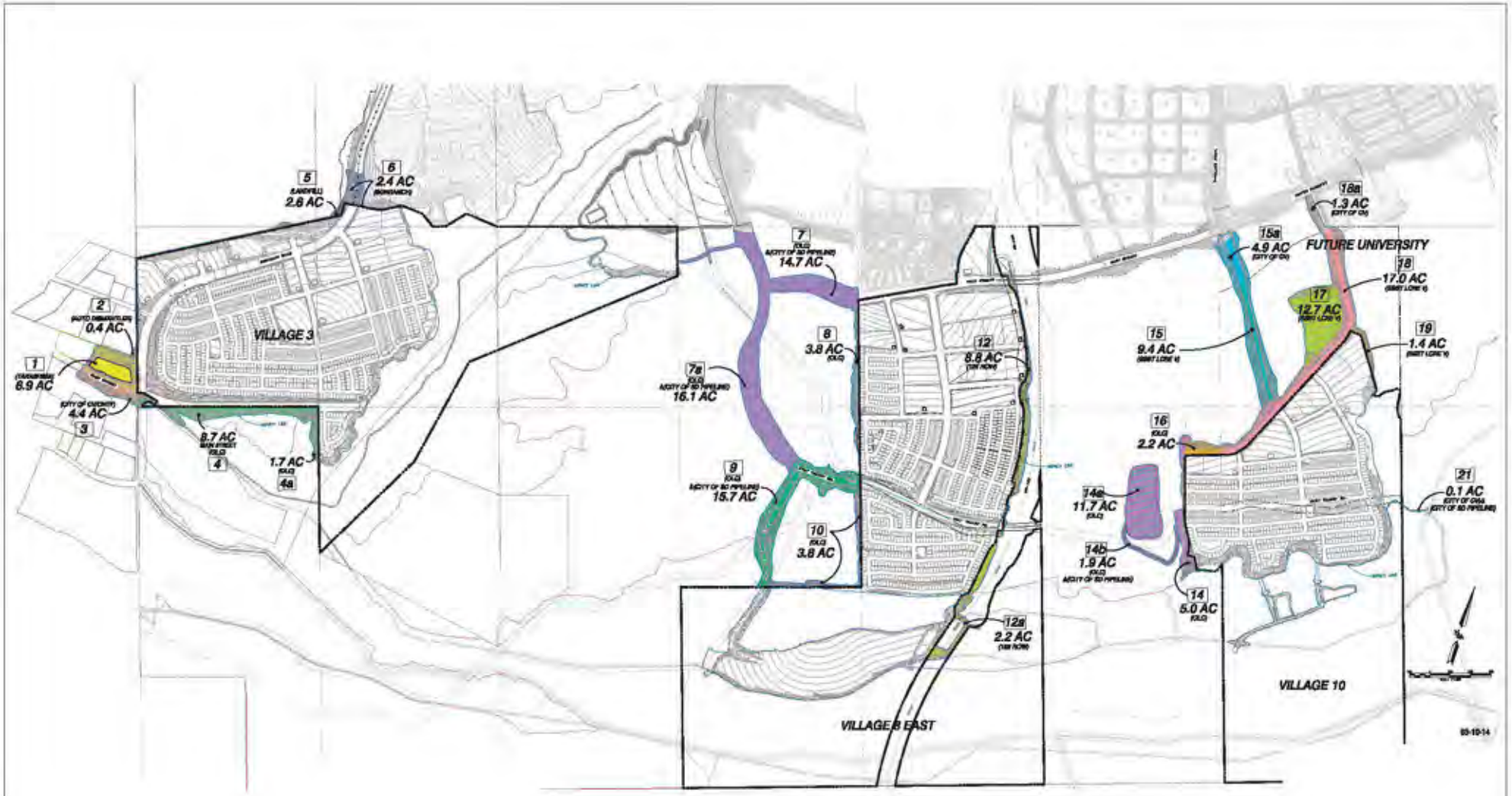
Table 5.5-12 (Continued)
Project Contribution to Off-Site Traffic Noise – Year 2030
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Year 2030	*Year 2030 + Project*	*dB Change*
La Media Rd/Magdelena Ave Birch to Santa Luna St	12-1	53	53	0
	12-2	55	55	0
	12-3	58	59	1
	12-4	59	59	0
	12-5	56	56	0
	12-6	56	56	0
	12-7	57	57	0
	12-8	58	59	1
	12-9	58	59	1
	12-10	59	60	1
	12-11	59	60	1
	12-12	59	59	0
	12-13	57	58	1
	12-14	53	54	1
	12-15	54	55	1
	12-16	58	59	1
	12-17	58	59	1
	12-18	57	58	1
	12-19	56	57	1
	12-20	59	59	0
	12-21	59	60	1
	12-22	59	60	1
La Media Rd/Magdalena Ave Santa Luna St to Main	13-1	52	53	1
	13-2	55	55	0
	13-3	54	54	0
	13-4	55	56	1
	13-5	53	54	1
	13-6	61	62	1
	13-7	61	62	1
	13-8	60	60	0

Table 5.5-12 (Continued)
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*
Eastlake Parkway Olympic Parkway to Hunte	14-1	58	58	0
	14-2	56	57	1
	14-3	58	58	0
	14-4	58	58	0
	14-5	59	59	0
	14-6	59	60	1
	14-7	61	61	0
	14-8	56	56	0
	14-9	56	56	0
	14-10	55	56	1
	14-11	54	55	1
	14-12	55	55	0
Hunte Pkwy Olympic Pkwy to Eastlake Pkwy	15-1	60	60	0
	15-2	55	56	1
	15-3	53	54	1
	15-4	55	55	0
	15-5	55	56	1
	15-6	55	55	0
	15-7	54	54	0
	15-8	54	54	0
	15-9	55	55	0
	15-10	56	56	0
	15-11	56	56	0
	15-12	56	56	0
	15-13	55	56	1
	15-14	56	57	1
	15-15	56	56	0
	15-16	56	56	0
	15-17	55	56	1
	15-18	55	55	0
	15-19	56	57	1
	15-20	56	56	0

NA - No current noise-sensitive uses at this location
Source: Dudek 2014



SOURCE: Hamilton & Associates, March 2014

FIGURE 5.5-6
Off-Site Improvement Areas

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UNIVERSITY VILLAGES PROJECT EIR

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As seen in Table 5.5-12, the project's contribution to cumulative noise levels would be limited, a 1 dB increase at most, which by itself is not a discernible increase. Additionally, as shown in Table 5.5-12, the 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 use 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.

Impacts to Sensitive Receptors

Because the development of each village would be a multi-year endeavor, portions of the development would be completed and occupied during the construction of subsequent portions (phases); the occupied project phases have the potential to be impacted by noise from on-going construction activities. Additionally, construction of the villages which are adjacent to existing noise-sensitive uses (such as Olympian High School, located to the north of Village Eight) and construction of off-site improvements (i.e., utility and roadway realignments and widenings) have 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. Noise-generating 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 a prediction of the project's potential noise impacts.

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 (EPA 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 5.5-13. Because of vehicle technology improvements and stricter noise regulations since the field study was published, this analysis would use the average noise levels shown in Table 5.5-13 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) are cyclical.

Table 5.5-13
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

Source: EPA 1971
[a] Sound level with all pertinent equipment operating.

Noise levels generated by construction equipment (or by any point source) decrease at a rate of approximately 6 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 Leq 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 5 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.

The generation of noise from construction activities during noise sensitive time periods upon completed and occupied components of the project is considered a significant nuisance. Additionally, construction noise, both from on-site and off-site improvements, could affect existing off-site noise-sensitive land uses. The nearest off-site noise-sensitive land uses relative to the project site is Olympian High School, located north of Village Eight. The nearest off-site noise-sensitive land use to off-site improvements is High Tech High Chula Vista, located to the north of Village Ten.

Olympian High School is located approximately 125 feet from the Village Eight project site boundary, and approximately 250 feet from the nearest off-site improvement work. High Tech High Chula Vista is located approximately 250 feet from the nearest off-site improvement work. As such, project generated construction noise would pose a potentially significant impact on noise-sensitive receptors if construction hour limitations are not imposed. However, and as required by Mitigation Measure NOI-8, 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.

Impacts to MSCP Preserve Areas

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 Eight East and Village Ten, and easternmost residences in Villages Three North and Village Ten would be located adjacent to MSCP Preserve area, and the OVRP, Greenbelt trail and Village Ten Connector Trails would traverse the Preserve. However, residences and trails are not sources of substantial noise. Occasional maintenance activities would be required along the trail and 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.

All development located adjacent to the Preserve is required to prepare an Edge Plan (Section 7.2 of the RMP). The Preserve edge is a strip of land 100 feet wide that surrounds the perimeter of the Preserve; however, it is not part of the Preserve. Preserve Edge Plans have been prepared for each SPA Plan in consultation with a qualified biologist. These plans detail the uses allowed within the 100-foot Preserve edge, provide a list of plant species that are appropriate adjacent to the Preserve, and overlap with the proposed 100-foot fuel modification zone. These Preserve Edge Plans also analyze how each village complies with the Preserve adjacency guidelines from Section 7.5.2 of the Chula Vista MSCP Subarea Plan. 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 (April 1 through June 31) in areas where breeding and/or nesting activity may occur. Therefore, impacts would be **less than significant**.

Another MSCP preserve area (Wolf Canyon) is located west of Village Four, which would be developed as a community park. The Community Park would potentially include sports fields, playgrounds, and other uses that could generate noise levels of 60 dBA up to 100 feet from the park. However, a 100-foot Preserve edge is required per the MSCP Subarea Plan in order to

reduce indirect impacts. As a result, no active park uses would be placed within 100 feet of the Preserve, and any indirect noise impacts would be less than 60 dBA. Additionally, biological noise mitigation measures are identified to reduce operational noise levels within the Preserve (see Section 5.8, Biological Resources, Mitigation Measures BIO-17 and BIO-18). Therefore, impacts would be **less than significant**.

In Village Three North, the extension of Main Street along the southern edge of Village Three North would result in noise levels of up to 67 dBA. However, similar to Village Four, biological noise mitigation measures are identified to reduce operational noise levels within the Preserve (see Section 5.8, Biological Resources, Mitigation Measures BIO-17 and BIO-18). Additionally, Main Street is a planned facility within the Preserve. As a result, impacts would be **less than significant**.

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 which 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 is located along the north side of Otay Mesa Road, approximately 1 mile south of Village Four and a similar distance from the other Villages. The runways are oriented in an east/west direction. According to the City of San Diego General Plan EIR (2007), some southerly portions of the project site may be located within the 60–65 dB CNEL contour line. The 65–70 dB contour line does not encompass any portion of the project site (refer to Appendix L for the noise contour map from the General Plan EIR).

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. This condition would run with the property, and as such, potential nuisance noise from aircraft overflights would be disclosed to future residents. Therefore, impacts would be **less than significant.**

The San Diego County Airport Land Use Commission adopted an ALUCP for Brown Field in 2005 (County of San Diego 2005). The graphics in the 2005 ALUCP indicate that the project site (i.e., Villages 3 North, 4, 8 East, and 10) is north and outside of the 60 and 65 dB CNEL noise contours for Brown Field (refer to Appendix L). 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 remain at **less than significant** levels.

F. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

See the discussion of Threshold E above. Impacts would be **less than significant**.

G. Be inconsistent with General Plan, Otay Ranch GDP or other objectives and policies regarding noise thereby resulting in a significant physical impact.

Appendix B evaluates the consistency of the proposed project with the applicable General Plan policies, and the analysis demonstrates the proposed project's consistency. 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. A complete analysis of consistency with General Plan policies is provided in Appendix B.

Appendix B evaluates the consistency of the proposed project with the applicable Otay Ranch GDP policies, and the analysis demonstrates the proposed project's consistency. The proposed project would promote a quiet community where residents live without noise which is detrimental to health and enjoyment of property. Mitigation measures have been included when necessary to reduce potential impacts from noise and the City of Chula Vista Noise Ordinance would continue to be enforced with implementation of the SPA Plans. As shown in Appendix B, the proposed project would be consistent with applicable Otay Ranch GDP policies. A more detailed analysis of the proposed project's consistency is provided in Appendix B.

As shown in Appendix B, the proposed project would be consistent with all applicable noise policies found in the General Plan and Otay Ranch GDP. Impacts associated with project implementation would be **less than significant**.

5.5.4 Level of Significance Prior to Mitigation

On-Site Traffic Noise Exposure – Major Roadways

Village Three North

The noise level associated with future Main Street traffic volumes in Village Three North would exceed the exterior noise criterion of 65 dB CNEL, and is considered a **potentially significant impact**. Additionally, the noise level associated with future Heritage Road traffic volumes would equal or exceed the exterior noise criterion of 65 dB CNEL, and is considered a potentially significant impact. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-1).

Interior noise levels at residences adjacent to Main Street and Heritage 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 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Village Eight East

The noise level associated with future Main Street traffic volumes in Village Eight East would exceed the exterior noise criterion of 65 dB CNEL, and is considered a **potentially significant impact**. Additionally, noise level associated with future Otay Valley Road traffic volumes would equal or exceed the exterior noise criterion of 65 dB CNEL, and is considered a potentially significant impact. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-1).

For residential areas north of Otay Valley Road, the row of homes closest to SR-125 could be exposed to noise levels ranging to 61 dB CNEL from future traffic along SR-125. This noise level associated with future SR-125 traffic volumes would not exceed the exterior noise criterion of 65 dB CNEL, and is thus considered a **less than significant** impact.

Interior noise levels at residences adjacent to Main Street, SR-125 and Otay Valley 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 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Village Ten

The first row of homes in Village Ten closest to Discovery Falls Drive could be exposed to noise levels ranging to 67 dB CNEL from future traffic along Discovery Falls Drive and University Drive. The noise level would equal or exceed the exterior noise criterion of 65 dB CNEL, and is

considered a **potentially significant impact**. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-1). Noise levels along Otay Valley Road, based upon Year 2030 Plus Project traffic, would not exceed 62 dB CNEL at proposed noise-sensitive land uses and impacts would be less than significant along this road.

Interior noise levels at residences adjacent to Discovery Falls Drive and Otay Valley 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 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Off-Site Noise Impacts Associated with Project Traffic

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. 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 5.5-10 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. To avoid **potentially significant impacts** related to commercial use noise, mitigation is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-4).

The proposed industrial areas are encompassed within the buffer for the municipal landfill located north of the project boundaries. Because of the presence of the landfill along the northerly property boundary 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. Although impacts would likely be less than significant, 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, 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 5.5.5, Mitigation Measures, Mitigation Measure NOI-5).

Additionally, the existing landfill currently exercises noise-generating activities such as horns, amplified sound or explosive-noise devices to deter avian vectors as a result of landfill operations. These noise sources are part of the existing ambient noise environment, and would be buffered by the proposed industrial development that would be located at the northerly property boundary along the proposed industrial use zone. Moreover, a review of available documents, including recent LEA inspection reports, shows that vectors have not been a problem at the landfill; however, there were some "Area of Concern" notes regarding proper waste coverage. Since proper waste coverage is the primary control mechanism for vectors, maintaining proper waste coverage should continue to prevent vector issues from occurring (SCS 2014). Impacts would be **less than significant**.

Parks and Recreation Related Noise

For the Village Eight East Community Park (P-2) and the Village Four Community Park (P-2), a 100-foot Preserve edge is required per the MSCP Subarea Plan in order to reduce indirect impacts. As a result, no active park uses would be placed within 100 feet of the Preserve, and any indirect noise impacts would be less than 60 dBA. Additionally, biological noise mitigation measures are identified to reduce operational noise levels within the Preserve (see Section 5.8, Biological Resources, Mitigation Measures BIO-17 and BIO-18). Therefore, impacts would be **less than significant**.

Based upon the most recent conceptual design drawings, each of the park sites is surrounded on all four sides by a street having a minimum 58 foot wide right of way. Thus, noise levels from the proposed parks would be less than 65 dB during park operating hours. Nighttime noise at the parks would be negligible because the parks would be closed after approximately 10 P.M. However, as the City of Chula Vista normally allows parks to remain open until 10:30 P.M., a potentially significant impact could result. Therefore, a mitigation measure is included which requires parks within the project to close at 10 P.M. (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-6). Landscape maintenance would result in a less than significant impact.

Other Recreation Facilities

Private Recreation Facilities would be located throughout each Village. In addition, trails, and playgrounds are a permitted use throughout the SPA. The proposed trails throughout the project site and the off-site trail connection to the OVRP would be used for walking and bicycling and

would generally not support activities that would generate noise levels higher than normal conservation. The PRFs would not include athletic fields or other major active use facilities. Playgrounds would generate noise levels less than the Neighborhood Park noise level of 54.3 dBA at 50 feet. The neighborhood playgrounds would generally not be in use after dark, and nighttime activity would be expected to be limited to normal conversation levels. Therefore, these facilities would not generate noise levels that exceed the City's noise level limits and significant impacts would not occur.

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 5.5.5, Mitigation Measures, Mitigation Measure NOI-7).

Future school buildings that are located in areas exposed to a noise level greater than 60 dB CNEL could exceed an interior noise level of 45 dB CNEL. To avoid these **potentially significant impacts**, mitigation is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-7).

Recreational activities at Olympian High School would not exceed the City's noise standards at the proposed project site. Impacts 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 5.5.5, Mitigation Measures, NOI-8).

Groundborne Vibration or Groundborne Noise Levels

Blasting may be required in the Village Four Community Park (P-2) area. Although this would not exceed any City thresholds, blasting, if determined to be necessary, is considered to have a **potentially significant impact** unless mitigated. To avoid potentially significant impacts, mitigation is provided (see Section 5.5.5, Mitigation Measures, NOI-9).

Permanent Increase in Ambient Noise Levels

As seen in Table 5.5-12, the proposed project's contribution to cumulative traffic noise levels would be limited, a 1 dB increase at most, which by itself is not a discernible increase. Additionally, also as shown in Table 5.5-12, 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 use under Without Project conditions. Impacts would be **less than significant** and mitigation is not required.

Airport Noise

The graphics in the 2005 ALUCP indicate that the project site (i.e., Villages 3 North, 4, 8 East, and 10) 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 remain below significant levels. No mitigation is required.

Consistency with General Plan, Otay Ranch 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.

5.5.5 Mitigation Measures

The following mitigation measures are recommended to address the identified potentially significant noise impacts. In addition to the following mitigation measures, MM BIO-17 and MM BIO-18 would also contribute to a reduction in noise related impacts.

MM NOI-1 Site-Specific Acoustical Analysis – Single- and Multi-Family Residential Development - Exterior. Prior to the approval of rough grading permits for residential development adjacent to Main Street and Heritage Road (Village Three), Otay Valley Road, SR-125 and Main Street (Village Eight), and Discovery Falls Drive and University Drive (Village Ten), the Project Applicant or its designee shall: (i) prepare a site-specific acoustical study based on the Final Map design; (ii) construct noise barriers as specified below; and (iii) implement any additional noise control measures recommended as a result of the analysis necessary to achieve compliance with the City's Land Use/Noise Compatibility Guidelines and the City's Noise Ordinance (Municipal Code Section 19.68) for exterior noise sensitive land uses. Implementation of all recommended measures

shall be to the satisfaction of the Development Services Director (or their designee) and all required noise control measures shall be made conditions of grading permit issuance. The acoustical study shall include, but not be limited to the following:

1. Specification of the location, height, and building material to be used for the noise barriers to be constructed in accordance with Figures 12, 13 and 14 (Approximate Sound Wall Locations), contained in the Noise Assessment Technical Report for the Otay Ranch University Villages Project (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 (with the exception of expansion joints gaps and other construction techniques, which could create an opening or crack). 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. Measures to reduce noise levels may include, but are not 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; 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 Acoustical Analysis – Single-Family Residences - Interior. Concurrent with design review and prior to the approval of building permits for single-family residential development where the exterior noise level exceeds 60 dBA CNEL as indicated in the Noise Assessment Technical Report for the Otay Ranch University Villages Project (Dudek 2014), the Applicant or its designee shall: (i) prepare a site-specific acoustical analysis identifying those noise control measures necessary to ensure that interior noise levels due to exterior noise sources will be at or below 45 dBA CNEL; and (ii) implement all measures recommended as a result of the analysis necessary to achieve compliance with the

City's Land Use/Noise Compatibility Guidelines and the City's Noise Ordinance (Municipal Code Section 19.68) for single-family residential interior uses.

This mitigation measure shall apply to neighborhoods R-1, R-2, R-9, R-11 and R-20 in Village Three North; and neighborhoods R-11a and R-13 in Village Eight East where exterior noise levels exceed 60 dBA CNEL.

Measures to reduce noise levels may include, but are not 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 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.

Design-level architectural plans shall be used to assess the exterior-to-interior transmissions loss for habitable rooms. Contingent upon the results of the interior acoustical analysis, the 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 Development Services Director (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 Acoustical Analysis – Multi-Family Residences - Interior. 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 as indicated in the Noise Assessment Technical Report for the Otay Ranch University Villages Project (Dudek 2014), the Applicant or its designee shall: (i) prepare a site-specific acoustical analysis identifying those noise control measures necessary to achieve 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); and (ii) implement those measures necessary to achieve compliance with all applicable noise standards.

This mitigation measure shall apply to neighborhoods R-14a, R-15a, R-16, R-17 and R-18d in Village Eight East; and neighborhoods R-5, R-6, R-7, R-8, R-9, R-10, R-17a, R-17b, R-17c, R-18a, R-18b, R-19a, R-19b, and R-19c in Village Ten, where exterior noise levels exceed 60 dBA CNEL.

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 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.

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.

The acoustical analysis shall be prepared to the satisfaction of the Development Services Director (or their designee), and all required noise control measures identified in the acoustical analysis shall be made conditions of building permit issuance.

MM NOI-4 Site-Specific Acoustic Analysis – Non-Residential Commercial and/or Mixed-Use Residential – Exterior. Concurrent with design review and prior to the approval of building permits for non-residential commercial and/or mixed use residential area where exterior noise levels exceed 65 dBA CNEL as indicated in the Noise Assessment Technical Report for the Otay Ranch University Villages Project (Dudek 2014), the Applicant or its designee shall: (i) prepare a site-specific acoustical analysis identifying those noise control measures necessary to ensure that exterior noise levels at the boundary of the proposed noise sensitive land use will be below 65 dBA CNEL; and (ii) 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 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 Development Services Director (or their designee), and all required noise control measures identified in the acoustical analysis shall be made conditions of building permit issuance.

MM NOI-5 Site-Specific Acoustical Analysis – Industrial Zone. 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 identify those noise control measures necessary 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 acoustical analysis shall be prepared to the satisfaction of the Development Services Director (or their designee). All required noise control measures identified in the acoustical analysis shall be made conditions of development approval.

MM NOI-6 As a condition of approval of the proposed project, the City shall limit the active programming operational hours for neighborhood park sites to 7:00 am–10:00 pm, 7 days a week.

MM NOI-7 Concurrent with design review and prior to the approval of building permits for the elementary schools: an acoustical analysis shall be prepared identifying the noise control measures necessary to ensure that noise levels at exterior use areas (i.e., playground, sports fields, athletic courts, etc.) will be below 65 dBA CNEL and requiring 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 residential 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 consistent with all applicable requirements 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.

Mitigation measure NOI-7 is consistent with the School Site Selection and Approval Guide prepared by the California Department of Education, which provides that if a school district is considering a potential school site near a freeway or other source of noise, it should hire an acoustical engineer to determine the level of sound that location is subject to and assist in designing the school site that should be chosen. The *Guide* provides further that the American Speech-Language-Hearing Association guidelines recommend that in classrooms sounds dissipate in 0.4 seconds or less (and not reverberate) and that background noise not rise above 30 decibels.

MM NOI-8 The Project Applicant or its designee shall limit all project-related site preparation and construction activities 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. Minor construction (i.e., minor household do-it-yourself type projects) and non-noise-generating construction activities such as interior painting are not subject to these restrictions.

MM NOI-9 Prior to the issuance of a grading permit, and in the event that blasting is proposed in Village Four, the Project Applicant or its designee shall prepare a blasting plan to ensure that exterior noise levels at noise sensitive land uses are in compliance with the City of Chula Vista General Plan Exterior Land Use / Noise Compatibility Guidelines and the City's Noise Ordinance Exterior Noise Limits. The plan shall be prepared by a licensed blasting engineer and identify when such blasting events would occur, the approximate amount of explosives to be used (which amount shall be limited to the extent practicable so as to minimize resulting noise), and the location and proximity of the blasting event relative to sensitive receptors. If deemed beneficial for noise reduction purposes, the plan shall include a requirement that blasting mats be used. The blasting plan shall also detail the surrounding zone in which noise-sensitive land uses would be notified of planned blasting activities, and of the nature of audible warning signals to be used just prior to blasting. The blasting plan shall be prepared to the satisfaction of the Development Services Director (or their designee), and all noise control measures identified in the blasting plan shall be made conditions of grading permit issuance.

5.5.6 Level of Significance After Mitigation

The mitigation measures listed in Section 5.5.5, and MM BIO-17 and MM BIO-18 would reduce potential noise impacts to **less than significant**.

5.6 CULTURAL RESOURCES

This section of the EIR tiers from the 1993 Otay Ranch GDP Program EIR, because potential impacts to cultural resources due to development in the entire Otay Ranch area was analyzed as part of the 1993 Otay Ranch GDP including the project site. The 1993 Otay Ranch GDP Program EIR determined that impacts to cultural resources would be significant and unmitigable; however, the Chula Vista City Council determined that the significant impacts identified in that EIR were acceptable because of specific overriding considerations.

This section of the EIR also tiers from the 2005 GPU/GDPA Program EIR, because potential impacts to cultural resources due to development in the entire Otay Ranch area were also analyzed as part of the 2005 GPU/GDPA. The 2005 GPU/GDPA determined that compliance with City policies and objectives, as well as specific mitigation measures, would result in less than significant impacts to cultural resources.

This section of the EIR addresses potential impacts to cultural resources resulting from the proposed project. The discussion in this section is based on the *Cultural Resources Study for the University Villages Project at Otay Ranch* ("Cultural Resources Study") prepared by Brian F. Smith and Associates Inc. in March 2014. The complete report is contained in Appendix F of this EIR.

5.6.1 Existing Conditions

Cultural resources include prehistoric resources and historical-period resources. Prehistoric resources are physical properties resulting from human activities that predate written records and are generally identified as isolated finds or sites. Prehistoric resources can include village sites, temporary camps, lithic (stone tool) scatters, roasting pits/hearths, milling features, rock features, and burials. Historic resources consist of physical properties, structures, or built items resulting from human activities after the time of written records. In North America, the historical-period is generally considered to be equivalent to the time period since European contact, beginning in A.D. 1492. Historic resources can include archaeological remains and architectural structures. Historic archaeological site types include town sites, homesteads, agricultural or ranching features, mining-related features, refuse concentrations, and features or artifacts associated with early military use of the land. Historic architectural resources can include houses, cabins, barns, lighthouses, early military structures, and local structures, such as missions, post offices, and meeting halls.

5.6.1.1 Regulatory Framework

Federal Level

National Historic Preservation Act

The National Historic Preservation Act (NHPA) (16 U.S.C. 470 et seq.) establishes the nation's policy for historic preservation and sets in place a program for the preservation of historic

properties by requiring federal agencies to consider effects to significant cultural resources (e.g., historic properties) prior to undertakings.

Section 106 of the NHPA requires federal agencies to take into account the effects of projects on historic properties (resources included in or eligible for the National Register of Historic Places (NRHP)). It also gives the Advisory Council on Historic Preservation and the state historic preservation offices an opportunity to consult. Federal agencies issuing permits for the proposed project will be required to comply with NHPA requirements.

Executive Order 11593, "Protection and Enhancement of the Cultural Environment"

Executive Order 11593 (36 FR 8921) (1) orders the protection and enhancement of the cultural environment through requiring federal agencies to administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations; (2) initiates measures necessary to direct their policies, plans, and programs in such a way that federally owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the people; and (3) in consultation with the Advisory Council on Historic Preservation, institutes procedures to assure that federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance (16 U.S.C. 470-1).

National Register of Historic Places

The NRHP is the nation's official list of historic places. The register is overseen by the National Park Service and requires that a property or resource eligible for listing in the register meet one or more of the following four criteria at the national, state, or local level to ensure integrity and obtain official designation.

- The property is associated with events that have made a significant contribution to the broad patterns of our history.
- The property is associated with the lives of persons significant to our past. Eligible properties based on this criterion are generally those associated with the productive life of the individual in the field in which the person achieved significance.
- The property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components lack individual distinction.
- The property has yielded, or is likely to yield, information important to prehistory or history.

In addition to meeting at least one of these four criteria, listed properties must also retain sufficient physical integrity of those features necessary to convey historic significance. The register has identified the following seven aspects of integrity: (1) location, (2) design, (3) setting, (4) materials, (5) workmanship, (6) feeling, and (7) association.

Properties are nominated to the register by the state historic preservation officer of the state in which the property is located, by the federal preservation officer for properties under federal ownership or control, or by the tribal preservation officer if on tribal lands. Listing in the NRHP provides formal recognition of a property's historic, architectural, or archaeological significance based on national standards used by every state. Once a property is listed in the NRHP, it becomes searchable in the NRHP database of research information. Documentation of a property's historic significance helps encourage preservation of the resource.

State Level

California Public Resources Code

California Public Resources Code (PRC), Sections 5097–5097.6, identify that the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands is a misdemeanor. It prohibits the knowing destruction of objects of antiquity without a permit (express permission) on public lands, and it provides for criminal sanctions. This section was amended in 1987 to require consultation with the Native American Heritage Commission (NAHC) whenever Native American graves are found. Violations that involve taking or possessing remains or artifacts are felonies.

Public Resources Code, Section 5097.5, states that "no person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historic feature situated on public lands, except with the express permission of the public agency having jurisdiction over the lands."

California Register of Historical Resources

The California Office of Historic Preservation maintains the California Register of Historical Resources (CRHR). The CRHR is the authoritative guide to the state's significant historic and archaeological resources. The program provides for the identification, evaluation, registration, and protection of California's historic resources. The CRHR encourages public recognition and protection of resources of architectural, historic, archaeological, and cultural significance; identifies historic resources for state and local planning purposes; determines eligibility for state

historic preservation grant funding; and affords certain protection to resources under the California Environmental Quality Act (CEQA).

The CRHR also has established context types to be used when evaluating the eligibility of a property or resource for listing. The four criteria are as follows:

- It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- It is associated with the lives of persons important to local, California, or national history.
- Represents the work of a master, or possesses high artistic values.
- It has yielded, or is likely to yield, information important to prehistory or history of the local area, California, or the nation.

Similar to the NRHP, eligibility for the CRHR requires an establishment of physical integrity, including the seven aspects previously described. The CRHR's list of special considerations is less stringent than the NRHP's, providing allowances for relocated buildings, structures, or objectives as reduced requirements for physical integrity.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code, Section 7050.5, requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the county coroner has examined the remains (Section 7050.5b). If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Section 7050.5c). The NAHC will notify a Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 24 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State. CEQA requires lead agencies to determine if a proposed project would have a significant effect on archaeological resources (PRC, Sections 21000 et seq.). As defined in Section 21083.2 of the PRC a "unique" archaeological resource is an archaeological artifact, object, or site, about which

it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In addition, CEQA Section 15064.5 broadens the approach to CEQA by using the term "historical resource" instead of "unique archaeological resource." The CEQA Guidelines recognize that certain historical resources may also have significance. The Guidelines recognize that a historical resource includes: (1) a resource in the California Register of Historical Resources; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of the PRC and Section 15064.5 of the Guidelines apply. If an archaeological site does not meet the criteria for a historical resource contained in the Guidelines, then the site is to be treated in accordance with the provisions of PRC §21083, which is a unique archaeological resource. The Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (14 CCR 15064.5(c)(4)).

Local Level

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 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 Otay Ranch GDP is consistent with the objectives, policies, and criteria established in the RMP (City of Chula Vista and County of San Diego 1993, 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.

The City of Chula Vista

The City of Chula Vista assesses and mitigates the potential impacts of private development and public facilities and infrastructure to significant cultural resources pursuant to the provisions of CEQA. Sections 15064.5 and 15126.4 of the State CEQA Guidelines define historical resources (i.e., cultural resources) and addresses, in general terms, mitigation requirements for significant and potentially significant impacts to such resources. Pursuant to the State CEQA Guidelines, historical resources are not limited to officially listed resources, but also include resources found to be eligible for listing at the local, state, and federal levels. Cultural resources that reflect the history of a community, from descendants of the earliest Native Americans to later explorers, settlers, and immigrants, are important to the community and, therefore, warrant protection by the City. Furthermore, the accessibility of important cultural resources to the public for educational, religious, cultural, scientific and other purposes should be supported and encouraged by the City. The proposed project's consistency with applicable goals, objectives and policies found in the City of Chula Vista General Plan and Otay Ranch GDP is provided in Appendix B.

Title 21 of the Chula Vista Municipal Code (CVMC) defines the Historic Preservation Ordinance, which creates a process for designating and delisting historical resources, requires review of alterations to historical resources, and establishes a qualified historic preservation commission (HPC). The HPC inherited the historic preservation duties that were previously vested with the City's Resource Conservation Commission. The HPC meets the requirements of a qualified review board for Certified Local Government (CLG) status (City of Chula Vista 2011). The HPC has authority on historic preservation matters, including designations, Major Alteration Certificate of Appropriateness applications, historical resource determinations and appeals. The HPC also provides advice to Council and other City boards and commissions on historic preservation matters. The HPC consist of seven members. Four of the seven members are selected from the disciplines of related fields such as: History, Architecture, Architectural History, Archeology, and Landscape Architecture, one licensed realtor, and two members with an interest competence or knowledge in historic preservation (City of Chula Vista 2011).

5.6.1.2 Existing Setting

The following discussion provides a summary of the existing historic and cultural setting of the overall project area, as well as the villages that comprise the project area, Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. A detailed overview of the archaeological conditions of the project vicinity is provided in Appendix F of the EIR.

The project area is located within the Otay River watershed, on terraces, ridges, and mesas overlooking the Otay Valley Regional Park (OVRP). Comparatively little is known about the prehistory of the Otay region of San Diego County; the development of the National City and Chula Vista areas prior to the establishment of CEQA laws resulted in the loss of a considerable amount of archaeological sites. Recent development of the area east of Chula Vista has resulted in the discovery of and recovery from numerous archaeological sites in that area. Several prehistoric habitation sites have been identified within the eastern Otay River watershed, which may be related to the occupants of the sites within the project area, described in greater detail in the following subsections.

The cultures that have been identified in the general vicinity of the project consist of the possible Paleo-Indian manifestation of the San Dieguito Complex, the Archaic and Early Milling Stone horizons represented by the La Jolla Complex, and the Late Prehistoric Kumeyaay culture. The area was used for ranching and farming following the Hispanic intrusion into the region, and extending into the historic period. A brief discussion of the cultural elements in the project area is provided in the following subsections.

5.6.1.2.1 Paleontological Environment

At the end of the final period of glaciation, approximately 11,000-10,000 years before the present (YBP), the sea level was considerably lower than it is now; the coastline at that time would have been two to two-and-one-half miles west of its present. At approximately 9,000 YBP, the sea level rose rapidly, filling in many coastal canyons that had been dry during the glacial period. The period between 7,000 and 4,000 YBP was characterized by conditions that were drier and warmer than previously, followed by a cooler, moister environment, similar to the present-day climate. Changes in sea level and coastal topography are often manifested in archaeological sites in the types of shellfish that were utilized by prehistoric groups. Different species of shellfish prefer certain types of environments; dated sites that contain shellfish remains reflect the setting that was exploited by the prehistoric occupants.

Unfortunately, pollen studies have not been conducted for this area of San Diego; however, studies in other areas of Southern California, such as Santa Barbara, indicate that the coastal plains supported a pine forest between approximately 12,000 and 8,000 YBP. After 8,000 YBP, this environment was replaced by more open habitats, which supported oak and non-arboreal communities. The coastal sage scrub and chaparral environments of today appear to have become dominant after 2,200 YBP.

5.6.1.2.2 Prehistory

The San Dieguito Complex was a group of people who occupied sites in this region between 10,000 and 8,000 YBP and was related to or contemporaneous with the Paleo-Indian groups in the Great Basin area and the Midwest. The artifacts recovered from San Dieguito sites duplicate the typology attributed to the Western Pluvial Lakes Tradition. These artifacts generally consist of scrapers and scraper planes, choppers, and bifacially flaked knives, but few or no milling tools. Tools recovered from sites of the San Dieguito Complex and the general pattern of site locations indicate that they were a wandering, hunting and gathering society. Very little evidence of the San Dieguito Complex has been identified within the project area. It is probable that environmental changes associated with climatic change affected the subsistence base of the San Dieguito Complex, resulting in their exodus from this area sometime before 9,000 YBP.

The La Jolla Complex

Approximately 9,000-8,500 YBP, a second major cultural tradition was established in the San Diego region, primarily along the coast. Locally, this cultural tradition has been called the La Jolla Complex, and radiocarbon dates from sites attributed to this culture span a period of more than 7,000 years in this region (between 9,000 and 2,000 YBP). The La Jolla Complex is best recognized for its pattern of shell middens, grinding tools closely associated with marine resources, and flexed burials.

The tool typology of the La Jolla Complex displays a wide range of sophisticated lithic manufacturing techniques. Scrapers, the most common type of flaked tool recovered from La Jolla sites, were created by either splitting cobbles or finely flaking quarried material. La Jolla sites also contain large numbers of milling tools (manos and metates) and utilized flakes that appear to have been used to pry open shellfish. Inland sites of the La Jolla Complex, sometimes called the Pauma Complex, were situated at a distance from marine food resources and generally lack marine-related refuse, but contain large quantities of milling tools and food bone, suggesting seasonal migration from the coast to the inland valleys.

The Late Prehistoric Kumeyaay Indians

The last major migration into the coastal zone occurred approximately 1,500 YBP, when Yuman- and Shoshonean-speaking people moved from the Colorado River Basin to the coast, in search of a more plentiful food supply. This group is known locally as the Late Prehistoric Diegueno, or Kumeyaay, culture. Sites associated with the Kumeyaay are focused in the foothills and mountains, rather than along the coast. Their subsistence pattern was based on the collection of seeds, berries, and bulbs, and the hunting of small game. Artifact collections from late prehistoric occupations include milling tools, ceramics, projectile points, scrapers, planes, beads, shaft straighteners, and hammerstones. Ethnographic information indicates that the culture of the Kumeyaay Indians consisted of a close clan system with definitive religious beliefs and complex trade associations with relatives living in the Colorado River Basin.

The last phase of the Kumeyaay culture began approximately 400 YBP, with the first contact by Europeans (Juan Rodriguez Cabrillo, in 1542). By 1769, at the time of the first European settlement in San Diego, at least 20 permanent or semi-permanent villages had been established near the Pueblo of San Diego. These living sites were primarily coastal, although some were located in valleys that were a short distance inland. Historical accounts generally agree that a few villages were located along the bay side of Point Lorna, and several were scattered along the shores of Mission Bay. Others were situated in the present area of the City of San Diego and near the mouths of the major streams that emptied into San Diego Bay. Major river valleys, such as the San Diego River Valley, were well populated because of their resources of plant foods and water. Villages were also located in the La Jolla area, in Soledad Canyon, at the mouth of Rose Canyon, and in the inland valleys of the Otay Mesa, east of San Diego. A number of temporary shellfish-gathering and fishing sites were situated on the shores of bays and the ocean.

History

Exploration Period (1530-1769)

The historic period around San Diego Bay began with the landing of Juan Rodriguez Cabrillo and his men in 1542. Sixty years after the Cabrillo expeditions, an expedition under

Sebastian Vizcaino made an extensive and thorough exploration of the Pacific Coast. Although the voyage did not extend beyond the northern limits of the Cabrillo tract, Vizcaino had the most lasting effect on the nomenclature of the coast. Cabrillo gave the name of "San Miguel" to the first port at which he stopped in what is now the United States; sixty years later, Vizcaino changed it to "San Diego".

Spanish Period (1769-1821)

The Spanish occupation of the claimed territory of Alta California took place during the reign of King Carlos III of Spain. The powerful representative of the King in Mexico was Jose de Galvez, who conceived of the plan to colonize Alta California and thereby secure the area for the Spanish Crown. Actual colonization of the San Diego area began on July 16, 1769, when the first Spanish exploring party, commanded by Gaspar de Portola (with Father Junipero Serra in charge of religious conversion of the native populations), arrived in San Diego to secure California for the Spanish Crown. Missions were constructed from San Diego to as far north as San Francisco.

Mexican Period (1821-1846)

By 1821, Mexico had gained independence from Spain, and the northern territories were subject to political repercussions. By 1834, all of the mission lands had been removed from the control of the Franciscan Order under the Acts of Secularization. The mission lands were divided into smaller tracts, or ranchos, which were granted to persons who had gained favor with the Mexican government. The proposed project lies within one such grant: Otay Ranch.

Anglo-American Period (1846-present)

California was invaded by United States troops during the Mexican War of 1846 to 1848. The acquisition of strategic Pacific ports and California land was one of the United States' principal objectives of the war. At the time, the inhabitants of California were practically defenseless, and they quickly surrendered to the United States Navy in July 1847.

During the first two decades of the twentieth century, the population of San Diego County continued to grow. After World War I, the history of San Diego County was primarily determined by the growth of San Diego Bay. An increasing demand for water both within the City of San Diego and Coronado Island led to the development of an aqueduct system. CA-SDI-11,383H is a portion of a little documented flume system that originated in Otay Reservoir and passed to the south and just outside the current project boundary on its way toward San Diego. In 1919, the United States Navy decided to make San Diego Bay the home base for the Pacific Fleet and during the 1920s, the aircraft industry also established itself in San Diego. Establishment of these industries led to growth of the county as a whole. Just before World War II, urbanization began to spread inland, including the area of eastern Chula Vista.

Otay Ranch History

The proposed project lies within the Mexican-era Otay Ranch. In 1829, Mexican Governor Jose Maria Echeandia granted the rancho to Dona Magdalena Estudillo; at the time it totaled 6,657 acres. Land use on the rancho consisted of grazing livestock and raising crops such as winter wheat for export. Hay, corn, beans, squash, tomatoes, peppers, olives for oil and for the table, grapes to make wine and for the table, and other staples were grown for local use. Otay Rancho later became Otay Ranch and expanded in size to 20,000 acres, which were at least partially utilized for grazing cattle. For the first half of the twentieth century, land use in the project area appeared to be limited to grazing of livestock, although artificial irrigation allowed some production of row crops. More recently, development of the area for residential communities and for the Olympic Training Center has taken place.

5.6.1.2.3 Cultural Resources

The Cultural Resources Study (Appendix F) identifies all cultural resources within the project area and assesses the potential significance of those resources. A records search of previously recorded archaeological sites on or near the project area was conducted; the project area was surveyed to locate any archaeological resources, and all cultural resources identified within the project boundary were tested for the evaluation process. 60 sites were identified within the project area. A summary of the findings within each village and the off-site improvement areas is provided below.

Village Three North and a Portion of Village Four

The archaeological survey of the Village Three North and a Portion of Village Four project area resulted in the relocation of 13 previously recorded prehistoric sites and the identification of one previously unrecorded prehistoric site. All sites were previously tested or tested as part of a significance evaluation; only one of the sites (SDI-12,291b) was determined to be an important cultural resource under criteria set out in CEQA (Section 15064.5). The results of the archaeological site evaluations and testing programs for Village Three North and a Portion of Village Four are provided in Table 5.6-1.

No historic elements were recorded within the Village Three North and a Portion of Village Four project area.

Table 5.6-1
Archaeological Site Evaluations and Test Results
Village Three North and a Portion of Village Four

Site Number	Site Description	Evaluation
CA-SDI-11,968	Moderate surface scatter and localized, shallow cultural deposit.	Not Significant
CA-SDI-12,290	Widely dispersed scatter of lithic artifacts over a terrace formation.	Not Significant
CA-SDI-12,291a	Moderate surface scatter; localized, shallow cultural deposit.	Not Significant
CA-SDI-12.291b	Expansive artifact scatter covering multiple terraces on slopes descending toward the Otay River. The analysis revealed a dense surface and subsurface deposit of artifacts, including a wide variety of lithic tools, groundstone, lithic production waste, and ecofacts. The subsurface excavations indicate that the site contains an intact subsurface cultural deposit extending to 120 centimeters, and therefore have the potential to answer questions important to understanding the prehistory of Otay Valley area, particularly during the Archaic period.	Significant
CA-SDI-12,292	Sparse lithic artifact scatter.	Not Significant
CA-SDI-12,293	Dense surface scatter and three localized, shallow cultural deposits. Tested area reveals sparse cultural deposits with little research potential.	Not Significant
CA-SDI-14,203	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-14,211	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-16,437	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-4738	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-11,378	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-14,176	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-14,204	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant

Village Eight East

The Village Eight East project area contains 25 recorded cultural resource sites. Of the 26 sites located within the boundaries of Village Eight East, six sites were not tested because they fall outside of the development area, one site was not tested because it was removed during construction of State Route 125, and 19 sites were tested and evaluated for significance. From the collection of sites within Village Eight East, two sites (SDI-4740 and SDI-12,809) were determined to be important cultural resources under criteria set out in CEQA Section 15064.5. The six sites that were not tested because they are not within the development envelope are considered potentially significant. The results of the archaeological site evaluations and testing programs for Village Eight East are provided in Table 5.6-2.

The sites and isolated finds studied within the Village Eight East project area conform to a pattern of prehistoric cultural resources with similar characteristics located on the higher slopes north of the Otay River. Previous studies, especially within Otay Ranch, have recorded essentially superficial scatters of artifacts and shell along the rolling hills and terraces that separate the Otay River and Poggi Canyon drainages. It appears the large habitation sites along Otay River were the staging locations for resource collecting forays through the hills to the north. The apparent centralization of occupation sites near the river negated the need for task sites in less desirable areas on the slopes north of the floodplain.

The historic elements recorded in Village Eight East are very marginal sites that consist of either minimal historic artifact scatters or linear water conveyance features. None of the historic sites nor the historic components of multi-component sites, produced data that supported findings of significance.

Table 5.6-2
Archaeological Site Evaluations and Test Results – Village Eight East

Site Number	Site Description	Evaluation
I-446	Three prehistoric lithic artifacts. No subsurface recovery.	Not Significant
CA-SDI-4731	Dispersed lithic scatter on steep slopes above the Otay River. This site was not tested as it is outside the development area.	Potentially Significant
CA-SDI-4740	Lithic artifact scatter of wide terrace slope above Otay River. Subsurface deposit indicates long-term site use. This site is in direct association with the prehistoric village complex at SDI-12,809.	Significant
CA-SDI-4741	Lithic scatter on terrace above village site at SDI-12,809. No subsurface deposits identified.	Not Significant
CA-SDI-4743	Dense lithic scatter on terrace above SDI-12,809. No subsurface deposits identified.	Not Significant
CA-SDI-4789	Dense lithic scatter on terrace and adjacent slopes above SDI-12,809. Shallow subsurface deposits lack research potential.	Not Significant
CA-SDI-4790	Sparse lithic scatter on slopes above canyon at the west end of SDI-12,809.	Not Significant
CA-SDI-9980	Resource extraction and lithic workshop site situated at the intersection of Johnson Canyon and Otay River. Not tested for this study.	Potentially Significant
CA-SDI-9981	Lithic scatter along floodplain of the Otay River. This site was not tested for this study, as it is located outside of the development area.	Potentially Significant
CA-SDI-11,372	Spare lithic scatter that has been disturbed by agricultural activities.	Not Significant
CA-SDI-11,373	Sparse surface scatter of lithic artifacts lacking any subsurface deposit.	Not Significant
CA-SDI-11,374/H	Sparse scatter of lithic artifacts in Otay River floodplain, adjacent to SDI-12,809. Historic materials reported in 1989 no longer present.	Not Significant
CA-SDI-11,383/H	Recorded as historic linear feature of irrigation pipe and water flume. Flume is no longer present; irrigation pipeline has been removed, destroyed, or buried.	Not Significant
CA-SDI-11,952	Limited function prehistoric lithic scatter. Not tested for this study.	Potentially Significant
CA-SDI-12,272/H	Prehistoric component includes marine shell and lithic scatter; historic component includes glass, metal, and plateware. Both components lack further research potential.	Not Significant

Table 5.6-2 (Continued)
Archaeological Site Evaluations and Test Results – Village Eight East

Site Number	Site Description	Evaluation
CA-SDI-12,287	Prehistoric lithic scatter with marine shell along drainage in north area of project.	Not Significant
CA-SDI-12,809	Multi-loci occupation site located along the Otay River floodplain. The site is multi-component (Archaic and Late-Prehistoric) and contains multiple subsurface deposits. Research potential is considered high.	Significant
CA-SDI-14,194	Lithic scatter of tools and flakes along Otay River floodplain. Not tested for this study.	Potentially Significant
CA-SDI-14,195	Lithic scatter recorded south of the Otay River. The site was not tested for this study and may have been disturbed by State Route 125 construction.	Potentially Significant
CA-SDI-14,205	Recorded as lithic scatter. This site was destroyed by State Route 125 construction.	Not Significant
CA-SDI-18,615	Limited function prehistoric task site and shell scatter.	Not Significant
CA-SDI-18,616	Limited function prehistoric task site and shell scatter.	Not Significant
CA-SDI-18,617	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-18,618	Limited function prehistoric task site focused on lithic reduction and resources processing activities.	Not Significant
CA-SDI-20,201	Limited function prehistoric task site focused on lithic reduction and resources processing activities.	Not Significant
CA-SDI-20,742	Shell scatter indicative of limited use site without any subsurface deposit or lithic artifacts observed.	Not Significant

Village Ten

The archaeological survey of the Village Ten project area resulted in the identification of 13 cultural resources. The resources within Village Ten are primarily prehistoric artifact and ecofact scatters, although one historic corral was also recorded. The results of the archaeological site evaluations and testing programs for Village Ten are provided in Table 5.6-3.

The sites studied within the project area conform to a pattern of prehistoric cultural resources with similar characteristics located on the higher slopes north of the Otay River. Previous studies, especially within Otay Ranch, have recorded essentially superficial scatters of artifacts and shell along the rolling hills and terraces that separate the Otay River and Poggi Canyon drainages. It appears that the large habitation sites along the Otay River were the staging locations for resource collecting forays though the hills to the north. The apparent centralization of occupation sites near the river negated the need for task sites in the less desirable areas on the slopes north of the floodplain.

Table 5.6-3
Archaeological Site Evaluations and Test Results – Village Ten

Site Number	Site Description	Evaluation
CA-SDI-20,441	Deflated temporary camp and shell scatter.	Not Significant
CA-SDI-20,442	Limited function prehistoric resource procurement and processing site.	Not Significant
P-37-032254	Historic corral associated with past agricultural and farming activities.	Not Significant
CA-SDI-20,443	Limited function prehistoric task site.	Not Significant
CA-SDI-4727	Limited function prehistoric task site focused on lithic reduction and possible resource processing.	Not Significant
CA-SDI-4728	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-4729	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-4730	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-10,875	Lithic scatter along floodplain of the Otay River. This site was not tested for this study, as it is located outside of the development area.	Potentially Significant
CA-SDI-11,375	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-11,377	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-14,199	Lithic scatter along floodplain of the Otay River. This site was not tested for this study, as it is located outside of the development area.	Not Significant
CA-SDI-20,551	A sparse lithic and marine shell scatter lacking any subsurface deposit or cultural features.	Not Significant

Off-Site Improvement Areas

The off-site improvement areas of the proposed project include 18 different areas where land outside of the ownership of Village Three North and Portion of Village Four, Village Eight East, and Village Ten is needed to facilitate the proposed development. Within the off-site improvement areas, archaeological surveys completed between 2010 and 2012 identified 8 cultural resources that would be impacted by the development of these areas. The testing of the 8 sites was confined to the projected limits of disturbance of the improvements and not the areas of the archaeological sites that lie outside of the limits of disturbance. None of the resources evaluated for the off-site improvement areas have been identified as significant. The management considerations for sites within the off-site improvement areas are summarized in Table 5.6-4.

Table 5.6-4
Archaeological Site Evaluations and Test Results – Village Ten

Site Number	Site Description	Evaluation
CA-SDI-20,553	Marine shell scatter that has been disturbed by agricultural activities. Testing revealed any subsurface deposits of marine shell, but no lithic artifacts.	Not Significant
CA-SDI-20,554	Sparse marine shell scatter that has been disturbed by agricultural activities. Testing did not reveal any subsurface deposits.	Not Significant
CA-SDI-20,737	Sparse lithic scatter on a terrace overlooking the Otay River. No subsurface deposit recorded.	Not Significant
CA-SDI-20,738	Sparse lithic scatter on a terrace overlooking the Otay River. No subsurface deposit recorded.	Not Significant
CA-SDI-20,739	Sparse lithic scatter of 17 artifacts that has been disturbed by agricultural activities. No subsurface deposit recorded.	Not Significant
CA-SDI-20,741	Sparse marine shell scatter that has been disturbed by agricultural activities. Testing did not reveal any subsurface deposits.	Not Significant
CA-SDI-12,286	Sparse shell scatter that has been disturbed by agricultural activities.	Not Significant
CA-SDI-4726	Sparse shell scatter that has been disturbed by agricultural activities. A subsurface deposit was not identified by testing.	Not Significant

Summary of Findings

The study of cultural resources within the project area identified 60 cultural resource sites. The study determined that three sites retain sufficient research potential to be considered significant under CEQA criteria. These significant sites are located at lower elevations near to the Otay River. The remaining 57 sites were determined to be not significant (49 sites) based upon a lack of research potential and eight sites were determined not to be significant because they fall outside the development area; they would have otherwise been considered to be potentially significant.

The historic elements recorded are very marginal sites that consist of either minimal historic artifact scatters or linear water conveyance features. Neither the historic sites nor the historic components of multi-component sites produced data that supported findings of significance for any historic resources within the project area.

5.6.2 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 cultural resources impact. Impacts to cultural resources would be significant if the proposed project would:

A. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

B. Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5.

C. Disturb any human remains, including those interred outside of formal cemeteries.

5.6.3 Impacts

The following discussion of impacts includes an analysis of impacts associated with the construction of the proposed project. Once constructed, the proposed project would not have the potential to impact cultural resources; therefore, operational impacts are not analyzed in this section.

A. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

As described in Section 5.6.1.2 Existing Setting, the historic elements recorded within the project area are very marginal sites that consist of either minimal historic artifact scatters or linear water conveyance features. Neither the historic sites nor the historic components, of multi-component sites, are considered significant. Therefore, construction and operation of the proposed project would not cause a substantial change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5, and **less than significant** impacts would occur.

B. Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5.

Village Three North and a Portion of Village Four

As listed in Table 5.6-1, a total of 13 recorded cultural resources were identified during the survey conducted within the Village Three North and a Portion of Village Four project area. Following a significance evaluation program, only one site (SDI-12,291b) was determined to be significant under CEQA Guidelines Section 15064.5. The other 12 sites are not significant. Grading and excavation associated with construction of the proposed project would impact nine of the 13 recorded cultural resources within Village Three North and a Portion of Village Four; however, all nine sites are characterized as non-significant resources. Although nine non-significant sites are impacted, the majority of these sites are recorded as sparse, low density lithic scatters lacking any substantial subsurface component or further research potential.

A total of four sites (SDI-11,378, SDI-14,204, SDI-12,291b, and SDI-14,211) were identified outside of the development area. These sites would not be directly impacted by the project since they are within proposed open space areas. Of the four sites within Village Three North and a Portion of Village Four that would not be directly impacted, only SDI-12,291b is identified as a significant resource. Although no direct impacts to this site are anticipated as a result of

development of Village Three North and a Portion of Village Four, potential indirect impacts associated with intrusion into this site during or after construction of the proposed project, may occur. Therefore, since development of Village Three North and a Portion of Village Four could cause a substantial change in the significance of this identified archaeological resource as defined in CEQA Guidelines Section 15064.5, impacts to this site would be **potentially significant** and mitigation would be required.

Village Eight East

The archaeological study of the Village Eight East project area identified 26 cultural resource sites. Of the 26 resources recorded, 15 sites would be directly impacted by the proposed development of Village Eight East. One regionally/locally important site (Site SDI-12,809) would be directly affected by the project and 14 are identified as not significant.

Site SDI-12,809 is characterized as a major occupation site and would be directly impacted, although the eastern third of the site would not. Direct potential impacts to this site would be significant. Within the grading envelope for Village Eight East, the portion of SDI-12,809 that will be impacted measures approximately 175,443 square meters (the remaining 152,106 square meters of the site has either been affected by SR-125 or lies east of SR-125 and will be preserved). SDI-12,809 is comprised of 11 loci, five of which will be disturbed as a result of the proposed project. A Data Recovery Program for these five loci will be required in order to reduce potential impacts.

14 sites (SDI-I-446, SDI-4741, SDI-4789, SDI-11,372, SDI-11,373, SDI-11,383/H, SDI-12,272/H, SDI-12,287, SDI-18,615, SDI-18,616, SDI-18,617, SDI-18,618, SDI-20,201, and SDI-20,472) are identified as having limited importance, and thus are not significant. The loss of 14 non-significant sites may appear to be an issue; however, the majority of these sites are recorded as very sparse, low density lithic scatters lacking any substantial subsurface component or any further research potential.

The remaining 11 sites are outside of the proposed development area and would not be directly impacted by the development of Village Eight East. Furthermore, for those resources located outside of the development envelope, whether evaluated as significant or not, no indirect impacts are likely to occur, as these will all be protected as part of the open space preserve, with the exception of Site SDI-14,205, which was previously destroyed by the construction of SR-125 (SDI-4731, SDI-4740, SDI-4743, SDI-4790, SDI-9980, SDI-9981, SDI-11,374, SDI-11,952, SDI-14,194, SDI-14,195, and SDI-14,205).

Although no direct impacts to these sites are anticipated as a result of development of Village Eight East, potential indirect impacts associated with intrusion into these sites during or after construction of the proposed project, may occur. In addition, one regionally/locally important

site would be directly impacted by grading and brushing associated with development of Village Eight East (SDI-12,809). SDI-12,809 is characterized as a major occupation site, although the entire site would not be impacted by the proposed project. Development of Village Eight East could cause a substantial change in the significance of these identified archaeological resources as defined in CEQA Guidelines Section 15064.5. Therefore, impacts to these sites would be **potentially significant** and mitigation would be required.

Village Ten

The archaeological study of the Village Ten project area identified a total of 13 cultural resources. Ten of the 13 sites would be impacted by the proposed development of Village Ten (SDI-4727, SDI-4728, SDI-4729, SDI-4730, SDI-11,375, SDI-11,377, SDI-20,441, SDI-20,442, SDI-20,443, and SDI-20,551). These ten cultural resources identified in the Village Ten project area were determined to be not significant under the guidelines set forth by CEQA Guidelines Section 15064.5. The loss of ten non-significant sites would not be critical since these sites were recorded as very sparse, low density lithic scatters lacking any substantial subsurface component or any further research potential.

The remaining three sites would not be directly impacted since they are located outside the proposed development area (SDI-14,199, SDI-10,875, and P-37-032254). Two of the three sites are assumed to be significant based on the CEQA criteria (SDI-14,199 and SDI-10,875). However, no direct impacts to these sites are anticipated as a result of development of Village Ten because they are all located outside the development envelope. Potential indirect impacts associated with intrusion into these sites during or after construction of the proposed project, may occur. Therefore, since development of Village Ten could cause a substantial change in the significance of these identified archaeological resources as defined in CEQA Guidelines Section 15064.5, impacts to these sites would be **potentially significant** and mitigation would be required.

Off-Site Improvement Areas

The archaeological study of the off-site improvement areas identified a total of 16 cultural resources (SDI-4726, SDI-12,286, SDI-20,553, SDI-20,554, SDI-20,737, SDI-20,738, SDI-20,739, SDI-20,741,SDI-12,293, SDI-14,203, SDI-12,291a, SDI-14,176, SDI-20,551, SDI-20,441, SDI-20,443, and SDI-12,809 Locus E). All of these resources would be impacted by the development of the proposed off-Site Improvements. None of these tested archaeological sites were identified as significant based on CEQA Guidelines Section 15064.5. The loss of these 16 non-significant sites may appear to be an issue; however, the majority of these sites were recorded as very sparse, low density lithic and marine shell scatters lacking any substantial subsurface component or any further research potential. Since development of the off-site

improvement areas would not cause a substantial change in the significance of identified archaeological resources as defined in CEQA Guidelines Section 15064.5, impacts would be **less than significant**.

Overall Project Area

In addition to the specific cultural resources that have been identified within each the areas described above, the potential to encounter unrecorded cultural sites during grading is considered high, given the density of archaeological sites within the project area. In the event that unrecorded cultural resources are discovered during grading for the proposed project, impacts to such resources would be **potentially significant** and mitigation would be required.

C. Disturb any human remains, including those interred outside of formal cemeteries.

No human remains were identified within the project area during the cultural testing program. However, the possibility exists that human remains may be discovered during project grading and construction. Any disturbance of human remains that may occur during project grading or construction would be significant. Therefore, impacts would be **potentially significant** and mitigation would be required to reduce potential impacts.

5.6.4 Level of Significance Prior to Mitigation

Implementation of the proposed project would result in direct and indirect impacts to cultural resources. Impacts would be considered **potentially significant** prior to mitigation.

5.6.5 Mitigation Measures

The following mitigation measures are recommended to reduce significant impacts to recorded archaeological resources, unrecorded subsurface archaeological resources, and unrecorded human remains within the project area and off-site improvement areas. In addition to the following mitigation measures, MM PAL-2 through MM PAL-4 would also reduce significant impacts to cultural resources.

MM CUL-1 Prior to issuance of land development permits, including clearing or grubbing and grading permits, the Applicant shall provide written confirmation and incorporate into grading plans, to the satisfaction of the Development Services Director or their designee, that a principal investigator (PI) meeting the criteria listed in the Secretary of the Interior guidelines (36 CFR 61) has been retained in an oversight capacity to ensure that an archaeological monitor(s) will be present during all cutting of previously undisturbed soil. If these cutting activities occur in more than one location, multiple monitors shall be provided to monitor these areas, as

determined necessary by the PI. Native American monitoring will only be required in the event that human remains are discovered and identified as Native American. The location and duration of monitoring by a Native American representative will be determined by the Consulting Archaeologist and will be focused strictly upon the area corresponding to the discovery of human remains.

MM CUL-2 During the initial grading of previously undisturbed soils within the SPA Plan areas) and off-site improvement areas, prehistoric and historic resources may be encountered. In the event that the archaeological monitor identifies a potentially significant site, the monitor shall secure the discovery site from further impacts by delineating the site with staking and flagging, and by diverting grading equipment away from the archaeological site. Following notification to the City, the archaeological monitor shall conduct investigations as necessary to determine if the discovery is significant under the criteria listed in CEQA and the environmental guidelines of the City. If the discovery is determined to be not significant, grading operations may resume and the archaeological monitor shall summarize the findings in a letter report submitted to the City following the completion of mass grading activities. The letter report shall describe the results of the on-site archaeological monitoring, each archaeological site observed, the scope of testing conducted, results of laboratory analysis (if applicable), and conclusions. The letter report shall be completed to the satisfaction of the City of Chula Vista's Development Services Director or their designee prior to the release of grading bonds. Any artifacts recovered during the evaluation of resources shall be curated at a facility approved by the City.

MM CUL-3 For the cultural prehistoric/historic resources that are determined to be significant, alternate means of achieving mitigation shall be pursued. In general, these forms of mitigation include:

A. site avoidance by preservation of archaeological site in a natural state in open space, or in specific open space easements,

B. site avoidance by preservation through capping the site and placing landscaping on top of the fill,

C. data recovery through implementation of an excavation and analysis program,

D. a combination of one or more of the above measures.

See Chapter 9.0 in the *Cultural Resources Study for the University Villages Project at Otay Ranch* (Appendix F of this EIR) for the detailed mitigation and monitoring program for each of the identified significant sites that would be impacted.

MM CUL-4 For those sites that are found to contain significant resources and for which avoidance and preservation is not feasible or appropriate, the Applicant shall prepare a Data Recovery Plan. The plan will, at a minimum, include the following:

A. a statement of why data recovery is appropriate as a mitigation measure,

B. a research plan that explicitly provides the research questions that can reasonably be expected to be addressed by excavation and analysis of the site,

C. a statement of the types and kinds of data that can reasonably be expected to exist at the site and how these data will be used to answer important research questions,

D. a step-by-step discussion of field and laboratory methods to be employed,

E. provisions for curation and storage of the artifacts, notes, and photographs will be stated.

Grading operations within the affected area may resume once the site has been fully evaluated and mitigated to the satisfaction of the Development Services Director or their designee. ~~All significant artifacts collected during the implementation of the Data Recovery Plan shall be curated at a facility approved by the City.~~ All artifacts collected during the survey, test, data recovery, and monitoring programs for this project shall be permanently curated at a qualified facility approved by the City of Chula Vista. Artifacts shall be prepared for curation in accordance with the guidelines of the selected curation facility.

MM CUL-5 Following the completion of mass grading operations, the Applicant shall prepare a plan that addresses the temporary on-site presentation and interpretation of the results of the archaeological studies for the proposed project. This could be accomplished through exhibition within a future community center, civic building and/or multi-purpose building. Any artifacts used for public displays shall be selected from the curated collections originating from the project. This exhibition will only be for temporary display of artifacts for public interpretation and display purposes. Artifacts selected for the exhibit shall be withdrawn on loan from the curation facility and will subsequently be returned to that facility upon the close of the exhibition. The applicant will be responsible for the artifacts during the display period and for the return of the artifacts at the close of the exhibition. The consulting archaeologist shall act on the applicant's behalf to coordinate the curation of all collections and the subsequent use of selected artifacts for the public display.

~~This exhibition will only be for temporary curation display of those materials being actively used for interpretation and display, and that permanent curation of artifacts and data will be at a regional repository that meets the standards of the State Historical Resource Commission's *Guidelines for the Curation of Archaeological Collections*, dated May 7, 1993, when one is established. All significant artifacts collected during the implementation of the Data Recovery Plan shall be permanently curated at a facility approved by the City.~~

MM CUL-6 If human remains are discovered during grading or site preparation activities within the SPA Plan area(s) and off-site improvement areas, the archaeological monitor shall secure the discovery site from any further disturbance. State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the San Diego County Coroner has made the necessary findings as to the origin and disposition of the remains pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC will then identify the person(s) thought to be the Most likely Descendent (MLD) of the deceased Native American. The MLD will assist the City in determining what course of action shall be taken to deal with the remains. Grading operations within the affected area may resume once the site has been fully evaluated and mitigated to the satisfaction of the Development Services Director or their designee. The Archaeological Monitor shall summarize the findings in a letter report to the City following the completion of mass grading activities.

5.6.6 Level of Significance After Mitigation

The mitigation measures listed in Section 5.6.5 would reduce potential impacts to cultural resources to a **less than significant** level.

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5.7 PALEONTOLOGICAL RESOURCES

This section of the EIR tiers from the 1993 Otay Ranch GDP Program EIR, because potential impacts to paleontological resources due to development in the entire Otay Ranch area were analyzed as part of the 1993 Otay Ranch GDP. The 1993 Otay Ranch GDP Program EIR determined that impacts to paleontological resources would be less than significant with implementation of specific mitigation measures.

This section of the EIR also tiers from the 2005 GPU/GDPA Program EIR, because potential impacts to paleontological resources due to development in the entire Otay Ranch area were also analyzed as part of the 2005 GPU/GDPA. Similar to the 1993 Otay Ranch GDP Program EIR, the 2005 GPU/GDPA determined that compliance with City policies and objectives, as well as specific mitigation measures, would result in less than significant impacts to paleontological resources.

This section of the EIR analyzes impacts to paleontological resources resulting from the proposed project. The discussion found in this section is based on the *University Villages Paleontological Resource and Monitoring Assessments for Village Three North, a Portion of Village Four, Village Eight East, and Village Ten*, prepared by Brian F. Smith and Associates Inc. in March 2014. The complete reports are contained in Appendix G of this EIR.

5.7.1 Existing Conditions

Paleontology is a branch of geology that studies the life forms of the past, especially prehistoric life forms, through the study of plant and animal fossils. Paleontological resources represent a limited, non-renewable, and impact-sensitive scientific and educational resource. As defined in this section, paleontological resources are the fossilized remains or traces of multi-cellular invertebrate and vertebrate animals and multi-cellular plants, including their imprints from a previous geologic period. Fossil remains such as bones, teeth, shells, and leaves are found in the geologic deposits (rock formations) where they were originally buried. Paleontological resources include not only the actual fossil remains, but also the collecting localities, and the geologic formations containing those localities.

5.7.1.1 Regulatory Framework

State Level

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is the principal statute governing environmental review of projects occurring in the state. CEQA requires lead agencies to determine if a proposed project would have a significant effect on archeological resources (Public Resources

Code [PRC] Sections 21000 et seq.). Paleontological resources are also afforded protection by environmental legislation under CEQA. Appendix G (part V) of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources and states, "a project will normally result in a significant impact on the environment if it will …disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study." The City of Chula Vista assesses and mitigates the potential impacts of private development and public facilities and infrastructure to paleontological resources pursuant to the provisions of CEQA. Pursuant to Section 15065 of the CEQA Guidelines, a lead agency must find that a project may have a significant effect on the environment where the project has the potential to eliminate important examples of the major periods of California prehistory, which includes the destruction of significant paleontological resources.

California Public Resources Code

Section 5097.5 of the Public Resources Code (PRC) specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, the California Penal Code Section 622.5 sets the penalties for damage or removal of paleontological resources.

Local Level

The City of Chula Vista General Plan

The City of Chula Vista includes protections for paleontological resources in the General Plan. The Environmental Element includes objectives to protect important paleontological resources and support and encourage public education and awareness of such resources (Objective E 10).

5.7.1.2 Existing Setting

The following discussion describes the existing paleontological conditions within each of the villages that comprise the project site, Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. A detailed overview of the paleontology of the project vicinity is provided in Appendix G of the EIR.

Geologic Setting

Sweetwater Formation

The upper middle Eocene (~ 42- to ~ 37-million-year-old) Sweetwater Formation is exposed in the southwestern corner of the project site along the north bank of the Otay Valley Regional Park (OVRP). These sensitive paleontological exposures are located the confluence of Wolf Canyon and Otay Valley. The Sweetwater Formation is composed of several stacked sedimentary sequences with each sequence containing a basal channel fill of gravelly gritstone and sandstone,

which fine upward into reddish siltstones and mudstones. The Sweetwater Formation overlies gray sandstones of the Mission Valley Formation farther to the west. At Wolf Canyon, on the east side of the project site, the Sweetwater Formation is about 60 feet thick. Sedimentary structures and the nature of the mudstones indicate an entirely non-marine origin for the formation. The Sweetwater Formation has been assigned a "high paleontological sensitivity" (Brian F. Smith 2014).

Otay Formation

The Otay Formation is divided into three informal members by paleontologists at the San Diego Natural History Museum: an upper sandstone-mudstone member, a middle gritstone member, and a basal angular-clast fanglomerate member. On local geologic maps, the formation is divided into an upper member, and a lower pebbly conglomerate, gritstone and sandstone member. Numerous fossil localities have been discovered in the upper sandstone-mudstone member and the middle gritstone member, but have yet to be recorded from the basal fanglomerate. The upper member of the Otay Formation has been assigned a "high paleontological resource sensitivity," and the middle and lower members have been assigned a "moderate paleontological resource sensitivity." The lower member is relatively thick around Lower Otay Reservoir, but thins to the west and is exposed on either side of Otay Valley above the Quaternary terrace deposits and below the middle and upper members of the Otay Formation (Brian F. Smith 2014).

San Diego Formation

The San Diego Formation is divided into a lower sandstone member and an upper conglomerate member. Numerous fossil localities have been discovered in the sandstone member, but none from the conglomerate member. Because of the extremely important remains of fossil marine mammals, sea birds, bivalve and gastropod mollusks, as well as other groups of invertebrates and paleobotanical remains that have been found, this formation has been assigned "high paleontological resource sensitivity." Because of the great diversity of organisms known from the San Diego Formation, it is now considered to be one of the most important sources of Pliocene marine life in California (Brian F. Smith 2014). A list of species found at each of the documented localities is provided in Appendix G.

Lindavista Formation

The Lindavista Formation is present across all of the older Pleistocene marine terraces in San Diego County from the San Onofre area in the northern part of the county and southward into northernmost Baja California. The Lindavista Formation is rarely fossiliferous, and the only published faunal account, mainly of bivalve mollusks and barnacles, is from the Tierrasanta area of San Diego many miles to the north. Nevertheless, most exposures of the Lindavista Formation are assigned a "moderate paleontological resource sensitivity" (Brian F. Smith 2014).

Quaternary Terrace Deposits

Quaternary terrace deposits, which represent remnants of flood plain deposits of the ancestral Otay River, are present on both the north and south sides of the present OVRP. The major river drainages in San Diego County, from the Santa Margarita River Valley in the north, and including the Sweetwater River Valley in the south, have on occasion yielded important late Pleistocene ("Ice Age") terrestrial vertebrate fossils such as extinct bison, camel, mammoth, mastodon, giant ground sloth, and others. The Quaternary terrace deposits have thus been assigned "moderate paleontological resource sensitivity" (Brian F. Smith 2014).

Quaternary Alluvium and Slope Wash

Quaternary alluvium, fluvial flood plain deposits and slope wash are mapped across the present OVRP. Geologically, these deposits are considered to be geologically too young to yield significant fossil resources, and thus are typically assigned a "low paleontological resource sensitivity." Paleontological monitoring of Quaternary alluvial deposits is not regarded as necessary or even warranted (Brian Smith 2014).

Santiago Peak Volcanics

The Santiago Peak Volcanics consist of mildly metamorphosed volcanic and volcaniclastic rocks, but are predominantly andesite and dacite in composition. The only exposures of the metavolcanic rocks in the project area are within Village Eight East project site in the far western corner of the area below Rock Mountain. The metavolcanic parts of the Santiago Peak Volcanics are assigned a "marginal paleontological resource sensitivity" and would not be expected to yield any fossils (Brian F. Smith 2014).

Village Three North and a Portion of Village Four

Geologically, the Village Three North and a Portion of Village Four project area is underlain by several sedimentary formational rock units, being, from oldest to youngest, the middle Eocene Sweetwater Formation (fringing the north side of the OVRP), the upper Oligocene Otay Formation (across most of the northern part of the property), the middle Pliocene San Diego Formation, the lower Pleistocene Lindavista Formation (both along the northern fringe of the project), and upper Quaternary alluvial and fluvial sediments deposited on ancestral floodplain terraces of the Otay River (terraces above the current valley floor). Minor exposures of Holocene alluvium and slope wash of the modern Otay River floodplain are present in the extreme southwest and southeast corners of the project area.

A collections and records search by the Department of Paleontology at the San Diego Natural History Museum didn't produce any records of fossil localities within Village Three North and

Portion of Village Four; however, the records search did yield a total of 56 fossil localities identified within a 1-mile radius of the Village Three North and a Portion Village Four project site.

Village Eight East

Geologically, the Village Eight East project area is underlain by sedimentary and metamorphic formational rock units, being, from oldest to youngest, the Lower Cretaceous Santiago Peak Volcanics (westernmost corner of the project area below Rock Mountain), the upper Oligocene Otay Formation (the upper sandstone-mudstone member and middle gritstone member across most of the northern part of the property, as well as the lower fanglomerate member in exposures on the north side of the Otay Valley), and upper Quaternary alluvial and fluvial sediments deposited on floodplain terraces of the ancestral Otay River (terraces above the north and south sides of the current valley floor). Holocene alluvium and fluvial sediments of the modern Otay River floodplain encompass much of the southern part of the project area.

A collections and records search by the Department of Paleontology at the San Diego Natural History Museum yielded a total of 28 fossil localities, one within the bounds of the project site (SDSNH loc. 5946) and 27 more within a 1-mile radius of the Village Eight East project site.

Village Ten

The geology of the Village Ten project site within Otay Ranch is shown on the geologic map of the Otay Mesa quadrangle. Geologically, the Village Ten project site is underlain by several sedimentary units representing, from oldest to youngest, the upper Oligocene lower, middle, and upper members of the Otay Formation, and upper Quaternary alluvial and fluvial sediments deposited on ancestral floodplain terraces of the Otay River. The lower, fanglomerate member of the Otay Formation is present along the southern and eastern edges of the project site and is mapped as Tertiary fanglomerate, whereas the middle and upper members, which encompass the northern two thirds of the project site. Minor exposures of Holocene alluvium and slopewash of the modern Otay River floodplain may be present along the southernmost margin of the project site.

A collections and records search by the Department of Paleontology at the San Diego Natural History Museum produced no previously recorded fossil localities within Village Ten; however, the records search did yield a total of 25 fossil localities located within a 1-mile radius of the Village Ten project site.

5.7.2 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 paleontological impact. Impacts to paleontological resources would be significant if the proposed project would:

A. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

B. Be inconsistent with General Plan paleontological policies thereby resulting in a significant physical impact.

5.7.3 Impacts

The following discussion of impacts includes an analysis of impacts associated with the construction of the proposed project. Once constructed, the proposed project would not have the potential to impact paleontological resources; therefore, operational impacts are not analyzed in this section.

A. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Village Three North and a Portion of Village Four

No fossil sites were found within the bounds of the Village Three North and a Portion of Village Four project site. However, development of the area within Village Three North and a Portion of Village Four would encounter sedimentary rocks with a "high paleontological resource sensitivity" that are assigned to the Sweetwater Formation, the upper sandstone-mudstone member of the Otay Formation and the San Diego Formation; sedimentary rocks with a "moderate paleontological resource sensitivity" are assigned to the Lindavista Formation and Quaternary terrace deposits. Therefore, grading and construction activities may impact fossils potentially buried in the underlying formations. Based upon the recognized potential to encounter fossils in these formations, impacts are considered **potentially significant,** and mitigation would be required.

Village Eight East

One fossil site was found within the bounds of the Village Eight East project site (SDSNH loc. 5946). This exposure was a road cut made during the construction of SR-125, but was subsequently graded away (SDNHM collections records, Appendix G). The analysis of the paleontological data gathered for this project has led to the conclusion that the Village Eight East property contains geological formations characterized as fossiliferous. A "high paleontological

resource sensitivity" has been assigned to the upper sandstone-mudstone member of the Otay Formation, and a "moderate paleontological resource sensitivity" to the middle and lower members of the Otay Formation and the Quaternary terrace deposits. Grading and construction activities may impact fossils potentially buried in the underlying formations. The occurrence of fossils within the covered bedrock cannot be evaluated prior to exposure. Based upon the recognized potential to encounter fossils in these formations, impacts are considered **potentially significant**, and mitigation measures would be required.

Village Ten

Based on records search, no fossil sites were found within the bounds of the Village Ten project site. However, the analysis of the paleontological data gatered for this project has lead to the conclusion that the Village Ten project site contains geological formations characterized as fossiliferous. A "high paleontological resource sensitivity" has been assigned to the upper sandstone-mudstone member of the Otay Formation and a "moderate paleontological resource sensitivity" to the middle and lower members of the Otay Formation and the Quaternary terrace deposits. Grading and construction activities may impact fossils potentially buried in the underlying formations. The occurrence of fossils within the covered bedrock cannot be evaluated prior to exposure. Based upon the recognized potential to encounter fossils in these formations, impacts are considered **potentially significant,** and mitigation measures would be required.

Off-Site Improvement Areas

Similar to the project sites described above, off-site improvement areas are designated as "moderate to high paleontological resource sensitivity." Grading and construction activities may impact fossils potentially buried in the underlying formations. The occurrence of fossils within the covered bedrock cannot be evaluated prior to exposure. Based upon the recognized potential to encounter fossils in these formations, impacts are considered **potentially significant,** and mitigation measures would be required.

The scientific value of fossils is in the information they contain rather than in the fossilized materials themselves. Thus, any mitigation program must focus upon recovering, not every fossil and/or fossil fragment encountered, but rather those fossils that are sufficiently complete and diagnostic to allow generic and specific identifications. Potential impacts caused by construction of the proposed project would be mitigated through implementation of a comprehensive program of construction monitoring, fossil salvage, fossil preparation, fossil curation, fossil storage and summary report preparation. While sensitive resources may be encountered during project grading, the recovery of these resources for scientific study would minimize potential impacts. However, impacts would still be considered **potentially significant** prior to mitigation.

B. Would the project be inconsistent with General Plan paleontological policies thereby resulting in a significant physical impact?

Appendix B lists the relevant paleontological goals, objectives, and policies found in the General Plan. The table also verifies the proposed project's consistency with each. The proposed project would comply with all necessary procedures to protect and minimize damage to paleontological resources through mitigation measures, public education, and awareness of such resources. The proposed project would be consistent with all General Plan goals, objectives, and policies related to paleontological resources, impacts would be **less than significant** with respect to this threshold.

Appendix B also details the proposed project's consistency with the Otay Ranch GDP. The proposed project identified sensitive and significant paleontological resources and mitigation measures have been provided to reduce potential impacts to these resources, including fossil recovery. The proposed project would be consistent with all Otay Ranch GDP goals, objectives, and policies related to paleontological resources, impacts would be **less than significant** with respect to this threshold.

The proposed project is in compliance with the General Plan and Otay Ranch GDP. The project site has a high potential for paleontological resources in certain areas and the paleontological resource investigation outlined in this chapter identified potential paleontological resources, and provided adequate mitigation to reduce or avoid impacts. Since the project would be consistent with the General Plan and Otay Ranch GDP's policies regarding paleontological resources, potential impacts would be **less than significant** with respect to this threshold.

5.7.4 Level of Significance Prior to Mitigation

Due to the proximity of potential paleontological resources, impacts associated with the proposed project would be considered potentially significant prior to mitigation.

5.7.5 Mitigation Measures

MM PAL-1 Prior to the issuance of grading permits for the proposed project, including the Off-site Improvement Areas, the Applicant shall confirm to the Development Services Director, or their designee, that a qualified paleontologist (QP) has been retained to carry out an appropriate mitigation program. A QP is defined as an individual with a doctorate or a master's degree in paleontology or geology, who is familiar with paleontological procedures and techniques. A pre-grade meeting shall be held between the paleontologist and the grading and excavation contractors.

MM PAL-2 A paleontological monitor shall be on site at all times during the original cutting of previously undisturbed sediments of highly sensitive geologic formations (i.e., San Diego, Otay, and Sweetwater formations) to inspect cuts for contained fossils. (A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.) The paleontological monitor shall work under the direction of a qualified paleontologist. The monitor shall be on site on at least a half-time basis during the original cutting of previously undisturbed sediments of moderately sensitive geologic formations (i.e., unnamed river terrace deposits of the Mission Valley Formation) to inspect cuts for contained fossils.

a. The monitor shall be on site on at least a quarter-tie basis during the original cutting of previously undisturbed sediments of low sensitivity geologic formations (i.e., Lindavista Formation and Santiago Peak Volcanics [metasedimentary portion only] to inspect cuts for contained fossils. He or she shall periodically (every several weeks) inspect original cuts in deposits with an unknown resource sensitivity (i.e., Quaternary alluvium).

b. In the event that fossils are discovered in unknown, low, or moderately sensitive formations, the Applicant shall increase the per-day field monitoring time. Conversely, if fossils are not discovered, the monitoring, at the discretion of the Planning Department, shall be reduced. A paleontological monitor is not needed during grading of rocks with no resource sensitivity (i.e., Santiago Peak Volcanics, metavolcanic portion).

MM PAL-3 When fossils are discovered, the paleontologist (or paleontological monitor) shall recover them. In most cases, this fossil salvage can be completed in a short period of time. However, some fossil specimens (such as a complete whale skeleton) may require an extended salvage time. In these instances, the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovery of small fossil remains such as isolated mammal teeth, it may be necessary in certain instances and at the discretion of the paleontological monitor to set up a screen-washing operation on the site.

MM PAL-4 Prepared fossils along with copies of all pertinent field notes, photos, and maps shall be deposited in a scientific institution with paleontological collections such as the San Diego Natural History Museum. A final summary report shall be completed. This report shall include discussions of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils.

5.7.6 Level of Significance After Mitigation

The mitigation measures explained above would reduce potential impacts to paleontological resources to **less than significant** level.

5.8 BIOLOGICAL RESOURCES

This EIR tiers from the 2005 GPU EIR and the 1993 Program EIR for the Otay Ranch GDP because biological resources for the entire Otay Ranch area, including the proposed project area, were analyzed as part of the 2005 GPU Program EIR and the 1993 Otay Ranch GDP Program EIR. The 2005 GPU determined impacts to biological resources to be less than significant with implementation of General Plan objectives and policies, and no mitigation measures were recommended. Conversely, the 1993 Otay Ranch GDP determined that impacts to biological resources would be significant and unavoidable even with required mitigation measures. This section describes the existing biological resources within the project area, analyzes the potential environmental effects of development on Village Three North, Portion of Village Four, Village Eight East, and Village Ten (proposed project), and recommends mitigation measures where necessary to reduce or avoid significant effects. Findings are based on the *Biological Technical Report for the Otay Ranch University Villages Project City Of Chula Vista, San Diego County, California* (Biological Technical Report) prepared by Dudek in March 2014 (see Appendix E).

5.8.1 Existing Conditions

Biological resource surveys of portions of the project site were conducted by various consultants during the early 1990s. Supplemental resource surveys of the project site were conducted by biologists from Dudek from 1997 to 2011 to map vegetation and jurisdictional waters and survey for plant and animal species recognized as special-status by local, state, or federal wildlife agencies and/or environmental organizations. Vegetation mapping that was previously completed for the project site was verified in 2012 and 2013 during mapping of off-site areas.

5.8.1.1 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 postconstruction 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

County of San Diego

One of the off-site improvement areas is located within the jurisdiction of the County of San Diego, and, therefore, impacts to this off-site area (Otay Landfill) are required to comply with the regulations set forth by the County. In compliance with the MSCP Subregional Plan and the County of San Diego Subarea Plan (County MSCP; October 1997), the County established the Biological Mitigation Ordinance (BMO; March 1998) to provide the requirements and mitigation measures necessary for projects within the Plan area. Certain areas within the County MSCP were designated as pre-authorized "take" areas. The take areas designated in the County MSCP were developed through a comprehensive planning effort with the affected jurisdictions and describe areas that are not subject to further mitigation because direct and cumulative impacts to MSCP covered species were considered in the overall MSCP planning effort. The County specifically exempted the take areas from the BMO at Article III. A. 4., which states that "[t]his Ordinance shall not apply to the following: any Take Authorization Area approved by the Board of Supervisors and the wildlife agencies as part of the County MSCP Subarea Plan, as shown on Attachment B, or any approved Habitat Loss Permit issued pursuant to 16 U.S. C. sec. 1533 (d)." The landfill is located within the South County section and the proposed impact area is designated as Take Authorized. As such and in accordance with the County MSCP and BMO, no additional biological mitigation is required for development to occur. The "take" as defined by the Endangered Species Act already has been adequately mitigated in the form of land set aside as "Hard Lined" preserves during the negotiations between the landowners, wildlife agencies, and County during preparation of the MSCP Subarea Plan.

City of Chula Vista General Plan

The Environmental Section of the Chula Vista General Plan includes Goals and Policies designed to conserve the City's sensitive biological resources. This is accomplished primarily through the City of Chula Vista MSCP Subarea Plan, which was adopted as part of the General Plan on May 13, 2003.

City of Chula Vista Multiple Species Conservation Program Subarea Plan

The MSCP Subregional Plan is implemented through local Subarea Plans adopted by each jurisdiction receiving Take authorization for covered species. The Chula Vista Subarea Plan was prepared pursuant to the general outline developed by the Wildlife Agencies to meet the requirements of the NCCP. The Chula Vista Subarea Plan is also consistent with the MSCP Subregional Plan and qualifies as a Subarea Plan document to implement the MSCP Subregional Preserve within the City.

The Chula Vista Subarea Plan was approved in 2003 and formed the basis for Take Authorization pursuant to Federal 10(a)(1)(B) permit and State 2835 permit. Take Authorization was granted to the City in January 2005 with the execution of the Implementing Agreement by and among the City and Wildlife Agencies and subsequent permit issuance. The MSCP 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. 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 MSCP 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 MSCP 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 MSCP 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 MSCP 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 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.

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 Otay Ranch 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.

5.8.2 Methodology

The biological analysis included a literature review, resources mapping, focused surveys for plant and wildlife species, and a jurisdictional delineation.

Resource Mapping

Vegetation mapping, jurisdictional delineations, and focused plant and wildlife surveys for the proposed project, including off-site areas, occurred from 2003 to 2013. Resource mapping for off-site areas that overlap with property owned by Otay Land Company, specifically Village Eight West and Village Nine, was obtained from the biological resources reports for those villages (URS 2012a, 2012b).

Vegetation mapping was conducted for Village Three North in February and July 2003. The vegetation for Portion of Village Four and Village Eight East was mapped in 2008. Vegetation mapping at Village Ten was conducted in 2008 and 2010. The off-site areas south and west of Village Three North (Areas 1 and 5) were mapped in September 2011 and in March 2012. Vegetation mapping for all project components (i.e., all three villages, Portion of Village Four, off-site areas and areas associated with the Boundary Adjustment) were verified during the 2012 and 2013 off-site mapping. Area 2 of the off-site impact areas outside of Otay Ranch, and within

the County jurisdiction, was mapped by using regional MSCP mapping; no site-specific survey was conducted due to lack of permission to access.

Jurisdictional Resources

A jurisdictional delineation for Village Three North was conducted in February and July 2003 and for the Portion of Village Four it was conducted in 2008. The jurisdictional delineation for the Village Eight East site was conducted in 2008 and 2010 and at this time the delineation for Village Three North was verified. The jurisdictional delineation for Village Ten was conducted in 2011.

Rare Plants

Focused surveys for special-status plant species were conducted at the Village Three North site in May 2003 and surveys for Otay tarplant (*Deinandra conjugens*) on the Village Three North site were conducted in June and July 2003. In summer 2010 and spring 2011, the 2003 surveys were updated or confirmed by conducting new focused surveys for special-status plant species including surveys for Otay tarplant. At the Village Eight East site and Village Ten, rare plant surveys were conducted in spring 2011 and the focused survey for Otay tarplant was conducted in summer 2010.

All surveys were conducted on foot via meandering transects throughout the entire project site with the exception of areas of intense agricultural disturbance and the revegetated maritime succulent scrub areas. The areas of intense agricultural disturbance were surveyed first from a vehicle to identify remnant patches of potential habitat for native species. The remnant patches were then surveyed on foot. The revegetated maritime succulent scrub areas were not surveyed for individual stem counts in order to avoid disturbing revegetation efforts. Population estimates were made based on estimated densities of sample plots.

California Gnatcatcher

Focused surveys for California gnatcatcher (*Polioptila californica californica)* were conducted in February 2003 by Dudek Biologist Brock A. Ortega at Village Three North. In 2011, Dudek conducted focused surveys for California gnatcatcher within the project area site in accordance with the USFWS survey protocol (USFWS 1997) using standard meandering transects within suitable habitat during suitable weather conditions. All suitable habitats for California gnatcatcher, including all forms of coastal sage scrub and maritime succulent scrub, were surveyed at each site.

Quino Checkerspot Butterfly

Focused surveys for the Quino checkerspot butterfly (*Euphydryas editha quino*) were conducted in 2011 by Dudek Biologists. The survey area within Village Three North included the Boundary Adjustment areas along Wolf Canyon in the eastern portion of the project site. Within Village Eight East, the non-agricultural lands in the southern portion were surveyed for Quino checkerspot. Almost all of Village Ten was surveyed for Quino checkerspot, except for some areas in the northern portion of the site. These surveys were conducted in accordance with the USFWS protocol (USFWS 2002).

Vernal Pool Branchiopods

Wet season surveys of a potential vernal pool within the Village Three North project area were conducted in the winter of 2003–2004, 2004–2005, and 2011–2012. Surveys were conducted in accordance with USFWS survey protocol by Dudek biologists. The updated 2011 wet season survey for Village Three North was initiated in November 2011 and was completed in 2012. No vernal pool branchiopod surveys were conducted on Village Eight East and Village Ten due to lack of suitable habitat.

Burrowing Owl/Raptor Nests

Surveys for burrowing owl (*Athene cunicularia*) and raptor nest sites were conducted within all potential development areas on Village Three North in 2003. In 2011, focused surveys for burrowing owl were conducted on all portions of the proposed project. Dudek wildlife biologists evaluated all areas of suitable habitat on foot and via vehicle for suitability for burrowing owl. Suitable habitat for burrowing owl included all areas with the exception of dense chaparral and coastal sage scrub, cactus scrub, and riparian habitats. Suitability for burrowing owl was based on the potential presence of ground squirrel (*Spermophilus beecheyi*) burrows. Suitable areas were surveyed on foot with specific inspection of all visible burrows for sign of burrowing owl. All trees and large stature shrubs were surveyed for sign of potential raptor nests.

5.8.3 Existing Conditions

Of the 1,375.6 acres within the SPA Plan Areas for the three villages, 750.3 acres are designated as outside of the Otay Ranch RMP and Chula Vista MSCP Preserve (i.e., preserve lands, Preserve), while the remaining 624.3 acres are within the Preserve. Within the Preserve, the project includes 18.1 acres of planned and future facilities. The Existing Conditions addresses the total Development Area of 768.4 acres. This includes 32.8 acres of land which is within the SPA Plan Area which is not proposed to be developed as part of the proposed project but are

labeled for future development areas (AR-11, Freeway Lots and "Future Development Area" east of SR-125 in the Village Eight East SPA Plan Area).

5.8.3.1 Special-Status Plant Species

Focused surveys of the project site were conducted according to the methods presented in Section 5.8.2. The data for species locations was recorded using a GPS unit and is represented on Figures 5.8-1 through 5.8-4 by point records where the occurrence is of a single individual and as polygons for a population. GPS of the polygons for a population of special status plants also included recorded the number of individuals within the polygon.

One listed plant species was detected within the project area: Otay tarplant (*Deinandra conjugens*) (federally threatened and state endangered, MSCP Covered, narrow endemic). Twelve other species considered sensitive by various agencies also occur on the project site: California adolphia (*Adolphia californica*), variegated dudleya (*Dudleya variegata*) (MSCP Covered, narrow endemic), South Coast saltscale (*Atriplex pacifica*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), San Diego barrel cactus (MSCP Covered), singlewhorl burrobrush (*Ambrosia monogyra*), small-flowered morning glory (*Convolvulus simulans*), Palmer's grapplinghook (*Harpagonella palmeri*), graceful tarplant (*Holocarpha virgata* ssp. *elongata*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), California boxthorn (*Lycium californicum*), and San Diego County viguiera (*Bahiopsis laciniata*) (Table 5.8-1).

Table 5.8-1
Summary of Special-Status Plant Populations

Special-Status Plant Species	Village Three North and Portion of Village Four	Village Eight East	Village Ten	Total
California adolphia (*Adolphia californica*)	1	—	—	1
California boxthorn (*Lycium californicum*)	9	59	—	68
Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)	—	25	—	25
Otay tarplant (*Deinandra conjugens*)	4,672	—	100	4,772
Palmer's grapplinghook (*Harpagonella palmeri*)	20	—	—	20
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	50	—	—	50
San Diego barrel cactus (*Ferocactus viridescens*)	71	78		149
San Diego County viguiera (*Bahiopsis [Viguiera] laciniata*)	2,796	1,829	2,627	7,085
Singlewhorl burrobrush (*Ambrosia monogyra*)		48		48
Small-flowered morning glory (*Convolvulus simulans*)	17	—	—	17
South Coast saltscale (*Atriplex pacifica*)	12	3	—	15
Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)	—	95	20	115
Variegated dudleya (*Dudleya variegata*)	100	—	—	100

FIGURE 5.8-1

Special Status Species Overview Map

7000

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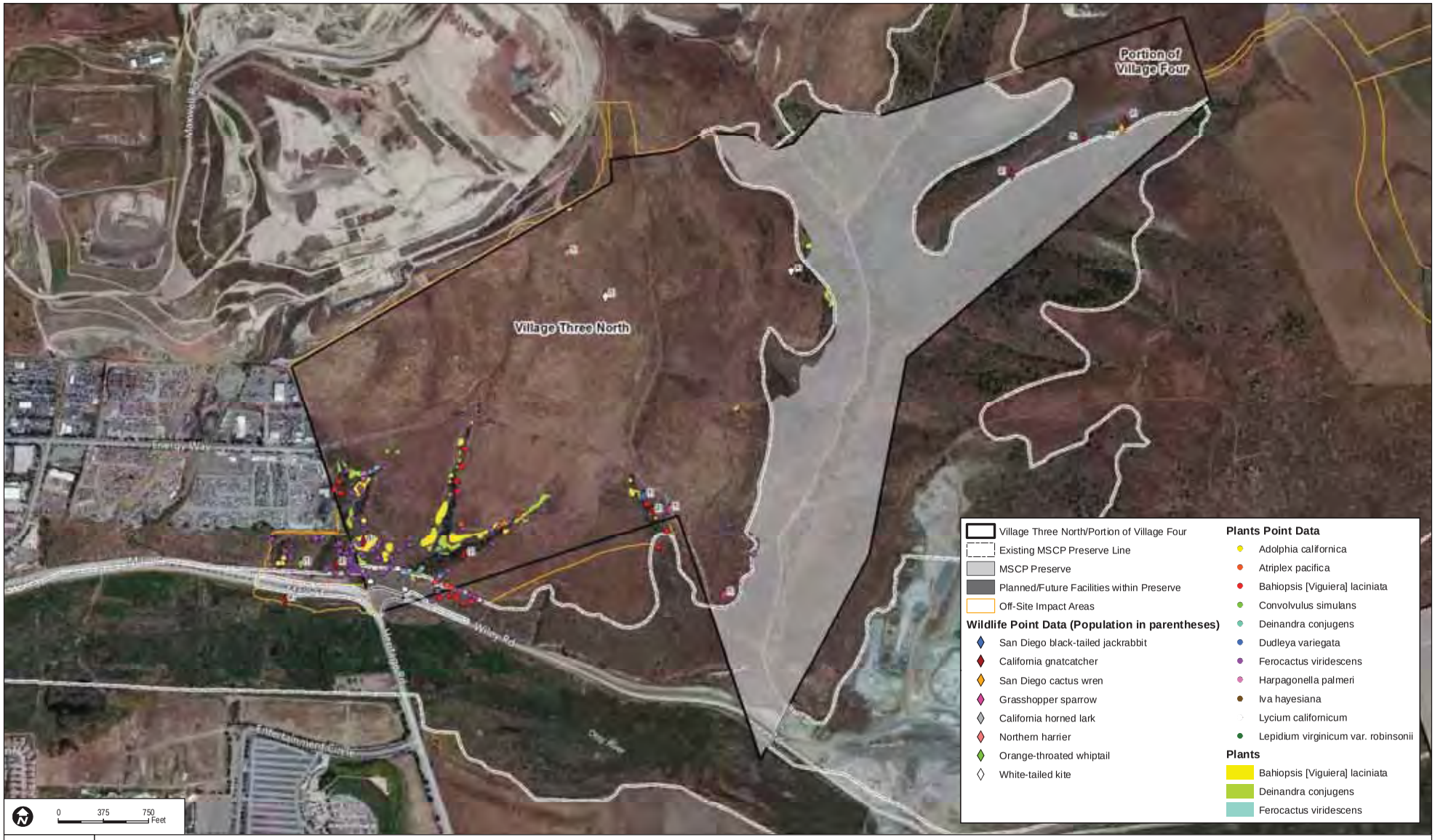

FIGURE 5.8-2

Special Status Species Map - Village Three North/Portion of Village Four

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FIGURE 5.8-3

Special Status Species Map - Village Eight East

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FIGURE 5.8-4

Special Status Species Map - Village Ten

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California adolphia (*Adolphia californica*), CRPR 4.2

California adolphia is a deciduous shrub that blooms from December through May and occurs in chaparral, coastal sage scrub, and valley and foothill grasslands with clay soils (CNPS 2011). One plant was observed within the Village Three North site, along the western edge.

California boxthorn (*Lycium californicum*), CRPR 4.2

California boxthorn is a perennial shrub that blooms December through August and grows in coastal bluff scrub and coastal scrub (CNPS 2011). Approximately 68 individuals were recorded throughout the project site in 2010–2011 and previous years. On the Village Three North site, California boxthorn occurs in the southwestern portion of the site. In addition, this species occurs within the Preserve adjacent to Village Three along Wolf Canyon and in the southwest corner of Village Three North. On Village Eight East, approximately 59 individuals were observed, primarily recorded north of the road along the southern boundary of the site and in an area closer to the center of the site. No California boxthorn individuals were observed on the Village Ten site.

Graceful tarplant *(Holocarpha virgata* ssp. *elongata*), CRPR 4.2

Graceful tarplant is an annual herb that blooms May through November and grows in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland (CNPS 2011). On the Village Eight East site, approximately 25 graceful tarplant individuals occur in the southeastern portion of the project site. No graceful tarplant were observed on Villages Three North and Portion of Village Four or Village Ten.

Otay tarplant (*Deinandra conjugens*), Federally Threatened, State Endangered, CRPR 1B.1, MSCP Covered, Narrow Endemic

Otay tarplant is an annual herb that blooms May through June and grows in coastal scrub and valley and foothill grassland with clay soils (CNPS 2011). On the Village Three North site, locations of Otay tarplant are generally clustered within the canyon topography in the southwest corner of the project site (Figure 5.8-2). In total, the on-site population for all three villages was estimated at 4,637 individuals in 2010–2011. It should be noted that population size of this species varies dramatically from year-to-year depending on rainfall patterns. Approximately 100 individuals were observed near the northeastern section of the Village Ten site (Figure 5.8-4).

Palmer's grapplinghook (*Harpagonella palmeri*), CRPR 4.2

Palmer's grapplinghook is an annual herb that blooms March through May and grows in chaparral, coastal scrub, and valley and foothill grassland (CNPS 2011). On the Village Three North site, Palmer's grapplinghook occurs near the western boundary of the site (Figure 5.8-2).

Approximately 20 individuals were recorded in 2010–2011. Palmer's grapplinghook was not observed on a Portion of Village Four, Village Eight East or Village Ten.

Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), CRPR 1B.2

Robinson's pepper-grass is an annual herb that blooms January through July and grows in chaparral and coastal scrub (CNPS 2011). On the Village Three North site, Robinson's pepper-grass occurs in the southwest corner, along the western and southern boundaries (Figure 5.8-2). There were approximately 50 individuals in 2010–2011. No Robinson's pepper-grass was observed on the Village Eight East or Ten project sites.

San Diego barrel cactus (*Ferocactus viridescens*), CRPR 2.1, MSCP Covered

San Diego barrel cactus is a perennial stem succulent that blooms May through June and grows in chaparral, coastal scrub, valley and foothill grassland, and vernal pools (CNPS 2011). On the Village Three North site, San Diego barrel cactus occurs commonly in the southwest portion and along the edge of Wolf Canyon (Figure 5.8-2). There were approximately 71 individuals recorded on Village Three North/Portion of Village Four in 2010–2011 and previous years. Approximately 78 San Diego barrel cactus individuals occur throughout the southern portion of Village Eight East (Figure 5.8-3).

San Diego County viguiera (*Bahiopsis [Viguiera] laciniata*), CRPR 4.2

San Diego County viguiera is a perennial shrub that blooms February through August and grows in chaparral and coastal scrub (CNPS 2011). On the Village Three North site, San Diego County viguiera occurs as a common component of scrub communities on site. Approximately 2,645 individuals were recorded throughout this area in 2010–2011. Approximately 1,829 individuals were mapped throughout the southern portion of Village Eight East, and approximately 2,611 individuals were mapped throughout Village Ten.

Singlewhorl burrobrush (*Ambrosia monogyra*), CRPR 2.2

Singlewhorl burrobrush is a perennial shrub that blooms August through November and grows in sandy chaparral and Sonoran desert scrub (CNPS 2011). On Village Three North and Portion of Village Four, there are approximately 6 individuals (Figure 5.8-2). On Village Eight, there are approximately 48 individuals of singlewhorl burrobrush observed along the southern boundary of the site (Figure 5.8-3). On Village Ten, there approximately 8 individuals (Figure 5.8-4). This is species also occurs within Preserve areas adjacent to all three Villages.

Small-flowered morning glory (*Convolvulus simulans*), CRPR 4.2

Small-flowered morning glory is an annual herb that blooms March through July and grows in openings in chaparral, coastal scrub, and valley and foothill grassland. The species is also associated with clay, serpentinite seeps (CNPS 2011). On the Village Three North site, small-flowered morning glory occurs in the northwest corner of the site (Figure 5.8-2). Approximately 17 individuals were recorded in 2010–2011 and previous years. This species was not observed on the Village Eight East or Village Ten sites.

South Coast saltscale (*Atriplex pacifica*), CRPR 1B.2

South Coast saltscale is an annual herb that blooms March through October and grows in coastal bluff scrub, coastal dunes, coastal scrub, and on playas (CNPS 2011). On the Village Three North site, populations of South Coast saltscale are generally located in the southwest corner of the site (Figure 5.8-2). In total, the on-site population in Village Three North was estimated at 12 individuals in 2010–2011. Approximately 3 individuals were recorded on the Village Eight East site along the southern boundary (Figure 5.8-3). No South Coast saltscale was recorded on Village Ten.

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), CRPR 4.2

Southwestern spiny rush is a perennial rhizomatous herb that blooms March through June and grows in mesic coastal dunes, alkaline seeps, and coastal salt marshes and swamps (CNPS 2011). This species was not recorded on Village Three North and Portion of Village Four. On the Village Eight East site, approximately 95 southwestern spiny rush were recorded in the southern portion of the site (Figure 5.8-3). On Village Ten, approximately 20 individuals were observed near the center of the site (Figure 5.8-4).

Variegated dudleya (*Dudleya variegata*), CRPR 1B.2, MSCP Covered, Narrow Endemic

Variegated dudleya is a perennial herb that blooms April through June and grows in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland with clay soils, and vernal pools (CNPS 2011). On the Village Three North site, locations of variegated dudleya are generally located within the canyon topography in the southwest corner of the site (Figure 5.8-2). In total, the on-site population was estimated at approximately 100 individuals in 2011. No variegated dudleya were observed on the Village Eight East or Village Ten project sites.

5.8.3.2 Special-Status Wildlife Species

Information from previous surveys is reported in the Biological Technical Report for Villages Two, Three and Portion of Village Four (Dudek 2006). Because the surveys have

been updated, the more current information is presented. Surveys from 2008 to 2011 found nine special-status wildlife species on the project site, which are discussed below; their locations are displayed in Figure 5.8-1. Only those species within the Development Area are depicted on the figures; species only observed in the Preserve are not displayed.

Coastal California Gnatcatcher (*Polioptila californica californica*) Federally Threatened, State Species of Special Concern, MSCP Covered Species

A total of three gnatcatcher pairs (two pair were with fledglings) were detected in the finger canyons of Village Three North and two pairs and one male were detected in the Portion of Village Four during focused surveys in 2011. One pair was located within the Portion of Village Four, along the Preserve boundary that also likely use habitat within the Portion of Village Four on-site areas as well as the habitat within the Preserve, and, therefore, that point location is displayed. In addition, two pairs were observed within the area outside of Otay Ranch located adjacent to the southwestern side of Village Three North.

Two pairs of gnatcatchers were observed during focused surveys on Village Ten. The on-site pairs were both located within coastal sage scrub in the southern portion of the village.

White-Tailed Kite (*Elanus leucurus*) State Fully Protected

During the 2010–2011 surveys on Village Three North and Portion of Village Four, one individual was observed hunting in the non-native grassland in the north-central portion of the development site and nine individuals were observed roosting at the western edge of Wolf Canyon, likely a communal roost activity. White-tailed kite was observed at three locations in the western portion of Village Eight East, north of the Preserve boundary. White-tailed kite was observed at one location on Village Ten, within the northern most portion of the Village.

Peregrine Falcon (*Falco peregrinus anatum*) State Fully Protected

Peregrine falcon was observed flying over the center of Village Ten, outside of the Preserve; it was not observed foraging but could forage on waterfowl on the Lower Otay Reservoir. This species was not observed within other Villages.

San Diego Black-Tailed Jackrabbit (*Lepus californicus bennettii*) State Species of Special Concern

One black-tailed jackrabbit was recorded during 2010–2011 surveys along the southern edge of the Village Three North site. However, this species is likely common throughout the site and associated Preserve. Fourteen black-tailed jackrabbits were observed within Village Eight East, primarily within the Community Park (P-2). Four black-tailed jack rabbits were observed within Village Ten.

Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*) USFWS Birds of Conservation Concern, State Species of Special Concern, MSCP Covered Species

During surveys conducted in 2010, two coastal cactus wrens were recorded within the Portion of Village Four, likely comprising a pair. One coastal cactus wren was observed in Village Eight East, east of SR 125 within a portion of the village that is not planned for development.

Grasshopper Sparrow (*Ammodramus savannarum*) State Species of Special Concern

On Village Three North, two grasshopper sparrows were recorded in the non-native grassland in the southern portion of the site during 2010–2011 surveys. Four grasshopper sparrows were recorded within the agricultural areas on Village Eight East, one in the southern portion and two in the north-central portion of the project site. Three sparrows were observed in the southern portion of Village Ten in and around the grassland areas.

Northern Harrier (*Circus cyaneus*) State Species of Special Concern, MSCP Covered Species

One northern harrier was observed hunting during 2010–2011 surveys on the Village Three North site in the northern portion of the site. Four individuals were observed within Village Eight East, a pair were observed foraging in the northwestern corner of the village; an individual was observed west of the village center; and a third one was observed along the edge of the Community Park (P-2) in the southern portion of the village. On Village Ten, two northern harriers were observed foraging near the center of the site.

Cooper's Hawk (*Accipiter cooperii*) State Watch List, MSCP Covered Species

A single Cooper's hawk was observed in the southern portion of Village Eight East, along the Preserve boundary. Cooper's hawk was not observed on Village Three North/Portion of Village Four or Village Ten.

California Horned Lark (*Eremophila alpestris actia*) State Watch List

California horned lark was not observed during surveys in 2010–2011 on the Village Three North Project site, but had been recorded in 2004. California horned lark was not observed on Portion of Village Four or Eight East. On Village Ten, 10 California horned larks were observed along the road near the center of the project site during 2011 surveys.

Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*) State Watch List, MSCP Covered Species

One occurrence of this species was observed in an off-site area associated with Village Ten. This occurrence is mapped along the western edge of the village. No Southern California rufous-crowned sparrows were observed within the Development Area during any of the surveys.

5.8.3.3 Plant Communities

Based on species composition and general physiognomy, nine native or naturalized plant communities, including disturbed forms, were identified within the area proposed for development: broom baccharis scrub (including disturbed), cismontane alkali marsh (including disturbed), coastal sage scrub (including disturbed), freshwater marsh (only for planned and future facilities, not within the SPA Plan development area), maritime succulent scrub (including disturbed), mulefat scrub (including disturbed), non-native grassland, southern mixed chaparral, and southern willow scrub. Four non-native or disturbed land covers also occur on site: agriculture, developed, disturbed habitat, and tamarisk scrub (Table 5.8-2). The area proposed for development includes the approximate 750.3 acres of land identified in the SPA Plan, and 18.1 acres identified as Planned and Future Facilities within the Preserve (i.e., access road to the Community Park (P-2) in Village Eight East and the Village Ten utility corridors and water quality basins) for a total of 768.4 acres of impacted areas. Figures 5.8-5 through 5.8-8 depict vegetation communities within the entire project area.

Table 5.8-2
Acreages of Existing Vegetation Community and Land Cover Types Within the Development Area

Vegetation Community/Land Cover	Village Three North/ Portion of Village Four	Village Eight East	Village Ten	Total University Villages Development Area
Development Area Outside of Preserve				
Agriculture	25.3	277.2 (261.1)	7.6	310.1
Broom Baccharis Scrub	--	--	<0.1 (0)	<0.1 (0)
Broom Baccharis Scrub (Disturbed)	--	0.4 (0.4)	--	0.4
Cismontane Alkali Marsh	--	0.1 (0.1)	--	0.1
Cismontane Alkali Marsh (Disturbed)	--	0.2 (0.2)	--	0.2
Coastal Sage Scrub	18.4	15.9 (7.4)	46.0	80.3
Coastal Sage Scrub (Disturbed)	6.3	6.7 (4.4)	21.6	34.6
Developed	--	8.1 (7.1)	--	8.1
Disturbed Habitat	0.9	5.1 (4.6)	2.2	8.2
Maritime Succulent Scrub	4.6	0.7 (0.7)	2.8	8.1
Maritime Succulent Scrub (Disturbed)	0.4	<0.1 (0)	--	0.4

Table 5.8-2 (Continued)
Acreages of Existing Vegetation Community and Land Cover Types Within the Development Area

Vegetation Community/Land Cover	Village Three North/ Portion of Village Four	Village Eight East	Village Ten	Total University Villages Development Area
Mulefat Scrub	–	0.5 (0)	0.3	0.8
Mulefat Scrub (Disturbed)	–	0.5 (0)	–	0.5
Non-Native Grassland	222.0	4.2 (2.8)	69.9	296.1
Southern Mixed Chaparral	–	–	<0.1 (.1)	<0.1 (.1)
Southern Willow Scrub	–	–	0.2	0.2
Tamarisk Scrub	<0.1	2.1	–	2.1 (the <.1 is a 0)
Subtotal Development Area (non-preserve) – SPA Plan	*277.9*	*321.7*[1] *(288.9 w/o AR)*	*150.7*	*750.3 (717.5 w/o AR)*
Planned and Future Facilities				
Agriculture	–	2.9	0.5	3.4
Broom Baccharis Scrub (Disturbed)	–	<.1 (0)	–	<.1 (0)
Coastal Sage Scrub	1.2	1.1	0.5	2.8
Coastal Sage Scrub (Disturbed)	0.4	–	0.1	0.6
Developed	0.3	1.1	1.5	2.9
Disturbed Habitat	0.3	<0.1 (.1)	0.8	1.2
Fresh Water Marsh	–	–	<0.1 (0)	<0.1 (0)
Maritime Succulent Scrub	–	0.6	–	0.6
Maritime Succulent Scrub (Disturbed)	0.2	–	–	0.2
Non-Native Grassland	0.7	–	5.6	6.3
Tamarisk Scrub	–	<0.1 (.1)	–	<0.1 (.1)
Subtotal Planned and Future Facilities	*3.1*	*5.9*	*9.1*	*18.1*
Total	**281.0**	**327.6 (294.8 w/o AR-11)**	**159.8**	**768.4 (735.6 w/o AR-11)**

Agriculture

Agriculture refers to areas that have been under cultivation or are pastures actively grazed by livestock and that contain less than 20% native plant cover. These areas contain very few native shrubs, and pastures are dominated by non-native grasses, dove weed (*Croton setigerus*), and black mustard (*Brassica nigra*). Agriculture dominates Village Eight East and occurs in the northeastern portion of Village Three North and Portion of Village Four.

[1] Includes 32.8 acres within the Development area (non-preserve) which is not proposed to be impacted by the proposed project but is designated future development.

Broom Baccharis Scrub (including disturbed)

Broom baccharis scrub is a native plant community very similar to Coastal Sage Scrub but dominated by broom baccharis (*Baccharis sarothroides*). It is typically associated with disturbed sites; sites with nutrient poor soils, such as along alluvial floodplains; or areas of sandy soils. Areas mapped as disturbed broom baccharis scrub included the intrusion of tamarisk (*Tamarix* spp.) along the perimeter.

Cismontane Alkali Marsh

According to Holland (1986), cismontane alkali marsh typically occurs in areas that are wet or inundated throughout most to all of the year. Dominant species include rushes (*Juncus* spp.), saltgrass (*Distichlis spicata*), sedges (*Carex* spp.), yerba mansa (*Anemopsis californica*), and alkali heath (*Frankenia grandifolia*). On site, the cismontane alkali marsh is dominated by spiny rush (*Juncus acutus*) and includes saltgrass, and tamarisk. There is cismontane alkali marsh along the southern boundary of the northern portion of the Village Eight East site that totals 0.1 acre. These areas are considered wetland under the jurisdiction of the CDFW, ACOE, and RWQCB. In addition, cismontane alkali marsh is considered to be a wetland as defined in the Chula Vista MSCP Subarea Plan.

Disturbed Cismontane Alkali Marsh

Disturbed cismontane alkali marsh is similar to cismontane alkali marsh described above, but is dominated by non-native tamarisk. There is one 0.2-acre area along the southern boundary of Village Eight East that is occupied by disturbed cismontane alkali marsh. This area is considered wetland under the jurisdiction of CDFW, ACOE, and RWQCB.

Coastal Sage Scrub

Coastal sage scrub is a native plant community composed of a variety of soft, low, aromatic shrubs. On site, this community consists primarily of California buckwheat, California sagebrush, jojoba (*Simmondsia chinensis*), San Diego viguiera (*Bahiopsis [Viguiera] laciniata*), and annual grasses. Lemonadeberry is dominant in some of the drainage bottoms within some areas of coastal sage scrub on site. Coastal sage scrub within the Development Area is generally found in the southern portion of Villages Eight East, throughout much of Village Ten, and in the eastern and southern portions of Village Three North and Portion of Village Four. Coastal sage scrub (and disturbed coastal sage scrub) is considered a sensitive vegetation community by the Chula Vista MSCP Subarea Plan

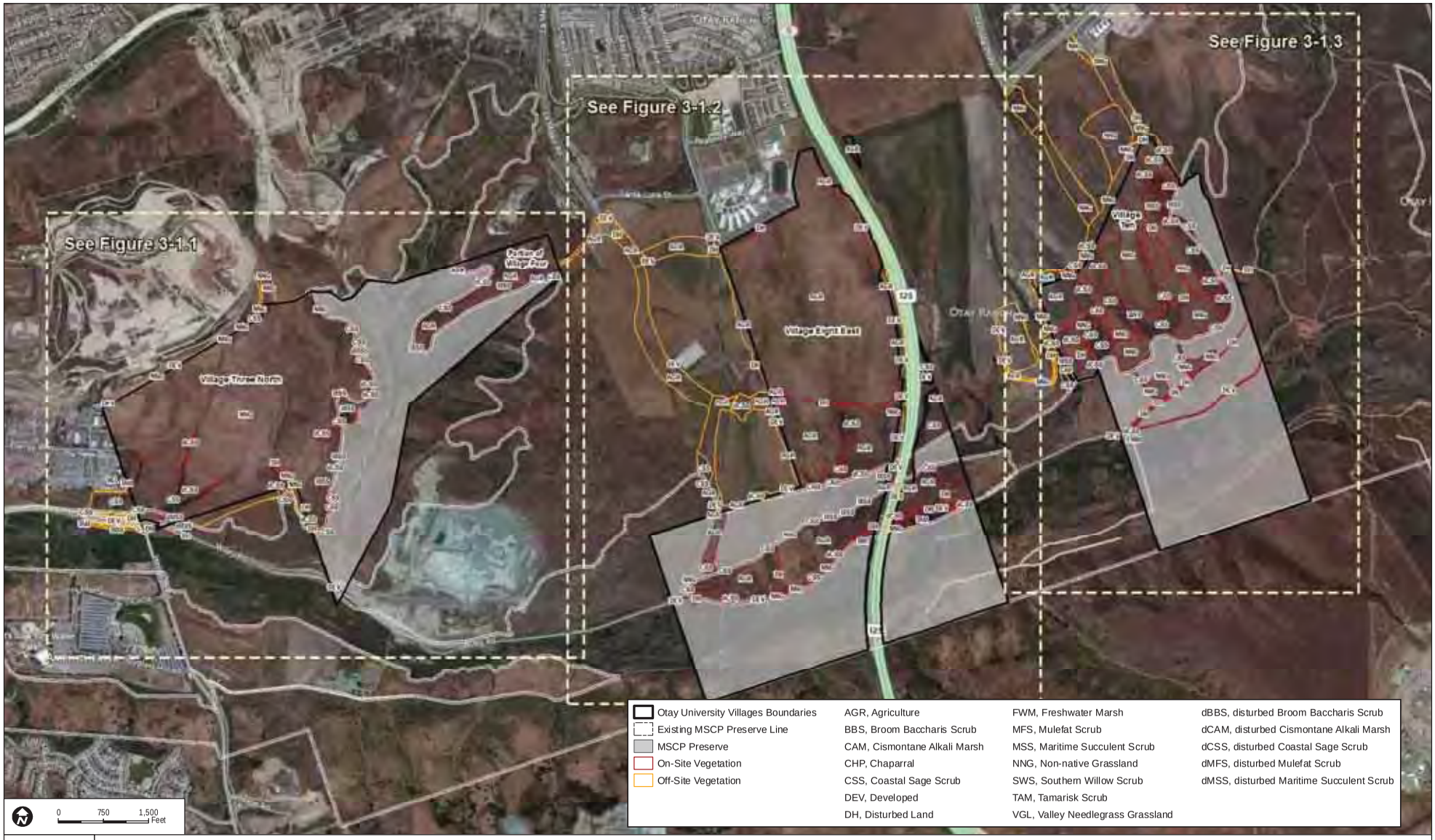

FIGURE 5.8-5

Vegetation Index Map

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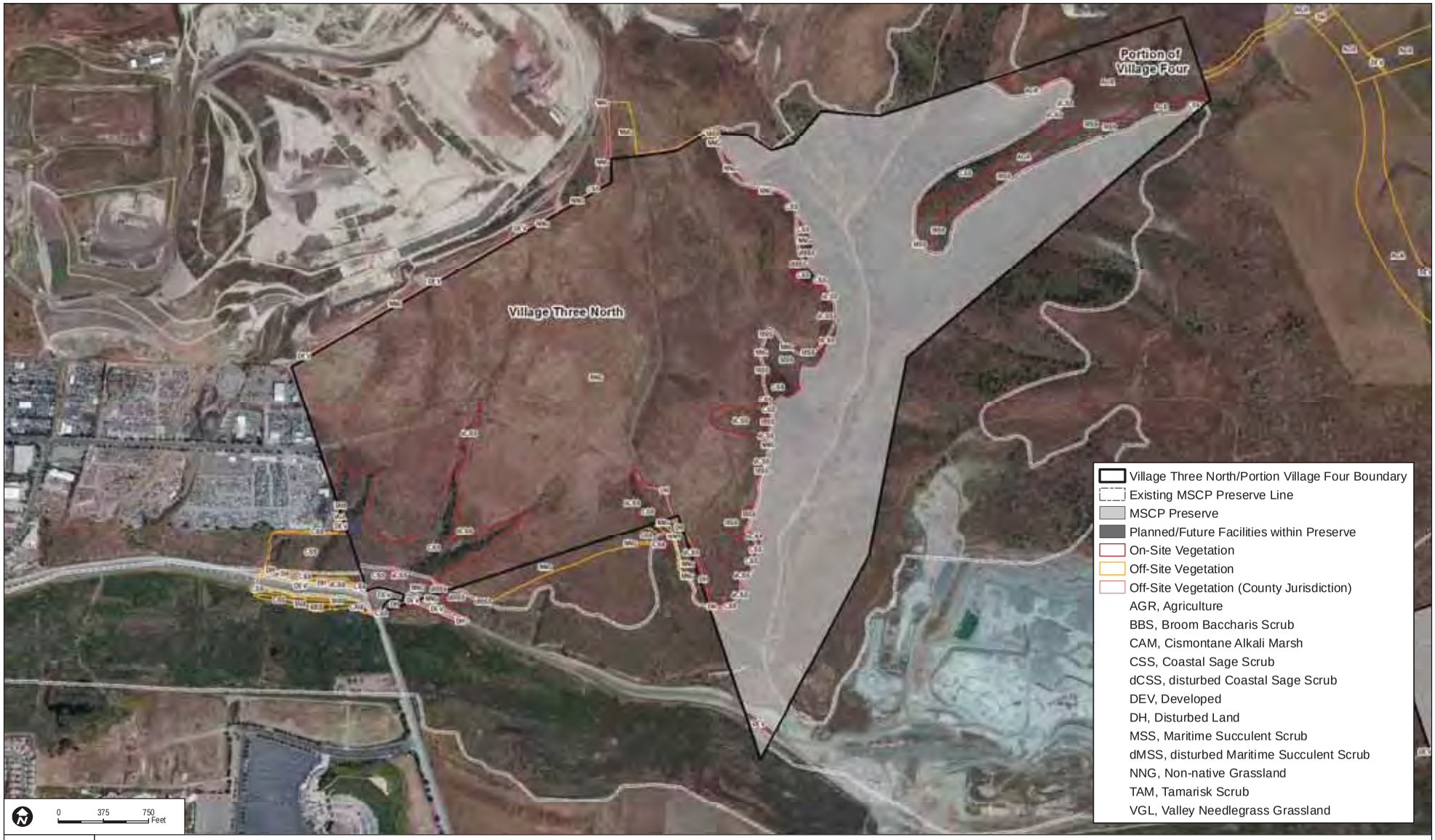

FIGURE 5.8-6

Vegetation Map - Village Three North/Portion of Village Four

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FIGURE 5.8-7

Vegetation Map - Village Eight East

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FIGURE 5.8-8

Vegetation Map - Village Ten

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Disturbed Coastal Sage Scrub

Disturbed coastal sage scrub habitat was identified throughout the Development Area, but primarily adjacent to coastal sage scrub often between agricultural lands and steeper hillsides of undisturbed native vegetation.

Developed Land

Developed land refers to areas that lack vegetation and support permanent or temporary structures and paved roads. Developed lands are primarily located in Village Eight East, but there is a small sliver of developed land along the southern border of Village Ten.

Disturbed Habitat

For purposes of this document, disturbed habitat includes all dirt roads, graded areas, and other places that lack vegetation. In general, these areas have been subject to mechanical perturbations that have greatly limited the growth of any vegetation. This habitat type occurs on all three Village sites.

Freshwater Marsh

Freshwater marsh is an emergent wetland habitat type that occurs where the water table is at or just above the ground surface. It is typically dominated by tall monocot species such as cattail (*Typha* spp.) and bulrush (*Scirpus* spp). Less than 0.1 acre of freshwater marsh occurs within Planned and Future facilities associated with Village Ten. This area is considered wetland under the jurisdiction of CDFG, ACOE, and RWQCB. In addition, freshwater marsh is considered to be a wetland as defined in the Chula Vista MSCP Subarea Plan.

Maritime Succulent Scrub

Maritime succulent scrub habitat is found on thin rocky or sandy soils, often on steep slopes, where there is a small amount of summer rainfall. It integrates with coastal sage scrub on better-developed soils away from the immediate coast. On site, maritime succulent scrub is dominated by jojoba and coast cholla (*Cylindropuntia prolifera*) with lemonadeberry, California buckwheat, coastal prickly-pear (*Opuntia littoralis*), and San Diego barrel cactus (*Ferocactus viridescens*) as conspicuous subdominant species. A total of 9.1 acres of maritime succulent scrub is located in the eastern portions of Village Three North and Portion of Village Four, Village Ten, and the southern portion of Village Eight East. Maritime succulent scrub (including areas mapped as disturbed maritime succulent scrub) is considered a sensitive vegetation community by the Chula Vista MSCP Subarea Plan.

Disturbed Maritime Succulent Scrub

Floral species of this disturbed maritime succulent scrub found within the Development Area are characteristic of maritime succulent scrub habitat with components of bare ground and non-native grasses and forbs, including ripgut grass (*Bromus diandrus*) and Maltese star-thistle (*Centaurea melitensis*). Disturbed maritime succulent scrub habitat was identified in the eastern portion of Village Three North on a slope of Wolf Canyon, in a small area in the southwestern corner of Village Three North, and along the northern boundary of the southern portion of Village Eight East. A total of 0.6 acre of disturbed maritime succulent scrub is located within the Development Area, of which 0.2 acre is associated with a Planned Facility in Village Three North.

Mulefat Scrub

Mulefat scrub is a tall, depauperate riparian community typically dominated by mulefat (*Baccharis salicifolia*), which develops along intermittent stream channels (Holland 1986). Mulefat scrub occurs long the southern boundary of Village Eight East and in the southwestern portion of Village Ten. The 0.8 acre of mulefat scrub is mapped, considered a wetland community under certain conditions, and as such, is under the jurisdiction of ACOE, RWQCB, and/or CDFW in some areas. In addition, these areas are considered to be wetland as defined in the Chula Vista MSCP Subarea Plan.

Disturbed Mulefat Scrub

The species composition of this habitat type found within the Development Area is characteristic of mulefat scrub habitat with components of non-native species or other evidence of physical disturbance. Disturbed mulefat scrub occurs in one area along the southern boundary of the Village Eight East site. A total of 0.5 acre of mulefat scrub is mapped. This area is considered to be a wetland as defined in the Chula Vista MSCP Subarea Plan.

Non-Native Grassland

Where the native vegetation has been disturbed frequently or intensively by grazing, fire, agriculture, or other activities, the native community usually is incapable of recovering. These areas are characterized by weedy, introduced annuals, primarily grasses that often include slender wild oat, bromes, mustards (*Brassica* and *Sisymbrium* spp.); broad-lobed filaree (*Erodium botrys*); and prickly Russian thistle (*Salsola tragus*).

Non-native grassland is the second largest land cover within the Development Area and is the dominant vegetation community on Villages Three North and Ten, but also occurs on Village Eight East. Species, such as wild oat (*Avena* sp.), foxtail chess, ripgut grass, and prickly Russian thistle are dominant in these areas. Non-native grassland is generally considered sensitive by the

Chula Vista MSCP Subarea Plan, because it supports species that are covered under the plan. The sensitivity of this community is based on its function as foraging habitat for several wildlife species, including raptors, as well as its function as resident habitat for special-status species, such as loggerhead shrike, horned lark, and burrowing owl.

Southern Mixed Chaparral

Southern mixed chaparral is a drought- and fire-adapted community of woody shrubs that is 1.5 to 3 meters (5 to 10 feet) tall, frequently forming dense, impenetrable stands. This vegetation community is typically a mixture of chamise (*Adenostoma fasciculatum*), mission manzanita (*Xylococcus bicolor*), ceanothus (*Ceanothus* spp.), interior scrub oak (*Quercus berberidifolia*), laurel sumac, and black sage. Less than <0.1 acre of southern mixed chaparral is found within the Development Area in one area in the southern portion of Village Ten. Southern mixed chaparral is considered a sensitive vegetation community by the Chula Vista MSCP Subarea Plan.

Southern Willow Scrub

Southern willow scrub is a broad-leafed, winter-deciduous riparian community dominated by willow species (*Salix* spp.) with scattered Fremont's cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*). The 0.2 acre of southern willow scrub occurs within Village Ten. These areas are considered wetland under the jurisdiction of CDFW, ACOE, and RWQCB. In addition, southern willow scrub is considered to be a wetland as defined in the Chula Vista MSCP Subarea Plan.

Tamarisk Scrub

Tamarisk scrub is a non-native riparian community dominated by stands of tamarisk. Other species commonly associated with this community include Bermuda grass (*Cynodon dactylon*), mulefat, and San Diego marsh-elder (*Iva hayesiana*). There is a total of 2.1 acres of tamarisk scrub within the Development Area. A small area of tamarisk scrub occurs within a small drainage on the western edge of the Village Three North boundary. Given the lack of predominant hydrophytic vegetation, this community would not be considered a wetland by ACOE or RWQCB; however, given the riparian overstory and association with a drainage, it would be considered a wetland community under the jurisdiction of CDFW. Tamarisk scrub also occurs in two areas along the southern boundary of Village Eight East. These areas are wetlands under the jurisdiction of the CDFW, ACOE and RWQCB.

5.8.3.4 Jurisdictional Waters and Wetlands

This section describes the jurisdictional features located within each village, Figure 5.8-9, 5.8-10, 5.8-12, and 5.8-13 show where these areas are located within the area proposed for

development. These acreages do not include off-site areas, which are provided in Section 5.8.5. All waters and wetlands described below are City of Chula Vista MSCP Subarea Plan wetlands.

Village Three North and Portion of Village Four

Village Three North supports several open ephemeral drainages (0.21 acre within the SPA Plan and 0.01 in a Planned Facility) that eventually flow south, outside of the Development Area, into the Otay River (Hunsaker & Associates 2014a, Table 5.8-3). In addition, there is approximately 0.04 acre of CDFW jurisdictional riparian habitat on the Village Three North Development Area that is comprised of tamarisk scrub (Figure 5.8-10). No riparian habitat or stream channels were mapped within the Portion of Village Four.

Table 5.8-3
Jurisdictional Wetlands and Waters on Village Three North

Wetlands Vegetation Community	Jurisdiction	Acres
Development Area – SPA Plan		
Tamarisk Scrub	CDFW only	0.04
Ephemeral Drainage	ACOE/CDFW/RWQCB	0.21
	Subtotal Development Area – SPA Plan	*0.25*
Development Area – Planned and Future Facilities		
Ephemeral Drainage	ACOE/CDFW/RWQCB	0.01
	Subtotal Development Area – Planned and Future Facilities	*0.01*
	Total Jurisdictional Area	**0.26**

The ephemeral drainages are largely located at the base of the western slopes of Village Three North. These drainages do not contain a predominance of hydrophytic vegetation nor hydric soils; however, they do exhibit evidence of hydrology and a clear bed and bank. These drainages are mapped on Figure 5.8-10 as line features. These unvegetated drainages are considered waters of the United States under the jurisdiction of the ACOE and waters of the State of California under the jurisdiction of the CDFW and RWQCB.

In general, the southern portions of the mesas on the project site appear to have historically supported vernal pool topography. Initial reconnaissance surveys in February 2003 located a single depression in the southwestern corner of the site (Figure 5.8-11).This feature is located within the area identified as the K17 vernal pool. Surveys indicated the presence of a circular shaped depression that supports ponded water following significant rain events. The area was revisited during spring rare plant surveys and was found to support hydrophytic vegetation, including rabbit's foot grass (*Polygonum monspeliensis*), dwarf stonecrop (*Crassula connata*), and toad rush (*Juncus bufonius*); however, no vernal pool indicator species were detected.

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FIGURE 5.8-9

Wetland Delineation Overview Map

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FIGURE 5.8-10

Wetland Delineation Map - Village Three North/Portion of Village Four

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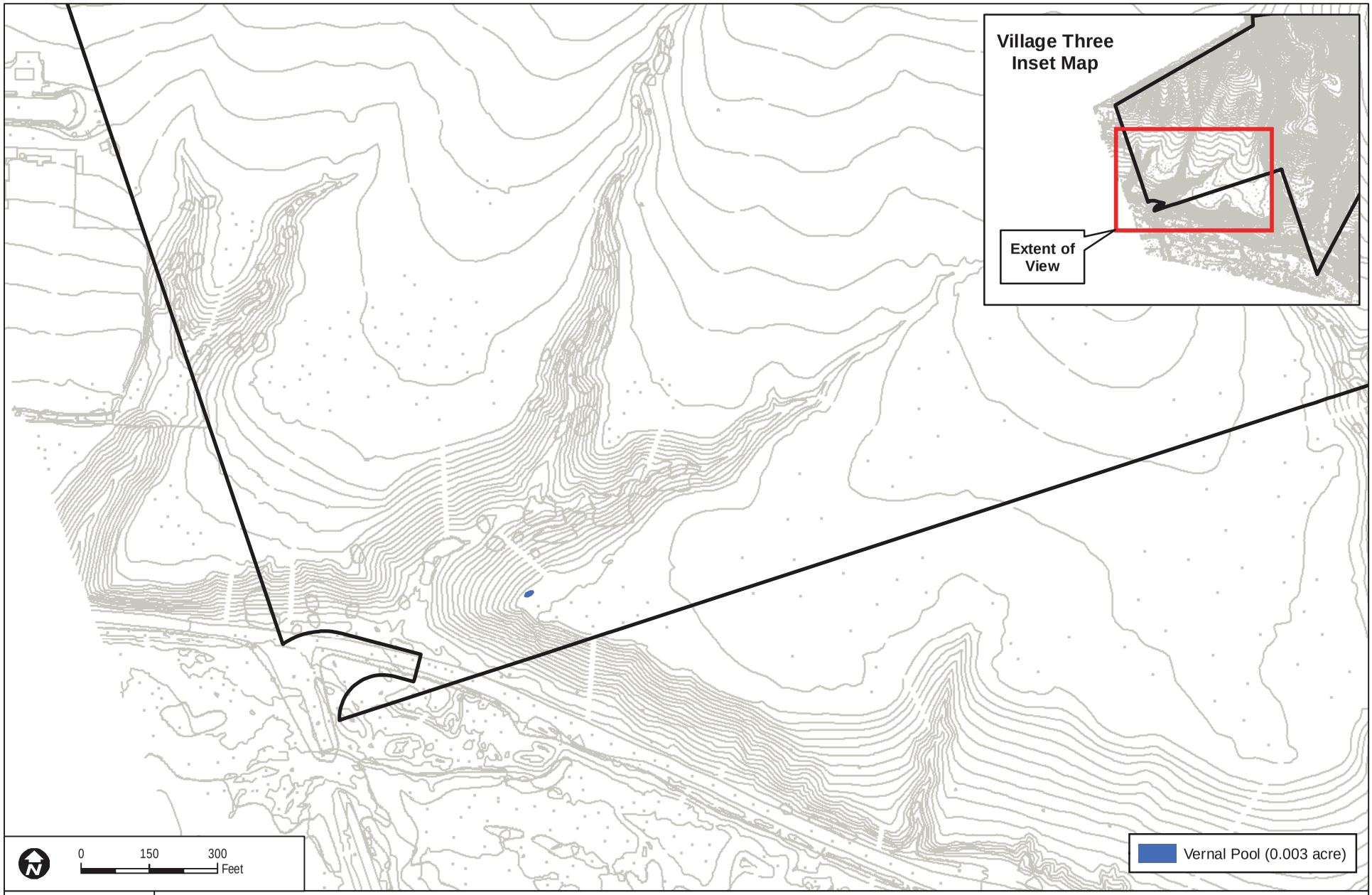

FIGURE 5.8-11

Vernal Pool - Village Three North

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FIGURE 5.8-12

Wetland Delineation Map - Village Eight East

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FIGURE 5.8-13

Wetland Delineation Map - Village Ten

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Wet season surveys of all potential vernal pools on the K17 mesa were conducted during winter 2003–2004 and winter 2004–2005 in accordance with the accepted USFWS survey protocol. An area of approximately 120 square feet was the observed ponding area for the vernal pool (Figure 5.8-11). Because of the length of time that has passed since the wet season surveys were conducted, new surveys were initiated in 2011. A dry season fairy shrimp survey was conducted in September 2011. The results confirmed the previous wet season surveys of negative results for fairy shrimp species. A wet season survey was conducted during the 2011–2012 wet season. The wet season survey results were negative for fairy shrimp species.

Based on the results of Dudek's surveys between 2003 and 2012, the vernal pool identified in the K17 pool complex exhibits characteristics identified by the ACOE as indicative of a formerly jurisdictional vernal pool. Specifically, the ACOE definition states that "vernal pools are wetlands that seasonally pond in small depressions as a result of a shallow, relatively impermeable layer that restricts downward percolation of water. The dominant water source for vernal pools is precipitation" (ACOE 1997). No vernal pool indicator species were identified within any of the pools, but because ponded water was observed in the vernal pool, this area would have been considered jurisdictional under the ACOE regulatory program. Under the ACOE guidelines, the total jurisdictional basin area is 120 square feet. Based on a jurisdictional delineation confirmation visit conducted in 2012 by the ACOE, the vernal pool is considered ACOE jurisdiction; however, ACOE has subsequently characterized it as a seasonal depression due to the lack of special-status resources or vernal pool plant species (ACOE Draft Permit SPL-2012-00181-MBS).

Village Eight East

There are approximately 3.69 acres of ACOE, RWQCB, and CDFW jurisdictional features within the Development Area of Village Eight East (Table 5.8-4). Approximately 0.30 acre of cismontane alkali marsh (including disturbed) occurs along the drainages within the canyon near the center of the site. It also occurs in a small area along the western boundary of the site, as well as along the road to the south. The cismontane alkali marsh is dominated by spiny rush, and includes San Diego marsh-elder, saltgrass, and tamarisk. Tamarisk scrub (0.13 acre) is located within the Community Park (P-2) in the Otay River Valley. The remaining tamarisk scrub and the polygons of mulefat scrub are located east of SR-125 within the Active Recreation Area (AR-11). At the location of the storm drain outfall (Future Facility) south of the Community Park (P-2), there is 0.02 acre of tamarisk scrub.

Table 5.8-4
Jurisdictional Wetlands and Waters on Village Eight East

Wetlands Vegetation Community	Jurisdiction	Acres
Development Area – SPA Plan		
Cismontane Alkali Marsh	ACOE/CDFW/RWQCB	0.12
Disturbed Cismontane Alkali Marsh	ACOE/CDFW/RWQCB	0.18
Mulefat Scrub	ACOE/CDFW/RWQCB	0.50
Disturbed Mulefat Scrub	ACOE/CDFW/RWQCB	0.55
Tamarisk Scrub	ACOE/CDFW/RWQCB	2.12
Ephemeral Drainage	ACOE/CDFW/RWQCB	0.15
Intermittent Stream Channel	ACOE/CDFW/RWQCB	0.07
	Subtotal Development Area – SPA Plan	*3.69*
Development Area – Planned and Future Facilities		
Tamarisk Scrub	ACOE/CDFW/RWQCB	0.02
	Subtotal Development Area – Planned and Future Facilities	*0.02*
	Total Jurisdictional Area	**3.71**

The ephemeral drainages are located both east and west of the existing dirt road in the southern portion of the site. The intermittent stream channel is within the forked canyon in the center of the site (Figure 5.8-12). With the exception of the mapped wetlands along the drainage in the canyon near the center of the site, these drainages do not contain a predominance of hydrophytic vegetation nor hydric soils; however, they do exhibit evidence of hydrology and a clear bed and bank. The drainage near the center of the site does support significant stands of vegetation considered jurisdictional wetlands, which are described below. The unvegetated drainages are considered waters of the United States under the jurisdiction of the ACOE and waters of the State of California under the jurisdiction of the CDFW and RWQCB. Wetlands and waters from the Development Area continue through the Preserve into the Community Park (P-2) where they eventually flow into the Otay River Valley.

Village Ten

There are four natural canyon drainages within the project area, each containing ephemeral drainages (Figure 5.8-13). The two drainages within the center of the village converge where the project boundary intersects the Preserve boundary and continue outside of Development Area into the Preserve. Another ephemeral channel is located along the western edge of Village Ten, and the headwaters to a larger ephemeral stream channel originate in the northeastern section of the village. According to the drainage study for Village Ten (Hunsaker & Associates 2014b), these channels drain to the Otay River and are, therefore, hydrologically connected to the navigable waters of the United States, which qualifies them as jurisdictional under ACOE, CDFW, and RWQCB regulations. The drainages alternate between sections characterized by

deeply incised channels and other sections where no flow is apparent. Along the drainage, the ordinary high water mark (OHWM) varies from approximately 0.5 feet to 3 feet. Vegetation in channels with no incisions is dominated by grasses and milk thistle (*Silybum marianum*). Southern willow scrub communities, including willows (*Salix gooddingii*), rushes (*Juncus acutus*), and mulefat, are located along the incised ephemeral stream channels.

Wetlands and waters under the jurisdiction of ACOE, RWQCB, and/or CDFW in the project area total 0.71 acre, including 0.51 acre of wetlands. Wetland vegetation communities on site include mulefat scrub, and southern willow scrub. Waters under jurisdiction of ACOE, CDFW, and RWQCB, or CDFW only total 0.20 acre within the project site. Table 5.8-5 lists the jurisdictional areas and acreages in the project area and Figure 5.8-13 shows were the location of these areas within the project site.

Table 5.8-5
Jurisdictional Wetlands and Waters on Village Ten

Wetlands Vegetation Community	Jurisdiction	Acres
Development Area – SPA Plan		
Mulefat Scrub	ACOE/CDFW/RWQCB	0.34
Ephemeral Drainage	ACOE/CDFW/RWQCB	0.18
Ephemeral Drainage	CDFW only	0.02
Southern Willow Scrub	CDFW only	0.17
	Subtotal Development Area – SPA Plan	*0.71*
Development Area – Planned and Future Facilities		
Freshwater Marsh	ACOE/CDFW/RWQCB	0.03
	Subtotal Development Area – Planned and Future Facilities	*0.03*
	Total Jurisdictional Area	**0.74**

ACOE, CDFW, and RWQCB jurisdictional areas on site total 0.55 acre, of which 0.34 acre is jurisdictional mulefat scrub that occurs in a couple of isolated patches along one of the tributaries. Approximately 0.03 acre of freshwater marsh is located within the Salt Creek interceptor which is a Future Facility. A total of 0.18 acre of ephemeral drainage is also jurisdictional for all three agencies.

CDFW jurisdiction extends over all areas under ACOE and RWQCB jurisdiction discussed above and includes areas that meet ACOE wetland vegetation criteria (i.e., hydrophytic) but lack wetlands hydrology and/or hydric soils indicators. CDFW-only jurisdictional areas on site total 0.17 acre of southern willow scrub and 0.02 acre of ephemeral drainage. The southern willow scrub is located in three isolated patches along two tributaries in the middle of the project site.

5.8.3.5 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the immigration and emigration of animals. Wildlife corridors contribute to population viability in several ways: (1) they allow the continual exchange of genes between populations, which helps maintain genetic diversity; (2) they provide access to adjacent habitat areas, representing additional territory for foraging and mating; (3) they allow for a greater carrying capacity of wildlife populations by including "live-in" habitat; and (4) they provide routes for recolonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes (e.g., fires).

Habitat linkages are patches of native habitat that function to join two substantially larger patches of habitat. They serve as connections between distinct habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage does represent a potential route for gene flow and long-term dispersal. Habitat linkages may serve as both habitat and avenues of gene flow for small animals, such as reptiles and amphibians. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat "islands" that function as "stepping stones" for dispersal.

The Otay River provides a major wildlife corridor for not only the Otay Ranch but for the entire South Bay region. As such, the Preserve areas of Otay Ranch play a major contribution to that regional wildlife movement. Within the project site, there is first a major contribution to the Preserve within the Otay River but also to more local wildlife movement connections. South of Village Three North, within the area east of the intersection of Main Street and Heritage Road, there is also upland habitat that provides ecotonal contribution to the Preserve areas within the River. California gnatcatchers and other upland species use this preserve area as live-in habitat but are also provided a conduit for movement within the Otay River Valley, which is composed of a mosaic of riparian and upland biological resources. This southern habitat area within the Village Three North and Portion of Village Four project area continues on steep hillsides off site toward the west but is bounded by development and subject to edge effects. While the existing extension of Main Street (Wiley Road) bisects the upland habitat to the north from habitat within the Otay River; at current use levels, the road does not preclude wildlife movement (including avian and mammalian species) between the upland and riparian areas. The habitat area just south of the development portion of Village Three North functions as a wetland buffer and/or as an extension of habitat and as a linkage and live-in habitat. The wildlife corridor study prepared by Ogden (1992) concluded that Wolf Canyon, located between Villages Three North and Portion of Village Four, functions as a "local" corridor for mammal species, including mule deer, and as a "regional" connection for California gnatcatchers and cactus wrens located in Wolf Canyon. Currently, Wolf Canyon does not link two or more patches of habitat, which, by definition, is required of a corridor. According to the Ogden study, for Wolf Canyon to function even as an

avian connection, one or two of the low passes that connect Poggi Canyon with Wolf Canyon would have required revegetation. Due to the lack of connection between Poggi and Wolf from recent development, Wolf Canyon does not function as a habitat linkage or wildlife corridor. However, as the focused surveys for California gnatcatcher have documented, Wolf Canyon provides live-in habitat for coastal sage scrub species and ecotonal function due to the drainage located in the bottom of the canyon. Movement of wildlife within Wolf Canyon connects to the south to the regional corridor in the Otay River Valley. Wildlife movement continues within the Otay River Valley to connect with the Preserve areas of Village Eight East and Village Ten.

Since it is undeveloped, Village Eight East currently allows general wildlife movement across the entire site. However, habitat that provides shelter and foraging for wildlife is within the Preserve areas of the Otay River along the southern slopes of Village Eight East; and it provides a connection from the habitat just east of the quarry along this narrow slope of upland, connecting to the habitat located on Village Eight East. The habitat on this slope is fragmented by the SR-125, so wildlife must either pass under the freeway bridge or fly over it. In spite of the constraints to this strip of upland preserve area, it provides a duplicate opportunity for wildlife movement with that in the Otay River Valley and provides the function of live-in habitat for species such as California gnatcatcher and cactus wren as documented by recent surveys. The major wildlife corridor for Village Eight East is located within the Otay River Valley. This corridor is well documented in studies conducted by Ogden (1992).

Similar to Village Eight East, Village Ten provides general wildlife movement and foraging within the entire site; however, wildlife movement is focused primarily within the Otay River Valley to the south and also in Salt Creek to the east. Wildlife movement is provided along the southern slopes of Village Ten within the strip of upland shrub vegetated habitat and continues along the slopes into Salt Creek where there is a large population of both California gnatcatcher and cactus wren. Also similar to the narrow upland Preserve slope of Village Eight East, this slope of Preserve land in Village Ten functions as live in habitat for California gnatcatcher. Beyond Village Ten, there is Preserve land within and to the east of Salt Creek that allows for movement from that corridor to Lower Otay Lake, thus facilitating wildlife movement around the lake and to areas of regional conservation south of Lower Otay Lake and to the City of San Diego Cornerstone Lands that surround the Otay Lakes.

5.8.4 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.

This section addresses direct, indirect, and cumulative impacts to biological resources that would result from implementation of the proposed project.

Direct impacts were quantified by overlaying the anticipated limits of grading on the biological resources map and quantifying impacts. The limits of grading are presumed to encompass all future development and use areas (i.e., “worst-case scenario”) including off-site impacted areas, lots, utilities, brush management, and trails.

Indirect Impacts result from adverse edge effects, either short-term indirect impacts related to construction, or long-term, chronic indirect impacts associated with the location of urban development in proximity to biological resources within natural open space. During construction

of the project, short-term indirect impacts may include dust and noise, which could disrupt habitat and species vitality temporarily, and construction-related soil erosion and runoff; however, all project grading is subject to established restrictions and requirements that restrict erosion and runoff, including the federal Clean Water Act and National Pollution Discharge Elimination System (NPDES), as well as preparation of a Stormwater Pollution Prevention Plan. These programs minimize project impacts to erosion/runoff. Long-term indirect impacts to adjacent open space may include intrusions by humans and domestic pets, noise, lighting, invasion by exotic plant and wildlife species, effects of toxic chemicals (e.g., fertilizers, pesticides, herbicides, and other hazardous materials), urban runoff from developed areas, soil erosion, litter, fire, and hydrological changes (e.g., groundwater level and quality). In addition, the project is subject to RMP requirements due to the adjacency with the Wolf Canyon preserve and the Otay River Valley; therefore, Edge Plan restrictions will apply and reduce or avoid potential long-term indirect impacts.

Cumulative Impacts refer to incremental individual environmental effects of two or more projects when considered together. These impacts taken individually may be minor, but collectively significant as they occur over a period of time.

The proposed project contains impact areas both inside and outside of the Preserve. Since these impacts may require varying mitigation ratios and/or different mitigation measures, they will be quantified separately. Two types of on-site impacts to biological resources will occur in association with the proposed project: on-site area outside of the preserve (SPA Plan) and on-site compatible use within the Preserve (Planned and Future Facilities). There are also proposed off-site impacts that include impacts required for infrastructure, including roads. The off-site impacted areas are further divided as: within or outside Otay Ranch and within or outside the Preserve.

Impacts to biological resources within the Preserve that are proposed to be removed from the Preserve as part of the Boundary Adjustment are addressed by the Boundary Adjustment Functional Equivalency Analysis discussed in Section 5.8.5 under subsection E and F.. The Boundary Adjustment Functional Equivalency Analysis concludes the proposed Preserve configuration provides an equal or better Preserve, consistent with the requirements of the MSCP. Therefore impacts to areas proposed to be adjusted from Preserve to Developable Area by the Boundary Adjustment are included in the Development Area totals (i.e., the analysis assumes the Boundary Adjustment is approved). However it is acknowledged that the Wildlife Agencies have not provided their concurrence at this time.

5.8.5 Impacts

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?

Special-Status Plant Species

Direct Impacts

Implementation of the proposed project would result in the direct loss of the majority of locations and individuals of sensitive plant species identified on Figure 5.8-5 and described in the text. Implementation of the proposed project has the potential to result in direct impacts to special-status plant species through the removal or disturbance of habitats from construction activities involving clearing, grading, re-contouring of topography, earth moving activities and the construction of buildings, pipelines, and other facilities. Direct impacts to special-status plant species that would occur from implementation of the proposed project are discussed below. Table 5.8-6 provides the permanent impacts to special-status species.

Table 5.8-6
Permanent Impacts to Special-Status Plant Species

Common Name	Village Three North and Portion of Village Four	Village Eight East	Village Ten	Off-Site Improvement Area	Total Permanent Impacts
California adolphia	1	–	–	12	13
California boxthorn	22	48	–	37	107
Otay tarplant	3,902	–	100	–	4,002
Palmer's grapplinghook	20	–	–	–	20
Robinson's pepper grass	60	–	–	–	60
San Diego barrel cactus	75	136	–	79	290
San Diego County viguiera	2,796	1,943	2,628	317	7,684
Small-flowered morning glory	17	–	–	–	17
South Coast saltscale	12	3	–	–	15
Variegated dudleya	100	–	–	–	100
Singlewhorl burrobush	–	48	-	1	49
Southwestern spiny rush	–	55	20	4	79
San Diego marsh-elder	–	–	–	4	4

Impacts to small-flowered morning glory, Palmer's grapplinghook, southwestern spiny rush, California boxthorn, graceful tarplant, and San Diego County viguiera are not considered significant,

because, as CRPR 4.2 species, they are relatively common in this portion of the County and, therefore, are not considered significantly rare for the proposed loss to be significant.

Under the MSCP Subarea Plan, significant direct impacts to "covered" sensitive plant species include the following: Otay tarplant, variegated dudleya, and San Diego barrel cactus. Otay tarplant and variegated dudleya are identified in the MSCP Subarea Plan as narrow endemics. Significant impacts to non-covered species include California adolphia, south coast saltscale, San Diego marsh-elder, singlewhorl burrobush, and Robinson's pepper grass. Direct impacts to these species would be **potentially significant**.

Indirect Impacts

Of particular sensitivity is the population of Otay tarplant in Wolf Canyon adjacent to the project site to the south and east. During construction of the project, indirect effects may include dust, which could disrupt plant vitality in the short term, and construction related soil erosion and runoff. Long-term edge effects could include intrusions by humans and domestic pets and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to urban pollutants, soil erosion, litter, fire, and hydrological changes (e.g., surface and groundwater level and quality). Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to limit impacts of fugitive dust on sensitive habitat and species. Indirect impacts to special-status plants are considered **potentially significant**.

Special-Status Wildlife Species

Direct Impacts

Figures 5.8-14 through Figure 5.8-17 show the impact areas in relation to the special-status wildlife species occurrences on site. Because avian species are mobile, the species recorded would not necessarily be directly impacted; however, the suitable habitat (113.6 acres of coastal sage scrub and maritime succulent scrub) associated with five pairs of coastal California gnatcatchers would be directly impacted by project implementation. The locations of three pairs would be impacted within Village Three North and Portion of Village Four and the locations of two pairs would be impacted within Village Ten. Habitat for the remaining pairs of gnatcatchers found on site will be preserved. Two additional locations of California gnatcatcher also will be impacted in the area outside of Otay Ranch within the Takashimi (off-site Area 1) and City of Chula Vista (off-site Area 3) properties. Impacts to sensitive animal species listed as having a moderate to high potential to occur and impacts to five pairs of coastal California gnatcatcher within the project site and two pairs in areas outside of Otay Ranch are considered significant. Implementation of the proposed project would result in the direct loss of habitat for all of the special-status wildlife discussed in Section 5.8.3.6 is considered **potentially significant**.

The Migratory Bird Treaty Act (MBTA) prohibits the Take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing,

collecting, killing, or attempting to commit any of these acts (16 U.S.C. 703 et seq.). If any active nests or the young of nesting special-status bird species are impacted through direct grading, these impacts would be considered **potentially significant**, absent mitigation, based on the MBTA.

Although Quino checkerspot were not observed within the project boundaries, there is suitable habitat throughout all villages due to presence of host plant and suitable coastal sage scrub habitat except for the Portion of Village Four. The MSCP Subarea Plan requires that impacts to Quino checkerspot habitat in the Preserve east of SR-125 be minimized to the extent possible, whether or not it is occupied. This avoidance criteria applies only to a portion of Village Eight East (east of SR-125) and Village Ten. Development within these areas will be required to comply with avoidance and minimization measure 4.b of the MSCP Subarea Plan. The proposed project would not impact any significant Quino checkerspot habitat patches of plantain east of SR-125 that are in the Salt Creek drainage or Otay River Valley and no preserve areas would be impacted that contain such plantain patches. Impacts to Quino checkerspot would be **less than significant**.

Indirect Impacts

Indirect impact to wildlife may also occur as a result of the recreational uses of the Active Recreation areas. All recreation uses are a minimum of 100 feet from the Preserve boundary. Uses that are allowed within the 100-foot buffer adjacent to the Preserve include the access road to the park, parking, picnic areas, walking paths, and graded slopes. In addition to a noise study, a lighting study will also be conducted for the Community Park (P-2). Lighting in the active recreation will be placed so that the preserve is shielded from lighting impacts.

Preserve Edge Plans, prepared for each village will address and describe avoidance of indirect effects to special-status species that occur along the preserve/development interface. Design of the Village Eight East Community Park (P-2) and the Community Park (P-2) within the Portion of Village Four includes a minimum of 100 feet between the Preserve boundary and active park uses. Thus, the occupied habitat north of the Village Eight East Community Park (P-2) and south of the Community Park (P-2) in the Portion of Village Four is buffered from the activities and active use.

Within the Village Eight East Community Park (P-2), facilities such as soccer fields and baseball diamonds will be oriented away from occupied coastal California gnatcatcher and coastal cactus wren habitat. Uses within the 100-foot Preserve edge are limited to passive uses that are not noise generating such as water quality/retention basin, scenic overlooks, picnic areas, trail staging area, walking paths, parking, and benches. The entire edge of the Preserve adjacent to the Community Park (P-2) will be fenced per the Edge Plan. Vegetation consistent with the Village Eight East Preserve Edge Plan shall be planted along the edge adjacent to the Preserve to serve as a buffer between the active park uses and the Preserve. Therefore, the Village Eight East Community Park (P-2) has been designed to avoid siting potential noise-generating land uses in proximity to occupied habitat, and future park planning would meet Otay Ranch GDP, RMP, and MSCP siting criteria.

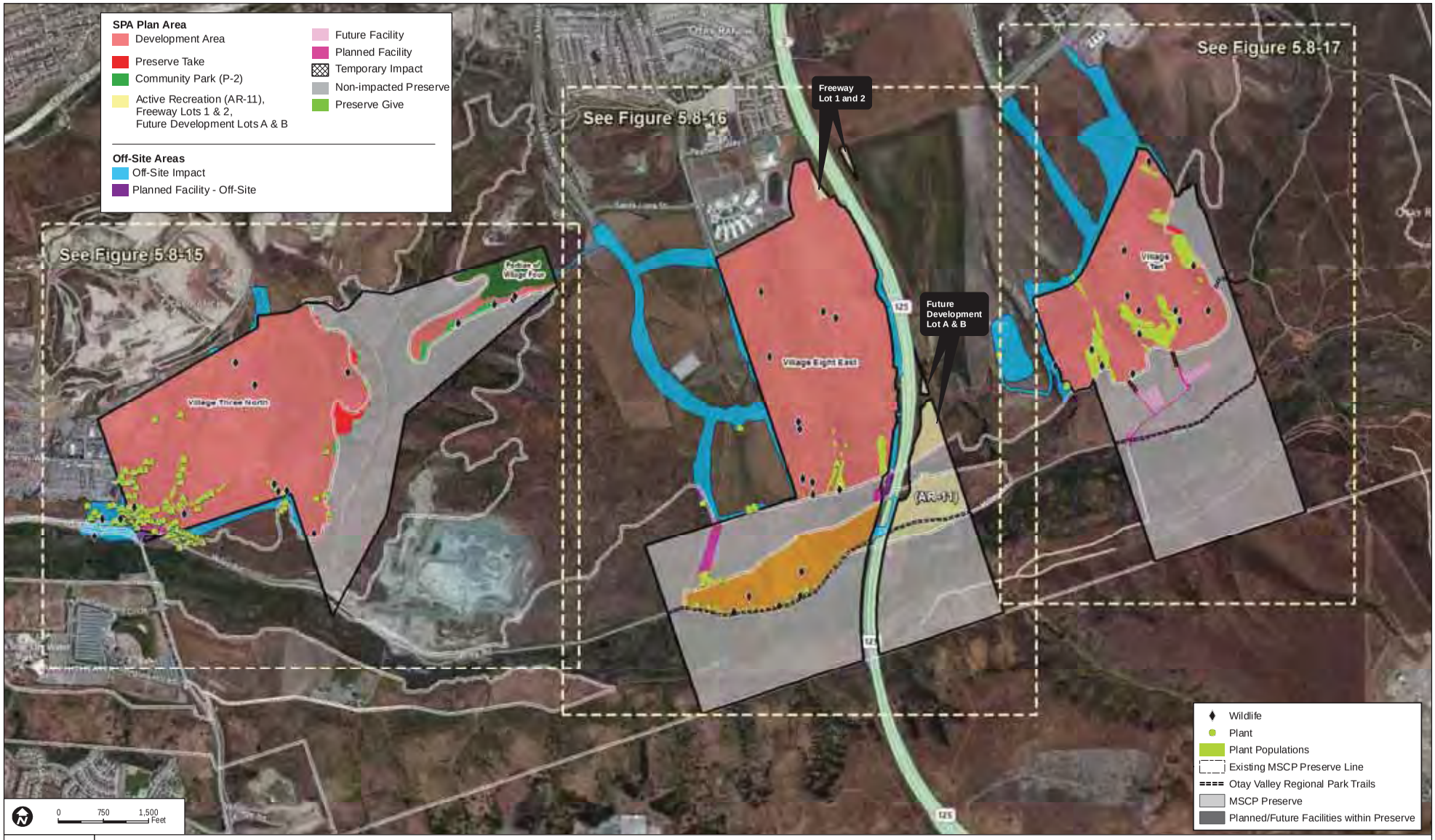

FIGURE 5.8-14

Special Status Species Impacts Overview Map

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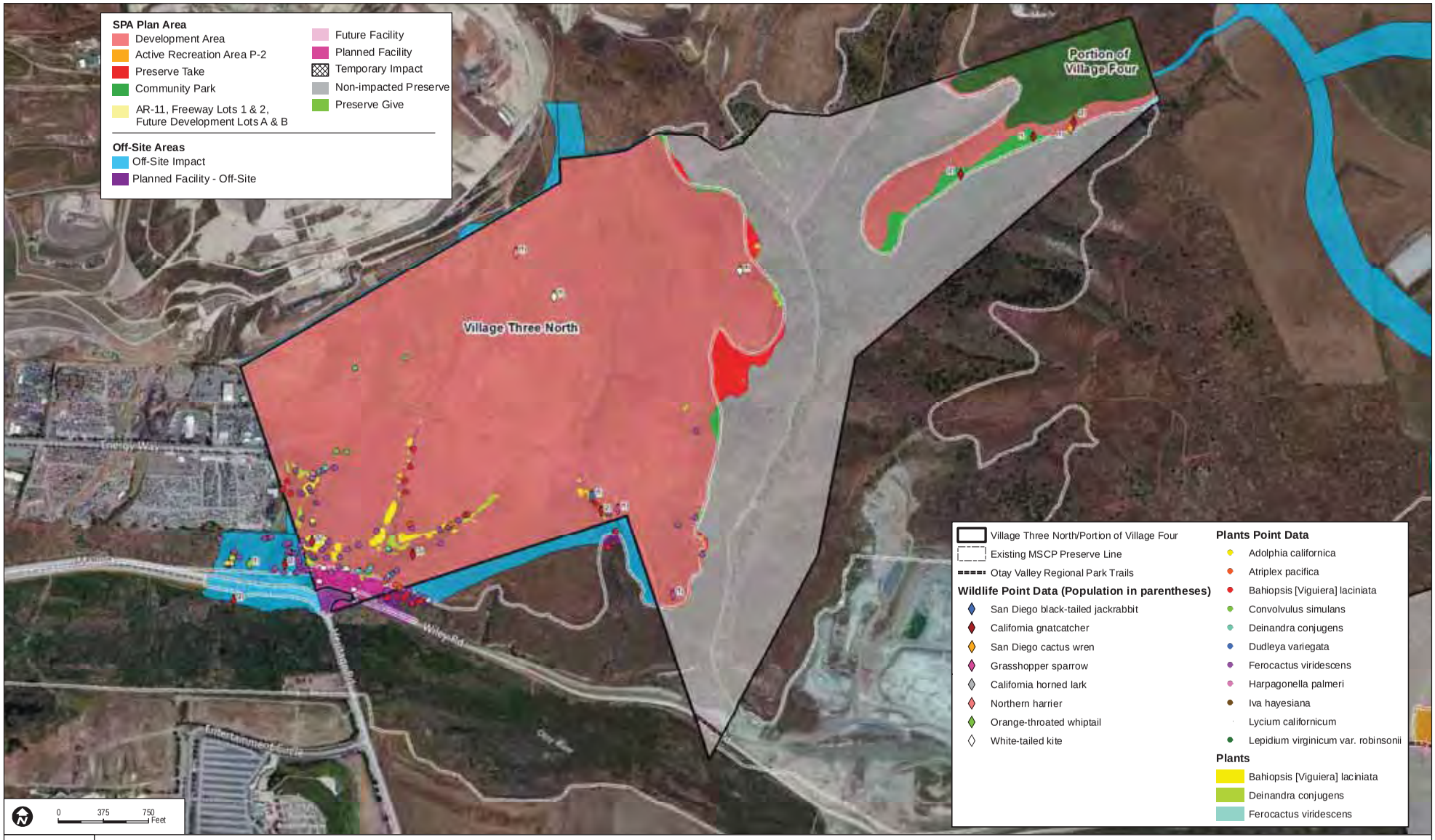

FIGURE 5.8-15

Special Status Species Impacts Map - Village Three North/Portion of Village Four

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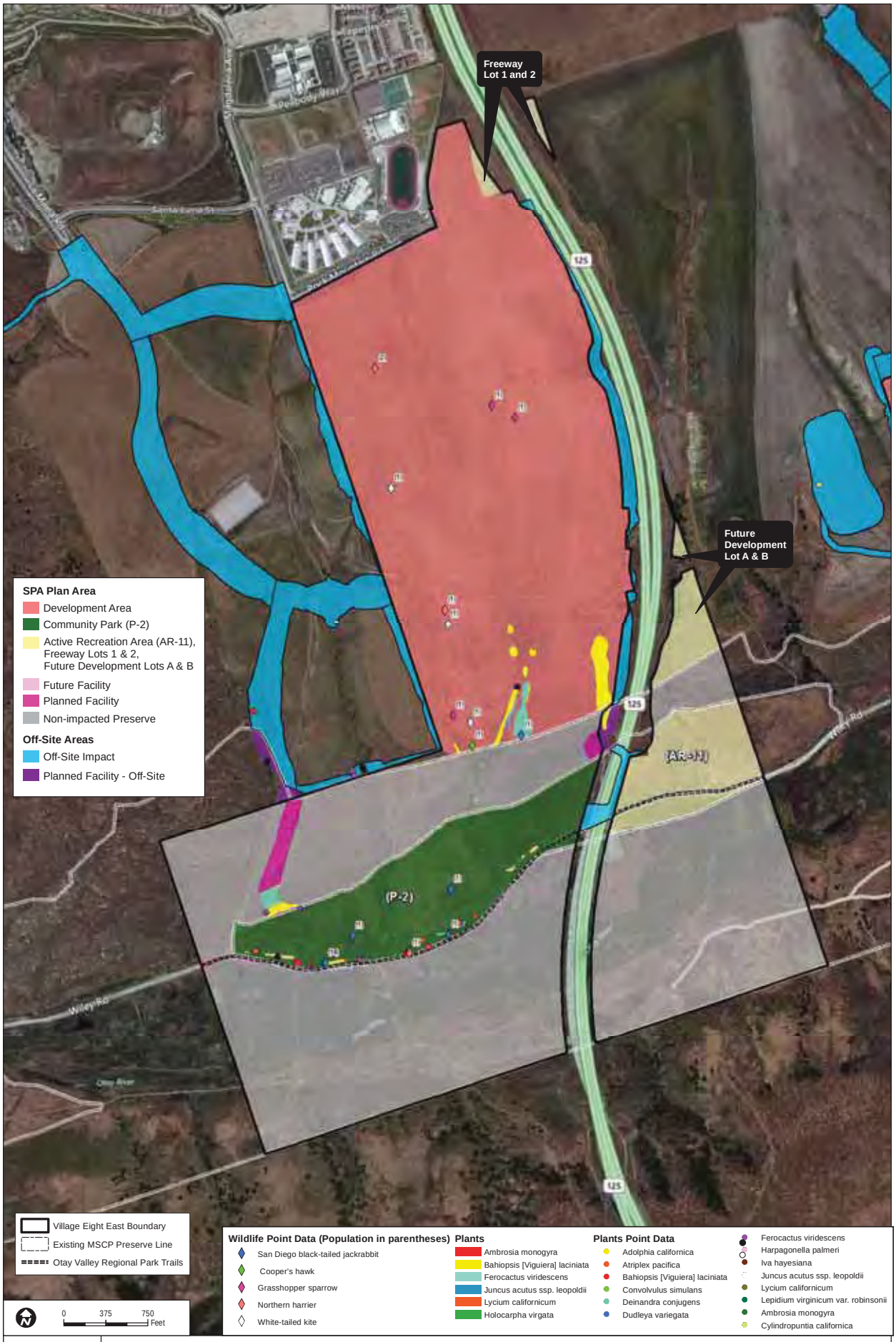

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FIGURE 5.8-16

Special Status Species Impacts Map - Village Eight East

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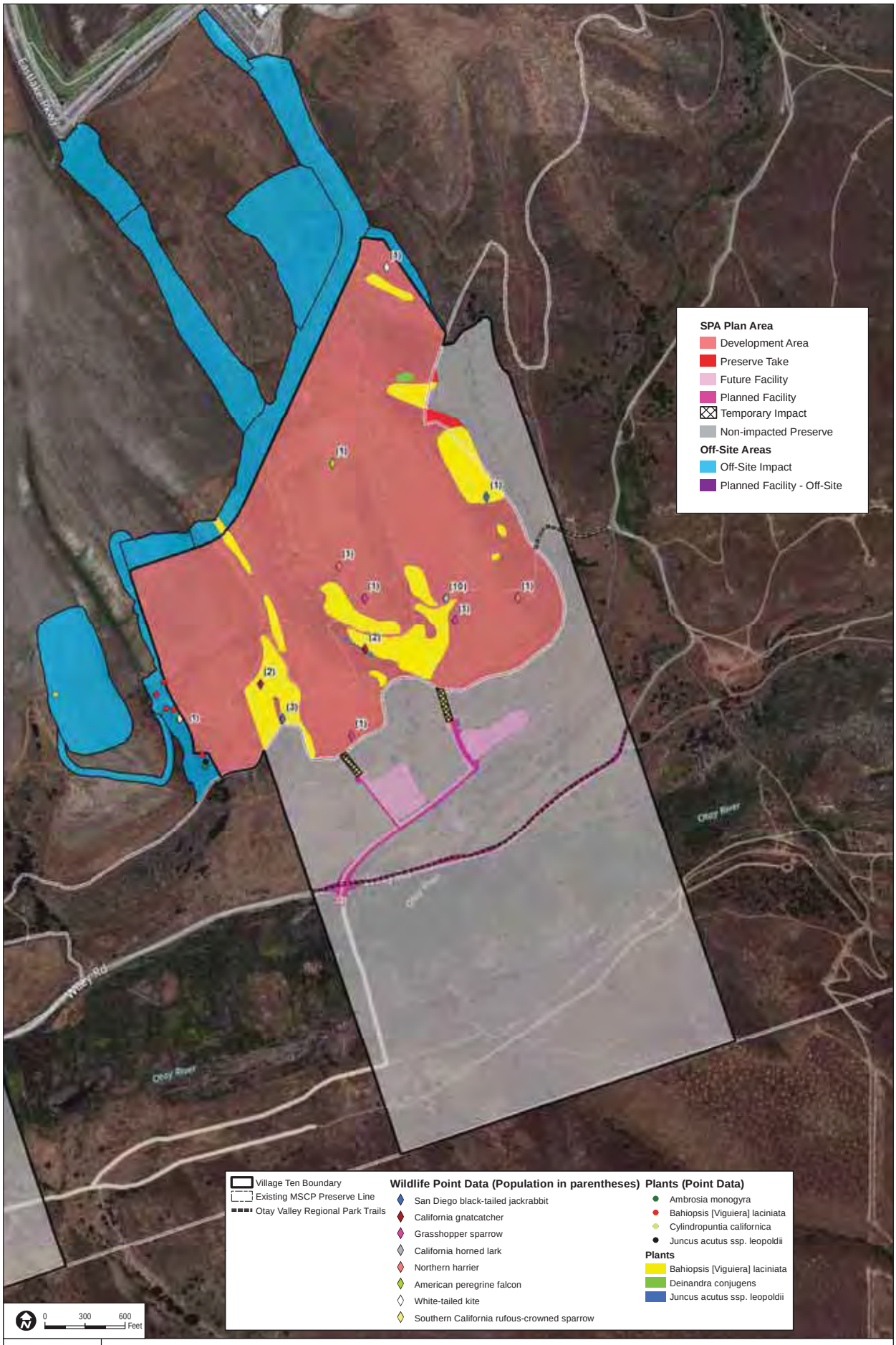

FIGURE 5.8-17

Special Status Species Impacts Map - Village Ten

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The Community Park (P-2) in the Portion of Village Four is part of a larger proposed Community Park. The design of this park, similar to that of the Village Eight East Active Community Park (P-2) will be subject to the Adjacency Management Guidelines. The park design will include specific measures to address noise issues with respect to the Preserve and the special status species that are located within habitat adjacent to the Community Park (P-2). The Portion of Village Four that extends into the Preserve area is designated as non-Preserve open space, and as such has no uses planned. There are no park facilities within this area. The boundary between this non-Preserve open space area and the Community Park (P-2) will be fenced as shown in the Edge Plan to prevent human intrusion into this area that is adjacent to the Preserve.

Short-term indirect impacts to special-status nesting bird species include construction noise impacts. Species potentially affected by such activities include, but are not limited to, California gnatcatcher, cactus wren, Southern California rufous-crowned sparrow, and nesting raptors. While Quino checkerspot butterfly has not been recorded on site in the recent survey, it is known to be present nearby within the ~~Salt Creek~~Otay Ranch Preserve. Dust may result in indirect impacts to a number of special status wildlife species. Indirect impacts to special-status bird species may occur if construction is conducted during the breeding season for California gnatcatcher (February 15–August 15) and raptors (January 15–August 31). Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to limit impacts of fugitive dust on sensitive habitat and species. Long-term indirect impacts to special-status wildlife species would also occur as a result of the proposed project. Impacts would consist of lighting, human activity in the Preserve, noise, and domestic animal predation. Indirect impacts to special-status wildlife species are considered **potentially significant**.

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.

Direct Impacts

Sensitive vegetation communities to be permanently impacted include non-native grassland, freshwater marsh, cismontane alkali marsh, disturbed cismontane alkali marsh, coastal sage scrub, disturbed coastal sage scrub, broom baccharis scrub, maritime succulent scrub, disturbed maritime succulent scrub, mulefat scrub, southern mixed chaparral, tamarisk scrub, and southern willow scrub. A complete breakdown of vegetation impacts by Village is presented in Table 5.8-7 and illustrated in Figures 5.8-18 through 5.8-21. Losses would occur as the result of grading and infrastructure installation.

Table 5.8-7
Direct Impacts to Sensitive Vegetation Communities

Vegetation Communities	Village Three North and Portion of Village Four	Village Eight East	Village Ten	Total Permanent Impacts
Non-Sensitive Vegetation Communities				
Agriculture	25.3	264.0	8.1	297.4
Developed	0.3	8.2	1.5	10.0
Disturbed Land	1.2	4.7	3.0	8.9
Subtotal	*26.8*	*276.9*	*12.6*	*316.3*
Sensitive Vegetation Communities				
Broom Baccharis Scrub (disturbed)	–	0.4	<0.1 (0)	0.5
Cismontane Alkali Marsh	–	0.1	–	0.1
Cismontane Alkali Marsh (disturbed)	–	0.2	–	0.2
Coastal Sage Scrub	19.6	8.5	46.5	74.7
Coastal Sage Scrub (disturbed)	6.7	4.4	21.8	32.9
Freshwater Marsh	–	–	<0.1 (0)	<0.1 (0)
Maritime Succulent Scrub	4.6	1.3	2.8	8.6
Maritime Succulent Scrub (disturbed)	0.6	–	–	0.6
Mulefat Scrub	–	–	0.3	0.3
Non-native Grassland	222.7	2.8	75.5	301.0
Southern Mixed Chaparral	–	–	<0.1 (.1)	<0.1 (.1)
Southern Willow Scrub	–	–	0.2	0.2
Tamarisk Scrub	<0.1 (0)	0.2	–	0.3
Subtotal	*254.2*	*17.9*	*147.2*	*419.3*
Total	**281.0**	**294.8**	**159.8**	**735.6**

Impacts to sensitive vegetation communities (as noted in Table 5.8-7) are considered **potentially significan**t.

Indirect Impacts

During construction of the proposed project, edge effects may include dust, which could disrupt plant vitality in the short term, and construction-related soil erosion and runoff. Long-term indirect impacts on vegetation communities would most likely occur as a result of trampling of vegetation by humans and domestic pets, invasion by exotic species, alteration of the natural fire regime, and exposure to urban pollutants (e.g., fertilizers, pesticides, herbicides, and other hazardous materials). Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to limit impacts of fugitive dust on sensitive habitat and species. Indirect impacts to vegetation communities are considered **potentially significant**.

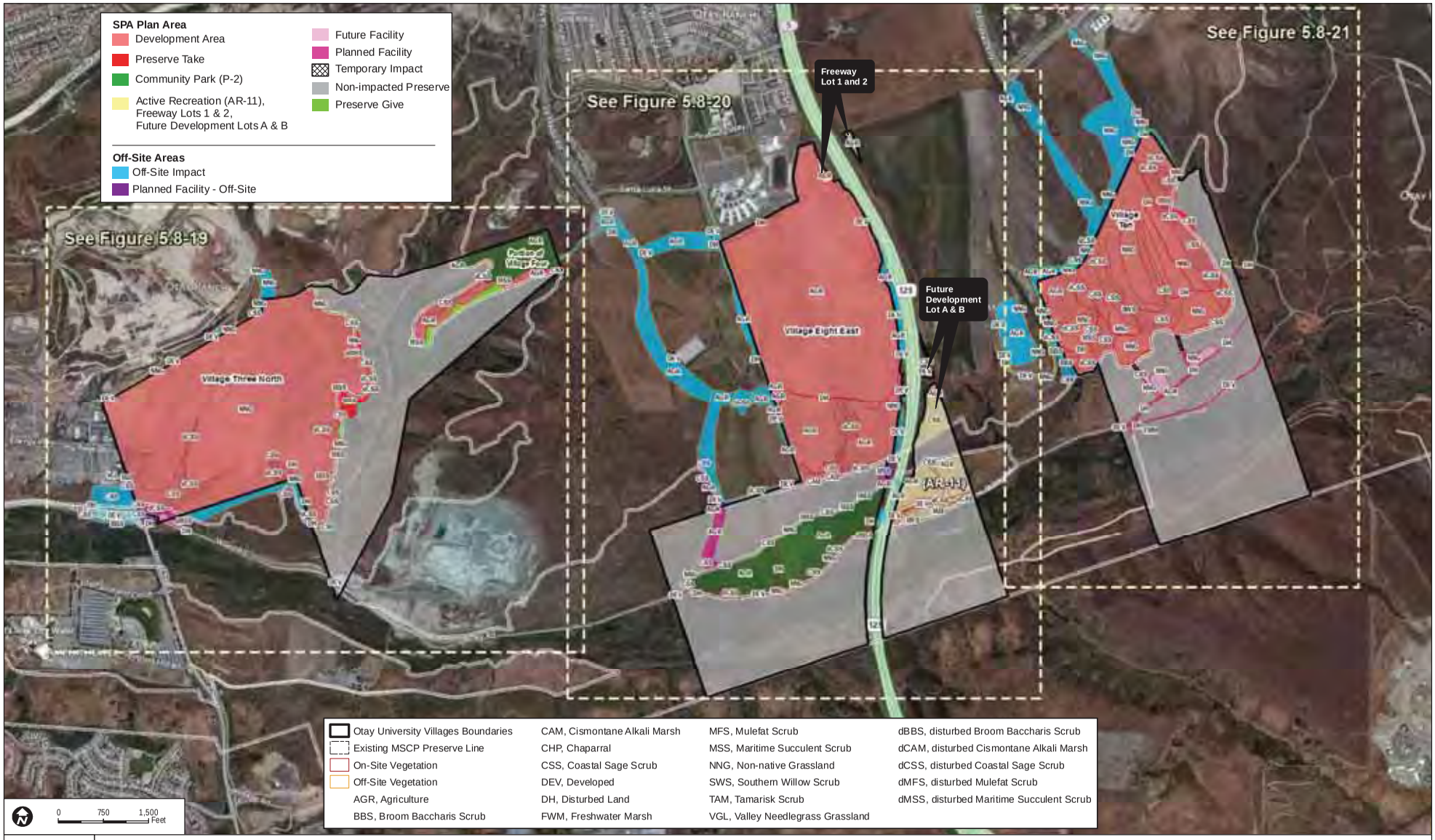

FIGURE 5.8-18

Vegetation Impacts Index Map

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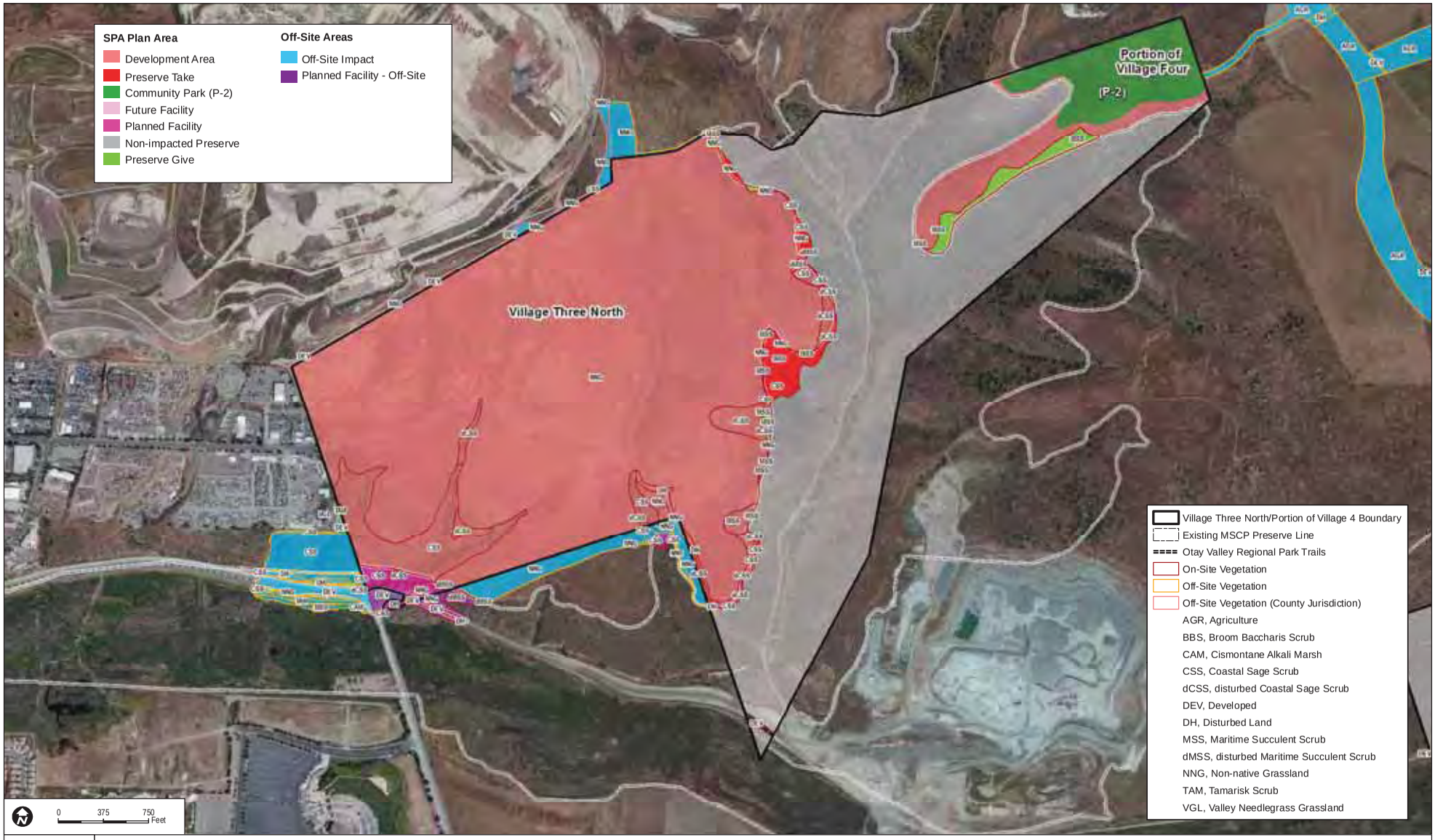

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FIGURE 5.8-19

Vegetation Impacts Map - Village Three North/Portion of Village Four

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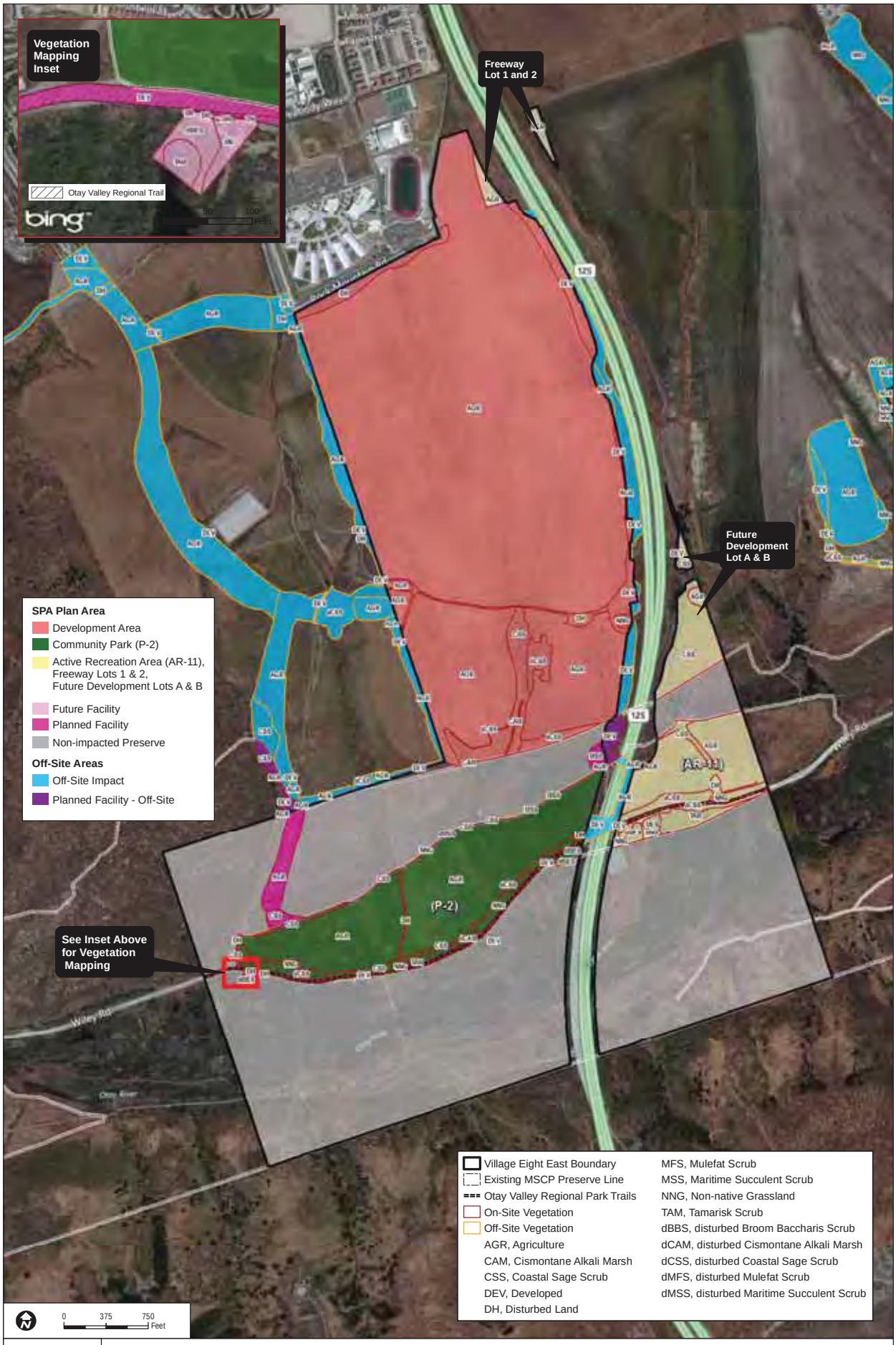

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FIGURE 5.8-20

Vegetation Impacts Map - Village Eight East

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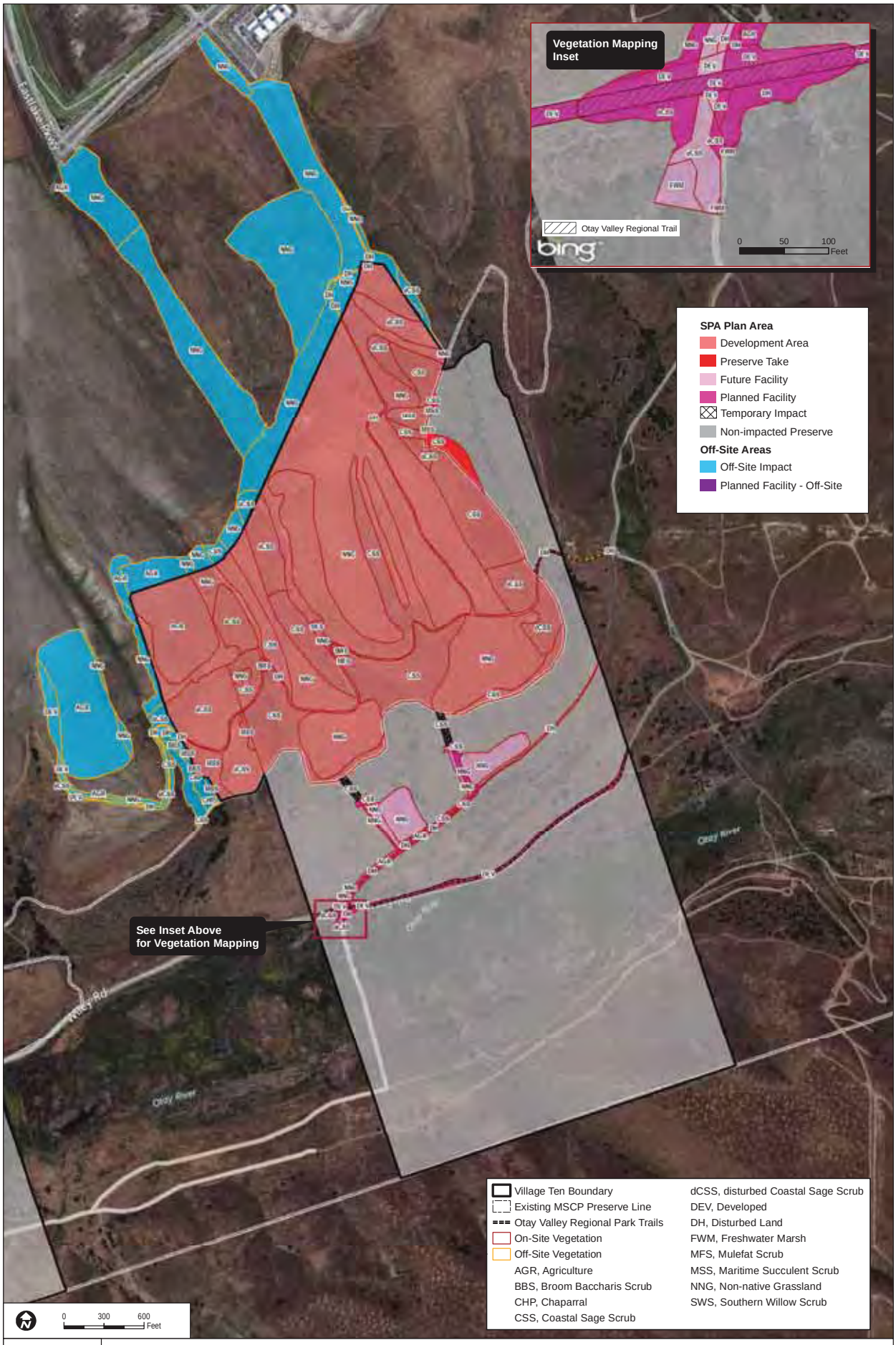

FIGURE 5.8-21

Vegetation Impacts Map - Village Ten

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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.

Direct Impacts

On-Site Impacts

Impacts to jurisdictional waters and wetlands would occur as a result of the proposed project as shown on Figures 5.8-22 through 5.8-25. Impacts to jurisdictional waters total 0.56 acre and are all permanent. Impacts to jurisdictional wetlands total 1.03 acres, 0.05 acre of which includes a compatible use while the remaining acres are permanently impacted. A total of 1.35 acres of jurisdictional areas under the ACOE, RWQCB, and CDFW would be impacted. Impacts to jurisdictional areas under CDFW only are 0.23 acre (Table 5.8-8).

Table 5.8-8
Impacts to On-Site Jurisdictional Wetlands and Waters

Wetlands Vegetation Community/Water Feature	Jurisdiction	Impact Type (Acres)		
		Development Area	*Future Facilities**	*Total Impacts*
Village Three North/Portion of Village Four				
Tamarisk Scrub	CDFW only	0.04	–	**0.04**
Ephemeral Drainage	ACOE/CDFW/RWQCB	0.20	0.01	**0.21**
Total Jurisdictional Impacts on Village Three North		*0.24*	*0.01*	***0.25***
Village Eight East				
Cismontane Alkali Marsh	ACOE/CDFW/ RWQCB	0.12	–	**0.12**
Disturbed Cismontane Alkali Marsh	ACOE/CDFW/ RWQCB	0.18	–	**0.18**
Tamarisk Scrub	ACOE/CDFW/ RWQCB	0.13	0.02	**0.15**
Ephemeral Drainage	ACOE/CDFW/ RWQCB	0.07	–	**0.07**
Intermittent Stream Channel	ACOE/CDFW/ RWQCB	0.07	–	**0.07**
Total Jurisdictional Impacts on Village Eight East		*0.57*	*0.02*	***0.59***
Village Ten				
Freshwater Marsh	ACOE/CDFG/RWQCB	–	0.03	**0.03**
Mulefat Scrub	ACOE/CDFW/ RWQCB	0.34	–	**0.34**
Southern Willow Scrub	CDFW only	0.17	–	**0.17**
Ephemeral Drainage	ACOE/CDFW/ RWQCB	0.18	–	**0.18**
Ephemeral Drainage	CDFW only	0.02	–	**0.02**
Total Jurisdictional Impacts on Village Ten		*0.71*	*0.03*	***0.74***
Total Project Jurisdictional Impacts		**1.52**	**0.06**	**1.58**

* Note that there are no impacts associated with Planned Facilities within the boundaries of the Otay Ranch Boundary

Development projects are required to demonstrate that impacts to wetlands have been avoided or minimized to the greatest extent practicable. The major drainage within Wolf Canyon, as well as all of the Otay River Valley, are included in the Preserve; therefore, these drainages will not be subject to grading and thus no impacts will occur. Impacts to ephemeral drainages and wetlands within the villages have been avoided and minimized to the extent feasible. Indirect impacts to wetlands and waters of the U.S. within the Preserve areas are avoided as described below. Project drainage impacts will be minimized in compliance with the San Diego RWQCB Permit CAS0109266 by Order No. R9-2013-0001. Bioretention basins and on-site Low Impact Development measures are proposed to mitigate sediment and pollutants of concern associated with the proposed development in compliance with the current permit. Outlet structures with energy dissipaters are proposed to reduce flows to non-erosive velocities at the Otay River outfalls to avoid direct impacts from development runoff. Direct impacts to ephemeral and intermittent unvegetated waters and jurisdictional wetlands are considered **potentially significant**.

Off-Site Impacts

Off-site facilities (i.e., outside of the SPA Plan Area but not outside of the Otay Ranch boundary), would impact 0.30 acre of waters (Table 5.8-9). Of the 0.30 acres of waters to be impacted, 0.16 acre is ephemeral waters under regulation of ACOE, RWQCB, and CDFW. The remaining waters, 0.14 acre, are under the sole jurisdiction of CDFW.

Table 5.8-9
Impacts to Off-Site Jurisdictional Wetlands and Waters

Off-Site Area	Wetlands Vegetation Community/Water Feature		
	Ephemeral Stream Channel		*Total*
	ACOE/CDFW/RWQCB	*CDFW*	
4	0.01	–	0.01
7	0.01	–	0.01
9	0.13	–	0.13
14	–	0.14	0.14
15	<0.01	–	<0.01
18	0.01	–	0.01
Total Project Jurisdictional Impacts	0.16	0.14	0.30

Impacts to off-site jurisdictional wetlands and waters due to project implementation would be **potentially significant**.

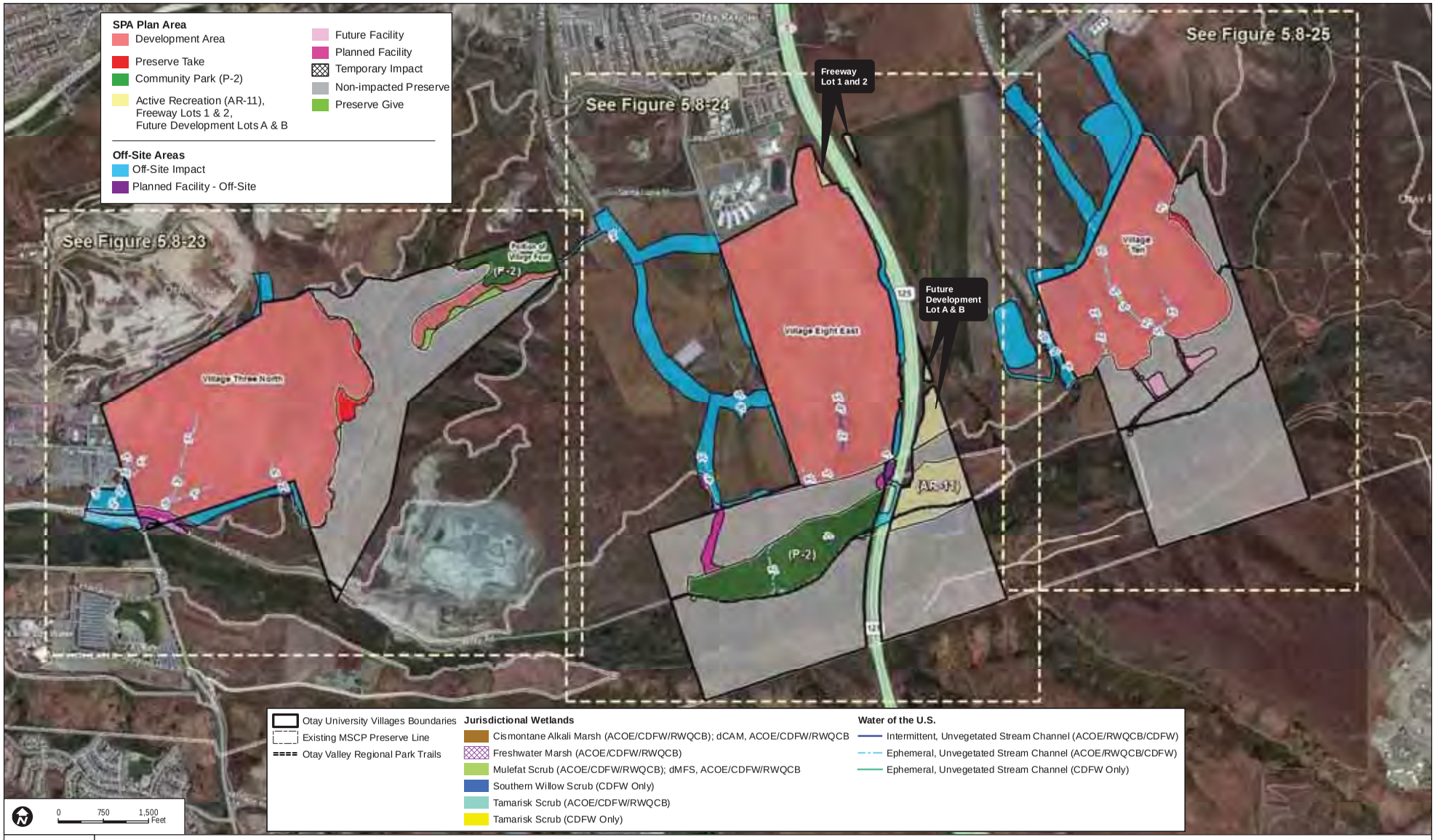

FIGURE 5.8-22

Wetland Delineation Impacts Overview Map

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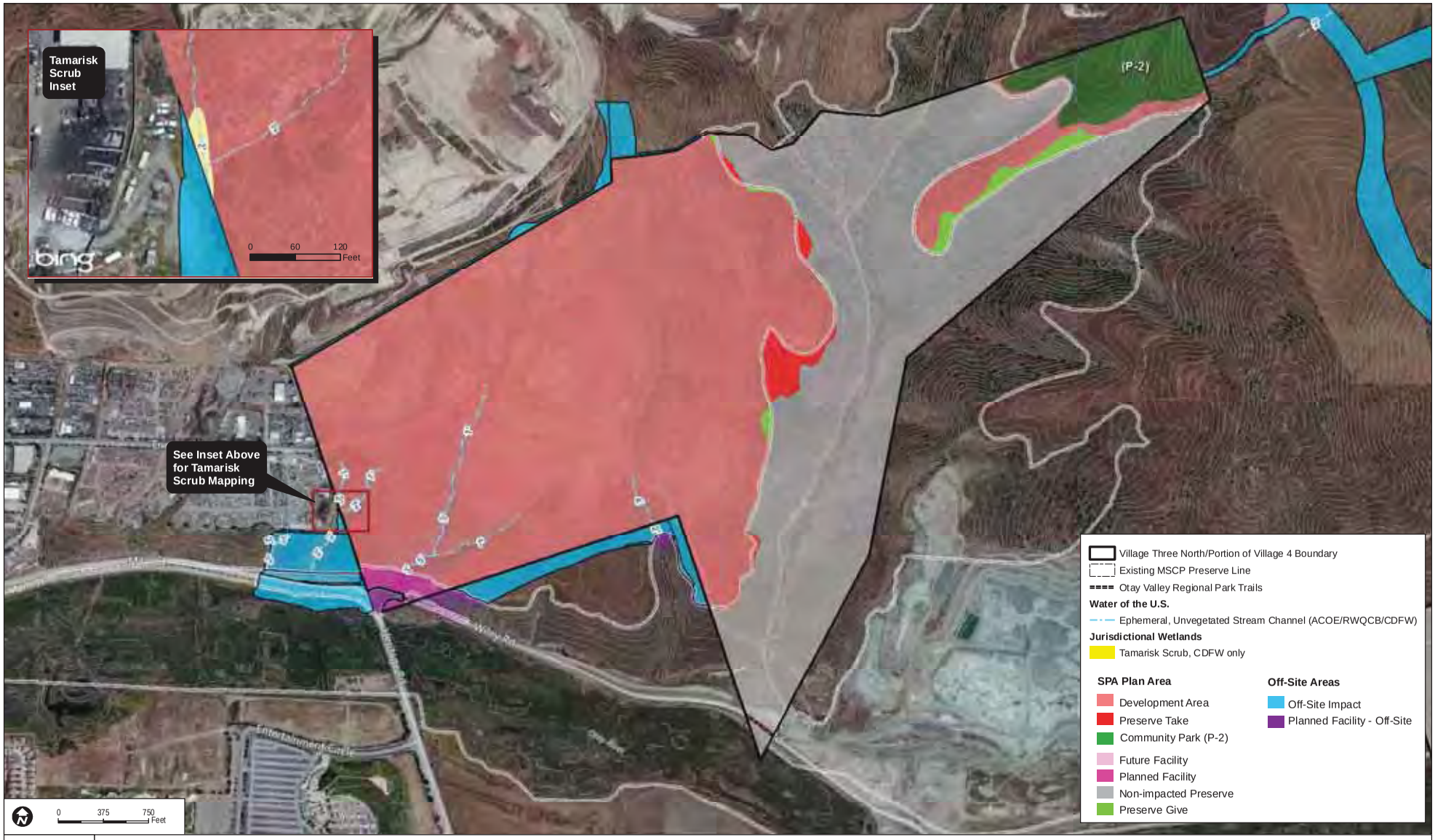

FIGURE 5.8-23

Wetland Delineation Impacts Map - Village Three North/Portion of Village Four

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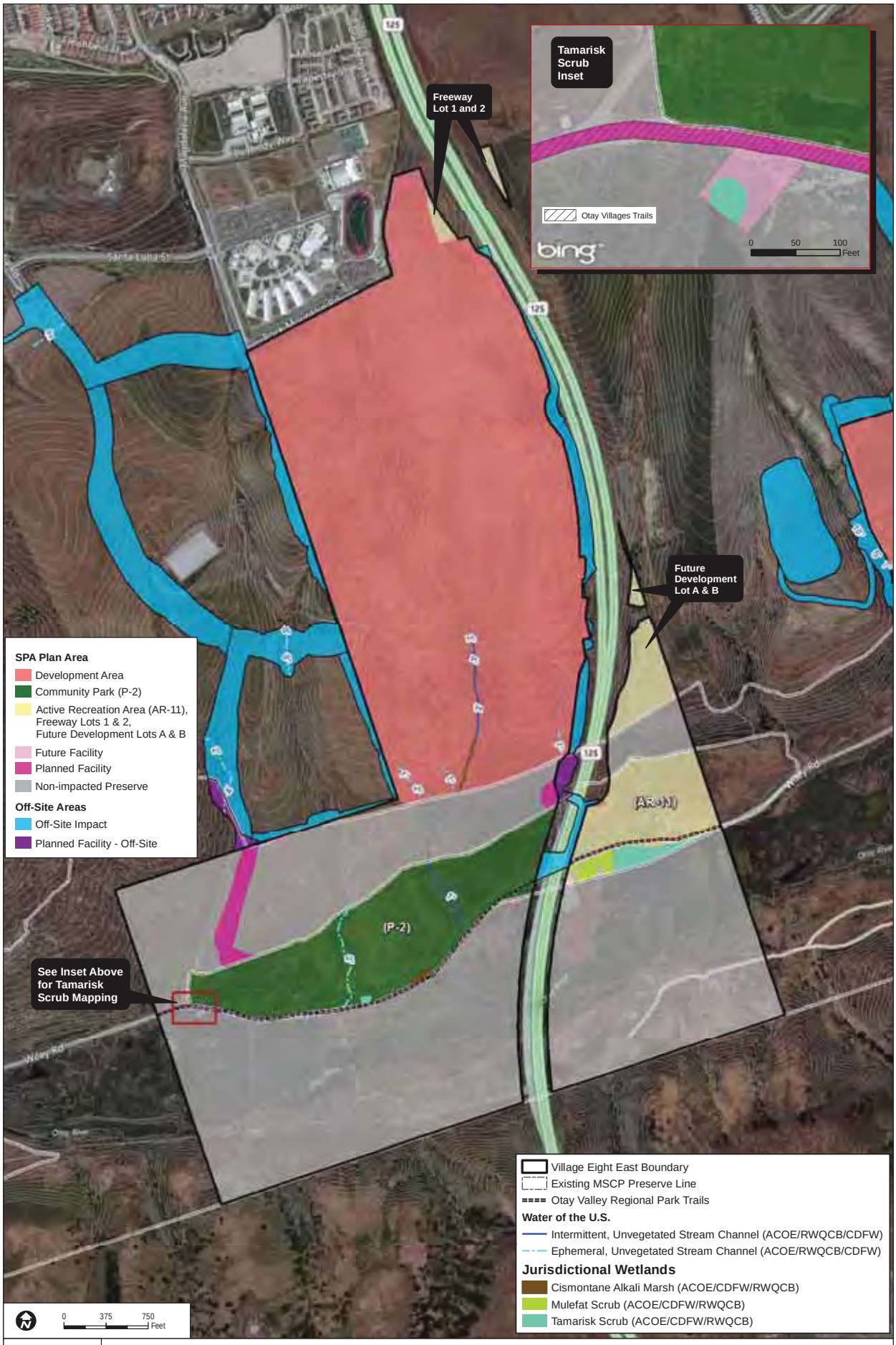

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FIGURE 5.8-24

Wetland Delineation Impacts Map - Village Eight East

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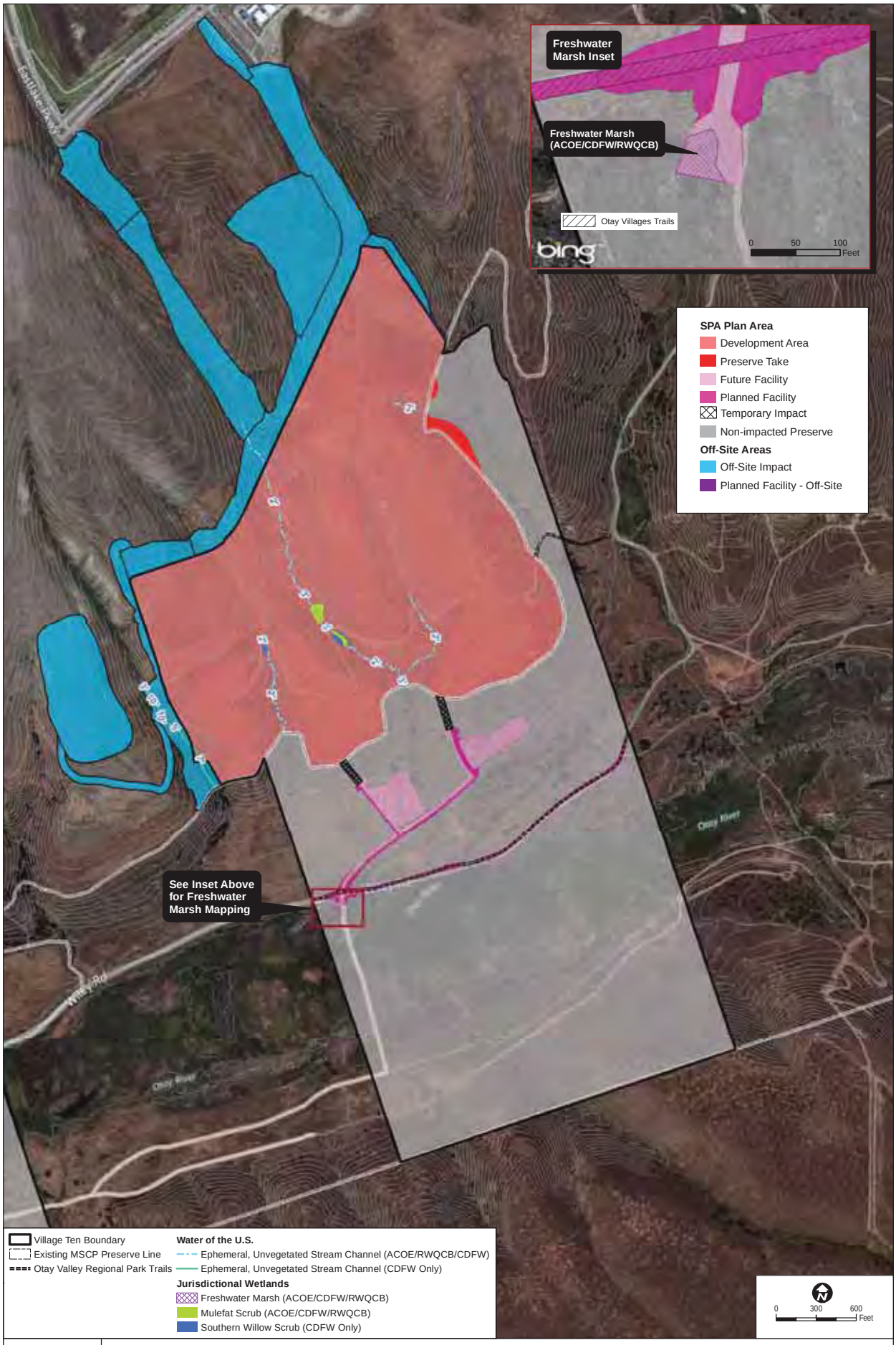

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FIGURE 5.8-25

Wetland Delineation Impacts Map - Village Ten

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Vernal Pool Impacts

Within Village Three North, there is one vernal pool within the K17 complex that would be impacted that is under ACOE jurisdiction, but characterized by the ACOE as a seasonal depression for permitting purposes. The total surface area proposed to be impacted is 120 square feet. It has not been established whether the vernal pool is considered jurisdictional by the RWQCB. Mitigation for impacts to these pool complexes is identified in Section 5.3.5 of the Otay Ranch Villages Two and Three EIR. The preferred mitigation option outlined in the Conceptual Vernal Pool Mitigation Plan (Dudek 2008) consists of restoration within existing vernal pool complexes to be preserved within Village Thirteen. In addition, optional mitigation is provided in consideration of restoration within the J23, J24, or J25 pools on Otay Mesa. Impacts to the vernal pool are considered **potentially significant** under CEQA.

Indirect Impacts

Indirect, adverse edge effects to jurisdictional waters and wetlands include potential runoff, sedimentation, erosion, exotics introduction, and habitat type conversion in the short and long-term, particularly within the Wolf Canyon drainage.

The Preserve Edge Plans prepared for University Villages (Otay Ranch Company 2013a, 2013b, 2013c) provide the description of and analysis for the subdrains that are proposed at the perimeter of the project Site. These subdrains are designed to allow subsurface drainage and to avoid resulting in impacts to wetlands and waters of the U.S. The subdrain outlets are comprised of a concrete headwall, flow channel and 10 foot wide percolation area. The outlet pipe is a minimum of 20 feet from the Preserve Boundary and each system is a minimum of three feet from the Preserve Boundary.

The Drainage Study for Village Ten shows that due to the impacts of the Savage Dam and Lower Otay Reservoir, project impacts to the peak flows in the Otay River are negligible. Since flows in the Otay River are impacted by the Savage Dam upstream, the Otay River Valley is exempt from Hydromodification criteria under the County of San Diego Hydromodification Management Plan. The Otay River Watershed Management Plan (Aspen Environmental Group 2006) also indicates that increased frequency and volumes of flows would be beneficial to the Otay River Valley.

Indirect impacts to jurisdictional waters, without mitigation, are considered **potentially significant**.

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.

Direct Impacts

In the western portion of Otay Ranch (west of Lower Otay Lake), significant areas of wildlife habitat occur in the Otay River Valley, Wolf Canyon, Poggi Canyon, and Salt Creek Canyon (Ogden 1992).

Wolf Canyon, Salt Creek, and the Otay River Valley are within the boundaries of the Preserve areas of the University Villages or within the Boundary Adjustment areas (Figure 5.8-26).

Village Three North and Portion of Village Four

The Wolf Canyon portion of the Preserve of Village Three North and Portion of Village Four is outside of the project site but is within the boundary of these villages. Wolf Canyon does not function as a regional habitat linkage or wildlife corridor, but is identified as a local corridor for focused mammal and bird species. The northern portion of Wolf Canyon functions as a corridor for California gnatcatcher and cactus wren (Ogden 1992). Although the proposed project would remove 0.8 acres from a portion of the Preserve in Wolf Canyon, the impact is concentrated along the edges of the preserve (Figures 5.8-26 through 5.8-30) and the project continues to maintain a wide corridor for wildlife movement within Wolf Canyon (Figure 5.8-28). In addition, the proposed Boundary Adjustment reduces the total linear length of edge by smoothing the boundary. The dimensions of the corridor would remain very similar to the original as noted above and illustrated in Figure 5.8-28 and, therefore, would maintain the movement within Wolf Canyon and the connection with the Otay River Valley. The Otay Ranch Village Three North and a Portion of Village Four Preserve Edge Plan (2013) provides the required buffer between the Preserve and the proposed development. As shown in that Plan, there are no facilities proposed to be located within the Wolf Canyon Preserve or within the edge with the exception of compatible allowed uses including brush management, residential streets, private park open space and Community Park (P-2). The Community Park (P-2) within Portion of Village Four has a minimum of 100 feet between the preserve and park uses in order to provide protection of California gnatcatcher/cactus wren occupied habitat, which is located along the southern edge of the village. Park uses within the 100-foot Preserve edge are limited to passive uses that are not noise generating such as picnic areas, walking paths, parking, and benches. The entire edge of the Preserve adjacent to the Community Park (P-2) will be fenced per the Edge Plan. The Portion of Village Four that extends into the preserve is not planned for inclusion in the Community Park (P-2). This area is designated as non-Preserve open space and as such has no uses planned, there are no allowed uses and there will be no park facilities within this area. The boundary between this non-Preserve open space area and the Community Park (P-2) will be fenced as shown in the Edge Plan to prevent human intrusion into this area that is adjacent to the Preserve. The development within Village Three North and Portion of Village Four would not interfere with the movement of wildlife species or impede the use of native wildlife nursery sites within Wolf Canyon. Connection of the mouth of Wolf Canyon to the Otay River Valley would be unaffected by the proposed project since it is not located at that point. However, impacts to wildlife corridors in Village Three North and Portion of Village Four would be **potentially significant** prior to mitigation.

FIGURE 5.8-26

Otay Ranch University Villages Give/Take Analysis

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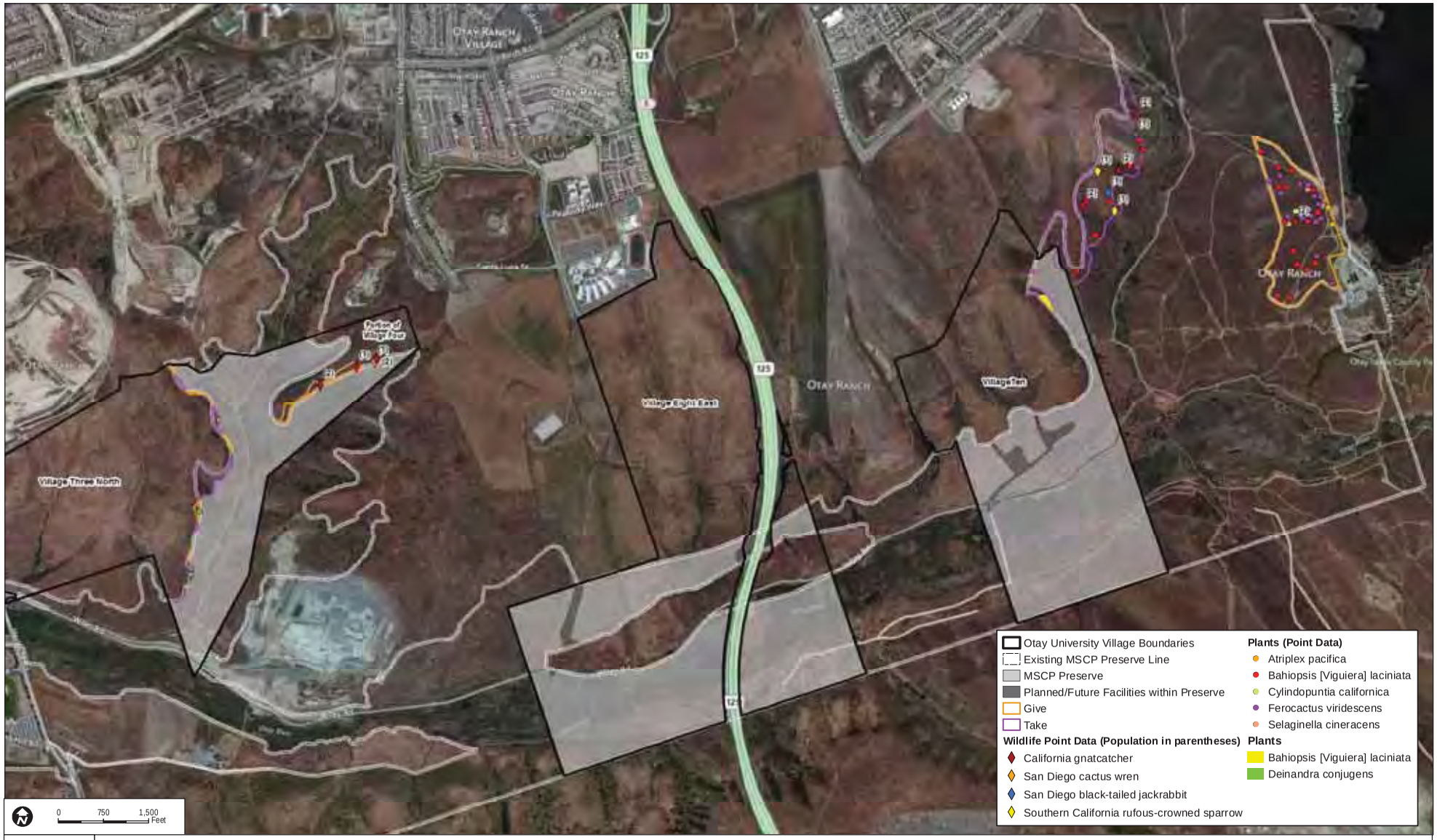

FIGURE 5.8-27

Otay Ranch University Villages Give/Take Analysis - Species Map within Give/Take Areas

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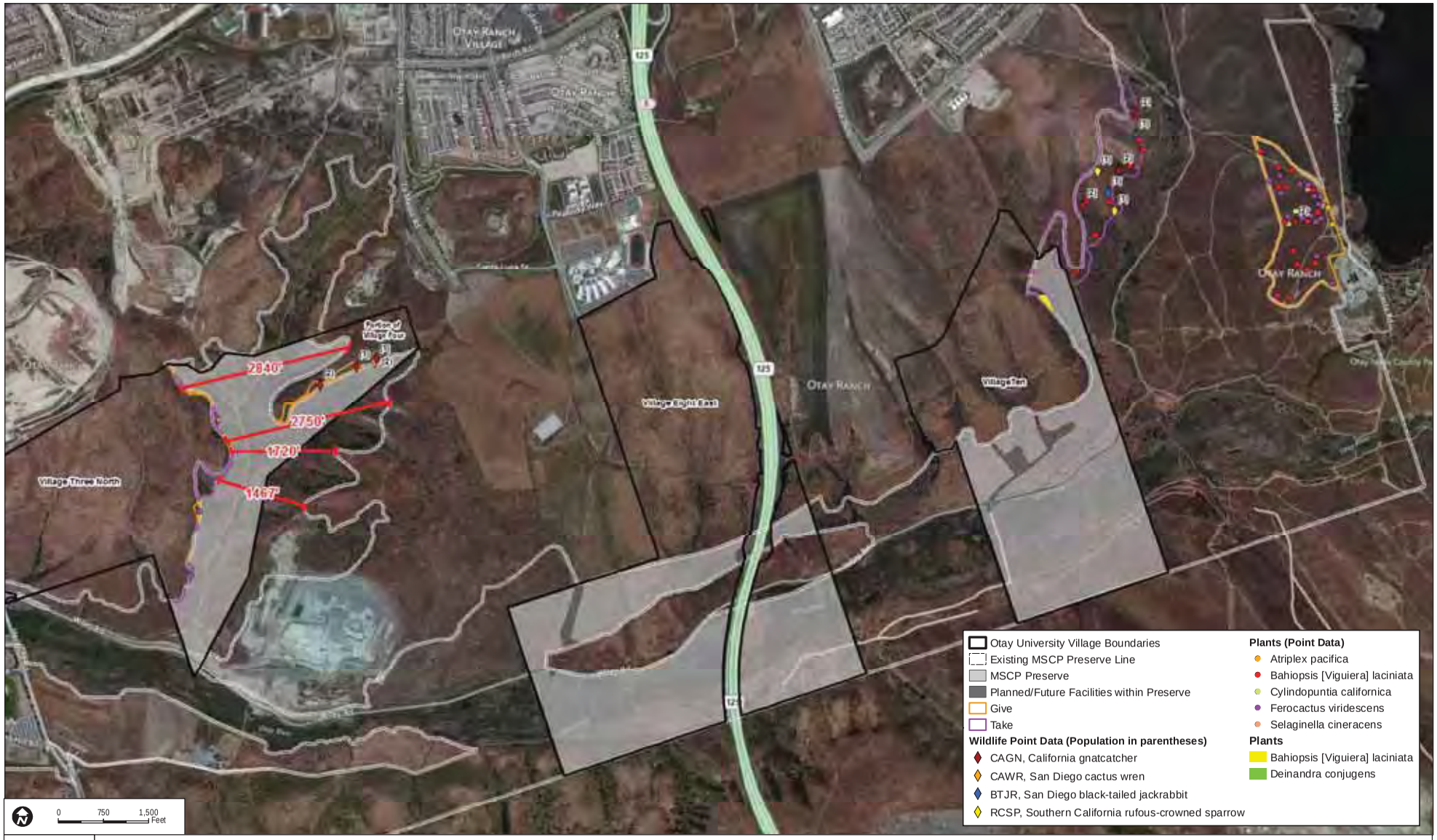

FIGURE 5.8-28

Otay Ranch University Villages Give/Take Analysis - Species Corridor Map within Give/Take Areas

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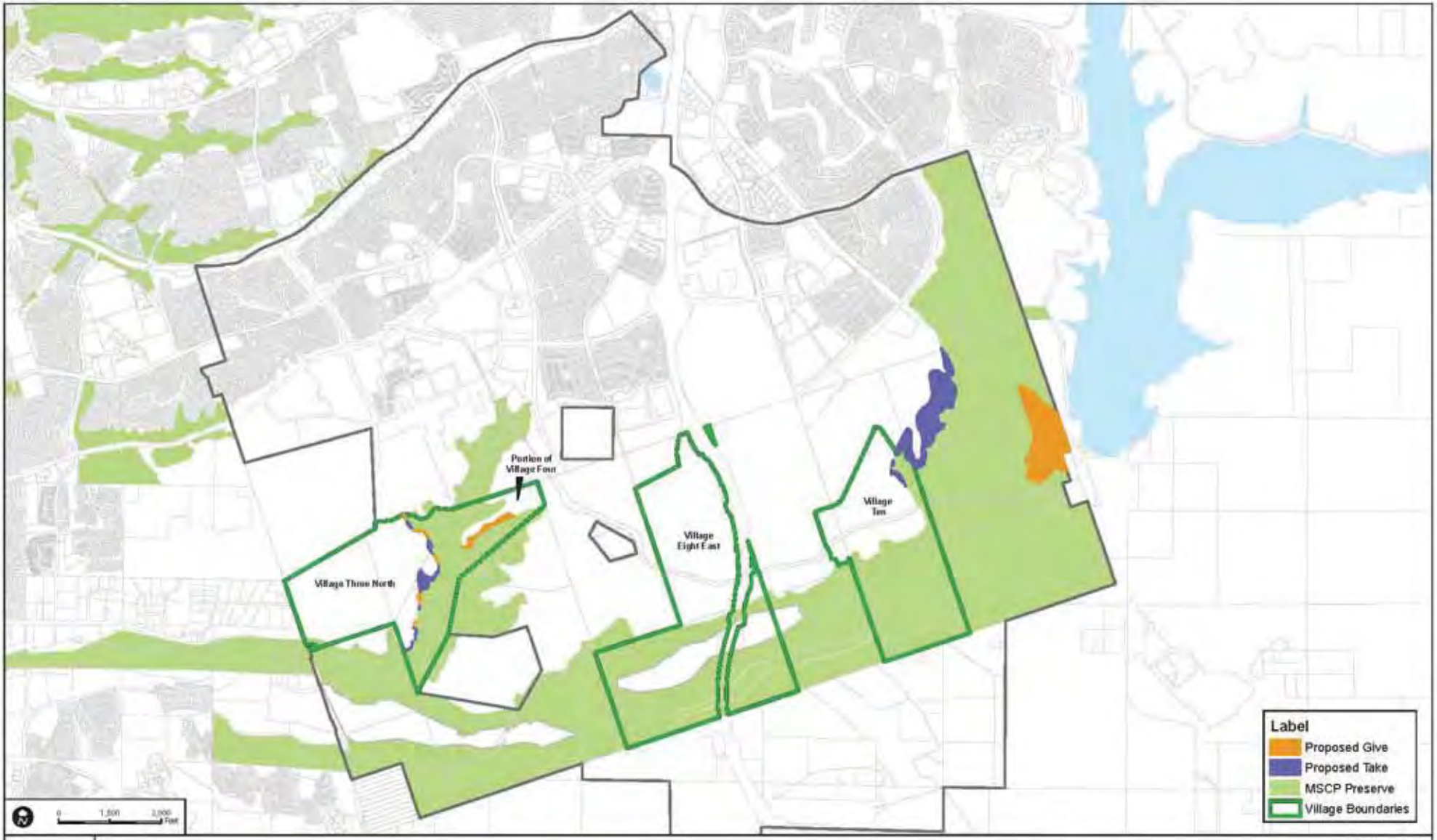

FIGURE 5.8-29

Otay Ranch University Villages Give/Take Analysis: Proposed Change in Preserve

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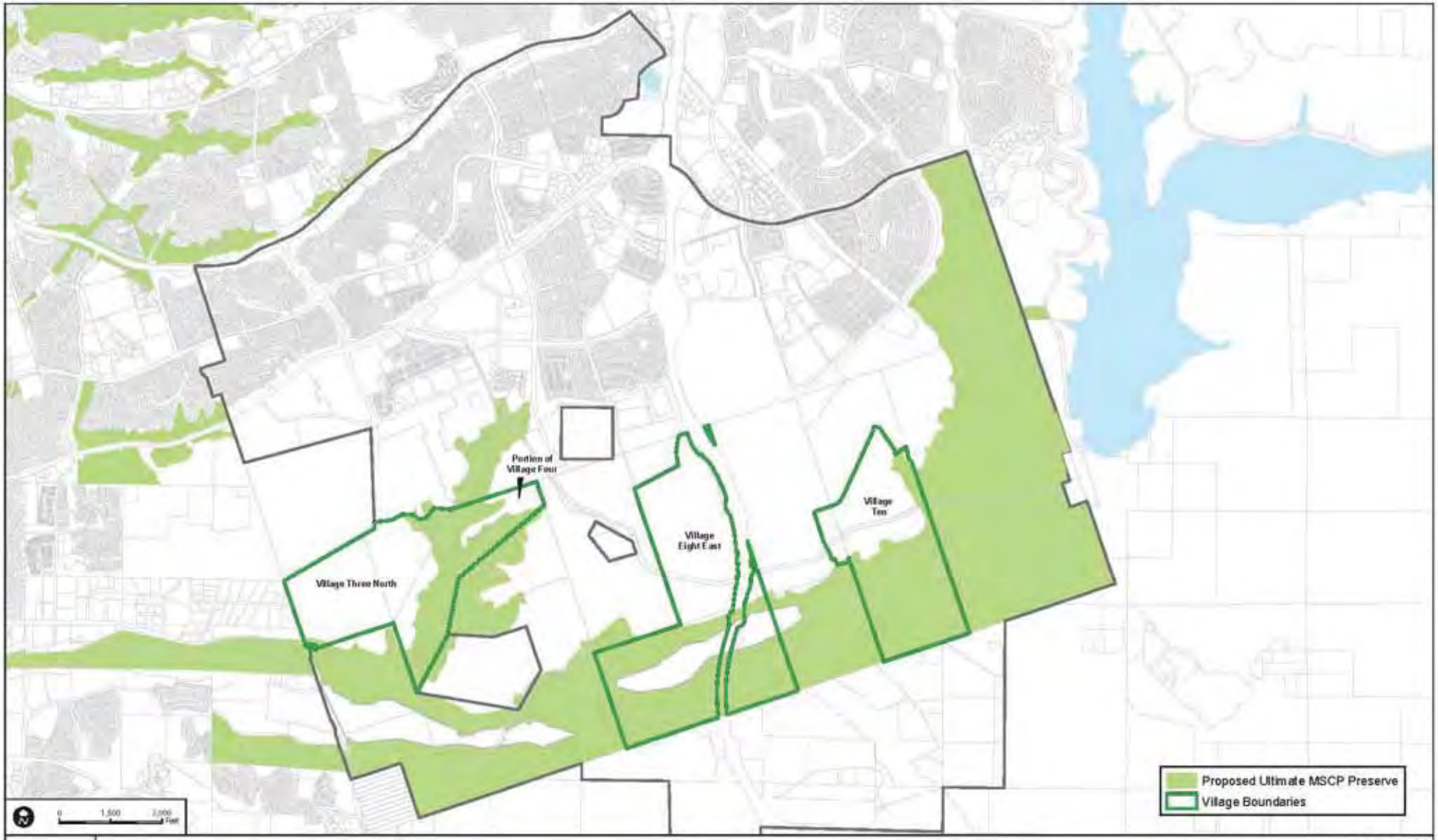

FIGURE 6.8-30

Otay Ranch university Villages Give/Take Analysis: Ultimate Preserve Boundary

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Village Eight East

The Otay River Valley is located immediately south and outside of the project site. The Otay River Valley provides regional wildlife movement and habitat connectivity functions for both mammal and bird species. The Otay River Valley will not be directly impacted by development of Village Eight East since there is no proposed change to the Preserve boundary along the Otay River Valley edge, and it will not adversely affect the habitat connectivity or wildlife movement functions of the Otay River Valley. The Community Park (P-2) is located immediately adjacent to the Otay River Valley Preserve area. The conceptual park design provides a minimum distance of at least 100 feet from active park uses, such as ball fields and basketball courts, which can be a source of noise and lighting, and the preserve boundary. Park uses within the 100-foot Preserve edge are limited to passive uses that are not noise generating such as water quality/retention basin, scenic overlooks, picnic areas, trail staging area, walking paths, parking, and benches. The entire edge of the Preserve adjacent to the Community Park (P-2) will be fenced per the Edge Plan. The Active Recreation Area (AR-11) east of SR-125 is not part of the proposed project but is not precluded from future active recreation uses.

Within the upland habitat along the slopes of Village Eight East between the proposed residential development and the proposed Community Park (P-2), there is a corridor designated for California gnatcatcher and cactus wren (Ogden 1992). This area is vegetated with a mix of coastal sage scrub and maritime succulent scrub. One access road and an emergency access route to the active recreation area extend south from the developed portion of Village Eight East through the Preserve. These access roads have been designed to the minimum widths feasible to reduce impacts to the Preserve by removal of sidewalks on one side and reduction of landscaping in order to narrow the roadway impact. The reduced road width combined with no parking along these roads will maintain direct line of sight between suitable habitat patches both at locations along the slope where there is native habitat and on the flatter mesa top north of the slope within the Preserve. The movement of species is not compromised through the Preserve between the two roads because avian species, which are the focus of this particular corridor, can still move through the habitat patch over these roads. In addition, the only other option for providing access to the Community Park (P-2) would be to fully improve Wiley Road from Heritage Road east through the Preserve over approximately 2 miles. This would result in impacts of approximately 12 acres, creating greater edge effects and a longer potential barrier to wildlife movement. Therefore, impacts to wildlife movement as a result of development in Village Eight East would be **potentially significant** prior to mitigation.

Village Ten

Development to the north of Salt Creek Canyon has restricted wildlife movement between the San Miguel Mountains and the Otay River Valley along this corridor. Salt Creek Canyon is

described as "a habitat cul-de-sac which includes a regional corridor for gnatcatcher and cactus wren" (Ogden 1992). The mouth of Salt Creek is considered an integral corridor that allows for movement of these two bird species to the Otay River Valley (Ogden 1992). Although the proposed project (Take B of the Boundary Adjustment) extends the future University site farther east into the Salt Creek area, Salt Creek remains intact as an area for avian movement as designated in the corridor study (Ogden 1992) and for live-in habitat. In addition, the Boundary Adjustment retains a connection from Salt Creek to Otay Lakes because the acreage in the proposed Boundary Adjustment Give B area would preserve the wildlife connection between Otay River Valley, Salt Creek, Lower Otay Lake and ultimately Sweetwater. The addition of the proposed Give Area in the ~~Salt Creek~~Otay Ranch Preserve area would essentially provide a complete Preserve area from the Preserve boundary east of Village Ten to the edge of Lower Otay Lake. The connection north of this Give area is unaffected and maintains the connection to the archipelago of coastal sage scrub south of the Olympic Training Center as described in the University Redesign (Chula Vista 2003). The proposed Give Area adds additional connection along the boundary of Otay Ranch with the City of San Diego Cornerstone lands. This contribution to the Preserve provides a total of 1,125 linear feet of connection along the eastern edge of the Give B to the coastal sage scrub habitat around the southern portion of Lower Otay Lake not including that portion adjacent to the Otay Water Treatment Plant. Thus, the proposed project does not result in significant impacts to habitat linkages or wildlife movement corridors. The proposed project maintains the integrity of the corridor that was established with the MSCP and especially includes patch of maritime succulent scrub which are critical for the cactus wren. However, impacts to wildlife movement as a result of development in Village Ten would be **potentially significant** prior to mitigation.

Indirect Impacts

According to the Wildlife Corridor studies conducted by Ogden (1992), the University Villages project area does not support any existing wildlife corridors, but does serve as a local corridor for target mammal species. Potential indirect impacts to wildlife utilizing this local corridor are identified under Threshold A. These impacts are considered **potentially significant** and mitigation measures are required. The discussion above under direct impacts analysis is provided of special status wildlife, and both their use and movement within the preserve and non-preserve areas of all three Villages.

Preserve Edge Plans, as described below, prepared for each village will address and describe avoidance of indirect effects to special-status species that occur along the preserve/development interface. Design of the Community Park (P-2) in Village Eight East has included a minimum of 100 feet between the Preserve boundary and park uses. Thus, the occupied habitat north of the Community Park (P-2) is buffered from the activities and active uses within the park.

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.

Consistency with City of Chula Vista MSCP Subarea Plan and Otay Ranch RMP

The proposed project design is consistent with the MSCP Subarea Plan and the Otay Ranch RMP through specific adherence to conditions of coverage and mitigation/conveyance requirements for Covered Projects as defined in the Chula Vista MSCP Subarea Plan, Section 7.6, and the Otay Ranch RMP. The Planned and Future Facilities located within the Preserve were designed to minimize impacts to covered habitats and species by following the MSCP Siting Criteria.

The Otay Ranch RMP and the Otay Ranch Preserve were the primary basis for CEQA mitigation of biological impacts identified in the Otay Ranch GDP Program EIR. The RMP includes conveyance procedures for dedicating parcels of land to the Otay Ranch Preserve. The conveyance ratio for all development is 1.188 acres for each acre of project area that does not include "common uses," which are identified as schools, parks, and arterial roadways. These common areas are excluded from the required mitigation/conveyance. The proposed project would have significant impacts related to biological resources unless the Otay Ranch Preserve is assembled proportionally and concurrently with development in accordance with provisions of the City's MSCP Subarea Plan and Otay Ranch RMP.

A number of land uses and activities are considered compatible with the MSCP and allowed within the Preserve. While trails are permitted, they must be consistent with Section 6.3.3.1 of the MSCP Subarea Plan, thus trails are discussed in this section as a compatible use as well as below under Planned and Future Facilities. Access points, new trails and facilities and control of public access must be consistent with the City Planning Component Framework Management Plan or the Otay Ranch RMP and future area-specific management directives. The MSCP Subarea Plan requires that trails should be located in the least sensitive areas of the Preserve. Trails should be located along the edges of urban land uses adjacent to the Preserve or at the boundary between land uses and should follow existing dirt roads as much as possible unless occupied by quino checkerspot butterfly. Locations of trails should avoid being between two different habitat types. Trails should not be paved and they should be monitored for degradation and off trail use. Width of trails should be minimized in order to reduce impacts and new trails should not be wider than four feet in core Preserve areas. Trail fences of other barriers may be required at strategic locations where there are sensitive resources. The extent and location of equestrian trails should be limited to the less sensitive areas of the Preserve.

In addition, all trails within the proposed project will be consistent with the guidelines and design criteria provided in the City of Chula Vista Greenbelt Master Plan (Chapin 2003) and OVRP and Trail Guidelines (County of San Diego 2003). All Greenbelt trail segments will be multi-use trails which provide a variety of uses including, hiking, biking and equestrian use, where identified. The trail requirements and the analysis that documents that the existing trail alignments accommodate the requirements are provided below.

The City Greenbelt Master Plan (2003) provides standards for trail construction materials. The materials for the trail surface may be asphalt, concrete, decomposed granite, a soil-stabilized surface, or native soil. The Greenbelt trail segments through Villages Three North, Eight East, and Ten are a proposed Type A trail per the OVRP trail guidelines. It is associated with a regional trail system and is multi-use. The OVRP requires that a Type A trail is 6 to 8 feet wide, is no more than 3% grade, has a surface of decomposed granite or native soil, has a horizontal clearance of 2 feet beyond the tread edge, and has a 12 foot vertical clearance. For the Greenbelt trail, the surface is Processed Miscellaneous Base (PMB) which consists of broken or crushed asphalt, concrete, Portland cement concrete, railroad ballast, glass, crushed porcelain material, crushed rock, rock dust, or natural material. This material within the Greenbelt trail is consistent with the requirements for the trail materials. The existing alignment is virtually flat with almost less than 1% slope. The existing width is a 30 foot wide easement; thus, there is a wide enough tread plus adequate horizontal clearance for the proposed 16-foot wide trail (10 feet trail, 2 feet clear on either side plus 2 feet for fencing/signage). There are no overhead obstacles or trees, thus the vertical clearance is adequate. In summary, no changes to the surface treatment, slope, or width of the existing Greenbelt trail are necessary.

All areas of the proposed trails were reviewed for presence of sensitive resources including sensitive habitats, vernal pools, and special status species. For trails located outside of Village Ten, baseline biological mapping including thorough surveys and review for special status species and habitats were reviewed as part of County and Otay Ranch POM tasks. Site reconnaissance also confirmed these off-site trail conditions.

Village Three North and Portion of Village Four

Within Village Three North and Portion of Village Four, there is a portion of one existing trail within the Preserve (Figure 5.8-31). This trail segment is a small portion of the trail located within the existing Wiley Road. Only a portion of it is located within the boundary of Village Three North and includes a small segment (75 linear feet) at the southwestern corner of the village and a second segment (263 linear feet) at the southeastern corner. Access to this trail is provided from Main Street, which intersects into Wiley Road at Heritage Road. The trail segment is identified in the Chula Vista Greenbelt Master Plan and OVRP Concept Plan.

FIGURE 5.8-31

University Villages Trails System

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The trail segment is currently an existing dirt road or gravel that also functions as a trail and would continue to function as a trail in the future. There would be no improvements required for the trail, the trail would not be paved, and no impacts would occur as a result of the trail. No vegetation would be removed and no species would be impacted. While there is sensitive habitat within the preserve adjacent to where the trail is located, the trail is wide and in well surfaced condition. No new trails are proposed. Due to the proximity of the trail to the river and habitat, the trail would be identified with post and rail fencing and signs in order to avoid intrusion impacts from users of the trail system. However, impacts to species or habitat could potentially occur as a result of the trail system, and impacts would be **potentially significant** prior to mitigation.

Village Eight East

Within Village Eight East, there is one trail proposed within the Preserve, approximately 3,188 linear feet. It is located within the existing Salt Creek sewer maintenance road and is a continuation of the trail in Village Three North. The trail segment is identified in the Chula Vista Greenbelt Master Plan and OVRP Concept Plan. The segment is currently the existing Salt Creek sewer maintenance road. There will be no improvements required for the trail and the trail will not be paved. While there is sensitive habitat within the preserve adjacent to where the trail is located, the trail is wide and in well surfaced condition. No new trails are proposed. The trail will be identified with post and rail fencing and signs in order to avoid intrusion impacts from users of the trail system. The proximity of the higher use of the Community Park (P-2) and the riparian habitat within the river warrants the placement of lodgepole fencing between the trail and the river. Fencing is not required on the northern side of the trail since the Community Park (P-2) is a development use at that location. No impacts to habitat or species will occur as a result of the trail system. This portion of the OVRP Trail will be accessed by the planned park access road and park fire/emergency response road from Village Eight East. However, impacts would be **potentially significant** prior to mitigation.

Village Ten

Within Village Ten, there are two trail segments proposed. The first is the continuation of the trail from Village Three North and Village Eight East that is located within Salt Creek sewer maintenance road. This segment is a total of 2,700 linear feet. The trail segment is identified in the Chula Vista Greenbelt Master Plan and OVRP Concept Plan. Similar to the portion of the trail segment in Village Eight East, there will be no improvements required for this trail and the trail will not be paved. While there is sensitive habitat within the preserve adjacent to where the trail is located, the trail is wide and in well surfaced condition.

A second trail segment, a Greenbelt connector, is located north of the Wiley Road segment and provides a connection to the Salt Creek Sewer Easement ~~Interceptor road~~ east from Village

Ten and will provide a connection to proposed trails within Village Ten (Figure 5.8-31). The trail segment for this eastern trail is approximately 225 linear feet within the preserve within the Village Ten project boundary and approximately 410 linear feet off-site, within the ~~Salt Creek~~Otay Ranch Preserve (outside the Village Ten project boundary). The Connector Trail will have limited use including hiking and biking, but no equestrian use because it connects through a residential neighborhood.

Per the Greenbelt Master Plan, this would be a rural trail that functions as a Connector Trail. This type of trail has the following guidelines:10 feet wide with varying widths of 4-5 feet in preserve area, if necessary; vertical grades of 5-20% over 500 feet, 10-15% over 250 feet and 15-20% for short distances less than 100 feet; surface material should be decomposed granite or native soil and contained within redwood header strips or some similar material; and a horizontal clearance of 14 feet. However, since it would be constructed in rural areas and may be subject to steeper slopes, it may not accommodate all types of user abilities or type of users. In some area, the trail may also be designed with a reduced width when adjacent to sensitive resources.

For the Connector Trail from the east side of Village Ten, the existing material is decomposed granite or native soil and is also consistent with the requirements for the trail materials. The existing alignment for the Connector Trail is 8 to 11 feet wide and is generally 1 to 6% grade with two sections that are 12 to 15%. No portion of the Connector Trail exceeds 15% grade. There is a greater than 1 foot clearance beyond the tread edge and there are no overhead trees or obstacles so the vertical clearance is greater than 12 feet. Thus this connector segment complies with the requirements of the trail system and no changes to the surface treatment, slope, or width within the proposed trail segments are necessary. There may be occasional trail grooming as a maintenance activity as an expected occurrence. Such grooming will remain within the established trail.

Due to the proximity of the trail segments, including both the Greenbelt trail and the Connector Trail, to the river or to other sensitive habitat, the trails would be identified with post and rail fencing and signs to avoid intrusion impacts from users of the trail system. Along the Connector Trail out of the eastern side of Village Ten, post and rail fencing and signage also would be placed to alert the user to the sensitive nature of the habitat. No new trails are proposed to be constructed, no improvements are necessary because existing trails already meet the applicable trail standards, and fencing would provide protection; therefore, no impacts would occur as a result of the trail system. Quino checkerspot butterfly are known to be present within this area east of SR 125 and especially within the ~~Salt Creek~~Otay Ranch Preserve. Recent surveys recorded Quino checkerspot approximately 1,400 feet to the east southeast of the trail but these recent surveys did not include the trail location (RECON 2013). Previous surveys that included all areas of Salt Creek, including the trail location except that area covered by the 2013 survey included observations of Quino checkerspot approximately 1,500 feet to the northeast of the Connector Trail (Dudek 2009). No

Quino checkerspot have been reported along the trail and no impacts are anticipated to occur to the species, to its habitat or to its host plant or nectar plant species since no vegetation would be removed. Regardless, the trail would be fenced and signed to prevent impacts to species or habitat within the Preserve. However, impacts would be **potentially significant** prior to mitigation.

a. Planned and Future/Siting Criteria Located within the Preserve

The development of the proposed project would be within the area designated for development under the Otay Ranch RMP and the MSCP Subarea Plan, with the exception of a limited number of facilities that would be located in designated Preserve areas. Section 6.0 of the City's MSCP Subarea Plan identifies permitted uses within the Preserve. The proposed project includes permanent impacts to the Preserve resulting from the following infrastructure uses: detention basins south of Village Ten, associated storm-drain lines and access roads for detention basins, sewer laterals connecting to the Salt Creek Interceptor, and access and emergency/fire roads to the Community Park (P-2) south of Village Eight East. Trails within the Preserve area are either located in existing dirt roads or are co-located with other planned facilities (i.e., sewer line roads). These uses are considered facilities within the Preserve as described in Section 6.3.3 of the MSCP Subarea Plan.

Section 6.3.3 of the MSCP Subarea Plan differentiates between "Planned Facilities" and "Future Facilities." Planned Facilities are major roads and infrastructure which were planned for development through existing plans and/or project approvals (i.e., General Plan and Otay Ranch GDP) and allowed to be constructed, operated, and maintained within the Preserve at the writing of the MSCP Subarea Plan. These Planned Facilities are identified in Table 6-1 of the MSCP Subarea Plan and no mitigation is required for these facilities. Consistent with Table 6-1, associated ancillary sewer facilities for the Salt Creek Interceptor, including connections and maintenance access roads are Planned Facilities, as are trails designated in the OVRP Concept Plan which are also discussed above under compatible uses within the Preserve since these are existing trails and not new trails. In addition, the proposed project would impact both on-site and off-site areas within the Preserve associated with Main Street widening.

Future Facilities are those facilities necessary to support planned development that were not identified at the time of the MSCP Subarea Plan but were anticipated to be required. Table 6-2 of the MSCP Subarea Plan identifies Future Facilities and Implementation Criteria. These facilities include detention facilities/basins, fire access roads, maintenance and operations roads, and new trails.

Both Planned and Future facilities located within the Preserve are subject to the Facilities Siting Criteria contained in Section 6.3.3.4 of the City's MSCP Subarea Plan. Compliance with the Facilities Siting Criteria ensures that the facilities located within the Preserve have been sited

within the least environmentally sensitive areas and that impacts to the Preserve have been avoided, minimized to the maximum extent practical, or mitigated per the City's MSCP requirements.

The following is a summary of the Facilities Siting Criteria (Section 6.3.3.4 and Table 6-1 of the MSCP Subarea Plan) as required for the project's Planned and Future Facilities:

1. *Such facilities will be located in the least environmentally sensitive location feasible, and use existing roads, trails and other disturbed areas, including use of the active recreation areas in the Otay River Valley, as much as possible (except where such areas are occupied by the QCB [Quino checkerspot]). Facilities should be routed through developed or developing areas where possible. If no other routing is feasible, alignments should follow previously existing roads, easements, rights of way, and disturbed areas, minimizing habitat fragmentation.*
2. *Such facilities shall avoid, to the maximum extent practicable, impacts to Covered Species and Wetlands, and will be subject to the provisions, limits, and mitigation requirements for Narrow Endemic Species and Wetlands pursuant to Section 5.2.3 and 5.2.4 of the MSCP Subarea Plan.*
3. *Where roads cross the Preserve, they should provide for wildlife movement in areas that are graphically depicted on and listed in the MSCP Subregional Plan Generalized Core Biological Resource Areas and Linkages map as a core biological area or a regional linkage between core biological areas. All roads crossing the Preserve should be designed to result in the least impact feasible to Covered Species and Wetlands. Where possible at wildlife crossings, road bridges for vehicular traffic rather than tunnels for wildlife use will be employed. Culverts will only be used when they can achieve the wildlife crossing/movement goals for a specific location. To the extent feasible, crossings will be designed as follows: the substrate will be left in a natural condition or revegetated if soils engineering requirements force subsurface excavation and vegetated with native vegetation if possible; a line-of-sight to the other end will be provided; and if necessary, low-level illumination will be installed in the tunnel.*
4. *To minimize habitat disruption, habitat fragmentation, impediments to wildlife movement and impact to breeding areas, road and/or right-of-way width shall be narrowed from existing City design and engineering standards, to the maximum extent practicable. In addition, roads shall be located in lower quality habitat or disturbed areas to the maximum extent practicable.*
5. *Impacts to Covered Species and habitats within the Preserve resulting from construction of Future Facilities will be evaluated by the City during project review and permitting. The City may authorize Take for impacts to Covered Species and habitats resulting from*

construction of Future Facilities located outside the Preserve, pursuant to the MSCP Subarea Plan and consistent with the Facility Siting Criteria in this Section.

6. *The City may authorize "Take" for impacts to Covered Species resulting from construction of Future Facilities located within the Preserve, subject to a limitation of 2 acres of impact for individual projects and a cumulative total of 50 acres for all Future Facilities. Wildlife Agency concurrence will be required for authorization of Take for any impacts to Covered Species and habitat within the Preserve that exceed 2 acres that may result from construction of any individual Future Facility. Wildlife Agency concurrence will be required for authorization of Take for impacts to Covered Species and habitat within the Preserve that exceed 50 acres that may result from all Future Facilities combined.*
7. *Planned and Future Facilities must avoid impacts to covered Narrow Endemic Species and the QCB [Quino checkerspot] to the maximum extent practicable. When such impacts cannot be avoided, Planned and Future facilities located within the Preserve are subject to the provisions of Section 5.2.3.6 of the MSCP Subarea Plan. Impacts to QCB that will result from construction of Planned and Future Facilities within the Preserve are subject to the provisions of Section 5.2.8 of the MSCP Subarea Plan.*

This section outlines the "Planned Facilities" and "Future Facilities" associated with the proposed project and how they adhere to the Facilities Siting Criteria. The facilities necessary to support the proposed project were sited in primarily disturbed, developed, and agricultural lands. In general, the process for designing and locating the Planned and Future Facilities followed an iterative process with the project civil engineer. The facilities were analyzed by overlaying potential Planned and Future Facility locations with biological resources including vegetation communities, species locations, and jurisdictional wetlands and waters. Adjustments were made to reduce impacts to sensitive resources to the greatest extent possible without compromising the integrity and purpose of each facility. In addition, facilities such as roads, sewer and water lines were co-located to reduce impacts. In some cases there are impacts to sensitive resources; however the options of shifting facilities were more impactful.

Village Three North and Portion of Village Four

All Future Facilities proposed for Village Three North and Portion of Village Four can be accommodated within the planned Main Street right-of-way (ROW), which is a Planned Facility. Planned Facilities within Village Three North include: Main Street, including sewer connection and storm drain improvements, the Quarry access road, and OVRP trails. There are no Planned Facilities located within the boundary of the Portion of Village Four.

Main Street, Sewer and Storm Drains – Planned and Future Facilities

Main Street will be located in the southwest corner of Village Three and will continue along the southern edge of Village Three North. Most of the alignment is not within the Preserve and therefore not subject to the siting criteria. The Main Street sewer connection and storm drain improvements have been co-located within the road right-of-way to minimize and avoid additional impacts. Thus the two 20-foot wide easements that would have been required for these two facilities have been co-located within the road to result in no impacts to the MSCP Preserve. These facilities, including the OVRP pedestrian trail, are all clustered within a single construction ROW to minimize habitat and sensitive species impact and habitat fragmentation. Table 5.8-10 provides a summary of these facilities as they relate to the siting criteria.

Table 5.8-10
Summary of Facilities Siting Criteria
Village Three North - Main Street and Associated Utilities

Facilities Siting Criteria	Main Street, Sewer Line and Storm Drain
Least environmentally sensitive location	The street has been shifted further north into the development footprint and will limit impacts to the Preserve and habitat by reducing the amount of fill necessary to construct the road. Main Street will be located immediately adjacent to development and will not cause fragmentation of habitat. If the alignment had remained in the original more southern location, impacts to the preserve would have been greater. All facilities are located within a single ROW and include the Main Street alignment, the sewer and storm drain as well as the OVRP pedestrian trail. The Quarry access road also uses the Main Street ROW until it exits from the ROW to reconnect with the existing Quarry road. Cross sections of Main Street are provided on the Tentative Map submittal. Any manufactured slopes (within the Preserve) created in conjunction with Planned and Future Facilities will be replanted/landscape with native species consistent with the Preserve Edge Plan.
Avoid wetlands and covered species and address Narrow Endemics	Lower reaches of two unvegetated stream channels will be impacted. However, the upper reaches of the channels are within the development footprint and impacts to these channels are currently being permitted by the resource agencies. A total of 4 San Diego barrel cactus will be impacted. Two populations of Otay tarplant will be impacted by development of the road (total population impacted is 41 plants). Moving the alignment farther north to avoid the Otay tarplant would have been infeasible since the current alignment needs to be matched. In addition walls are proposed to reduce the grading impacts that would otherwise extend farther south and potentially impact more coastal sage scrub covered species and habitat for covered species. Impacts to special-status plants and wetlands are addressed in Mitigation Measures BIO5, BIO6, BIO8, BIO9, BIO10, and BIO12. Potential impacts to nesting bird species will be mitigated through the implementation of Mitigation Measure BIO13.
Provide for wildlife movement	The road is located immediately adjacent to the proposed development and will not preclude wildlife from using the OVRP to the south. Main Street will not impede a major regional linkage and culverts will not be required within the Preserve. In addition, the post and rail fence associated with Greenbelt trail will be designed and constructed to allow for continued wildlife movement through this area (BIO-16 and BIO-17). By co-locating the facilities within a minimal width construction ROW these linear facilities would not impede wildlife movement.

Table 5.8-10 (Continued)
Summary of Facilities Siting Criteria
Village Three North - Main Street and Associated Utilities

Facilities Siting Criteria	Main Street, Sewer Line and Storm Drain
Road widths are narrowed and in lower quality habitat	Walls are included north of Main Street to reduce grading impacts, and an approximate 20 feet wide grading impact is avoided by use of the walls. By shifting Main Street slightly north by 20 feet, impacts to the MSCP Preserve and coastal sage scrub habitat within the canyon at the eastern edge of Village Three are reduced by 0.10 acre. Other shifts are not feasible because of the need to meet the existing Main Street alignment. The quarry access road will branch off from Main Street to avoid a separate access road that would result in impacts to the riparian habitat within the Otay River. The pedestrian trail will be located within the paved access road of Main Street and will result in no habitat impacts.
Impacts for future facilities will be evaluated by the City	All facilities/utilities have been co-located with the planned alignment of Main Street.
Future facilities are limited to 2 acres or cumulative total of 50 acres	N/A
Avoid impacts to covered Narrow Endemic Species and QCB	Construction of Main Street, and associated facilities, will not impact any QCB populations. Two populations of Otay tarplant, totaling 41 plants, will be impacted by development of the road. Within University Villages, the population of Otay tarplant is 4,772 plants. The impact to Otay tarplant is 0.9% of the total population within the University Villages. Thus this impact meets the Narrow Endemic requirements of the Chula Vista MSCP Subarea Plan of no more than 5% impact of the total population within the project area. Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to prevent impacts of fugitive dust on sensitive habitat and species (BIO-6).

OVRP Trails – Planned Facility

A portion of the trail associated with Village Three North is located within the Preserve. This trail segment is a small portion of the trail located within the existing Wiley Road. Only a portion of it is located within the boundary of Village Three North and includes a small segment (75 linear feet) at the southwestern corner of the village and a second segment (263 linear feet) at the southeastern corner. The trail segment is currently an existing dirt or gravel road (Salt Creek ~~Interceptor road~~Sewer Easement) that also functions as a trail and will continue to function as a trail in the future. Table 5.8-11 provides a summary of these facilities as they relate to the siting criteria.

Table 5.8-11
Summary of Facilities Sting Criteria
OVRP Trails (Villages Three North, Eight East and Ten)

Facilities Siting Criteria	OVRP Trails (Villages Three North, Eight East and Ten)
Least environmentally sensitive location	No vegetation will be impacted. Trails south of the project site are co-located on the existing Salt Creek ~~Interceptor Road~~Sewer Easement, consistent with the alignment of a trail in the OVRP Concept Plan on the north side of the Otay River Valley.
Avoid wetlands and covered species and address Narrow Endemics	Since no new trails are planned, no wetlands or narrow endemics will be directly impacted. In addition, no covered species will be directly impacted. Due to the proximity or location of the trail with respect to the MSCP Preserve which is immediately adjacent in Village Eight East and is within the Preserve in Village Three North and Village Ten, the trail will be identified with post and rail fencing and signs in order to avoid intrusion impacts from users of the trail system (BIO16 and BIO17).
Provide for wildlife movement	No vegetation is removed, and no structures will be placed, therefore wildlife will continue to move freely within the Preserve. In addition, the post and rail fence associated with the Greenbelt trail will be designed and constructed to allow for continued wildlife movement through this area (BIO16 and BIO17).
Road widths are narrowed and in lower quality habitat	Trail is proposed to be 16 feet wide within the existing 30 foot road easement. No additional new impacts caused by trail.
Impacts for future facilities will be evaluated by the City	N/A
Future facilities are limited to 2 acres or cumulative total of 50 acres	N/A
Avoid impacts to covered Narrow Endemic Species and QCB	Trails will be fenced to preclude impacts to narrow endemics and QCB.

Village Eight East

Main Access Road to Community Park P-2, and Associated Utilities – Planned and Future Facilities

The main access road connecting residences to the active recreation area will be located within the same alignment as La Media, as shown in the MSCP Subarea Plan. Within the access road, water, reclaimed water, sewer lines and a storm drain have been co-located. These facilities continue through the Community Park (P-2) and the storm drain and sewer lines connect to an outfall located just southwest of the active recreation area. The access road, a small portion of the sewer and storm drain connections, as well the outfall are all located within the preserve. The associated facilities (water, reclaimed water, sewer lines and storm drain) are future facilities and the road is a planned facility. Because extent of the planned facility (road) is greater (46 feet) than the future facilities (40 feet), the impact acreage is quantified based on the road. The outfall and associated connections are not within the road and therefore they will result in additional impacts. Table 5.8-12 provides a summary of these facilities as they relate to the siting criteria.

Table 5.8-12
Summary Facilities Siting Criteria Village Eight East - Main Access Road to Community Park (P-2) and Associated Facilities

Facilities Siting Criteria	Main Access Road to Community Park (P-2), Water, Reclaimed Water, and Sewer lines, Storm Drain and Outfall Structure
Least environmentally sensitive location	The road was reduced from a 55-foot right-of-way to a 46-foot right-of-way. The original design included both a paved sidewalk and a trail along site the road, however the paved sidewalk is no longer a part of the right-of-way. The majority of the road is located within non-native grasslands and agricultural lands with some impacts to coastal sage scrub. Shifting the road to a different location would impact more native habitat and special-status species. Shifting the road to the west would have resulted in impacts to wetlands. Because it is as narrow as possible, fragmentation is reduced. Cross section of the road is provided in the Preserve Edge Plan (Otay Ranch 2013b). In order to preclude impacts to sensitive habitat, the outfall connections have been placed to the southern edge of the active recreation area, within an existing road. The storm drain outfall will impact a small quantity of tamarisk scrub and disturbed broom baccharis scrub. Shifting the outfall to any other location would result in greater impacts to wetland habitat. Impacts to sensitive habitat will be mitigated through the implementation of Mitigation Measures BIO1, BIO4, and BIO5. In addition, any manufactured slopes (within the Preserve) created in conjunction with Planned and Future Facilities will be replanted/landscape with native species consistent with the Preserve Edge Plan.
Avoid wetlands and covered species and address Narrow Endemics	The access road will not impact any wetlands or waters nor will it impact any narrow endemic species. Some habitat for coastal sage scrub covered species will be impacted. This impacted is reduced by narrowing of the road and placement slightly east of the existing dirt road which avoids impacts to the drainage. Impacts have also been reduced by co-locating associated facilities within the limits of grading for the road. The connections to the outfall will not impact any wetlands or narrow endemic species. The outfall will impact a small quantity of tamarisk scrub but no narrow endemics or covered species will be impacted. Potential impacts to nesting bird species will be mitigated through the implementation of Mitigation Measure BIO-13.
Provide for wildlife movement	The road right-of-way has been reduced from 55 feet to 46 feet. Landscaping on either side of the road has been eliminated to allow wildlife (avian species for which this Preserve segment is focused) to cross the road. Wildlife will have direct line of site between habitat patches on either side of the road. Including landscaping along the road would result in increased impacts. Including a wildlife crossing in this location also would increase the impacts since there is no topography to allow for the construction of a wildlife culvert. Construction of the connections to the outfall will not preclude wildlife from using the area as this facility is underground. Nor will construction of the outfall.
Road widths are narrowed and in lower quality habitat	The road was reduced from a 55-foot right-of-way to a 46-foot right-of-way ROW.
Impacts for future facilities will be evaluated by the City	The outfall must be reviewed by City.
Future facilities are limited to 2 acres or cumulative total of 50 acres	Total impact to covered habitat from construction of the outfall is 0.05 acre of disturbed broom baccharis scrub.

Table 5.8-12 (Continued)
Summary Facilities Siting Criteria Village Eight East - Main Access Road to Community Park (P-2) and Associated Facilities

Facilities Siting Criteria	Main Access Road to Community Park (P-2), Water, Reclaimed Water, and Sewer lines, Storm Drain and Outfall Structure
Avoid impacts to covered Narrow Endemic Species and QCB	Construction of the access road and associated facilities will not impact any QCB habitat or narrow endemics. Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to prevent impacts of fugitive dust on sensitive habitat and species.

Sewer Line/Fire Access Roads and Associated Utilities – Planned and Future Facilities

The sewer line and storm drains are co-located within the eastern sewer line/fire access road between Village Eight East and the active recreation area. The storm drain and fire access roads are future facilities and the sewer road and sewer line are planned facilities. Because the extent of both the future and planned facilities are the same, the impact is based on the planned facilities. The easement for the facilities, including the road, is 30 feet. All facilities/utilities have been co-located with the planned easement of the access road. Table 5.8-13 provides a summary of these facilities as they relate to the siting criteria.

Table 5.8-13
Summary Facilities Siting Criteria
Village Eight East - Sewer Line/Fire Access Roads and Associated Utilities

Facilities Siting Criteria	Sewer Line/Fire Access Roads, Storm Drain, and Sewer Line
Least environmentally sensitive location	The sewer line and storm drain has been co-located within the access road to reduce impacts to native habitat, especially maritime succulent scrub. The access roads are required but fragmentation is avoided by having these uses co-located and by locating adjacent to the SR 125 ROW. Impacts to sensitive habitat resulting from the future facilities will be mitigated through the implementation of Mitigation Measures BIO1, BIO2, BIO4, and BIO5. In order to preclude impacts to sensitive habitat, the outfall connection has been placed to the southern edge of the active recreation area, adjacent to an existing road. The storm drain outfall will impact a small quantity of disturbed broom baccharis scrub. Shifting the outfall to any other location would result in greater impacts to wetland habitat. Impacts to sensitive habitat will be mitigated through the implementation of Mitigation Measures BIO1, BIO4, and BIO5. In addition, any manufactured slopes (within the Preserve) created in conjunction with Planned and Future Facilities will be replanted/landscape with native species consistent with the Preserve Edge Plan.
Avoid wetlands and covered species and address Narrow Endemics	This component will not impact any wetlands or narrow endemic species. Some habitat for covered species will be impacted. This impacted is reduced by the co-location of facilities. Impact to covered species habitat would be to those species that occur within coastal sage scrub. Potential impacts to nesting bird species will be mitigated through the implementation of Mitigation Measure BIO13.

Table 5.8-13 (Continued)
Summary Facilities Siting Criteria
Village Eight East - Sewer Line/Fire Access Roads and Associated Utilities

Facilities Siting Criteria	Sewer Line/Fire Access Roads, Storm Drain, and Sewer Line
Provide for wildlife movement	Construction of this component will not preclude wildlife from using the area. Wildlife (avian species which is the focus for this Preserve segment) will traverse the road and the road is not expected to receive much traffic. In addition, this road has been moved to be located near SR-125 and is not a primary location for wildlife movement.
Road widths are narrowed and in lower quality habitat	The road was designed to be as narrow as possible: 20 feet.
Impacts for future facilities will be evaluated by the City	The outfall must be reviewed by City.
Future facilities are limited to 2 acres or cumulative total of 50 acres	All facilities/utilities have been co-located with the planned alignment of the access road. Total impact to covered habitat from construction of the outfall is 0.08 acre of disturbed broom baccharis scrub.
Avoid impacts to covered Narrow Endemic Species and QCB	Construction of this facility will not impact any QCB habitat or narrow endemics. Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to prevent impacts of fugitive dust on sensitive habitat and species (BIO6).

OVRP Trails – Planned Facility

The trail segment associated with Village Eight East is located within the Salt Creek ~~Interceptor road~~Sewer Easement, of which the majority is located within the Community Park (P-2). A small portion to the trail, approximately 315 feet, continues west from the active recreation area, through the preserve, and outside of the Village Eight East limits.

Village Ten

Detention Basins, Access Roads, and Associated Utilities– Planned and Future Facilities

The two detention basins south of Village Ten are located in an area previously identified as a potential active recreation site. The area is disturbed by former agricultural activities and is currently covered by non-native grassland. Each detention basin would have an access road parallel to the west of the basin, which would be connected to a main access road stemming from Wiley Road. The main access road would be located primarily within an existing dirt road. Storm drain and sewer lines extending south from Village Ten development would be in line with the location of the detention basin access roads. These facilities are co-located with the access roads and would connect to the Salt Creek interceptor located south of Wiley Road. Table 5.8-14 provides a summary of these facilities as they relate to the siting criteria.

Table 5.8-14
Summary Facilities Siting Criteria
Village Ten - Detention Basins and Associated Utilities

Facilities Siting Criteria	Detention Basins, Access Roads, Strom Drain and Sewer Lines, Sewer Line Connection to Salt Creek Interceptor and Storm Drain Outfall
Least environmentally sensitive location	Currently, two basins are associated with Village Ten. Originally 3 larger basins were proposed, however, to reduce impacts to the Preserve, one basin was removed and acreages of the remaining basins were reduced. This was accomplished by deepening the basins. Basins also are consolidated to serve multiple areas, including the University site, rather than just Village Ten. The basins are located within annual grasslands and do not impact the coastal sage scrub located to the north. Two basins are proposed in order to avoid impacts to wetlands and waters of the U.S. Fragmentation is avoided by locating the basins adjacent to existing road and within lower quality habitat. The majority of the access roads are located within annual grasslands, agricultural or developed areas. A small portion of the main access road will impact the edge of a coastal sage scrub polygon. Shifting the road north in that area would result in impacts to the ephemeral channel. Storm and sewer lines were co-located to reduce the need for two locations. The width of impacts was reduced from 40 feet to 30 feet, most of which will be located within the access roads. Some coastal sage scrub will be impacted by the installation of these two facilities. The storm drain outfall will impact a small quantity of freshwater marsh, disturbed coastal sage scrub and developed land. Shifting the outfall to any other location would result in greater impacts to wetland habitat within the Otay River. The design follows an existing disturbed area within the River, however it must outfall to the appropriate location. Impacts to sensitive habitat will be mitigated through the implementation of Mitigation Measures BIO1, BIO3, BIO4, BIO5, BIO6, BIO8, BIO9, and BIO10). In addition, any manufactured slopes (within the Preserve) created in conjunction with Planned and Future Facilities will be replanted/landscape with native species consistent with the Preserve Edge Plan.
Avoid wetlands and covered species and address Narrow Endemics	The two basins were originally proposed to be one basin but were split in order to avoid impacts to an ephemeral drainage. The basins will not impact wetlands or narrow endemic species. There are other covered species that potentially occur within the basin impact area including burrowing owl, orange-throated whiptail, San Diego horned lizard, raptor foraging habitat including northern harrier and other raptors that are not on the Covered Species list. The basins have been reduced in size by deepening their construction, reduced in number from 3 to 2, placed next to an existing road to reduce fragmentation, and provide detention basin function to more projects than just Village Ten thus reducing impacts of other future facilities. The access roads will not impact any wetlands or waters, nor will they impact any narrow endemic species or covered species. The outfall will impact a small quantity of freshwater marsh (0.03 acre), however it will not impact any narrow endemics or covered species. Impacts to jurisdictional resources will be mitigated through the implementation of Mitigation Measures BIO8, BIO9, and BIO10. The storm drain and sewer lines will not impact wetlands or waters, nor will they impact any narrow endemic species. There will be small impacts to covered species habitat for California gnatcatcher, and other coastal sage scrub species. The number of impact areas has been reduced from 3 to 2 and include co-location to reduce impacts. Impacts to potentially nesting special-status birds will be mitigated through the implementation of Mitigation Measure BIO13.

Table 5.8-14 (Continued)
Summary Facilities Siting Criteria
Village Ten - Detention Basins and Associated Utilities

Facilities Siting Criteria	Detention Basins, Access Roads, Strom Drain and Sewer Lines, Sewer Line Connection to Salt Creek Interceptor and Storm Drain Outfall
Provide for wildlife movement	Construction of the basins and associated the outfall will not preclude wildlife from using the area. The outfall is located on the edge of the Otay River and has been located as close to the existing road as possible. The access roads are not expected to preclude wildlife from using the area as wildlife will traverse the road. In addition, the road is not expected to receive much traffic. Construction of the storm and sewer facilities will not preclude wildlife from using the area as these facilities are underground. These storm and sewer lines are considered to be permanent impacts even though there will be no above ground structures. This is to preclude large shrubs from being planted as part of a restoration program. The area will be revegetated with native upland herbaceous species so as to not preclude movement of wildlife through the area and also to provide foraging opportunities (Mitigation Measure BIO3).
Road widths are narrowed and in lower quality habitat	The roads were designed to be as narrow as possible (30 feet) while still accommodating the co-location of sewer and storm drains.
Impacts for future facilities will be evaluated by the City	All of the facilities must be evaluated by the City.
Future facilities are limited to 2 acres or cumulative total of 50 acres	See Table 5.8-15 below for the analysis of the cumulative total. The total impact is 4.0 acres of non-native grassland for the two detention basins. The roads, storm drains and the outfall total approximately 0.15 acre of impacts with 0.08 acre impact to disturbed coastal sage scrub, 0.03 acre to freshwater marsh, and 0.6 acre to non-native grassland. See below for the analysis of the cumulative total. Total impact to covered habitat is 0.03 acre of freshwater marsh and 0.08 acre of disturbed coastal sage scrub.
Avoid impacts to covered Narrow Endemic Species and QCB	Construction of the detention basins, roads, and outfall will not impact any QCB habitat or narrow endemics. Construction of the utilities will impact a location of sparse plantago, however this area is not considered prime suitable habitat. Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to prevent impacts of fugitive dust on sensitive habitat and species (BIO-6).

OVRP and Non-OVRP Trails – Planned and Future Facilities

Within Village Ten, there are two trail segments proposed. The first is the continuation of the trail from Village Three North and Village Eight East that is located within Wiley Road. This segment is a total of 2,700 linear feet. See Table 5.8-11 for the summary of OVRP trails as they relate to the facilities siting criteria. A second trail segment, a Greenbelt connector, is located north of the Wiley Road segment and provides a connection to Salt Creek ~~Interceptor road~~Sewer Easement east from the development area of Village Ten and would provide a connection to proposed trails within Village Ten. The trail segment for this eastern trail is approximately 225 linear feet within the preserve on site in Village Ten and approximately 410 linear feet within the

~~Salt Creek~~Otay Ranch Preserve. Since this trail is a non-ORVP trail, it is evaluated as a Future Facility Table 5.8-15.

Table 5.8-15
Summary of Planned Facilities Siting Criteria
Non-OVRP Trails

Facilities Siting Criteria	Non-OVRP Trails (Village Ten)
Least environmentally sensitive location	Since the trail is located within and existing dirt road, no vegetation will be impacted.
Avoid wetlands and covered species and address Narrow Endemics	Since no new trails are planned, no wetlands or narrow endemics will be directly impacted. In addition, no covered species will be directly impacted. Due to surrounding sensitive habitat, the trail will be identified with post and rail fencing and signs in order to avoid intrusion impacts from users of the trail system (BIO-16 and BIO-17).
Provide for wildlife movement	No vegetation is removed, and no structures will be placed, therefore wildlife will continue to move freely within the Preserve. In addition, the post and rail fence associated with the trail segment will be designed and constructed to allow for continued wildlife movement through this area (BIO16 and BIO17). The fence design is open and low enough to allow wildlife movement through or over it but will serve to discourage human access to the Preserve.
Road widths are narrowed and in lower quality habitat	Trail is proposed to be 8 feet wide and will remain within the existing dirt road.
Impacts for future facilities will be evaluated by the City	This trail location must be reviewed by the City.
Future facilities are limited to 2 acres or cumulative total of 50 acres	The trail is 225 lineal feet.
Avoid impacts to covered Narrow Endemic Species and QCB	Trails are fenced to preclude impacts to narrow endemics and QCB (BIO-16 and BIO-17).

Permanent Impacts to Covered Habitats

Permanent impacts to covered habitats associated with the development of Future Facilities are discussed in Tables 5.8-10 through 5.8-15. Pursuant to the City's MSCP Subarea Plan, no single facility may permanently impact more than 2 acres of covered habitat. In addition, permanent impacts to covered habitats in the Preserve resulting from Future Facilities may not exceed a cumulative total of 50 acres. Temporary impacts associated with Future Facilities are not subject to the limitations for permanent impacts to covered habitat; however, all areas of temporary impacts must be revegetated (Mitigation Measure BIO3). These future facilities include the storm drain and sewer lines from Village Ten to the detention basins located within the preserve south of the Village Ten development area. Shrubs plantings would not be included since the storm drain and sewer lines might need access or repair in the future (Mitigation Measure BIO3).

Future Facilities associated with impacts to covered habitat include: the storm drain outlet for Village Eight (0.05 acre Broom baccharis scrub), detention basins for Village Ten (2 acres of non-native grassland for each basin for a total of 4.0 acres) and associated utilities (0.08 acre disturbed coastal

sage scrub, 0.6 non-native grassland, 0.03 acre freshwater marsh). Development of these facilities would permanently impact 5.0 acres and temporarily impact 0.2 acre of covered habitat, which is less than the 2-acre single facility limitation since each of the facilities impact 2 acres or less. Cumulative impacts to covered habitat associated with future facilities are estimated at 6.2 acres (Table 5.8-16).

Table 5.8-16
Proposed and Cumulative Impacts to Covered Habitat from Future Facilities within Otay Ranch

Project	Permanent Impacts to Covered Habitat (acres)
Village Eleven	0.5
Village Two	0.1
Village Eight West	0.1
Village Nine	0.2
Village Three (proposed)	–
Village Eight East (proposed)	0.1
Village Ten (proposed)	5.1
Off Site	<0.1
Total	**6.2**

b. Adjacent Land Uses and Setback Criteria

All development located adjacent to the Preserve is required to prepare an Edge Plan (Section 7.2 of the RMP). The Preserve edge is a strip of land 100 feet wide that surrounds the perimeter of the Preserve; however, it is not part of the Preserve. Preserve Edge Plans have been prepared for each SPA Plan in consultation with a qualified biologist. These plans detail the uses allowed within the 100-foot Preserve edge, provide a list of plant species that are appropriate adjacent to the Preserve, and overlap with the proposed 100-foot fuel modification zone. These Preserve Edge Plans also analyze how each village complies with the Preserve adjacency guidelines from Section 7.5.2 of the Chula Vista MSCP Subarea Plan.

In addition, the RMP outlines eight specific setback criteria in the guidelines for Policy 9.8, which all boundary modifications must adhere by. The setback criteria is designed to provide a buffer between the development and special-status species and resources, including coastal sage scrub, California gnatcatcher, perennial (native) grassland, vernal pools, mulefat scrub, riparian woodlands, oak woodlands, and southern interior cypress forest. The Give/Take for the proposed Boundary Adjustment includes the following applicable resources: coastal sage scrub and chaparral, California gnatcatcher and cactus wren, and mulefat scrub. The guidelines for each of these resources are as follows:

1. Coastal sage scrub and chaparral shall be provided a 100-foot setback where interfacing with residences and a minimum of 50 feet where interfacing with commercial and industrial development, active park uses, and schools.

2. Coastal sage scrub habitat occupied by gnatcatcher and/or cactus wren shall be provided a setback no less than 100 feet determined in consideration of topography or other factors through additional study at the SPA level.
3. Mulefat scrub should be provided with a setback that is a minimum of 50 feet and a maximum of 100 feet wide, depending upon the quality of the habitat and its function within the matrix of the surrounding vegetation (e.g., corridor and foraging habitat) and the specific type of adjacent development.

The proposed project and associated Boundary Adjustment adhere to the setback criteria through compliance with RMP Policy 7.2 which requires a minimum 100-foot setback between development and the Preserve. The 100-foot Preserve Edge is not strictly an open space area but includes a number of facilities including a recreational community facilities (plantable retaining wall, village trail including fencing, interpretive and trail signage, landscaped lawn and planter areas, and benches), residential streets, canyon subdrains. Fencing prevents impacts resulting from the recreation uses and residential streets that are included within the 100-foot Preserve Edge. Lighting that may be located along the residential streets will be equipped with shields to prevent light from shining in the Preserve. The canyon subdrains are comprised of a concrete headwall, flow channel, and percolation area. The subdrains are designed to allow percolation of drainage runoff to present erosion impacts to the preserve. Because the proposed project provides a buffer of 100 feet between development and the Preserve edge, the setbacks prescribed by RMP Policy 9.8 are achieved (Mitigation Measures BIO11 and BIO16). Please refer to the village-specific Preserve Edge Plans for more detailed information regarding uses within the 100-foot Preserve buffer (Otay Ranch Company 2013a through 2013c).

c. HLIT Ordinance

A portion of the proposed project is located outside of the Otay Ranch boundary and is subject to the City of Chula Vista's HLIT Ordinance. These outside of Otay Ranch areas are all affiliated with Village Three North (Areas 1, 2 and 3). The outside of Otay Ranch impact area, as proposed, is consistent with City Planning Guidelines and does not conflict with the goals or standards of the City's MSCP Subarea Plan since most of the impacts are within the development area of the Outside of Otay Ranch areas and the balance are for the road improvements required for the extension of Main Street; however, compliance with the City's HLIT Ordinance will require conformance with several standard measures to address habitat loss.

Impacts to native upland vegetation communities and wetland habitats are considered significant under the City's HLIT Ordinance and require mitigation (MSCP Subarea Plan Tables 5-3 and 5-6) (City of Chula Vista 2003). Vegetation communities considered sensitive under the City MSCP Subarea Plan are those listed as Tier I through Tier III, rare to common uplands, respectively, as well as wetlands. Significant impacts include non-native grassland (Tier III),

coastal sage scrub (Tier II), broom baccharis scrub (Tier II), tamarisk scrub (Wetlands), cismontane alkali marsh (Wetlands), southern willow scrub (Wetlands) and disturbed southern willow scrub (Wetlands). Impacts to vegetation communities that are not considered significant include impacts to Tier IV habitats (other uplands) consisting of disturbed habitat and developed land on site. Impacts to areas subject to HLIT are summarized below in Table 5.8-17 and mitigated as described below. Findings are required for the impacts within these off-site areas as provided in Appendix E.

Table 5.8-17
Impacts to Off-Site Vegetation Communities and Land Cover Types

Out-side of Otay Ranch Area	Vegetation Community/Land Cover									Total Acres Acreage*
	Non-Sensitive Vegetation Communities/Land Covers		*Sensitive Vegetation Communities*							
	Developed	*Disturbed Habitat*	*Tamarisk Scrub*	*Broom Baccharis*	*Cismontane Alkali Marsh*	*Coastal Sage*	*Coastal Sage (disturbed)*	*Non-Native Grassland*	*Valley Needlegrass Grassland*	
1	–	0.8	–	–	–	0.8	–	–	–	1.6
1	–	–	–	–	–	5.3	–	–	–	5.3
2	0.1	–	–	–	–	0.3	–	–	0.1	0.4
3	2.1	0.1	0.8	0.2	0.2	0.7	<0.1	0.3	–	4.4
Total	**2.2**	**0.9**	**0.8**	**0.2**	**0.2**	**7.1**	**<0.1**	**0.3**	**0.1**	**11.7**

Impacts to jurisdictional wetlands and waters within the off-site Areas 1, 2, and 3 are subject to the HLIT Ordinance and MSCP siting criteria. These impacts are summarized in Table 5.8-18. Wetlands protection must be provided throughout the Subarea and an evaluation of wetlands avoidance and minimization is required. No net loss of wetlands must be achieved through compensatory mitigation. Impacts to the wetlands south of the existing alignment of Main Street are unavoidable because the project component is the widening of the road. Thus the impacts to the 0.98 acre of wetlands have been minimized as much as possible by keeping the road improvement within the existing footprint and adding on the minimal amount necessary to achieve the requirements of the roadway. For the impact to waters north of the existing Main Street, the waters impact cannot be avoided because the basin located in this property treats flows from Village Three North as well as surface runoff from Heritage Road and Main Street. A basin must be located at this southwestern corner by Village Three North in order to receive runoff from the site. Placing a detention basin within the Takashimi property eliminated the need for an additional outfall to the Otay River at the mouth of Wolf Canyon which also would

require a longer pipe to reach the river and would result in greater impacts. Thus the placement of the detention basin in this location serves multiple uses including Village Three North, Heritage Road and Main Street.

Table 5.8-18
Impacts to Jurisdictional Wetlands and Waters within Off-Site Areas

Outside of Otay Ranch Area	Wetlands Vegetation Community/Water Feature			
	Ephemeral Stream Channel	*Cismontane Alkali Marsh*	*Tamarisk Scrub*	
	ACOE/CDFW/RWQCB	*ACOE/CDFW/RWQCB*	*ACOE/CDFW/RWQCB*	Total
1	0.05	–	–	**0.05**
2	<0.01	–	–	**<0.01**
3		0.18	0.80	**0.98**
Total Project Jurisdictional Impacts	**0.06**	**0.18**	**0.80**	**1.04**

Impacts to special status plant species located in the off-site Areas 1, 2, and 3 are summarized in Table 5.8-19. For wildlife species, two locations of California gnatcatcher and one location of Belding's orange-throated whiptail will be impacted. There are no narrow endemic species located within the off-site Areas 1 or 3.

Table 5.8-19
Impacts to Special-Status Plant Species Located Off-Site

Outside of Otay Ranch Area	Location with respect to the Preserve	Common Name (Scientific Name)	Status	Impacts (estimated number of individuals)
1	Outside	California adolphia	CRPR 2.1	12
1	Outside	San Diego barrel cactus	CRPR 2.1, MSCP Covered	36
1	Outside	Orange-throated whiptail	None/CSC/MSCP	1
1	Outside	Coastal California gnatcatcher	FT, USBC/CSC/MSCP Covered	1
3	Inside	Coastal California gnatcatcher	FT, USBC/CSC/MSCP Covered	1

In addition to the species documented as being present within the impact area (Table 5.8-19), additional species are potentially present within the Auto Dismantler's area (Area 2) for which surveys could not be conducted. These potential species include: Otay tarplant, variegated dudleya, San Diego County viguiera, Palmer's grapplinghook, small-flowered morning glory,

South Coast saltscale, and California boxthorn. Of these species, Otay tarplant and variegated Dudley are narrow endemic species.

Impacts to the wetlands south of the existing alignment of Main Street are unavoidable because the project component is the widening of the road; however, impacts have been minimized by keeping the road improvement within the existing footprint and adding on the minimal amount necessary to achieve the requirements of the roadway. Potential impacts to waters north of the existing Main Street, due to the location of a detention basin, are less significant than the alternative location on the Takashimi property. Potential impacts to special status plant species located in the off-site Areas 1, 2, and 3 could also occur. The proposed project would apply the HLIT Ordinance to those areas located outside of Otay Ranch, which specifically is Areas 1, 2, and 3. The proposed project will coordinate with the County for those areas located outside of Otay Ranch and within the County's jurisdiction. However, since impacts to native upland vegetation communities and wetland habitats are considered significant under the City's HLIT Ordinance, impacts would be **potentially significant** and mitigation would be required.

MSCP Preserve Boundary Adjustment

Pursuant to the Chula Vista MSCP Subarea Plan, the standard of review for the proposed Boundary Adjustment is one of "biological equivalency." As defined in Section 1.3 of the Chula Vista MSCP Subarea Plan:

> Biological Functional Equivalency – A modification to a Preserve boundary which results in a Preserve configuration with a biological value that is equal to or higher than the original Preserve configuration. The comparison of biological value is based on the "like or equivalent" exchange concept for biological factors identified in Section 5.4.2 of the MSCP Subregional Plan.

The following is a discussion and comparison of biological value of the proposed Boundary Adjustment, pursuant to the provisions of Section 5.4.2 of the MSCP Subregional Plan.

1. **Conserved Habitats.** Effects on significantly and sufficiently conserved habitats (i.e., the exchange maintains or improves the conservation, configuration, or status of significantly or sufficiently conserved habitats as defined in Section 4.2.4).

The exchange maintains or improves the conservation of conserved habitat. Overall, there is a net gain of Preserve acreage. There is a net take for the following vegetation communities/ land covers: non-native grassland, coastal sage scrub, and disturbed maritime succulent scrub. These losses are offset by a net gain for the following vegetation communities/land covers: disturbed coastal sage scrub, maritime succulent scrub, and disturbed land. The increase in preservation of maritime succulent scrub is especially important due to the overall rarity of the

vegetation community and the use of this habitat by special-status species such as coastal cactus wren. Overall, there is a 4.1-acre gain of upland communities and a 3.6-acre gain in disturbed land covers. The net loss of 3.8 acres of coastal sage scrub and 0.2 acre of disturbed maritime succulent scrub is offset by the net gain of 1.6 acres of maritime succulent scrub and 8.8 acres of disturbed coastal sage scrub. Although the coastal sage scrub is lower in shrub cover and has non-native grass as a component, it is occupied by special-status species; therefore, increasing the amount of coastal sage scrub in the Preserve improves the conservation of covered species. Table 5.8-20 shows the acreage of each vegetation community or land cover type for each village affected by the proposed Boundary Adjustment, as well as the University Site and Lake Property.

Table 5.8-20
Otay Ranch University Villages
Proposed MSCP Preserve Boundary Adjustment–Give/Take Analysis

Vegetation Community/ Land Cover	Give/Take of MSCP Preserve for Boundary Adjustment				
	Village Three North/ Portion of Village Four (acres)	*Village Ten (acres)*	*University Site (acres)*	*Lake Property (acres)*	*Total (acres)*
Upland Scrub Vegetation Communities					
Coastal sage scrub	−1.0	−1.2	−34.7	+33.1	−3.8
Coastal sage scrub (disturbed)	−0.2	0.0	−2.5	+11.5	+8.8
Maritime succulent scrub	+1.1	−0.1	−<0.01	+0.6	+1.6
Maritime succulent scrub (disturbed)	−0.2	—	—	—	−0.2
Upland Scrub Subtotal	-0.3	-1.3	-37.2	+45.2	+6.4
Upland Grassland Vegetation Communities					
Non-native grassland	−0.5	—	−3.4	+1.6	−2.3
Disturbed or Developed Land Covers					
Disturbed land	−<0.01	—	−0.3	+3.9	+3.6
Total Give/Take	**+4.2/-5.0**	**−1.3**	**−40.9**	**+50.7**	**+54.9/−47.2**
Net acreage change	**−0.8**	**−1.3**	**−40.9**	**+50.7**	**+7.7**

Note: For Give/Take of MSCP Preserve, "+" denotes Give to the Preserve and "−" denotes Take from the Preserve.

The proposed Boundary Adjustment would result in the loss of undisturbed coastal sage scrub, disturbed maritime succulent scrub, and non-native grassland but will increase the amount of disturbed coastal sage scrub and maritime succulent scrub in the Preserve. The result of the Boundary Adjustment will be an overall gain of 7.7 acres to the Preserve, 6.4 acres of which consists of native scrub habitat.

Configuration. The configuration of the conserved habitat is equivalent or improved with the proposed Preserve Boundary Adjustment because the proposed Give Area A associated with Portion of Village Four increases the amount of habitat in Wolf Canyon and widens the

Preserve at that location. In addition, Give Area B removes a large block of habitat from development and adds to the Preserve. This Give Area also provides a connectivity configuration of the habitat in the Preserve to other regional Preserve areas. Although Take Area B removes coastal sage scrub habitat from the Preserve, it eliminates the peninsula of development that juts into the Preserve, thus creating a lesser edge effect.

Status of significantly or sufficiently conserved habitat. The status of the proposed Give habitat includes conservation of Tier I habitat (i.e., maritime succulent scrub) and Tier II habitat (i.e., disturbed coastal sage scrub). Hence, the status of the conserved habitats is improved by providing equal or greater acreage of the sensitive habitats preserved under the MSCP.

2. **Covered Species.** Effects to covered species (i.e., the exchange maintains or increases the conservation of covered species).

The Give and Take of covered species is summarized in Figure 4-2 and Table 5.8-21. The occurrence of special-status plants is represented by surveys conducted over the past 2 years within Village Three North/Portion of Village Four and Village Ten and recorded in 2009 within the Lake Property (Give Area B). The data is represented by point records where the occurrence is of a single individual and as polygons when a population was recorded using GPS. For the special-status wildlife, surveys within Village Three North/Portion of Village Four and Village Ten were recorded during the past 2 years. The focused surveys for coastal California gnatcatcher were conducted in the Lake Property in 2008 and confirmed anecdotally in 2011. Figure 4-2 provides detailed records of the species surveys conducted for the University Villages.

Table 5.8-21
Summary of Give/Take for Covered Species for the University Villages

Give and Take within Boundary Adjustment Areas: Polygons and Points						
	Population (Polygons)			Population (Points)		
Species[a]	*Give*	*Take*	*Net*	*Give*	*Take*	*Net*
Plant Species						
Otay tarplant	+806	−107	+699	–	–	+699
San Diego barrel cactus	—	—	—	+65	−2	+63
Snake cholla	—	—	—	+20	–	+20

Table 5.8-21 (Continued)
Summary of Give/Take for Covered Species for the University Villages

Give and Take within Boundary Adjustment Areas: Polygons and Points						
	Population (Polygons)			Population (Points)		
Species[a]	*Give*	*Take*	*Net*	*Give*	*Take*	*Net*
Wildlife Species						
Coastal California gnatcatcher	—	—	—	+ Habitat occupied by 4 locations[b] Adds 10.4 acres of suitable habitat	− Habitat occupied by 3 locations[b] Removes 4.0 acres of suitable habitat	+ Net increase of 1 location Adds a net of 6.4 acres of suitable habitat
Coastal cactus wren	—	—	—	+ Habitat occupied by 1 location[b] Adds 1.6 acres of suitable habitat	No take of locations Removes 0.2 acre of suitable habitat	+ Habitat occupied by 1 location[b] Adds a net of 1.4 acres of suitable habitat
Southern California rufous-crowned sparrow	—	—	—	No addition of locations Adds 10.4 acres of suitable habitat	− Habitat occupied by 2 locations[b] Removes 4.0 acres of suitable habitat	− Habitat occupied by 2 locations[b] Adds a net of 6.4 acres of suitable habitat

[a] Wide-ranging species are not presented in this table (e.g., raptors, medium-sized mammals).
[b] Bird species are mobile and although these species were observed within specific boundaries, they utilize habitat in and around the Give/Take Areas where they were observed. For this reason, populations are represented as occupied habitat and territory locations and not specific points. In addition, although the focused survey may have only detected one individual, it is likely to be occupied by a pair. To account for this, the discussion is based on "locations" of special-status species and not pairs or individuals.

Otay Tarplant. Give Area A and Take Area A both contain populations of Otay tarplant (806 and 107 plants, respectively). Therefore, implementation of the Preserve Boundary Adjustment will result in a net addition of approximately 699 individuals of Otay tarplant to the Preserve. The proposed Preserve Boundary Adjustment provides for suitable habitat for this species and the species is documented within the proposed Give Areas.

San Diego Barrel Cactus. One barrel cactus was recorded within Give Area A and 65 individuals were observed within Give Area B. Two barrel cactus individuals were recorded within the Take Areas, one in Take Area A and one in Take Area B. The Preserve Boundary Adjustment will result in a net increase of 63 San Diego barrel cactus individuals within the Preserve. In addition, suitable habitat for this species will be included within the Preserve.

Snake Cholla. Twenty snake cholla (*Cylindropuntia californica* var. *californica*) were recorded within Give Area A. No snake cholla were recorded within the Take Areas; therefore, 20 snake cholla individuals will be preserved under the proposed Boundary Adjustment. In addition, suitable habitat for this species will be included within the Preserve.

Coastal California Gnatcatcher. Analysis of the species is based on suitable habitat and observed locations rather than on observation of pairs or individuals, which can vary from year to year. A total of three coastal California gnatcatcher locations were observed within Give Area A and one location was observed within Give Area B. The habitat within Give Area A does not include the full territory of all three locations of coastal California gnatcatcher; however, it does provide portions of the territory, and during the focused surveys, these birds were consistently observed at the locations shown. An additional four pairs of gnatcatcher were recorded within close proximity to Give Area B and would be expected to use the coastal sage scrub habitat within the Lake Property. Three coastal California gnatcatcher locations were observed within Take Area B and similar to the discussion above, these locations represent portions of territories for these pairs. Although habitat for three locations will be lost as a part of the Boundary Adjustment, habitat for four locations will be preserved. As such, the potential occupied habitat has a net increase by 6.4 acres. It is likely that this species utilizes the coastal sage scrub in and around the Take/Preserve boundary and although the Boundary Adjustment in Take Area B will result in reduced habitat for this species, the slopes of the Preserve contain additional habitat for this species. In addition, although the gain of coastal sage scrub vegetation associated with Give Area B is considered disturbed, this is still a net increase of habitat for gnatcatchers and the gnatcatchers within Give Area B were observed using the disturbed coastal sage scrub.

Coastal Cactus Wren. One coastal cactus wren location was detected within Give Area A and no locations were observed within any of the Take Areas. Therefore, the proposed Boundary Adjustment would result in a net increase of suitable habitat by 1.4 acres and area used by coastal cactus wren.

Southern California Rufous-Crowned Sparrow. Two Southern California rufous-crowned sparrow locations were observed within Take Area B. It is likely that this species utilizes the coastal sage scrub in and around the Take/Preserve boundary and although the Boundary Adjustment in this area will result in reduced habitat for this species, the slopes of the Preserve contain additional habitat for this species. There is a net increase in suitable habitat for this species.

Summary of MSCP Equivalency Finding "Effects on Covered Species." Because wildlife are mobile, the species recorded would not necessarily be preserved or taken, but this analysis demonstrates that the average net effect of the proposed Boundary Adjustment would be to preserve a roughly equivalent number and variety of plant and wildlife species to the number and variety of species that would be taken. The proposed Preserve Boundary Adjustment would remove some coastal sage scrub and non-native grassland vegetation and add disturbed coastal sage scrub and disturbed lands to the Preserve. The result of the Boundary Adjustment

is a net increase of 7.7 acres: 6.4 acres of native scrub communities and a net 1.3 acres of disturbed and non-native land covers.

From a covered species habitat use perspective, the proposed adjustment would result in an increase of suitable habitat for covered species in the form of disturbed coastal sage scrub. The areas mapped as disturbed coastal sage scrub have a higher content of non-native grass species and generally lower shrub cover; however, they still function as suitable habitat for special-status species and coastal California gnatcatcher was observed within the disturbed coastal sage scrub. Quino checkerspot butterfly was observed basking on the disturbed land as represented by dirt roads. While this is not their suitable nectar or host plant habitat, they will use the open areas in territory defense. The proposed Boundary Adjustment will also result in the increase of coastal cactus wren territories. In addition, the proposed adjustment will ensure that populations of special-status plant species are included within the Preserve.

The proposed project will adhere to the MSCP Subarea Plan's requirement of a soil salvage plan, which states: "As a means of reducing impacts to sensitive species and habitats from development allowed by the Subarea Plan, the City will continue its practice of requiring soil, seed and plant salvage on a project-by-project basis. Project review and CEQA analysis will identify appropriate salvage opportunities. Mitigation measures and conditions of project approval would specify the soils, seed and plant material to be salvaged, identify the procedures for salvage, and specify locations and time frames for use of material, as appropriate" (City of Chula Vista 2003; BIO12). This requirement will be a benefit for the covered species for which it is required including Otay tarplant.

In summary, the proposed Boundary Adjustment results in equal or improved conservation of covered species, an increase in habitat for covered species, and an increase in conservation of a Narrow Endemic Species (Otay tarplant and snake cholla).

3. **Habitat Linkages and Function of Preserve Areas.** Effects on habitat linkages and function or preserve areas (i.e., the exchange maintains or improves a habitat linkage or wildlife corridor).

Wolf Canyon, Salt Creek, and the Otay River Valley are geographically depicted on the City MSCP Subregional Plan Generalized Core Biological Resource Areas and Linkages Map (City of Chula Vista 2003, Figures 1-1 through 3-2); however, they are not identified as a regional linkage between core biological areas. These corridors are dominated by wetlands and riparian habitat with associated upland buffer areas.

In Wolf Canyon, Give Area A is along the eastern and western edges of Wolf Canyon, adjacent to Village Three North/Portion of Village Four. Take Area A would smooth out the existing MSCP boundary, which results in fewer linear feet of Preserve interface and reduced potential

edge effects, which improves the function of Preserve areas. Edge effects are especially important to species such as birds, which often suffer from predation from homeowners' pets. Edge effects can also be detrimental to special-status plant species, which can be outcompeted by invasive plants from developed areas. Improving the edge-to-area ratio of a Preserve improves the protection for the special-status species occurring within the Preserve. The proposed Boundary Adjustment results in little change to the width of Wolf Canyon; it is still maintained at a width varying from 1,440 to 2,850 feet of native habitat (Figure 4-3).

The Otay River Valley and the sensitive resources and important wildlife movement function of the River Valley are not impacted by the proposed Boundary Adjustment. The closest location of the Boundary Adjustment area is approximately 800 feet from the Otay River in the Village Three North site and over 2,000 feet away in the Village Ten site.

Salt Creek Canyon, where Take Area B is located, once served as a wildlife connection between the San Miguel Mountains and the Otay River Valley (Ogden 1992). However, development to the north of Salt Creek Canyon has restricted wildlife movement between the San Miguel Mountains and the Otay River Valley along this corridor. Instead, this canyon is described as "a habitat cul-de-sac which includes a regional corridor for gnatcatcher and cactus wren" (Ogden 1992). The mouth of Salt Creek is considered an integral corridor that allows for movement of these two bird species to the Otay River Valley (Ogden 1992). Although Take Area B will remove habitat along the upper slopes of the Preserve, the Salt ~~Creek Preserve~~Otay Ranch, which is the primary movement corridor in this area, will not be impacted. Wildlife species that currently utilize the slopes within Take Area B are expected to continue to utilize the open space on the slopes within the ~~Salt Creek~~Otay Ranch Preserve (approximately 500 feet in width). Take Area B will remove a strip of habitat varying from 75 to approximately 300 feet. But this is replaced by habitat within Give Area B that is up to 450 feet in width. The Give Area B will provide equivalent habitat within this portion of the Preserve and the corridor width will be maintained at a minimum of 900 feet and exceeding 1,500 feet. Therefore, the movement linkage for bird species within the ~~Salt Creek~~Otay Ranch Preserve will be preserved.

In addition, the acreage in Give Area B will preserve the wildlife connection between Otay River Valley, Salt Creek, Lower Otay Lake, and ultimately Sweetwater. The addition of Give Area B will essentially provide a complete Preserve area from the Preserve boundary east of Village Ten to the edge of Lower Otay Lake. The connection north of Give Area B is unaffected and it maintains the connection to the archipelago of coastal sage scrub south of the Olympic Training Center, as described in the University Redesign (City of Chula Vista 2003). Give Area B then adds an additional connection along the boundary of Otay Ranch with the City of San Diego Cornerstone Lands. Give Area B provides a connection from the

eastern slope of Salt Creek to the coastal sage scrub habitat around the southern portion of Lower Otay Lake (Figure 4-3).

The proposed Boundary Adjustment would result in minor changes to the Wolf Canyon wildlife corridor and would maintain the connectivity for special-status and focal wildlife species between Salt Creek, the Otay River Valley, Lower Otay Lake, and surrounding open space; thus, Give Area B makes a substantial contribution to habitat connectivity.

4. **Preserve Configuration and Management.** Effects on preserve configuration and management (i.e., the exchange results in similar or improved management efficiency and/or protection for biological resources).

Similar or Improved Management Efficiency. As part of the Otay Ranch RMP, Preserve lands are required to be dedicated to the Otay Ranch Preserve Owner/Manager. Ongoing funding for Preserve management is assured through an existing Community Facilities District within Otay Ranch. This Preserve management funding and maintenance program is not altered by the Boundary Adjustment.

The result of the proposed Boundary Adjustment is an overall reduced edge effect, especially near the Lower Otay Lake (Give Area B), where a large area of developable land will be added to the Preserve. The total reduction in edge, as measured by length of boundary between the Preserve and development, is 3,889 linear feet. That reduction in edge means there is less Preserve adjacent to Development Areas, which reduces edge effects, such as invasive plants, trash, human intrusion, and access to homeowners' dogs and cats, which prey on wildlife. Reducing the potential for edge effects would in turn reduce management challenges and expenses for implementing edge effect control measures. Adjusting the boundary along Salt Creek Canyon (Take Areas B and C) eliminates the peninsula of development that juts into the Preserve, thus creating a lesser edge effect. No wetlands or waters were mapped within Take Area B; therefore, converting this area to developable land will not directly impact any downstream features.

Although the proposed Boundary Adjustment in Wolf Canyon will remove 0.8 acre from a portion of the Preserve, the Take is concentrated along the interface of the Preserve and development boundary. The adjustment lessens the edge effects by smoothing out the boundary in this area, and the Give increases the native habitat within the southern part of Portion of Village Four. The combination of Give and Take along Wolf Canyon reduces the edge by 205 linear feet. The Give along the Portion of Village Four, while it does increase the edge, contributes a very valuable habitat type composed of maritime succulent scrub.

Protection for Biological Resources. The proposed Boundary Adjustment adds additional acreage to the area near Lower Otay Lake (Give B) that is composed of high-quality habitat.

Although Give B contains disturbed land, the disturbed land is composed of dirt roads, which will not need to be treated or maintained as a part of the Preserve. The majority of Give B contains coastal sage scrub habitat, and although a portion is disturbed, it stills functions as important wildlife habitat and is occupied by coastal California gnatcatcher. No restoration is required for the habitat to function for wildlife use because it is currently used by coastal California gnatcatcher. Overall, the proposed Boundary Adjustment reduces coastal sage scrub within the Preserve by 3.8 acres, but increases the amount of disturbed coastal sage scrub by 8.8 acres. While the reconfigured Preserve in Village Ten and the University Site (Take Areas B and C) would result in development pushing east into the Preserve, wildlife movement will still be able to take place within the regional movement corridor in the Otay River Valley and the Salt Creek drainage. A movement linkage will be retained on the undisturbed slopes south of Village Ten to promote movement of upland species. The movement linkage for avian species along the upland slopes and within Salt Creek will also be preserved. This slope is approximately 500 feet wide from the edge of Take Area C to the bottom of the drainage. In addition, the acreage in Give Area B will preserve the wildlife connection between Otay River Valley, Salt Creek, and Lower Otay Lake.

As described in Chapter 2.0, Effects to Covered Species, covered species preservation is improved with the proposed Preserve Boundary Adjustment. There is an addition of coastal cactus wren occupied habitat and an addition of documented mapped occurrences of Otay tarplant, San Diego barrel cactus, and snake cholla. This provides additional and improved protection of biological resources.

5. **Ecotones or Other Conditions Affecting Species Diversity.** Effects on preserve configuration and management (i.e., the exchange results in similar or improved management efficiency and/or protection for biological resources)

The proposed Boundary Adjustment results in similar topographic and structural diversity as the existing Preserve. The general consideration for this issue is that the components of the Boundary Adjustment are all within a confined geographical area, with variation in ecotone elements and habitat diversity throughout. The Take in Village Three North is along slopes adjacent to Wolf Canyon, and the Give in Village Three North/Portion of Village Four is also along slopes adjacent to Wolf Canyon. Likewise, Take Areas B and C are along the edges of Salt Creek, as is Give Area B. All of the habitat types included in the Give and Take Areas are upland communities and hence there is little ecotonal condition involved. Therefore, the proposed Boundary Adjustment would not result in a significant overall difference in ecotone considerations.

6. **Species of Concern not on the Covered Species List.** Effects to species of concern not on the covered species list (i.e., the exchange does not significantly increase the

likelihood that an uncovered species will meet the criteria for listing under either the federal or state Endangered Species Acts).

Based on biological surveys, three species of concern not on the covered Species List were identified within the proposed Preserve Boundary Adjustment area: San Diego County viguiera, south coast saltscale, and San Diego black-tailed jackrabbit. In Give Area B, there is a population of San Diego County viguiera, as well as a few individuals of south coast saltscale. Nine San Diego County viguiera are located within Take Area B. Two black-tailed jackrabbits were identified during 2011 focused surveys in Take Area B. The Give and Take of special-status species that are not covered under the MSCP Subarea Plan is summarized in Table 5.8-22 and shown along with the covered species on Figure 4-2 in the MSCP Subarea Plan.

Table 5.8-22
Summary of Give/Take for Non-Covered Special-Status Species for the University Villages

Give and Take within Boundary Adjustment Areas: Polygons and Points						
	Polygons (Acres)			*Points*		
*Species**	*Give*	*Take*	*Net*	*Give*	*Take*	*Net*
Plant Species						
San Diego County viguiera	—	−166	−166	+40	−9	−135
South coast saltscale	—	—	—	+7	–	+7
Wildlife Species						
San Diego black-tailed jackrabbit	—	—	—	—	−2	−2

* Wide-ranging species are not presented in this table (e.g., raptors, medium-sized mammals).

San Diego County Viguiera. Although the proposed Preserve Boundary Adjustment would result in a loss of approximately 135 individuals, this loss does not significantly increase the likelihood that this species will meet the criteria for listing under either the federal or state Endangered Species Acts. San Diego County viguiera has a California Rare Plant Ranking (CRPR) of 4.2, which means that this species is of limited distribution, but is not considered rare, and is only fairly threatened. Additionally, there are thousands of individuals and acres of San Diego County viguiera-dominated habitat within the Village Three North/Portion of Village Four, Village Eight East, and Village Ten Preserve areas. There are also many individuals of the plant species located within Give Area B, and this area provides suitable habitat for the species; therefore, the removal of 135 individuals from the Preserve will not substantially affect long-term survival of the species.

South Coast Saltscale. The proposed Boundary Adjustment will increase the amount of south coast saltscale within the Preserve by seven individuals. In addition, the proposed Boundary Adjustment will result in the preservation of suitable habitat for this species.

San Diego Black-Tailed Jackrabbit. Because wildlife are mobile, the black-tailed jackrabbits recorded would not necessarily be preserved or taken, but this analysis demonstrates that the average net effect of the proposed Boundary Adjustment would be a reduction in the locations recorded for this species in Take Area B. Both occurrences of black-tailed jackrabbits are located along the Take/Preserve boundary interface and therefore it is likely that this species utilizes habitat in and around the Take/Preserve boundary. Although the proposed Boundary Adjustment in this area will result in reduced habitat for this species in this area, the adjacent slopes of the Preserve contain additional habitat for this species. In addition, Give Area B will result in the preservation of suitable habitat for this species, and the species has been documented within the ~~Salt Creek~~Otay Ranch Preserve area. Therefore, the proposed Boundary Adjustment will not increase the likelihood that this species will meet the criteria for listing under either the federal or state Endangered Species Acts.

Summary of Boundary Adjustment. The proposed Preserve boundary adjustment results in equal, or improved conservation of covered species, an increase in habitat for covered species, and an increase in conservation of a narrow endemic species. The proposed Boundary Adjustment would result in an increase of Preserve acreage (7.7 acres), and improve Preserve design by resulting in less edge and, hence, fewer edge effects. The proposed adjustment does not propose to affect Preserve management or wildlife movement: wildlife will continue to be able to move within the Otay River Valley, the slopes of upland habitat north of the River Valley, Salt Creek, and the regional area by movement east to additional Preserve area east of Lower Otay Lake. The proposed Preserve boundary adjustment meets the requirements of the MSCP Subregional Plan for adjustments to the boundary of the Preserve under the "like or equivalent" exchange concept and the direct and permanent impacts to the Preserve would be **less than significant**.

G. Be inconsistent with General Plan biological resource policies thereby resulting in a significant physical impact.

City of Chula Vista General Plan

Appendix B evaluates the consistency of the proposed project with applicable General Plan policies associated with biological resources. Goal E 1 and policy E 1.1 are in place to conserve the City of Chula Vista's sensitive biological resources and implement the Chula Vista MSCP Subarea Plan. The proposed project would conserve sensitive biological resources to the extent feasible, as well as implement minimization and avoidance measures included in the Chula Vista MSCP Subarea Plan. As shown in Appendix B, the proposed project would be consistent with the General Plan policies that are associated with biological resources and impacts would be **less than significant**.

Otay Ranch General Development Plan

Appendix B provides a comparison of the proposed project with the applicable Otay Ranch GDP biological resources policies. Consistent with the Otay Ranch GDP, prior to recordation of each Final Map, land shall be conveyed within the Otay Ranch Preserve to the Otay Ranch Preserve Owner Manager or its designee at a ratio of 1.188 acres for each acre of development area, as defined in the Otay Ranch RMP. Also Consistent with the Otay Ranch GDP, the portion of the proposed project designated Open Space Preserve and conveyed into the Preserve would be retained as open space and maintained to protect environmentally sensitive land in accordance with the RMP and MSCP. As demonstrated in Appendix B, the proposed project is consistent with the applicable Otay Ranch GDP policies related to biological resources and impacts would be **less than significant**.

5.8.6 Cumulative Impacts

Implementation of the proposed project would contribute to the cumulative loss of biological resources within Otay Ranch and City of Chula Vista Subarea. Compliance with the MSCP 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. Although portions of the project would designate open space that is in addition to existing planned Preserves, encroachment into both the RMP and MSCP Subarea Plan Preserves requires a demonstration that the modified Preserve would provide for an equal or higher biological value. As noted in Section 5.8.5, the proposed reconfiguration of the Preserve provides for an equivalent biological value to the original Preserve, and therefore, significant cumulative impacts related to losses to habitats and species would be **less than significant** through the project's implementation of the Boundary Modification to the RMP and Boundary Adjustment to the MSCP Subarea Plan.

5.8.7 Level of Significance Prior to Mitigation

Prior to mitigation implementation of the proposed project would result in significant direct and indirect impacts to "covered" sensitive plant species include the following: Otay tarplant, variegated dudleya, and San Diego barrel cactus. Otay tarplant and variegated dudleya are identified in the MSCP Subarea Plan as narrow endemics. Significant impacts to non-covered species include California adolphia, south coast saltscale, San Diego marsh-elder, singlewhorl burrobush, and Robinson's pepper grass. Implementation of the proposed project would result

in the direct loss of habitat for all of the special-status animals and is considered **potentially significant** prior to mitigation.

Long-term indirect impacts to special-status wildlife species would also occur as a result of the proposed project. Impacts would consist of lighting, human activity in the Preserve, noise, and domestic animal predation. Indirect impacts to special-status wildlife species are considered **potentially significant** prior to mitigation.

Prior to mitigation, sensitive vegetation communities to be permanently impacted include non-native grassland, freshwater marsh, cismontane alkali marsh, disturbed cismontane alkali marsh, coastal sage scrub, disturbed coastal sage scrub, broom baccharis scrub, maritime succulent scrub, disturbed maritime succulent scrub, mulefat scrub, southern mixed chaparral, tamarisk scrub, and southern willow scrub. Impacts to sensitive vegetation communities would be **potentially significant** prior to mitigation.

Impacts to jurisdictional waters and wetlands would occur as a result of the proposed project. Impacts to jurisdictional waters total 0.56 acre and are all permanent. Impacts to jurisdictional wetlands total 1.03 acres, 0.05 acre of which includes a compatible use while the remaining acres are permanently impacted. A total of 1.35 acres of jurisdictional areas under the ACOE, RWQCB, and CDFW would be impacted. Impacts to jurisdictional areas under CDFW only are 0.23 acre. Impacts to ephemeral and intermittent unvegetated waters and jurisdictional wetlands are considered **potentially significant** prior to mitigation.

Table 5.8-23 summarizes the proposed projects total impacts to vegetation communities/land covers, special-status plant species, special-status wildlife species, and jurisdictional waters.

Table 5.8-23
Summary of Total Impacts

Resource Impacted	Development Area Impacts			
	SPA Plan Development Area	*Future Facilities Within the Preserve*	*Planned Facilities Within the Preserve*	*Total Impacts*
Vegetation Communities/Land Covers (acres)	*717.5*	*6.1*	*12.0*	*735.6*
Agriculture	294.0	0.10	3.3	296.6
Broom baccharis scrub	<0.10 (0)	0.00	0.0	<0.10 (0)
Broom baccharis scrub (disturbed)	0.40	<.1 (0)	0.0	0.4
Cismontane alkali marsh	0.10	0.00	0.0	0.10
Cismontane alkali marsh (disturbed)	0.20	0.00	0.0	0.20
Coastal sage scrub	71.80	0.30	2.5	74.60
Coastal sage scrub (disturbed)	32.30	0.10	0.5	32.90
Developed	7.1	0.00	2.9	10.00
Disturbed land	7.70	0.4	0.8	8.9

Table 5.8-23 (Continued)
Summary of Total Impacts

Resource Impacted	Development Area Impacts			
	SPA Plan Development Area	*Future Facilities Within the Preserve*	*Planned Facilities Within the Preserve*	*Total Impacts*
Freshwater marsh	0.00	<0.1 (0)	0.0	<0.1 (0)
Maritime succulent scrub	8.10	0.00	0.6	8.70
Maritime succulent scrub (disturbed)	0.40	0.00	0.2	0.60
Mulefat scrub	0.30	0.00	0.0	0.30
Non-native grassland	294.70	5.10	1.2	301.00
Southern mixed chaparral	<0.1 (.1)			<0.1 (.1)
Southern willow scrub	0.20	0.00	0.00	0.20
Tamarisk scrub	0.1	<0.1 (.1)	0.00	0.20
Special-Status Plant Species (individuals)	*11,547*	*0*	*439*	*11,986*
California adolphia *(Adolphia californica)*	1	0	0	1
California box-thorn *(Lycium californicum)*	57	0	13	70
Otay tarplant *(Deinandra conjugens)*	3,961	0	41	4,002
Palmer's grapplinghook *(Harpagonella palmeri)*	20	0	0	20
Robinson's pepper grass *(Lepidium virginicum* var. *robinsonii)*	50	0	10	60
San Diego barrel cactus *(Ferocactus viridescens)*	146	0	65	211
San Diego County viguiera *(Bahiopsis (=Viguiera) laciniata)*	7,057	0	310	7,367
Singlewhorl burrobrush *(Ambrosia monogyra)*	48	0	0	48
Small-flowered morning glory *(Convolvulus simulans)*	17	0	0	17
South coast saltscale *(Atriplex pacifica)*	15	0	0	15
Southwestern spiny rush *(Juncus acutus* ssp. *leopoldii)*	75	0	0	75
Variegated dudleya *(Dudleya variegata)*	100	0	0	100
Special-Status Wildlife Species (individuals)	*68*	*0*	*0*	*68*
California Horned Lark *(Eremophila alpestris actia)*	10	0	0	10
Coastal Cactus Wren *(Campylorhynchus brunneicapillus sandiegensis)*	1	0	0	1
Coastal California Gnatcatcher *(Polioptila californica californica)*	16	0	0	16
Cooper's Hawk *(Accipiter cooperii)*	1	0	0	1
Grasshopper Sparrow *(Ammodramus savannarum)*	8	0	0	8
Loggerhead Shrike *(Lanius ludovicianus)*	0	0	0	0
Northern Harrier *(Circus cyaneus)*	6	0	0	6
Orange-Throated Whiptail *(Aspidoscelis hyperythra)*	0	0	0	0
Peregrine Falcon *(Falco peregrinus anatum)*	1	0	0	1
San Diego Black-Tailed Jackrabbit *(Lepus californicus bennettii)*	11	0	0	11
Southern California Rufous-Crowned Sparrow *(Aimophila ruficeps canescens)*	0	0	0	0

Table 5.8-23 (Continued)
Summary of Total Impacts

Resource Impacted	Development Area Impacts			
	SPA Plan Development Area	*Future Facilities Within the Preserve*	*Planned Facilities Within the Preserve*	*Total Impacts*
White-Tailed Kite *(Elanus leucurus)*	14	0	0	14
Jurisdictional Wetlands and Waters (acres)	*1.52*	*0.06*	*0.00*	*1.58*
Cismontane alkali marsh	0.12	0.00	0.00	0.12
Disturbed cismontane alkali marsh	0.18	0.00	0.00	0.18
Ephemeral drainage	0.47	0.01	0.00	0.48
Freshwater marsh	0.00	0.03	0.00	0.03
Intermittent stream channel	0.07	0.00	0.00	0.07
Mulefat scrub	0.34	0.00	0.00	0.34
Southern willow scrub	0.17	0.00	0.00	0.17
Tamarisk scrub	0.17	0.02	0.00	0.19

5.8.8 Mitigation Measures

The following mitigation measures address the proposed project's significant effects on special-status species, special-status vegetation, and jurisdictional resources. With implementation of the proposed mitigation, the identified impacts will be reduced to less than significant. Impacts for biological resources inside the Preserve are addressed through the MSCP Boundary Adjustment, discussed in Section 4.

Special-Status Vegetation

MM BIO-1 Prior to the approval of the first Final Map for the project, the Project Applicant shall coordinate with the City of Chula Vista (City) Engineer and annex the project area within the Otay Ranch Preserve Community Facilities District No. 97-2.

Prior to the 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 "Developable Area" as defined by the RMP. Access for maintenance purposes shall also be conveyed to the satisfaction of the POM. 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.

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.

MM BIO-2 Prior to the issuance of any land development permits that impact maritime succulent scrub, including clearing and grubbing or grading permits, the Project Applicant shall prepare a restoration plan to restore impacts to maritime succulent scrub at a 1:1 ratio pursuant to the Otay Ranch RMP. A total of 5.5 acres will require restoration. The maritime succulent scrub restoration shall be prepared by a City-approved biologist and to the satisfaction of the Development Services Director (or their designee) pursuant to the Otay Ranch RMP restoration requirements. The restoration plan shall include, at a minimum, an implementation strategy; species salvage and relocation; appropriate seed mixtures and planting method; irrigation; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Project Applicant shall also be required to implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee).

MM BIO-3 Prior to issuance of land development permits, including clearing, grubbing, grading and construction permits for the Future and Planned Facilities associated with Village Ten, the Project Applicant shall provide a revegetation plan for temporary impacts to 0.3 acres of coastal sage scrub habitat. The revegetation plan must be prepared by a qualified City-approved biologist familiar with the City's MSCP Subarea Plan and must include, but not be limited to, an implementation plan; appropriate seed mixtures and planting method; irrigation method; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Project Applicant shall be required to prepare and implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee).

MM BIO-4 Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits for any areas adjacent to the preserve and the off-site facilities located within the preserve, the Project Applicant shall provide written confirmation that a City-approved biological monitor has been retained and shall be on site during clearing, grubbing, and/or grading activities. The biological monitor shall attend all pre-construction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas and protective fencing. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City's MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the project.

Before construction activities occur in areas containing sensitive biological resources within the off-site facilities area, all workers shall be educated by a City-approved biologist to recognize and avoid those areas that have been marked as sensitive biological resources.

MM BIO-5 Prior to issuance of grading permits in portions of the SPA Plan areas that are adjacent to the Preserve, the Project Applicant shall install fencing. Prior to issuance of land development permits, including clearing, grubbing, grading and/or construction permits, the Project Applicant shall install fencing in accordance with Chula Vista Municipal Code (CVMC) 17.35.030. Prominently colored, well-installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to the preserve and for all off-site facilities constructed within the preserve. Prior to release of grading and/or improvement bonds, a qualified biologist shall provide evidence that work was conducted as authorized under the approved land development permit and associated plans.

MM BIO-6 Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the following notes shall be included on the applicable construction plans to the satisfaction of the Development Services Director (or their designee):

- A qualified biologist shall be on site to monitor all vegetation clearing and periodically thereafter to ensure implementation of appropriate resource protection measures.

- Dewatering shall be conducted in accordance with standard regulations of the RWQCB. A permit to discharge water from dewatering activities will be required. This will minimize erosion, siltation, and pollution within sensitive communities.
- During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This will protect sensitive vegetation from being inundated with sediment-laden runoff.
- Material stockpiles shall be covered when not in use. This will prevent fly-off that could damage nearby sensitive vegetation communities.
- Graded area shall be periodically watered to minimize dust that may affect adjacent vegetation.

MM BIO-7 Prior to issuance of any land development permits, including clearing or grubbing and grading and/or construction permits, the project will be required to obtain a HILT Permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Chula Vista MSCP Tier I, II, and II vegetation communities as shown below in Tables 5.8-24 and 5.8-25 and in accordance with Table 5-3 of the City of Chula Vista MSCP Subarea Plan. These impacts are due to the proposed development and are not associated with Planned or Future Facilities. Mitigation for off-site impacts outside of Otay Ranch will be in accordance with the City of Chula Vista MSCP Subarea Plan and the City's Habitat Loss and Incident Take (HLIT) Ordinance and as provided in the HLIT Findings. Mitigation for impacts associated with the landfill (off-site Area 5) is not required.

Prior to issuance of any land development permits, the Applicant shall mitigate for direct impacts pursuant to Section 5.2.2 of the City's MSCP Subarea Plan. In compliance with the City's MSCP Subarea Plan, the Applicant shall secure mitigation credits within a City/Wildlife Agency-approved Conservation Bank or other approved location offering such credits consistent with the ratios specified in Tables 5.8-24 and 5.8-25.

The Applicant shall be required to provide verification of purchase to the City, prior to issuance of any land development permits.

In the event that a Project Applicant is unable to secure mitigation through an established mitigation bank approved by the City and Wildlife Agencies, the Project Applicant shall secure the required mitigation through the conservation of an area containing in-kind habitat within the City's MSCP Subarea Plan or MSCP

Planning Area in accordance with the mitigation ratios contained in Table 5-3 of the City's MSCP Subarea Plan and subject to Wildlife Agency concurrence.

Table 5.8-24
Mitigation for Permanent Impacts to Upland Vegetation Outside of Otay Ranch (HLIT)

Off-Site Area	Ownership	Vegetation Community	Tier	Permanent Impacts (acres)	Location of Impact	Mitigation Ratio	Mitigation Required (acres)
1	Takashima	Coastal Sage Scrub	II	0.8	Inside Preserve	1.5:1	1.2
		Coastal Sage Scrub	II	5.3	Outside Preserve	1:1	5.3
2	Auto Dismantler[1]	Coastal Sage Scrub	II	0.3	Outside Preserve	1:1	0.3
		Valley Needlegrass grassland	I	0.1	Outside Preserve	1:1	0.1
3	City of Chula Vista	Broom Baccharis Scrub	II	0.2	Inside Preserve	1.5:1	0.3
		Cismontane Alkali Marsh	I	0.2	Inside Preserve	1.5:1	0.3
		Coastal Sage Scrub	II	0.7	Inside Preserve	1.5:1	1.1
		Disturbed Coastal Sage Scrub	II	0.1	Inside Preserve	1.5:1	0.2
		Non-Native Grassland	III	0.3	Inside Preserve	1:1	0.3

[1] Mapping was unable to be conducted on this property. Impacts and mitigation will be based on updated information determined within one year of construction as stated in Section 5.1.2.

Note: Tiers and Mitigation Ratios are in accordance with the City of Chula Vista MSCP Subarea Plan's HLIT Upland Habitat Mitigation Ratios. No mitigation is required for Tier IV habitat types (i.e., non-sensitive vegetation communities and land covers including disturbed land, ornamental, or developed land). It is assumed that mitigation will be located inside the Preserve. Mitigation outside of the Preserve (i.e., Chula Vista MSCP Subarea Plan or Planning Area boundary) will require increased mitigation per Table 5-3.

Table 5.8-25
Mitigation for Impacts to Wetlands Outside of Otay Ranch (HILT)

Outside of Otay Ranch Area	Wetlands Vegetation Community/Water Feature			Mitigation Ratio	Mitigation Required
	Ephemeral Channel	*Cismontane Alkali Marsh*	*Tamarisk Scrub*		
1	0.05			1:1 to 2:1	**0.05 to 0.10**
2	<0.01			1:1 to 2:1	**<0.01 to 0.01**
3		*0.18*	*0.80*	*1:1 to 2:1*	***0.98 to 1.96***

Prior to issuance of any land development permit, and to the satisfaction and oversight of the City's Development Services Director (or their designee), the Applicant shall secure the parcel(s) that will be permanently preserved for in-kind habitat impact mitigation, prepare a long-term Management and Monitoring Plan (MMP) for the mitigation area, secure an appropriate management entity to ensure long-term biological resource management and monitoring of the mitigation area is

implemented in perpetuity, and establish a long-term funding mechanism for the management and monitoring of the mitigation area in perpetuity.

The long-term MMP shall provide management measures to be implemented to sustain the viability of the preserved habitat and identify timing for implementing the measures prescribed in the MMP. The mitigation parcel shall be restricted from future development and permanently preserved through the recordation of a conservation easement or other mechanism approved by the Wildlife Agencies as being sufficient to insure that the lands are protected in perpetuity. The conservation easement or other mechanism approved by the Wildlife Agencies shall be recorded prior to issuance of any land development permits.

The Project Applicant shall be responsible for maintaining the biological integrity of the mitigation area and shall abide by all management and monitoring measures identified in the MMP until such time as the established long-term funding mechanism has generated sufficient revenues to enable a City-approved management entity to assume the long-term maintenance and management responsibilities.

General

MM BIO-8 Prior to issuance of grading permits in portions of the SPA Plan areas that are adjacent to the Preserve, the Project Applicant shall develop a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall be developed, approved, and implemented during construction to control storm water runoff such that erosion, sedimentation, pollution, and other adverse effects are minimized. The following performance measures contained in the Edge Plans shall be implemented to avoid the release of toxic substances associated with urban runoff:

- Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures.
- Where deemed necessary, storm drains shall be equipped with silt and oil traps to remove oils, debris, and other pollutants. Storm drain inlets shall be labeled “No Dumping–Drains to Ocean.” Storm drains shall be regularly maintained to ensure their effectiveness.
- The parking lots shall be designed to allow storm water runoff to be directed to vegetative filter strips and/or oil-water separators to control sediment, oil, and other contaminants.
- Permanent energy dissipaters shall be included for drainage outlets.

- The BMPs contained in the SWPPP shall include, but are not limited to, silt fences, fiber rolls, gravel bags, and soil stabilization measures such as erosion control mats and hydro-seeding.
- The project area drainage basins will be designed to provide effective water quality control measures, as outlined in the Water Quality Technical Report. Design and operational features of the drainage basins will include design features to provide maximum infiltration, maximum detention time for settling of fine particles; maximize the distance between basin inlets and outlets to reduce velocities; and establish maintenance schedules for periodic removal of sedimentation, excessive vegetation and debris.

Jurisdictional Resources

MM BIO-9 The City requires that impacts to wetlands be avoided to the maximum extent possible and where impacts are unavoidable, compensatory mitigation within the Chula Vista Subarea or Chula Vista Planning Area shall be required resulting in no overall net loss of wetlands. A total of up to 1.03 acres of wetland and 0.56 acre of waters of the U.S./State within the project may be impacted within the Development Area. Off-site areas may impact a total of up to 0.98 acre of wetlands and 0.38 acre of waters (0.24 acre of waters of the U.S. and 0.14 acre of water of the State). Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project Applicant 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 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-10 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 have been obtained.

MM BIO-11 The Project Applicant shall implement one of the following prior to the issuance of grading permits for areas impacting vernal pools within Village Three North:

1. The Project Applicant shall restore 240 square feet of vernal pools within the Village Thirteen (resort) planning area. The restoration would involve reconfiguration and reconstruction of the mima mounds and basins, removal of weedy vegetation, revegetation of the mounds with upland sage scrub species and inoculation of the pools with vernal pool species. The property owner has prepared a Conceptual Vernal Pool Mitigation Plan (Dudek 2008). The Plan includes, but is not limited to an implementation plan, maintenance and monitoring program, estimated completion time, and relevant contingency measures.
2. The Project Applicant shall restore 240 square feet of vernal pools somewhere other than the Village Thirteen (resort) planning area. The restoration would still involve reconfiguration and reconstruction of the mima mounds and basins, removal of weedy vegetation, revegetation of the mounds with upland sage scrub species and inoculation of the pools with vernal pool species.
3. The Project Applicant shall buy into a mitigation bank in an amount that would mitigate for impacts to 120 square feet of vernal pool.

Special-Status Plant Species

MM BIO-12 Prior to the issuance of land development permits, including clearing or grubbing and grading permits, for areas with salvageable sensitive biological resources, including Otay tarplant, variegated dudleya, San Diego barrel cactus, San Diego bur-sage, singlewhorl burrobush, south coast saltscale, San Diego marsh-elder, and Robinson's pepper grass (including plant materials and soils/seed bank), the Project Applicant shall prepare a Resource Salvage Plan. The Resource Salvage Plan shall be prepared by a City-approved biologist to the satisfaction of the Development Services Director (or their designee).

The Resource Salvage Plan shall, at a minimum, evaluate options for plant salvage and relocation, including individual cactus salvage, native plant mulching, selective soil salvaging, application of plant materials on manufactured slopes, and application/relocation of resources within the Preserve. The Resource Salvage Plan shall include incorporation of relocation efforts for non-covered species, including singlewhorl burrobush, south coast saltscale, San Diego marsh-elder, and Robinson's pepper grass, species that are all considered special-status by the CEQA and that would be impacted with project implementation. Relocation efforts may include seed collection and/or transplantation to a suitable receptor

site and will be based on the most reliable methods of successful relocation. The program shall also contain a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures. The program shall also be subject to the oversight of the Development Services Director (or their designee).

Special-Status Wildlife Species

MM BIO-13 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. The breeding season is defined as February 15 to August 15 for coastal California gnatcatcher and other non-raptor birds and January 15 to August 31 for raptor species. 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-14 Prior to issuance of any land development permits, including clearing, grubbing, and grading permits, the Project Applicant shall retain a City-approved biologist to conduct focused surveys for northern harrier to determine the presence or absence of this species within 900-feet of the construction area. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction. The results of the survey must be submitted to the City for review and approval. If active nests are detected by the City-approved biologist, a bio-monitor shall be on site during construction to minimize construction impacts and ensure that no nests are removed or disturbed until all young have fledged.

MM BIO-15 Prior to issuance of any land development permits (including clearing, grubbing, and 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.

Preserve

MM BIO-16 Prior to issuance of grading permits, the Project Applicant shall submit evidence to the satisfaction of the Development Services Director (or their designee), showing that the following features of the Preserve Edge Plans (Otay Ranch Company 2013a through 2013c) have been incorporated into grading and landscaping plans:

- Provide post and fencing and signage for sensitive habitat adjacent to trails. Prior to the issuance of land development permits, including clearing or grubbing and grading and/or construction permits, for the project, the project owner shall submit wall and fence plans depicting appropriate barriers to prevent unauthorized access to the Preserve. The wall and fence plans shall, at a minimum, illustrate the locations and cross-sections of proposed walls, fences, informational and directional signage, access controls, and/or boundary markers along the Preserve boundary and off-site pedestrian trails as conceptually described in the Edge Plans. The required wall and fence plan shall be subject to the approval of the Development Services Director (or their designee).
- Install canyon subdrains to prevent erosion of drainage and wetlands within the Preserve.
- Prevent release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem within the Preserve.
- Implement all necessary requirements for water quality as specified by the State and local agencies
- Phase out agricultural uses adjacent to the Preserve to remove pollutants from the project site.
- No invasive non-native plant species shall be introduced into areas immediately adjacent to, or within, the Preserve. All slopes immediately

adjacent, or within, to the Preserve shall be planted with native species that reflect the adjacent native habitat, per the Edge Plan. Prior to the issuance of land development permits, including clearing or grubbing and grading and/or construction permits, for 1) areas within the 100-foot Preserve edge, and 2) infrastructure (e.g., roads, trails, utilities, etc.) sited within the Preserve, the Project Applicant shall prepare and submit to the satisfaction of the Development Services Director (or their designee) landscape plans to ensure that the proposed plant palette is consistent with the plant list contained in the Preserve Edge Plans for each village. The landscape plan shall also incorporate a manual weeding program for areas adjacent to the Preserve. The manual weeding program shall describe, at a minimum, the entity responsible for controlling invasive species, the maintenance activities and methods required to control invasive species, and a maintenance/monitoring schedule.

- All fuel modification shall be incorporated into development plans and shall not include any areas within the Preserve.

MM BIO-17 In accordance with the City's Adjacency Management Guidelines, the following mitigation measures shall be implemented to further reduce indirect impacts (from lighting, noise, invasive species, toxic substances, and public access) to sensitive biological resources located in the adjacent Preserve areas:

- **Lighting.** In compliance with the Chula Vista MSCP Subarea Plan, all lighting shall be shielded and directed away from the Preserve. Concurrent with design review and prior to issuance of a building permit for any development located adjacent to the Preserve, the Applicant shall prepare a lighting plan and photometric analysis to the satisfaction of the Development Services Director (or their designee), for review and approval. The lighting plan shall illustrate the location of the proposed lighting standards and type of shielding measures. Low-pressure sodium lighting shall be used, if feasible, and shall be subject to the approval of the Development Services Director (or their designee).
- **Noise.** Noise impacts adjacent to the Preserve lands shall be minimized. Berms or walls shall 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. A 100-foot buffer around community park areas, specifically Community Parks (P-2) south of Village Eight East and in Portion of Village Four, should be installed in sections adjacent to Preserve habitat occupied by sensitive species such as the coastal cactus wren. Potential noise generating uses, such as baseball diamonds and soccer fields, should be oriented away from sensitive species habitat in these areas. Construction

activities shall include noise reduction measures or be conducted outside the breeding season of sensitive bird species.

- **Noise, California Gnatcatcher.** For any work proposed between February 15 and August 15, prior to issuance of any land development permits, including clearing, grubbing, grading, and construction permits, associated with the off-site facilities located within the Preserve, the Project Applicant shall retain a City-approved biologist to conduct a pre-construction survey for the coastal California gnatcatcher to reaffirm the presence and extent of occupied habitat. The pre-construction survey area for the coastal California gnatcatcher shall encompass all habitats within the project work zone, as well as within a 300-foot buffer. 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 coastal California gnatcatcher is detected, a minimum 300-foot buffer delineated by orange biological fencing shall be established around the detected species to ensure that no work shall occur within the occupied habitat from February 15 through August 15 and on-site noise reduction techniques shall be implemented to ensure that construction noise levels do not exceed 60 dB(A) Leq-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.
- **Invasive Species.** Prior to issuance of land development permits, including clearing or grubbing and grading and/or construction permits for 1) areas within the 100-foot Preserve edge, and 2) infrastructure (e.g., roads, trails, utilities, etc.) sited within the Preserve, the Project Applicant shall prepare and submit to the satisfaction of the Development Services Director (or their designee), landscape plans to ensure that the proposed plant palette is consistent with the plant list contained in the Preserve Edge Plan. The landscape plan shall also incorporate a manual weeding program for areas adjacent to the preserve. The manual weeding program that shall describe at a minimum, the entity responsible for controlling invasive species, the maintenance activities and methods required to control invasives, and a maintenance/monitoring schedule.
- **Toxic Substances.** See MMs BIO-4, BIO-6, BIO-8, BIO-16

- **Public Access.** Prior to issuance of grading permits, the Project Applicant shall submit wall and fence plans depicting appropriate barriers to prevent unauthorized access into the Preserve. The wall and fence plans shall illustrate the locations and cross-sections of proposed walls and fences along the Preserve boundary, subject to the approval the City's Development Services Director (or their designee).

MM BIO-18 In accordance with the City's Adjacency Management Guidelines, the following mitigation measures shall be implemented to further reduce indirect impacts from noise to sensitive biological resources located in the adjacent Preserve areas emanating from the community parks:

Concurrent with the preparation of site-specific plan(s), and prior to the approval of a precise grading plan, the Project Applicant shall prepare, or in the case of the City being the lead on the preparation of the site specific plan, the Project Applicant shall fund the preparation of an acoustical analysis to ensure that noise impacts to surrounding Preserve areas have been minimized. The park design shall include measures to minimize noise impacts adjacent to the Preserve. Features that may be included in the park design may include, but are not limited to:

- berms or walls;
- inclusion of a minimum of 100 feet between the Preserve boundary and park uses where adjacent to habitat occupied by sensitive species such as coastal California gnatcatcher and coastal cactus wren;
- allow uses within the 100-foot buffer adjacent to the Preserve that may include access roads, parking, picnic areas, walking paths, and graded slopes;
- orient potential noise generating uses such as soccer fields and baseball diamonds away from occupied coastal California gnatcatcher and coastal cactus wren habitat.

5.8.9 Level of Significance After Mitigation

With implementation of MMs BIO-1 through BIO-18 identified above; MMs AQ-1 through AQ-3 in Section 5.4, Air Quality; and MMs HYD-1 through HYD-5 in Section 5.11, Hydrology and Water Quality, sensitive species, riparian habitat and other sensitive natural communities, federally protected wetlands, and wildlife corridor impacts related to the implementation of the SPA Plans would be reduced to a **less than significant** level.

Furthermore, with implementation of mitigation measures listed above, biological resources impacts related to compliance with local polices, ordinances, HCPs and NCCPs would be reduced to a level of **less than significant**.

5.9 AGRICULTURE AND FORESTRY RESOURCES

This section of the EIR tiers from the 1993 Otay Ranch GDP Program EIR, because potential impacts to agricultural resources due to development in the entire Otay Ranch area was analyzed as part of the 1993 Otay Ranch GDP, including the project site. The 1993 Otay Ranch GDP Program EIR determined that impacts to agricultural resources would be significant and unmitigable; however, the Chula Vista City Council determined that the significant impacts identified in that EIR were acceptable because of specific overriding considerations.

This section of the EIR also tiers from the 2005 GPU/GDPA Program EIR, because potential impacts to agricultural resources due to development in the entire Otay Ranch area were also analyzed as part of the 2005 GPU/GDPA. The 2005 GPU/GDPA Program EIR determined that there were no prime farmlands or farmlands of statewide importance in the city that would be converted as a result of the proposed land use changes. No mitigation measures were identified and impacts to agricultural resources were determined to be less than significant.

This section of the EIR analyzes potential impacts to agricultural resources resulting from the proposed project. The agricultural analysis characterizes the existing project setting as it pertains to agricultural resources, including any historical farming practices on the property and the project site's farmland suitability based on the categories established by the California Department of Conservation. The analysis is focused on consistency with the goals established in the Chula Vista General Plan and the Otay Ranch General Development Plan.

5.9.1 Existing Conditions

5.9.1.1 Regulatory Framework

State Level

Department of Conservation Farmland Mapping and Monitoring Program

In response to a critical need for assessing the location, quality, and quantity of agricultural lands and conversion of these lands over time, the Department of Conservation established the Farmland Mapping and Monitoring Program (FMMP) in 1982. The goal of the FMMP is to provide consistent and impartial data to decision makers for use in assessing the suitability of agricultural lands in the State of California. The FMMP classifies land into five mapping categories based on soil and climatic conditions: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. In addition, the FMMP identifies nonagricultural lands as either Urban and Built-Up Land or Other Land. Important Farmland Maps are updated every 2 years.

The FMMP identifies farmlands as follows:

- **Prime Farmland.** Prime Farmland has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agriculture production at some time during the 4 years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland of Statewide Importance is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Unique Farmland.** Unique Farmland consists of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but it may include nonirrigated orchards or vineyards, as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.
- **Farmland of Local Importance.** Land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee. The following lands are to be included in the Farmland of Local Importance category:
    - All farmable lands within San Diego County that do not meet the definitions of Prime, Statewide, or Unique but are currently irrigated pasture or nonirrigated crops
    - Nonirrigated land with the soils qualifying for Prime Farmland or Farmland of Statewide Importance
    - Lands that would have Prime or Statewide designation and have been improved for irrigation but are now idle
    - Lands with a General Plan Land Use designation for agricultural purposes
    - Lands that are legislated to be used only for agricultural (farmland) purposes.
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for Grazing Land is 40 acres.

According to the City's General Plan, the FMMP does not necessarily reflect local General Plan actions, urban needs, changing economic conditions, proximity to market, and other factors that may be taken into consideration when government considers agricultural land use policies.

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value. The goal of the Williamson Act Program is to encourage the preservation of California's agricultural land and to prevent its premature conversion to urban uses. Currently, there are no active Williamson Act contracts or properties, which are established agricultural preserves, within the General Plan area, including the project area (City of Chula Vista 2005a).

California Public Resources Code

The California Public Resources Code (PRC) defines "forest land" and "timberland" as follows:

"Forest land" is land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits (California Public Resources Code, Section 12200 (g)).

> Timberland" means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis after consultation with the district committees and others (California Public Resources Code, Section 4526).

California Government Code

The California Government Code defines "timberland" zoned "timberland production" as follows:

> Timberland production zone" or "TPZ" means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, "timberland preserve zone" means "timberland production zone" (California Government Code, Section 51100 et seq.)

Local Level

City of Chula Vista General Plan

The City of Chula Vista General Plan indicates that the most recent large-scale farming and agricultural operations in the City were located primarily in eastern Chula Vista. Limited irrigation-related water supplies and the high costs associated with agricultural irrigation have restricted crop production, animal raising and other agricultural operations in the area. The City's General Plan does not explicitly designate any land areas for agricultural use; however certain portions of the City may be used for agricultural purposes in the future.

Although the City of Chula Vista General Plan does not provide agricultural land use designations, several parcels within the General Plan area are zoned for agricultural use. These parcels are pending development proposals in conformance with applicable land use plans and are not considered long-term, regional agricultural uses of value.

Otay Ranch General Development Plan

The Otay Ranch General Development Plan (GDP) establishes goals, objectives, and policies related to the protection of agricultural resources. While these are general in nature, they are intended to be applicable to the entire Otay Ranch GDP area, including the proposed project area. The Otay Ranch GDP Program EIR concluded that the loss of agricultural lands is a significant and unmitigable impact, even with implementation of mitigation that requires an Agricultural Plan to be prepared by each Project Applicant prior to approval of a Sectional Planning Area (SPA) Plan affecting on-site agricultural resources.

As stated in the Otay Ranch GDP Final EIR, an Agricultural Plan must include the following:

1. Indication of the type of agricultural activity allowed as an interim use; buffering guidelines to prevent land use interface impacts shall be prepared. Buffering measures shall include:
    a. A 200-foot distance between property boundaries and agricultural operations.
    b. If permitted, interim agricultural uses require the use of pesticide, then limits shall be set as to the time of day and the type of pesticide application that may occur.
    c. Use of vegetation along the field edges adjacent to development that can be used for shielding.
    d. Notification of adjacent property owners of potential pesticide applications.
    e. Use of fencing.

2. Landscaping and buffering guidelines shall be developed for the areas planned adjacent to continuing agricultural uses (off-site).
3. In the Otay Valley Parcel near the proposed composting facilities and Bird Ranch where prime soils are located, a demonstration agricultural area shall be set aside. Schools within the Otay Ranch property shall be allowed to promote educational activities in regard to agriculture through the use of the agricultural demonstration area.
4. Agricultural activity and the keeping of animals shall be allowed within the large, low density lots planned along the northern edge of the Proctor Valley Parcel as allowed within the Jamul/Dulzura Subregional Plan. Development plans for this area shall contain landscaping and buffering guidelines to prevent nuisance impacts related to noise and odor from occurring between adjacent internal residential uses.

Otay Ranch Resource Management Plan

The Otay Ranch Resource Management Plan (RMP) contains several objectives and policies related to agriculture. The single unifying goal of the RMP is the establishment of an open space system that will become a permanent preserve dedicated to the protection and enhancement of environmental resources. Establishment of the preserve will provide opportunities for creation of demonstration agricultural uses. Demonstration agricultural uses must be compatible with RMP policies and standards for resource protection and enhancement. In conformance with the RMP, a range management plan for Otay Ranch was subsequently prepared. In general, the range management plan recommendations and implementing actions provide for ongoing managed grazing activities on conveyed lands if the activity is shown not to negatively affect biological resources. The area in the vicinity of Bird Ranch has been identified as an area suitable for demonstration agriculture.

Otay Ranch Grazing Ordinance

Chapter 17.30 of the Chula Vista Municipal Code, the Otay Ranch Grazing Ordinance, aids in the implementation of the preserve management goals and recommendations for the Otay Valley Regional Park (OVRP) Management Area of the Range Management Plan under the Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan. The ordinance states that no grazing activities shall be conducted on land designated as Otay Ranch Preserve by the Otay Ranch GDP or as 100 Percent Conservation Area in the Chula Vista MSCP Subarea Plan, except as provided by the ordinance (City of Chula Vista 2005b). Although grazing has historically been conducted within the project areas, grazing no longer occurs within any portions of the project area.

5.9.1.2 Existing Setting

The Department of Conservation has designated approximately 476 acres of the project area as Farmland of Local Importance, as shown in Figure 5.9-1 (DOC 2010). Historically, the project area has been used for dry farming, as well as cattle and sheep grazing. Crop production was limited to "dry farming" of hay and grains due to limited water availability. Although cultivation and cattle grazing activities are currently permitted, these activities are no longer occurring within the project area. Land utilized for agricultural activities in areas surrounding the project area has decreased over the years. Factors that have led to the decrease in agricultural use include the conversion of farmland to urban uses as a result of land value, particularly given that property taxes often exceed income from agricultural production. The high cost of importing water for irrigation has also resulted in many agricultural activities becoming cost prohibitive. These factors have contributed to the fact that large-scale agricultural activities on the project site ceased in 1999. Since that time, only periodic and limited dry farming activities have continued in some areas.

5.9.2 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 agricultural or forestry impact. Impacts to agricultural and/or forestry resources would be significant if the proposed project would:

A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, to non-agricultural use.

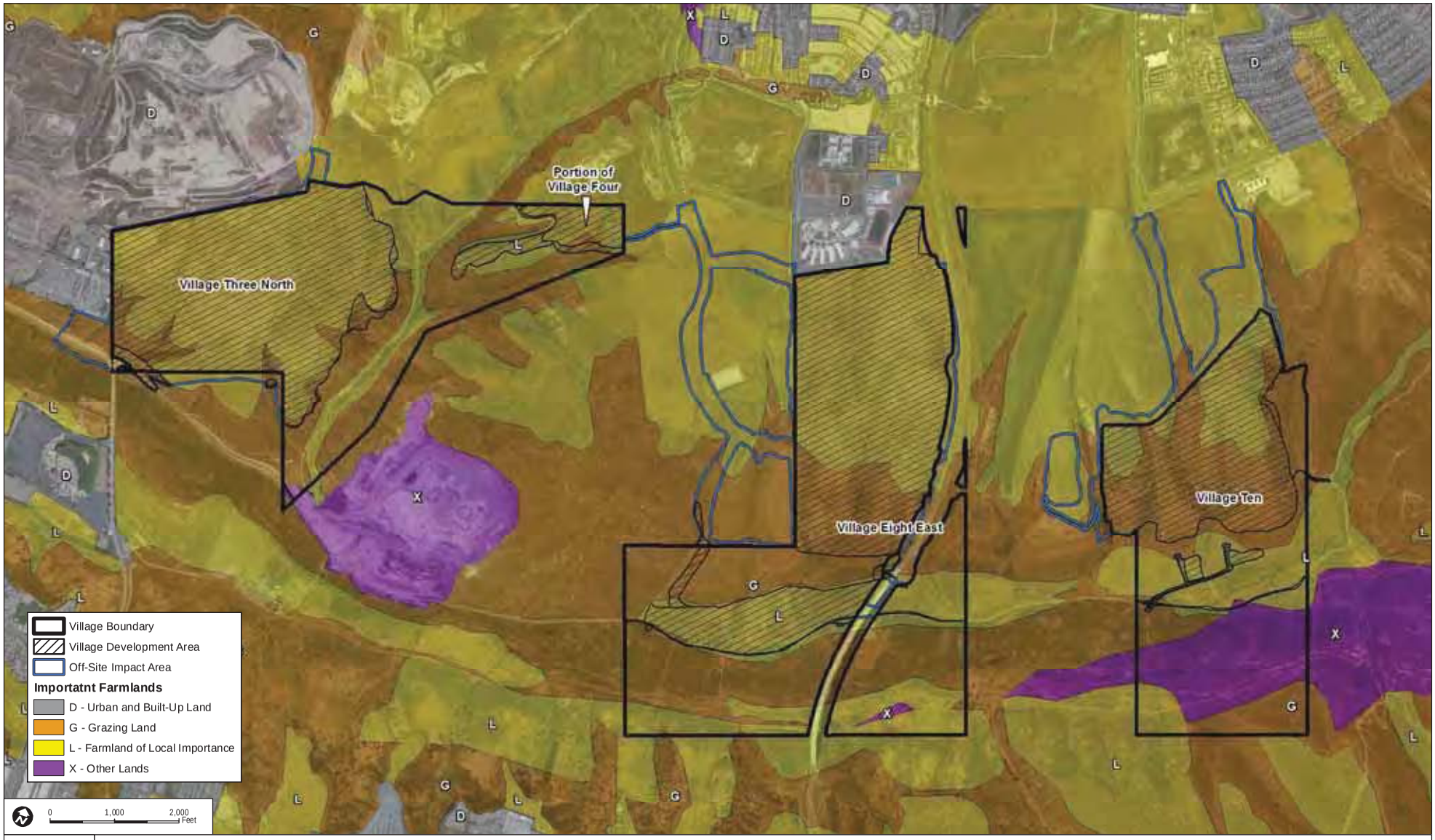
B. Conflict with existing zoning for agricultural use or a Williamson Act contract.

C. Be inconsistent with General Plan agricultural resource policies thereby resulting in a significant physical impact.

D. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).

E. Result in the loss of forest land or conversion of forest land to non-forest use.

F. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.



SOURCE: CA Dept of Conservation, 2008; Bing Maps

FIGURE 5.9-1

Important Farmlands

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5.9.3 Impacts

A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, to non-agricultural use.

The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use, as shown on the maps prepared pursuant to the FMMP by the Department of Conservation. However, the proposed project would convert approximately 476 acres designated as Farmland of Local Importance to residential and village land uses. Although the project area is no longer used for crops because of the lack of reliable and affordable water, the loss would contribute to an incremental loss of Farmland of Local Importance.

Once fully developed, the proposed project would eliminate all agricultural activity on site; however, there is potential for interim agricultural activity to occur within the project area, which could potentially result in land use conflicts with adjacent ownership areas. The Otay Ranch GDP Program EIR identified the potential for land use incompatibility as a short-term impact due to noise, odor, rodents, and chemical applications associated with agricultural activities adjacent to developed areas in the vicinity of the project area. The preparation of an Agricultural Plan was identified as mitigation to reduce the potential short-term impacts to below a level of significance.

An Agricultural Plan has been prepared as part of the SPA Plans for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten, in accordance with the mitigation identified in the Otay Ranch GDP Program EIR. The plans would allow for interim agricultural activity within the project area and adjacent ownership area, and prevent potential land use impacts between developed land and ongoing agricultural activities by providing separation between urban uses and adjacent agricultural uses.

Consistent with the findings in the Otay Ranch GDP Program EIR, the incremental loss of Farmland of Local Importance as a result of the proposed project would be a **potentially significant** impact.

B. Conflict with existing zoning for agricultural use or a Williamson Act contract.

There are no Williamson Act contracts within the proposed project area. The designated zoning within the project area is Planned Community (P-C). Off-site improvement area 5 is located within an area zoned Agriculture (A); however, the improvement will be limited to grading and would not conflict with the existing zoning for agricultural use (City of Chula Vista 2012).

Therefore, the proposed project would not affect Williamson Act contract land or conflict with existing on-site zoning for an agricultural use, and there would be **no impact**.

C. Be inconsistent with General Plan agricultural resource policies thereby resulting in a significant physical impact.

The City's General Plan Objective E-4 and Policies E 4.1, E 4.2, and E 4.3 relate to agricultural resources. Appendix B analyzes the proposed project's consistency with the General Plan's objectives and policies regarding agricultural uses. Appendix B analyzes the proposed project's consistency with objectives and policies found in the Otay Ranch GDP associated with agricultural resources.

As described under Threshold (A), the proposed project includes an Agricultural Plan for each village, which is consistent with General Plan Objective E 4 and Policies E 4.1 and E 4.2. The Agricultural Plans would maintain the opportunity for limited agricultural and related uses to occur as an interim land use within the project area. Consistent with Policy E 4.3, the SPA Plans for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten include provisions for community gardens and identify potential locations for these gardens within each village. For the reasons described above, the proposed project is consistent with the applicable General Plan and Otay Ranch GDP objectives and policies related to agricultural resources. Therefore, the proposed project would result in **~~no impact~~ less than significant impacts** due to inconsistency with General Plan agricultural resources policies.

D. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).

The project area does not contain any forest land, land suitable for timber production, or any parcels of real property zoned for timberland production pursuant to the California Timberland Productivity Act of 1982 (Chapter 6.7 (commencing with Government Code Section 51100) of Part 1 of Division 1 of Title 5). Therefore, the proposed project would not affect such lands, and there would be **no impact**.

E. Result in the loss of forest land or conversion of forest land to non-forest use.

The project area does not include any forest land. Therefore, the proposed project would not result in the loss of forest land or the conversion of forest land to non-forest use and there would be **no impact**.

F. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

As described under Threshold (A), although the proposed project would convert Farmland of Local Importance to nonagricultural use, the project includes Agricultural Plans for each village within the project area. The Agricultural Plans which would allow for limited agricultural and related to uses to occur on an interim basis within the project area.

Since there is no forest land within the project area, there would be **no impact** associated with the conversion of forest land to non-forest use.

5.9.4 Level of Significance Prior to Mitigation

The proposed project would result in a **potentially significant** impact to agricultural resources due to the loss of approximately 476 acres of Farmland of Local Importance. The proposed project would not result in any significant impacts in relation to Williamson Act contract lands, conflicts with existing zoning for agricultural uses, or loss of forest lands or timberlands.

5.9.5 Mitigation Measures

There are no feasible mitigation measures to reduce the proposed project's impact on Farmland of Local Importance to below a level of significance. Placing agricultural easements or restrictions on new parcels is possible, but would not feasibly result in the economical use or operation of other agricultural lands due to high land costs, high water and labor costs, restrictive water use regulations, restrictive environmental regulations related to air quality and use of pesticides, agricultural competition from other parts of the State and from foreign countries, and the likelihood of incompatibility with other existing and planned land uses due to growing urbanization within the Otay Ranch area. Also, restriction of other properties to agricultural or farmland uses would not facilitate the achievement of City objectives to provide sufficient housing units to meet identified housing needs and obligations, to improve the existing jobs/housing balance, to increase property values and related property-based municipal revenues, and to preserve biological habitat and open space. Further, there are no fee-based programs in the City that would facilitate the purchase of economically viable farmland resources based on the cost and regulatory factors discussed above.

5.9.6 Level of Significance After Mitigation

Since no mitigation measures are available to reduce the proposed project's impact on Farmland of Local Importance, this impact would remain **significant and unavoidable**.

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5.10 WATER QUALITY AND HYDROLOGY

This section tiers from the 1993 Otay Ranch GDP Program EIR (Section 3.9, Water Resources and Water Quality). The 1993 Otay Ranch GDP Program EIR analyzed the potential impacts and identified mitigation measures related to hydrology and drainage for the entire Otay Ranch GDP area, including the proposed project area. The Otay Ranch GDP concluded that implementation of the Otay Ranch GDP land plan would result in significant and mitigable environmental impacts upon regional hydrology and drainage. This section also tiers from the 2005 GPU/GDPA Program EIR, which analyzed the existing conditions related to water quality and hydrology for the entire Otay Ranch area, including the proposed project area.

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 analysis and discussion of hydrology contained in the Otay Ranch GDP Program 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 Three North and a Portion of Village Four, Village Eight East, and Village Ten* that were prepared by Hunsaker and Associates (March 2014). The complete reports are contained in Appendix K of this EIR.

5.10.1 Existing Conditions

5.10.1.1 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 (City of Chula Vista).

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. The California Toxics Rule criteria are applicable to the receiving waters from the project site (RWCQB 2011).

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 projects 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 CGP 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 by the SWRCB 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 total maximum daily loads (TMDLs) for sediment or whether the receiving water is designated with beneficial uses for cold water, spawning, or migratory habitats.

Risk is officially determined prior to grading of a site along with the SWPPP. 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. The proposed project outlets into the Otay River, which has low receiving water risk for sediment/siltation, and therefore does not require receiving water monitoring and reporting. However, the proposed project will require inspection and reporting necessary of Risk Level 1 or 2 projects as defined in the General Permit for Stormwater Discharges.
- **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* (January 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 requirements included in the Storm Water Manual are derived from the NPDES Municipal Permit, 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).

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 (projects subject to SUSMP requirements) 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 citizens 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.

5.10.1.2 Existing Setting

Hydrological Setting

The project area is located in the southwestern portion of the San Diego Hydrological Basin. The San Diego basin is divided into 11 hydrographic units and 54 hydrographic subunits, which are based primarily on the surface water drainage basins. The proposed project area and the Otay River are located within the Otay Valley Hydrologic Sub-Area of the Otay Hydrologic Unit (basin number 910.20), which encompasses the Otay River Watershed. The Otay River watershed encompasses approximately 160 square miles in southwest San Diego County and is one of the three hydrologic units that discharge to San Diego Bay. The watershed consists largely of unincorporated areas in the County of San Diego, but also includes portions of the cities of Chula Vista, Imperial Beach, Coronado, National City and San Diego. The major hydrologic features, Upper and Lower Otay Lakes, are two water supply reservoirs that also provide

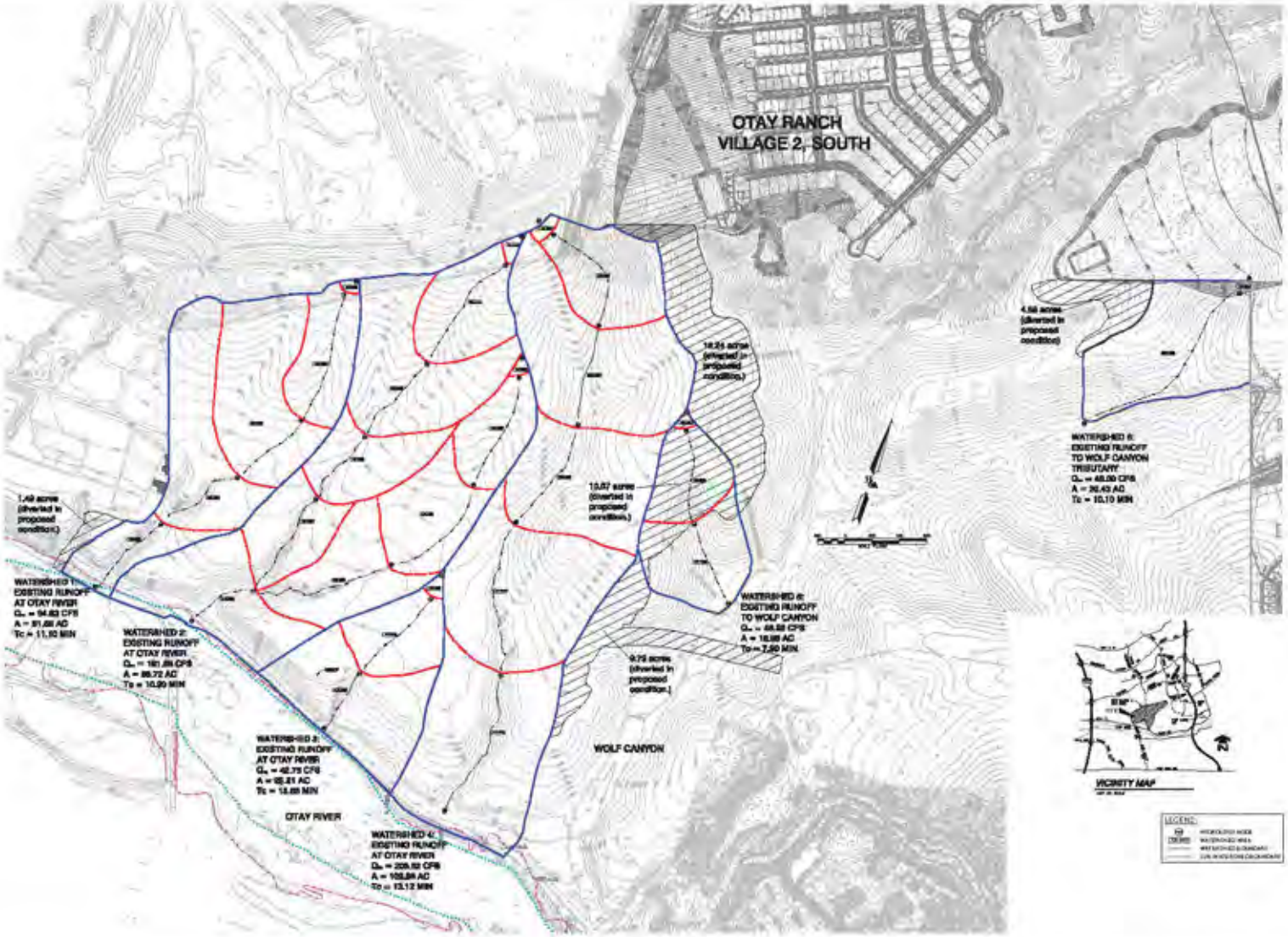
important habitat and recreational opportunities. The proposed project is located downstream of the Otay Lakes. San Diego Bay, located west of the proposed project and the Otay River, located south of the proposed project, are the other major water bodies in the watershed. Approximately 36 square miles of the watershed are within the City of Chula Vista Multiple Species Conservation Plan conservation areas (Project Clean Water 2013).

The beneficial uses for the Otay Hydrographic Subunit, as defined in the Water Quality Plan for the San Diego Basin, include agricultural supply, potential industrial process supply, potential contact water recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat and rare, threatened or endangered species. Currently, no surface water on the project area is used for any of these beneficial uses, as surface water within the project area originates from precipitation and is short-lived. Furthermore, no permanent lakes or ponds exist within the project area.

Village Three North and a Portion of Village Four

The topography of the existing Village Three North and a Portion of Village Four project area is characterized by farmland, rolling hills, vegetation consisting mainly of grassland and brush with incised canyons that partition the site into six defined watersheds (five in Village Three North, one in Village Four), as listed in Table 5.10-1 and illustrated in Figure 5.10-1. The watershed boundary along the northern portion of the site is defined by the grading which has occurred for the Otay Landfill and by the proposed Otay Ranch Village Two (South) development at the northeast corner of the site. The existing commercial businesses (consisting mostly of vehicle salvage yards and auto parts stores) establish the western watershed boundary.

Except for Watersheds 5 and 6, which are located along the eastern edge of Village Three North and western edge of Village Four, respectively, all the existing watersheds currently drain south toward the Otay River and ultimately the San Diego Bay. Watershed 5 is 19.0 acres and drains to the southeast via a natural steep sloping canyon towards Wolf Canyon. Runoff from this area confluences with runoff from the proposed Otay Ranch Village Two South development located approximately one-half mile upstream. Runoff from Watershed 6 drains to the southwest through one of the two canyons tributary to Wolf Canyon and also confluence with runoff from Village Two South, at Wolf Canyon. This runoff then flows south within Wolf Canyon toward the Otay River. The Otay River flows from east to west accumulating runoff from each of the aforementioned watersheds (1-4) along the way. It should be noted that Watershed 6 runoff is directed towards the western boundary where it will outlet at the same location as the proposed Village Eight West western outlet into Wolf Canyon. This combination has been coordinated with the current owner of Village Eight West.



SOURCE: HUNSAKER & ASSOCIATES, 2014

FIGURE 5.10-1
Village Three North and a Portion of Village Four Existing Hydrology Map

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Table 5.10-1 summarizes the 100-year pre-development peak flows to each of the delineated watersheds. A runoff coefficient of 0.35 and 0.50 was assumed for the existing tributary area per the City of Chula Vista Subdivision Manual. These coefficients correspond to farm land and vegetated rolling slopes.

Table 5.10-1
Village Three North and a Portion of Village Four
Summary of Pre-Developed Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
Watershed 1	51.6	94.8
Watershed 2	96.7	191.7
Watershed 3	25.8	42.8
Watershed 4	110.0	205.6
Watershed 5	19.0	46.9
Subtotal	*303.1*	*581.8*
Watershed 6 (Village Four Portion)	20.4	46.0
Total	**323.5**	**627.8**

cfs = cubic feet per second
Source: Hunsaker and Associates 2014.

Village Eight East

The topography for the existing Village Eight East project area is characterized by farmland, rolling hills, vegetation consisting mainly of brush and incised canyons that partition the site into several defined watersheds, as listed in Table 5.10-2 and illustrated in Figure 5.10-2.

Approximately 51.5 acres along the eastern project boundary drains east towards SR-125. This area is designated as the Northeast Watershed in the table below. Runoff along the upper portion of the eastern boundary is conveyed via trapezoidal channel and storm drain. A storm drain directs this runoff to the east side of SR-125. The southern portion is channeled south along the eastern project boundary en route to the Otay River.

The northern half of Main Street currently extends approximately 1,130 feet east of the Magdalena Avenue – Main Street intersection. This constructed street portion allows access to Olympian High School located on its north side. Approximately 6.13 acres of undeveloped land within the northeast portion of the site currently drains towards the existing storm drain located at the current eastern terminus of Main Street. A headwall and storm drain direct the runoff west along Main Street within the existing storm drain which would tie in to the Village Eight West storm drain. The future Village Eight West storm drain will outlet into the Otay River downstream.

The remaining areas within the Village Eight East boundary currently drain via the incised canyons located throughout the site. These canyons flow south and empty directly into the Otay River. The Otay River flows from east to west accumulating runoff from each tributary canyon along the way. The Otay River empties into the San Diego Bay approximately 8.5 miles downstream.

Table 5.10-2 below summarizes the 100-year pre-development peak flows to each of the delineated watersheds. A runoff coefficient of 0.35 and 0.50 was assumed for the existing tributary area per the City of Chula Vista Subdivision Manual. These coefficients correspond to farmland and vegetated rolling slopes.

Table 5.10-2
Village Eight East
Summary of Pre-Developed Flows to the Otay River

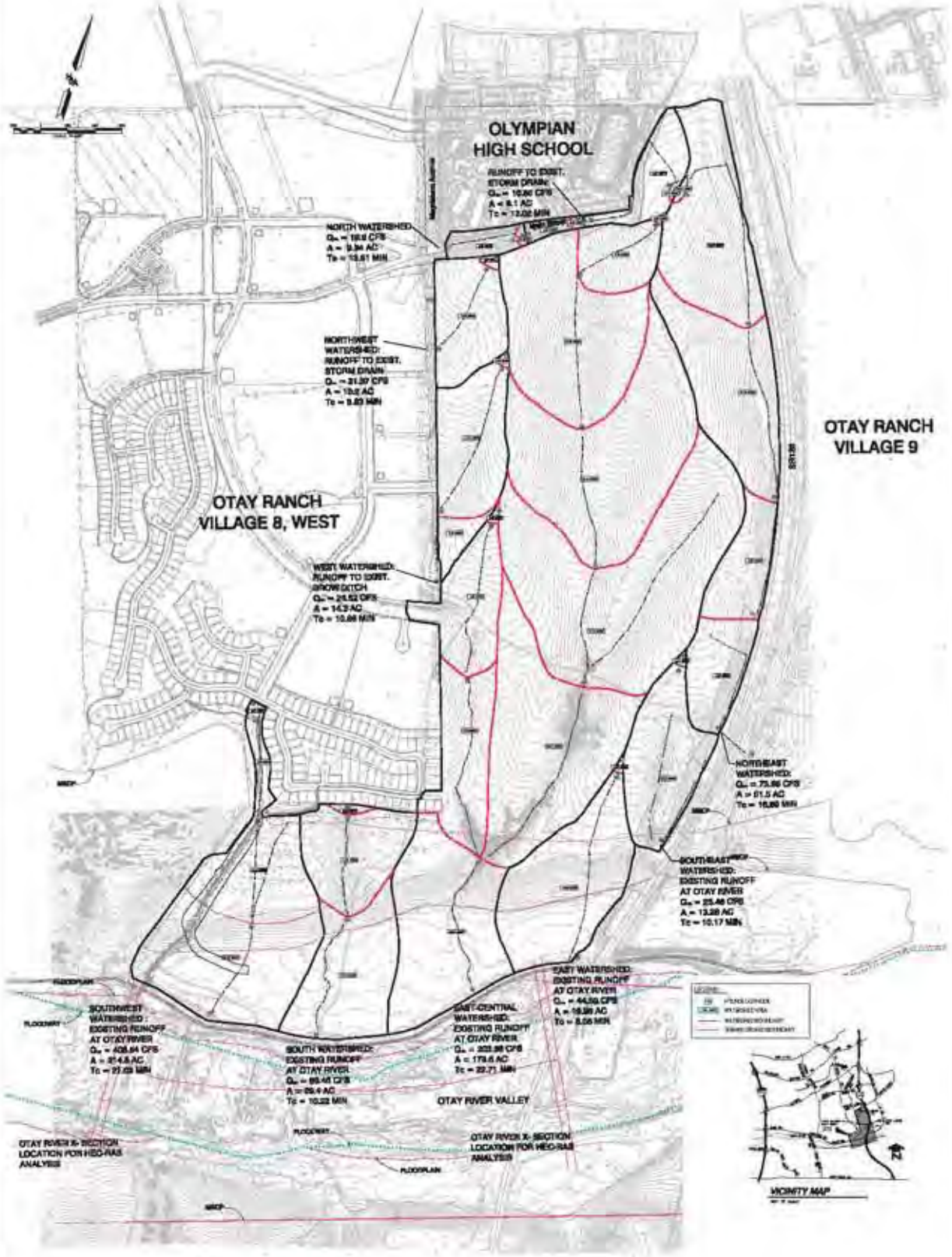
Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
North Watershed	9.9	19.6
Northwest Watershed	10.2	21.4
West Watershed	14.3	26.5
Northeast Watershed	51.5	73.9
Southwest Watershed	214.5	406.5
South Watershed	26.4	50.5
East-Central Watershed	178.6	203.9
East Watershed	20.0	44.5
Southeast Watershed	13.3	25.5
Total	**538.6**	**872.2**

cfs = cubic feet per second
Source: Hunsaker and Associates 2014.

Village Ten

The existing topography for the Village Ten project area is characterized by farmland, rolling hills, vegetation consisting mainly of grassland and brush with incised canyons that partition the site into six defined watersheds, as listed in Table 5.10-3 and illustrated in Figure 5.10-3. All the existing watersheds currently drain directly south towards the Otay River and have been modeled to have their downstream boundary adjacent to the river. The Otay River at this location flows from east to west. The ‘East Watershed’ is 163 acres and consists mostly of off-site areas which include the High Tech High School site. The ‘Southeast Watershed’ is the largest sub-watershed and includes 53 acres from the Otay Ranch Village Eleven, Phase 3 development which currently empties its runoff into the Village Ten project area.

All the existing watersheds within Village Ten drain to the south via natural steep sloping canyons. Runoff from these canyons confluence with runoff in the Otay River which ultimately empties into the San Diego Bay located approximately 10 miles downstream of Village Ten.



SOURCE: HUNSAKER & ASSOCIATES 2010

FIGURE 5.10-2
Village Eight East Existing Hydrology Map

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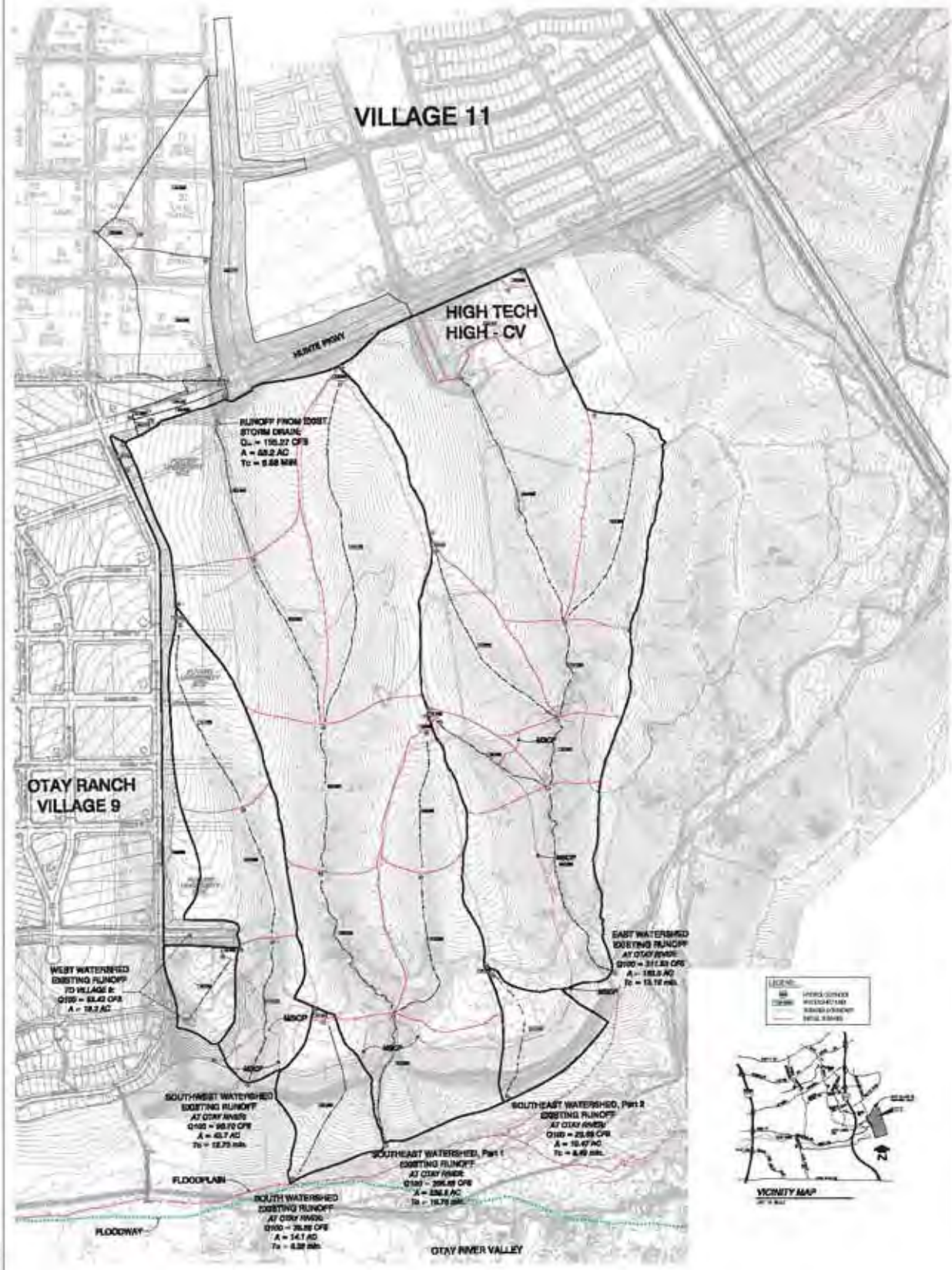

SOURCE: HUNSAKER & ASSOCIATES, 2010

FIGURE 5.10-3
Village Ten Existing Hydrology Map

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Table 5.10-3 below summarizes the 100-year pre-development peak flows to each of the delineated watersheds in Village Ten. A runoff coefficient of 0.35 and 0.50 was assumed for the existing tributary area per the City of Chula Vista Subdivision Manual. These coefficients correspond to farmland and vegetated rolling slopes.

Table 5.10-3
Village Ten Summary of Pre-Developed Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
West Watershed	19.3	52.4
Southwest Watershed	43.7	90.7
South Watershed	14.1	38.6
Southeast Watershed, Pt 1	239.8	365.7
Southeast Watershed, Pt 2	10.5	25.9
East Watershed	163.0	311.5
Total	**490.4**	**884.8**

cfs = cubic feet per second
Source: Hunsaker and Associates 2014

Water Quality

Surface Water Quality

The Porter-Cologne Act establishes a comprehensive program for the protection of beneficial uses of the waters of the state. California Water Code Section 13050(f) describes the beneficial uses of surface and ground waters that may be designated by the state or regional board for protection as follows: "Beneficial uses of the waters of the state that may be protected against quality degradation include, but are not necessarily limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves." Twenty-three beneficial uses are now defined statewide and are designated within the San Diego Region. The complete list of the beneficial uses and their definitions for Otay River, Wolf Canyon and San Diego Bay are provided in the water quality report, Appendix K. On October 30, 2006, the SWRCB approved the Section 303(d) list. Subsequently on November 30, 2006, the EPA approved the SWRCB's inclusion of all waters and pollutants identified for the San Diego region in its 2006 list of Water Quality Limited Segments. Within the Otay Hydrologic Unit, the San Diego Bay is impaired for pollution from organic compounds. Wolf Canyon and the Otay River are not on the 303(d) list.

The project location and watersheds have been compared to the current published 303(d) List of Water Quality Limited Segment. Within the Otay Hydrologic Unit, the San Diego Bay is

impaired for pollution from organic compounds. Wolf Canyon and the Otay River are not on the 303(d) list.

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. Proposed outlets into Wolf Canyon, however, are not exempt.

Groundwater

Groundwater in the Otay Valley hydrologic area has been identified for following beneficial uses: municipal and domestic water supply, agricultural water supply and industrial service water supply. The Otay Hydrographic Unit contains groundwater that is rated poor to very poor due to high levels of total dissolved solids. According to PEIR 90-01, the groundwater in the project area contains sodium-calcium chloride, and samples from 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 high salt concentration 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.

No groundwater was encountered during a previous site field testing conducted as part of a Geotechnical Investigation in 2013. Groundwater table is expected to occur deeper than 100 feet below the lowest existing grades at the site. However, it is not uncommon for seepage conditions to develop where none previously existed due to the permeability characteristics of the geologic units encountered. During the rainy season, perched water conditions are likely to develop within the drainage areas that 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.

Flooding

Per the Flood Insurance Rate Map (FIRM) Nos. 06073C2159F and 06073C2178F, the Village Three and a Portion of Village Four development areas are located outside the FEMA floodplain boundary; however, the active recreation area, including Community Park P-2, is within the dam inundation zone. FIRM Nos. 06073C2178 and 06073C2179, show that the Village Eight East development area lies outside the FEMA floodplain boundary. And per FIRM No. 06073C2177F, the Village Ten development area lies outside the FEMA floodplain boundary (FEMA 2013a).

5.10.2 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, Otay Ranch 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.

5.10.3 Impacts

A. Violate any water quality standards or waste discharge requirements, including City of Chula Vista Engineering Standards for storm water flows and volumes.

Construction Impacts

Construction of the proposed project would involve grading and site preparation activities within each of the villages and the off-site improvements areas. The proposed project would result in sources of polluted runoff during construction which would have short-term impacts on surface water and groundwater quality through activities such as demolition, clearing and grading, excavation of undocumented fill materials, stockpiling of soils and materials, concrete pouring, painting and asphalt surfacing. Construction activities would involve various types of equipment such as bulldozers, scrapers, graders, loaders, compactors, dump trucks, cranes, water trucks and concrete mixers. Additionally, soils and construction materials are typically stockpiled outdoors.

Pollutants associated with construction would degrade water quality if they were washed by stormwater or non-stormwater into surface waters. Sediment is often the most common pollutant associated with construction sites because of the associated earth-moving activities and areas of exposed soil. Sediment that is washed off site can result in turbidity in surface waters, which can impact aquatic species. In addition, when sediment is deposited into receiving water, it can smother species, alter the substrate and habitat and alter the drainage course. Hydrocarbons such as fuels, asphalt materials, oils and hazardous materials such as paints and concrete slurries discharged from construction sites could also impact aquatic plants and animals downstream. Debris and trash could be washed into existing storm channels to downstream surface waters and could impact aquatic wildlife, wetland or riparian habitat and aesthetic value. Construction activities would potentially result in a significant change in local receiving water if BMPs are not put in place to prevent polluted runoff from entering Wolf Canyon or the OVRP.

All construction activities would comply with Chapter 29 of the California Building Code (CBC), which regulates excavation activities and the construction of foundations and retaining walls, and Chapter 70 of the CBC, which regulates grading activities, including drainage and erosion control. In addition, prior to grading plan approval by the City Engineer, all grading would be subject to the requirements of the CVMC, Title 15.04, 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.

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. For coverage by the General Construction Permit, the Project Applicant is required to submit to the SWRCB a Notice of Intent and develop a SWPPP describing BMPs to be used during and after construction to prevent discharge of sediment and other pollutants in stormwater 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, stormwater inlet protection, soil stabilization measures such as erosion control mats, tackifier, hydroseeding, etc. Prior to the issuance of grading permits, the SWPPP would be required to be prepared to the satisfaction of the City Engineer and the Director of Public Works.

The Storm Water Manual limits grading to an area that can be cleared or graded and left exposed at one time. This applies to the amount of acreage that the owner/contractor can adequately protect prior to a predicted rainstorm. Under the Storm Water Manual, at no time shall disturbed soil be more than 100 acres for an individual grading permit or combination of grading permits. Due to the size of the project area (approximately 1,372 acres), grading has the potential to require the concurrent grading of more than 100 acres. Although this has the potential to exceed the grading provided under the Storm Water Manual, the Manual does provide that the Director of Public Works may approve, on a case-by-case basis, extensions of the disturbed soil area limit. Soil stabilization and sediment control materials shall be maintained on site that are sufficient to protect the disturbed soil areas. Under the Limitation of Grading requirements, grading is expected to be phased at larger sites. Also, according to the Storm Water Manual, it may be necessary to deploy erosion and sediment control BMPs in areas that are not actively being worked before additional grading is done. In addition to requiring compliance with a project-specific SWPPP and GCP, the manual requires proper inspection, monitoring and maintenance of construction BMPs during dry and wet weather conditions. A qualified person who is trained and competent in the use of BMPs shall be on site daily, although not necessarily full time, to evaluate the conditions of the site with respect to stormwater pollution prevention.

Runoff generated by any interim mass graded pad would drain to temporary desilt basins to be sized and located for each respective pad. For mass graded pads, the only potential pollutant of concern that would be generated by these pads is sediment. Desilt basins would target this sole pollutant prior to discharging flows to the receiving storm drain system. Applicable erosion control measures for permanent stabilization would comply with California Stormwater Quality Association Handbook measures and as indicated by each area's SWPPP. Future development of each mass graded pad would be the responsibility of the future builder, ensuring that all future developed runoff would be treated in accordance with the governing water quality requirements at the time of construction, prior to discharging to the receiving storm drain system. If new technology that increases treatment capacity is available at the time of construction, it would be utilized.

Therefore, although construction of the proposed project has the potential to violate water quality standards, 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 SWPPPs, impacts would help reduce potential impacts. However, the proposed project could still result in **potentially significant** impacts and mitigation would be required.

Operational Impacts (Post Construction)

The proposed project area currently consists of farmland, rolling hills, vegetation consisting mainly of brush, and incised canyons that partition the villages into several defined watersheds. The project area currently flows south into the Otay River in the pre-developed condition. The following provides a discussion of the effects of the proposed development in each village, as well as the applicable regulatory requirements and project design features to reduce potential impacts to surface water quality.

Equipment and hazardous materials associated with construction activities would be removed from the project site after build-out is complete, which would reduce the potential for pollutants to be discharged. However, there are multiple pollutants associated with operation of the proposed land uses within the project area. The pollutants of concern for the project are listed in Table 5.10-4 and are described below.

Table 5.10-4
Anticipated Pollutants from Project Site

Priority Project Categories	General Pollutant Categories(1)								
	Sediments	*Nutrients*	*Heavy Metals*	*Organic Compounds*	*Trash and Debris*	*Oxygen Demanding Substances*	*Oil and Grease*	*Bacteria and Viruses*	*Pesticides*
Detached Residential	X	X			X	X	X	X	X
Attached Residential	X	X			X	P(1)	P(2)	P	X
Commercial (> 100,000 ft2)	P(1)	P(1)		P(2)	X	P(5)	X	P(3)	P(5)
Automotive Repair Shops			X	X(4)(5)	X		X		
Restaurants					X	X	X	X	
Hillside Development (>5,000 S.F.)	X	X			X	X	X		X
Parking Lots	P(1)	P(1)	X		X	P(1)	X		P(1)
Streets	X	P(1)	X	X(4)	X	P(5)	X		

(1) X = Anticipated Pollutants, P = Potential Pollutants
(2) A potential pollutant if landscaping exists on site
(3) A potential pollutant if the project includes uncovered parking areas
(4) A potential pollutant if land use involved food or animal waste products
(5) Including petroleum hydrocarbons
(6) Including solvents
Source: Hunsaker and Associates 2014

Sediments. Soils or other surface materials eroded and then transported or deposited by the action of wind, water, ice, or gravity. Sediments can increase turbidity, clog fish gills, reduce spawning habitat, smother bottom dwelling organisms, and suppress aquatic vegetative growth.

Nutrients. Inorganic substances, such as nitrogen and phosphorous, that commonly exist in the form of mineral salts that are either dissolved or suspended in water. Primary sources of nutrients in urban runoff are fertilizers and eroded soils. Excessive discharge of nutrients to water bodies and streams can cause excessive aquatic algae and plant growth. Such excessive production, referred to as cultural eutrophication, may lead to excessive decay of organic matter in the water body, loss of oxygen in the water, release of toxins in sediment, and the eventual death of aquatic organisms.

Heavy Metals. Metals are raw material components in non-metal products such as fuels, adhesives, paints and other coatings. Primary sources of metal pollution in stormwater are typically commercially available metals and metal products. Metals of concern include cadmium, chromium, copper, lead, mercury and zinc. Lead and chromium have been used as corrosion inhibitors in primer coatings and cooler tower systems. At low concentrations naturally occurring in soil, metals are not toxic. However, at higher concentrations, certain metals can be toxic to aquatic life. Humans can be impacted from contaminated groundwater resources, and bioaccumulation of metals in fish and shellfish. Environmental concerns, regarding the potential for release of metals to the environment, have already led to restricted metal usage in certain applications.

Organic Compounds. Organic compounds are carbon-based. Commercially available or naturally occurring organic compounds are found in pesticides, solvents and hydrocarbons. Organic compounds can, at certain concentrations, indirectly or directly constitute a hazard to life or health. When rinsing off objects, toxic levels of solvents and cleaning compounds can be discharged to storm drains. Dirt, grease and grime retained in the cleaning fluid or rinse water may also adsorb level of organic compounds that are harmful or hazardous to aquatic life.

Trash and Debris. Examples include paper, plastic, leaves, grass cuttings, and food waste, which may have a significant impact on the recreational value of a water body and aquatic habitat. Excess organic matter can create a high biochemical oxygen demand in a stream and thereby lower its water quality. In areas where stagnant water is present, the presence of excess organic matter can promote septic conditions resulting in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide.

Oxygen Demanding Substances. Biodegradable organic material as well as chemicals that react with dissolved oxygen in water to form other compounds. Compounds such as ammonia and hydrogen sulfide are examples of oxygen-demanding compounds. The oxygen demand of a substance can lead to depletion of dissolved oxygen in a water body and possibly the development of septic conditions.

Oil and Grease. Characterized as high high-molecular weight organic compounds. Primary sources of oil and grease are petroleum hydrocarbon products, motor products from leaking vehicles, oils, waxes, and high-molecular weight fatty acids. Elevated oil and grease content can decrease the aesthetic value of the water body, as well as the water quality.

Bacteria and Viruses. Bacteria and viruses are ubiquitous micro-organisms that thrive under certain environmental conditions. Their proliferation is typically caused by the transport of animals or human fecal wastes from the watershed. Water, containing excessive bacteria and viruses can alter the aquatic habitat and create a harmful environment for humans and aquatic life. Also, the decomposition of excess organic waste causes increased growth of undesirable organisms in the water.

Pesticides. Pesticides (including herbicides) are chemical compounds commonly used to control nuisance growth or prevalence of organisms. Excessive application of a pesticide may result in runoff containing toxic levels of its active component.

Generally, these constituents are referred to as non-point source pollutants. As stated in the Development Storm Water Manual, any anticipated pollutants potentially generated by the proposed project that are on the 303(d) list are considered pollutants of concern. The San Diego Bay is impaired for organic compounds. Therefore, organic compounds are a pollutant of concern associated with the proposed project. Increased runoff from the development of future land uses as designated in the contribution of non-point source pollution, including organic compounds into Wolf Canyon and the Otay River, and ultimately San Diego Bay that would degrade water quality.

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. California RWQCB Order No. R9-2007-0001, sets the waste discharge requirements for discharges of urban runoff from municipal storm separate drainage systems draining the watersheds of San Diego County. Per the RWQCB Order, post-development runoff from a site shall not contain pollutant loads which cause or contribute to an exceedance of receiving water quality objectives or which have not been reduced to the maximum extent practicable. The following operational BMPs will ensure that water quality standards and waste discharge requirements are met during post-development activity:

Operational Best Management Practices

As required by the Development Storm Water Manual, implementation of the proposed project would minimize impacts on receiving water quality by incorporating post-construction BMPs into project design, including low impact development site design, source control, and treatment control BMPs. The following BMPs are specific to the development proposed for the Village

Three North and a Portion of Village Four, Village Eight East, and Village Ten project sites (Figure 5.10-4, 5.10-5, 5.10-6, respectively), which include the construction of servicing roads, sidewalks, utilities and the mass grading of industrial pads for future development.

Treatment Control BMPs

The Village Three North and a Portion of Village Four site design includes a bioretention basin in the northwest corner of the Heritage Road-Main Street intersection.

A bioretention basin is proposed in the southeast corner of the site along Main Street to treat the majority of the Village Eight East development consisting of the various neighborhood areas, school site, community purpose facilities, parks, and streets. The downstream end of the storm drain systems which collects runoff from these areas will have a clean out with a weir set at a height which will divert the 'water quality' flows towards the basin and allow peak flows to continue to be routed to the Otay River. The bioretention basins will be designed as dictated by the City of Chula Vista SUSMP.

Two bioretention basins are proposed to treat the Village Ten development consisting of the various neighborhood areas, school site, community purpose facilities, parks, and streets, as well as runoff from the university site and the portion of Village Eleven which drains its runoff through the Village Ten site. The on-site residential areas and streets will convey their runoff within one of two different storm drains. The downstream end of these two storm drain systems will include a clean out with a weir set at a height which will divert the water quality flows towards their respective basin and allow peak flows to continue to be routed to the Otay River. The two storm drain systems will ultimately confluence downstream of the water quality basins prior to outletting into the Otay River. The bioretention basins will be designed as dictated by the City of Chula Vista SUSMP.

Source Control BMPs

Design Outdoor Material Storage Areas to Reduce Pollution

- Storage areas shall include structural features that prevent pollutants from entering storm drains. Where appropriate, comply with the requirements of local Hazardous Materials Programs.
- Grade and berm outdoor storage areas to prevent run-on or runoff from area.
- Storage of hazardous materials and wastes shall be in compliance with federal, state, and local laws, ordinances, and regulations.

Design Trash Storage Areas to Reduce Pollution Introduction

All outdoor trash storage areas shall meet the following requirements per Design Concept SC-3 in the Chula Vista Development Storm Water Manual dated March 2010 (limited exclusion: detached residential homes):

- Paved with an impervious surface, designed not to allow run-on from adjoining areas, screened or walled to prevent off-site transport of trash; and
- Covered with a roof, awning or trash lid to minimize direct precipitation.
- Designed in accordance with Chula Vista Municipal Code Section 19.58.340.

Integrated Pest Management (IPM) Principles

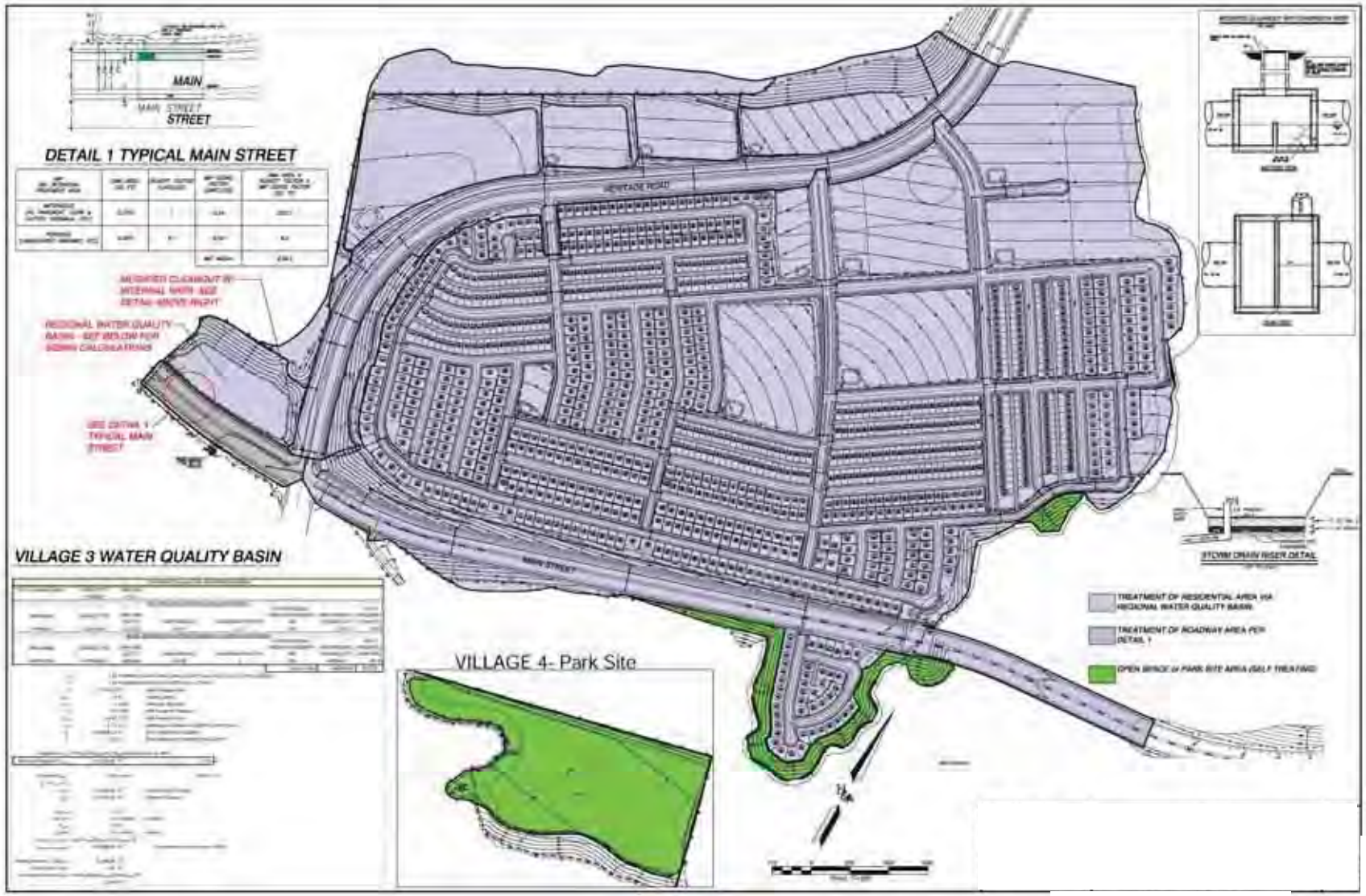
Integrated pest management (IPM) is an ecosystem-based pollution prevention strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitation manipulation, modification of cultural practices, and use of resistant plant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. More information may be obtained at the UC Davis website (http://www.ipn.ucdavis.edu/WATER/U/index.html).

- Eliminate and/or reduce the need for pesticide use in the project design by:
    - Plant pest-resistant or well-adapted plant varieties such as native plants
    - Discourage pests by modifying the site and landscaping design.

  In order to achieve this source control BMP objective, native vegetation will be used throughout the project site in accordance with the landscape plans.
- Distribute IPM educational materials to future site residents/tenants.

  Minimally, educational materials must address the following topics:
    - Keeping pests out of buildings and landscaping using barriers, screens, and caulking;
    - Physical pest elimination techniques, such as, weeding, squashing, trapping, washing, or pruning out pests;
    - Relying on natural enemies to eat pests;
    - Proper use of pesticides as a last line of defense.

  The homeowners will be made aware of the aforementioned RWQCB regulations through a homeowners' education program.



SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.10-4
Village Three North and a Portion of Village Four BMP Location Map

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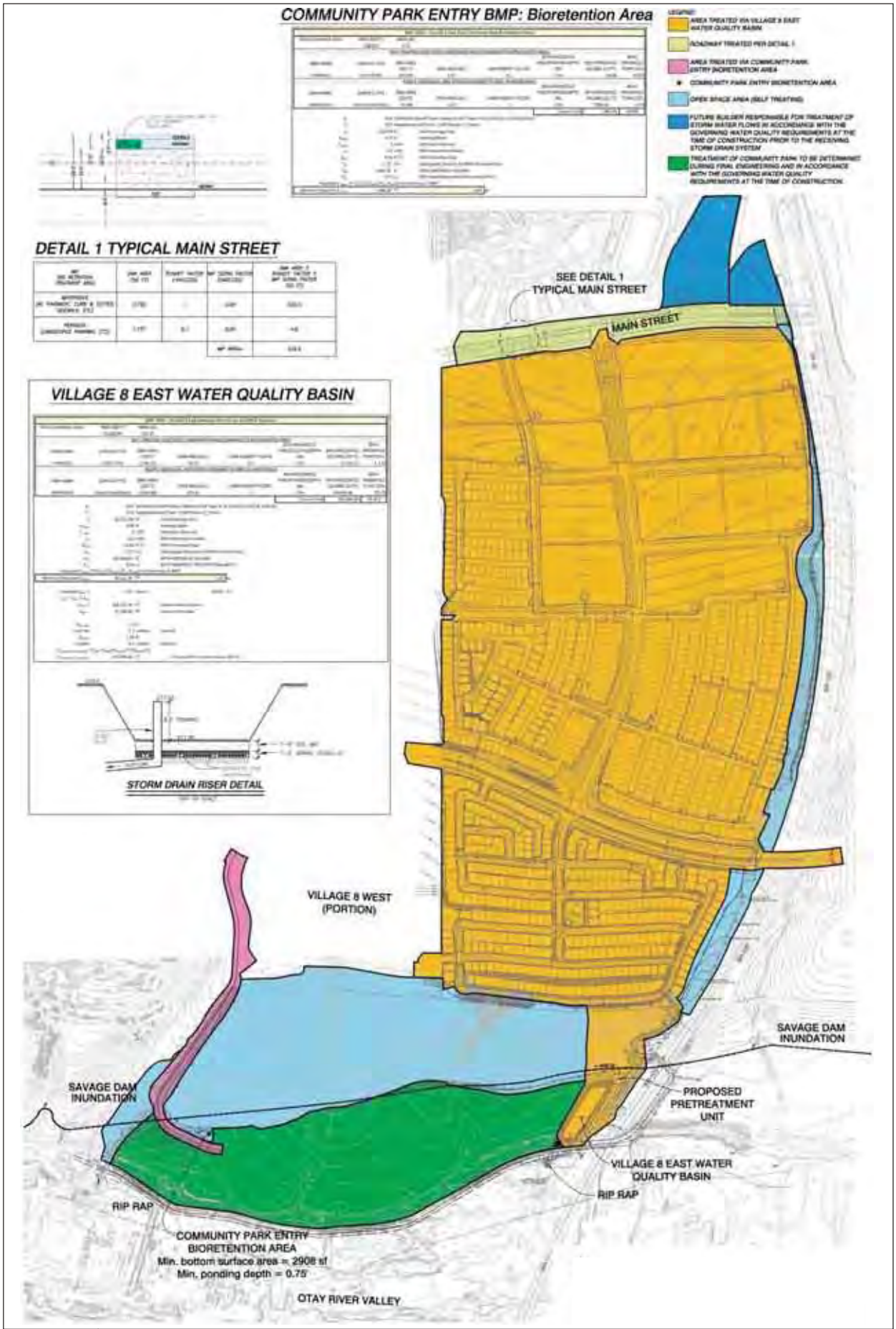

SOURCE: HUNSAKER & ASSOCIATES 2014

FIGURE 5.10-5
Village Eight East BMP Location Map

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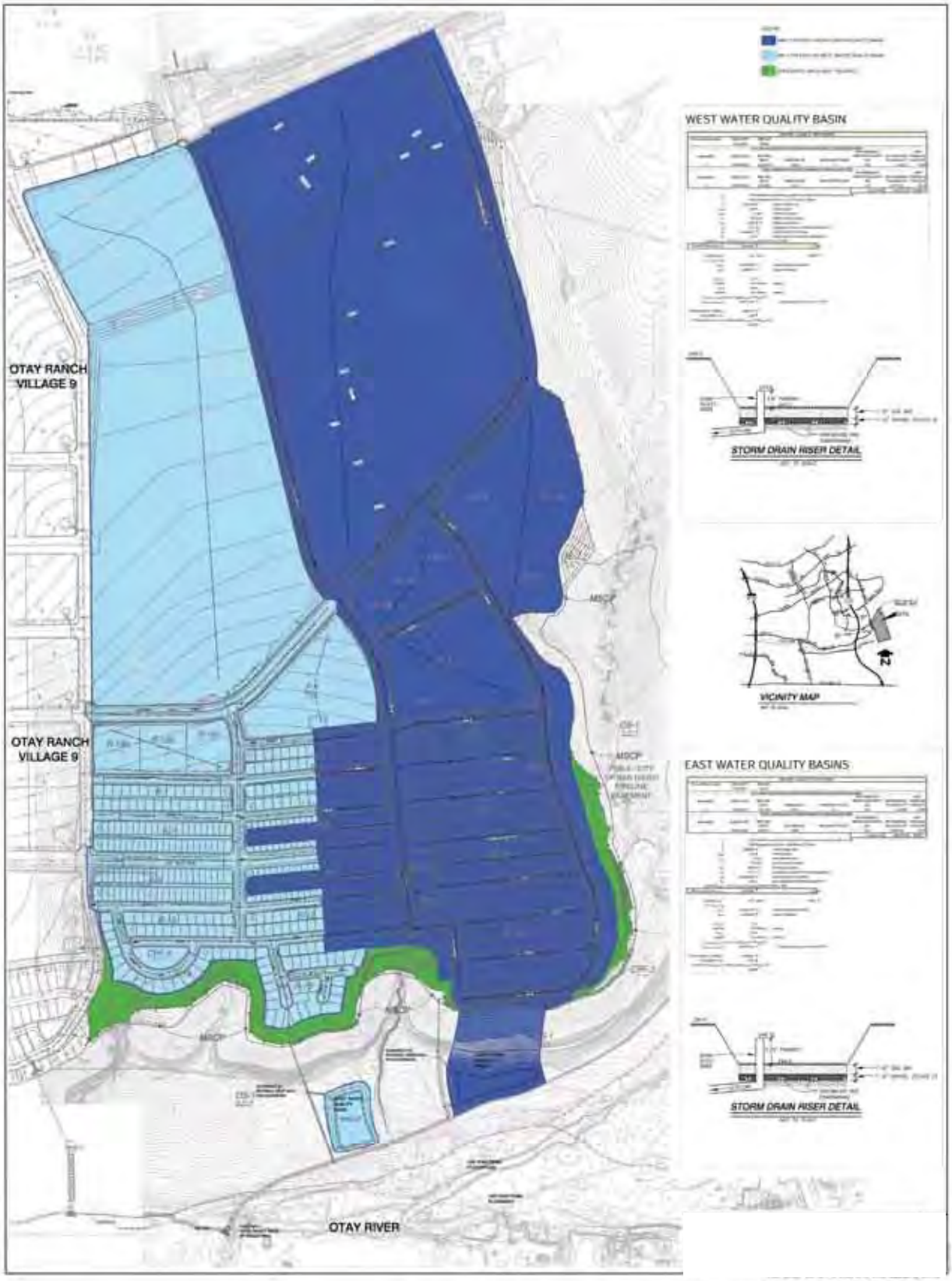

SOURCE: HUNSAKER & ASSOCIATES 2013

FIGURE 5.10-6
Village Ten BMP Location Map

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Efficient Irrigation Systems and Landscaping Design

In compliance with the Water Conservation in Landscaping Act, the following methods to reduce excessive irrigation runoff shall be implemented:

- Employ rain shutoff devices to prevent irrigation during and after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Use flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.

All maintained landscaped areas will include rain shutoff devices to prevent irrigation during and after precipitation. Flow reducers and shutoff valves triggered by pressure drop will be used to control water loss from broken sprinkler heads or lines.

Storm Water Conveyance Systems Stenciling and Signage

The proposed development will incorporate concrete stamping, or equivalent, of all stormwater conveyance system inlets and catch basins within the project area with prohibitive language (e.g., "No Dumping – I Live in <<name receiving water>>"), satisfactory to the City Engineer. Stamping may also be required in Spanish.

Design of Loading Dock Areas

Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading areas. Water from loading dock areas should be drained or pumped to landscape areas where feasible. Direct connections to storm drains from depressed loading docks are prohibited. Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.

Maintenance of Sidewalks and Parking Lots

Sidewalks and parking lots shall be swept regularly to prevent the accumulation of litter and debris.

Site Design and LID BMPs

Priority projects, such as the proposed Village Three North and a Portion of Village Four, Village Eight East, and Village Ten, development shall be designed to minimize, to the maximum extent practicable, the introduction of pollutants generated from site runoff and address conditions of concern that may impact the receiving watershed and/or downstream

water conveyance systems. Site design and LID components can significantly reduce the impact of a project on the environment.

Low Impact Development (LID) is an innovative stormwater management approach with the basic principle that is modeled after nature: manage rainfall runoff at the source using uniformly distributed decentralized micro-scale controls. LID's goal is to mimic a site's predevelopment hydrology by using design practices and techniques that effectively capture, filter, store, evaporate, detain and infiltrate runoff close to its source.

Conserve Natural Areas

The Otay Ranch Village Three North and a Portion of Village Four, Village Eight East, and Village Ten urban development will incorporate open space areas and vegetation throughout the development. Approximately 70 acres of internal open space will be provided as well as 620 acres of open space preserve south and east of the developed areas.

Minimize Impervious Footprint

Methods of accomplishing this goal include:

- Increase building density (number of stories above or below ground), where applicable;
- Construct walkways, trails, patios, overflow parking lots and alleys and other low-traffic areas with permeable surfaces, such as pervious concrete, unit pavers, and granular materials, where applicable;
- Construct streets, sidewalks and parking lot aisles to the minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised;
- Minimize the use of impervious surfaces in the landscape design.

Minimize Directly Connected Impervious Areas

Methods of accomplishing this goal include:

- Where landscaping is proposed, drain rooftops into adjacent landscaping where it is safe and appropriate and will not cause damage or adverse impacts to any existing and proposed structures, slopes, pavements, or other features prior to discharging to the stormwater conveyance system;
- Where landscaping is proposed, drain impervious parking lots, sidewalks, walkways, trails, and patios into adjacent landscaping where it is safe and appropriate and will not cause damage or adverse impacts to any structures, slopes, pavements, or other features.

Minimize Soil Compaction in Landscape Areas

Prior to final landscape installation in areas disturbed due to construction and where landscaping will be placed, the subsoils below the topsoil layer shall be scarified at least 6 inches. If upper layers of topsoil exists or is imported, incorporate the upper or topsoil material to avoid stratified layers.

Soil Amendments

Landscape top soil improvements play a significant role in maintaining plant and lawn health plus improve the soil's capacity to retain moisture, which will reduce runoff from the water quality design storm and improve water quality. San Diego Landscape regulations will be adhered to for landscaped areas.

Protect Slopes, Channels, and Energy Dissipation/Erosion Control

Methods of accomplishing this goal include:

- Use of natural drainage systems to the maximum extent practicable
- Stabilize permanent channel crossings
- Planting native or drought tolerant vegetation on slopes
- Energy dissipators, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels.

BMPs Applicable to Individual Priority Development Project Categories

Roads

The design of private roadway drainage shall use at least one of the following:

- **Rural swale system.** Street sheet flows to vegetated swale or gravel shoulder, curbs at street corners, culverts under driveways and street crossings
- **Urban curb/swale system.** Provide periodic curb cuts to allow street runoff to drain to vegetated swale/bioretention area
- **Dual drainage system**. First flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder. Connect high flows directly to storm drainage system
- **Other methods**, which are comparable and equally effective within the project, as determined by the City Engineer.

This will be incorporated within the site design of the internal servicing roadways.

Residential Driveways and Guest Parking

Driveways shall have one of the following:

- Shared access
- Flared entrance (single lane at street)
- Wheelstrips (paving only under tires)
- Porous paving
- Designed to drain into landscaping prior to discharging to the stormwater conveyance system.

Uncovered temporary or guest parking on private residential lots may be:

- Paved with a permeable surface;
- Designed to drain into landscaping prior to discharging to the stormwater conveyance system.

This will be incorporated within the site design for single-family residential lots.

Dock Areas

Loading/unloading dock areas shall include the following:

- Cover loading dock areas, or design drainage to preclude urban run-on and runoff
- An acceptable method of containment and pollutant removal, such as a shut-off valve and containment area.

Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

Maintenance Bays

Maintenance bays shall include at least one of the following:

- Repair/ maintenance bays shall be indoors; or
- Designed to preclude urban run-on and runoff.

Maintenance bays shall include a repair/maintenance bay drainage system to capture all wash water, leaks and spills. Drains shall be connected to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the stormwater conveyance system is prohibited.

Vehicle and Equipment Wash Areas

Areas for washing/steam cleaning of vehicles and areas for outdoor equipment/accessory washing and steam cleaning shall be:

- Self-contained to preclude run-on and runoff, covered with a roof or overhang, and equipped with a clarifier or other pretreatment facility;
- Properly connected to a sanitary sewer.

Outdoor Processing Areas

Outdoor processing areas shall:

- Cover or enclose areas that would be the most significant source of pollutants; or slope the area toward a dead-end sump; or, discharge to the sanitary sewer system.
- Grade or berm processing area to prevent run-on from surrounding areas.
- Installation of storm drains in areas of equipment repair is prohibited.

Surface Parking Areas

Where landscaping is proposed in surface parking areas (both covered and uncovered), incorporate landscape areas into the drainage design. Overflow parking (parking in excess of the project's minimum parking requirements) may be constructed with permeable paving.

On-street parking is proposed to drain to tree wells directly adjacent or a combination of tree wells and permeable pavers will be incorporated throughout the project on non-residential single family streets.

Non-Retail Fueling Areas

Non-Retail fueling areas shall be designed with the following:

- Fuel dispensing area that is: (1) paved with Portland cement concrete or equivalent smooth impervious surface (asphalt concrete is prohibited); (2) designed to extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less; (3) sloped to prevent ponding; (4) separated from the rest of the site by a grade break that prevents run-on of urban runoff; and (5) designed to drain to the project's treatment control BMP(s) prior to discharging to the stormwater conveyance system.
- Overhanging roof structure or canopy that is: (1) equal to or greater than the area within the fuel dispensing area's grade break; and (2) designed not to drain onto or across the fuel dispensing area.

Steep Hillside Landscaping

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.

Operations and Maintenance Plan

Site BMPs for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten will be maintained through a CFD or Master Homeowners Association. A maintenance plan will be development and will include the following information:

- Specification of routine and non-routine maintenance activities to be performed.
- A schedule for maintenance activities.
- Name, qualifications, and contact information for the parties responsible for maintaining the BMPs.

Village Three North and a Portion of Village Four

Once developed, runoff from Village Three North and a Portion of Village Four would drain towards the southwest corner of the project area. Storm drain pipes and flows from Heritage Road, Main Street, and the residential areas would all generally confluence at the intersection of Heritage Road and Main Street. 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 comingling of treated flows with untreated runoff. A cleanout with an internal weir wall will act to divert the 'water quality' amount towards the basin while allowing peak flows to continue downstream and outlet into the Otay River. The weir wall will be set at a height which would redirect the water-quality flow amount towards the basin. The higher flows would overtop the weir wall and continue downstream. However, it should be noted here that the portion of Main Street west of Heritage Road will not be treated by the Water Quality Basin but will instead be treated by linear bioretention areas located behind curbs within the parkways. This manner of treatment is necessary since the inlets which receive the runoff from this portion of Main Street will have invert elevations below the proposed basin bottom.

LID-based BMPs are proposed for Village Three North and a Portion of Village Four to treat the 85th percentile runoff from the site, including Main Street and Heritage Road, prior to discharging to the storm drain (see proposed BMPs listed below). 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.

Table 5.10-5 summarizes the 100-year developed condition peak flows to each of the discharge locations towards the Otay River (Figure 5.10-7).

Table 5.10-5
Village Three North and a Portion of Village Four
Summary of Developed Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
Watershed 1 - Outlet 1A	9.5	22.1
Watershed 1 – Outlet 1B	267.8	704.4
Watershed 2	1.2	4.0
Watershed 3	18.0	37.1
Watershed 4	26.8	47.5
Watershed 5	8.9	22.3
Subtotal	*332.3*	*837.5*
Watershed 6 (Village Four Portion)	25.3	24.5
Total	**357.5**	**861.9**

cfs = cubic feet per second

The storm drain outlet proposed for Village Three North (Outlet 1B) would outlet directly into the Otay River, east of the intersection of Main Street and Heritage Road. As described above, the HMP exempts projects that outlet directly to the Otay River from hydromodification criteria. The storm drain is therefore exempt from hydromodification requirements. The remaining discharge points with the exception of Watershed 6 are also exempt from hydromodification since these watersheds would remain undeveloped and they show a reduction of impervious/pervious areas and peak flows. A hydromodification analysis for Watershed 6 was performed since the total watershed acreage increased. No additional measures would be needed to address hydromodification because the proposed condition frequency and duration curves do not exceed those during the existing condition more than 10%, in accordance with the General Permit for Storm Water Discharges. There would not be an increase in potential for erosion for the proposed conditions when compared to existing conditions. Landform grading has been incorporated to mimic existing conditions wherever possible. It is intended for the stormwater from the manufactured slopes would sheet flow and continue along their existing drainage patterns.

Approximately 15.6 acres of pad area from a Portion of Village Four would drain toward the eastern portion of the pad. This area is included in Watershed 6 and is part of the total 25.31 acres shown on the table above. The park area is considered self-treating and therefore would be treated onsite. All impervious areas within the park site will be treated by a bioretention facility/facilities which will be sited with improvements plans since the final design of the park is

not complete. These facilities would then connect to the proposed storm drain systems located at each end of the park site prior to outletting into the Otay River

A temporary desilt basin is proposed in the southwest portion of P-2. Runoff from the basin is then conveyed via storm drain east where it will tie into the Village Eight West storm drain system prior to outletting into a tributary of Wolf Canyon and continue downstream towards the Otay River. The hydromodification analysis for Watershed 6 is included in Appendix K. The area at the point of discharge is referred to as a Point of Compliance (POC). Results of the hydromodification analysis determined that the POC analyzed passed; therefore, erosion potential would not be increased compared to existing conditions. The proposed condition frequency and duration curves would not exceed those during the existing condition more than ten percent, in accordance with the General Permit for Storm Water Discharges. This results in no requirements for additional hydromodification mitigation measures. The results support the determination that there would not be an increase in potential for erosion as a result of the proposed development in Village Three North and a Portion of Village Four.

Table 5.10-6 summarizes the effects of site development at the receiving Otay River. Development of Village Three North and a Portion of Village Four would result in the net increase of runoff discharged to the adjacent Otay River by approximately 234 cfs.

Table 5.10-6
Village Three North and a Portion of Village Four
Summary of Pre vs. Post-Developed Condition Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
Pre-Developed	323.5	627.8
Post-Developed	357.5	861.9
Difference	**+34.1**	**+234.1**

cfs = cubic feet per second
*= Area diverted along eastern project boundary and at bioretention basin.

The Village Three North and a Portion of Village Four project area is located downstream of the Savage Dam at the Lower Otay Reservoir. According to the Otay River Watershed Management Plan, the Savage Dam impounds runoff from over 60% of the Otay River's tributary watershed, which reduces the increase in flows from development downstream of the dam compared to the flows prior to dam construction (Aspen Environmental Group 2006). Detention for any development below the dam would be ineffective since the peak flows from these smaller watersheds would pass well before the reservoir outflows would reach the project area.

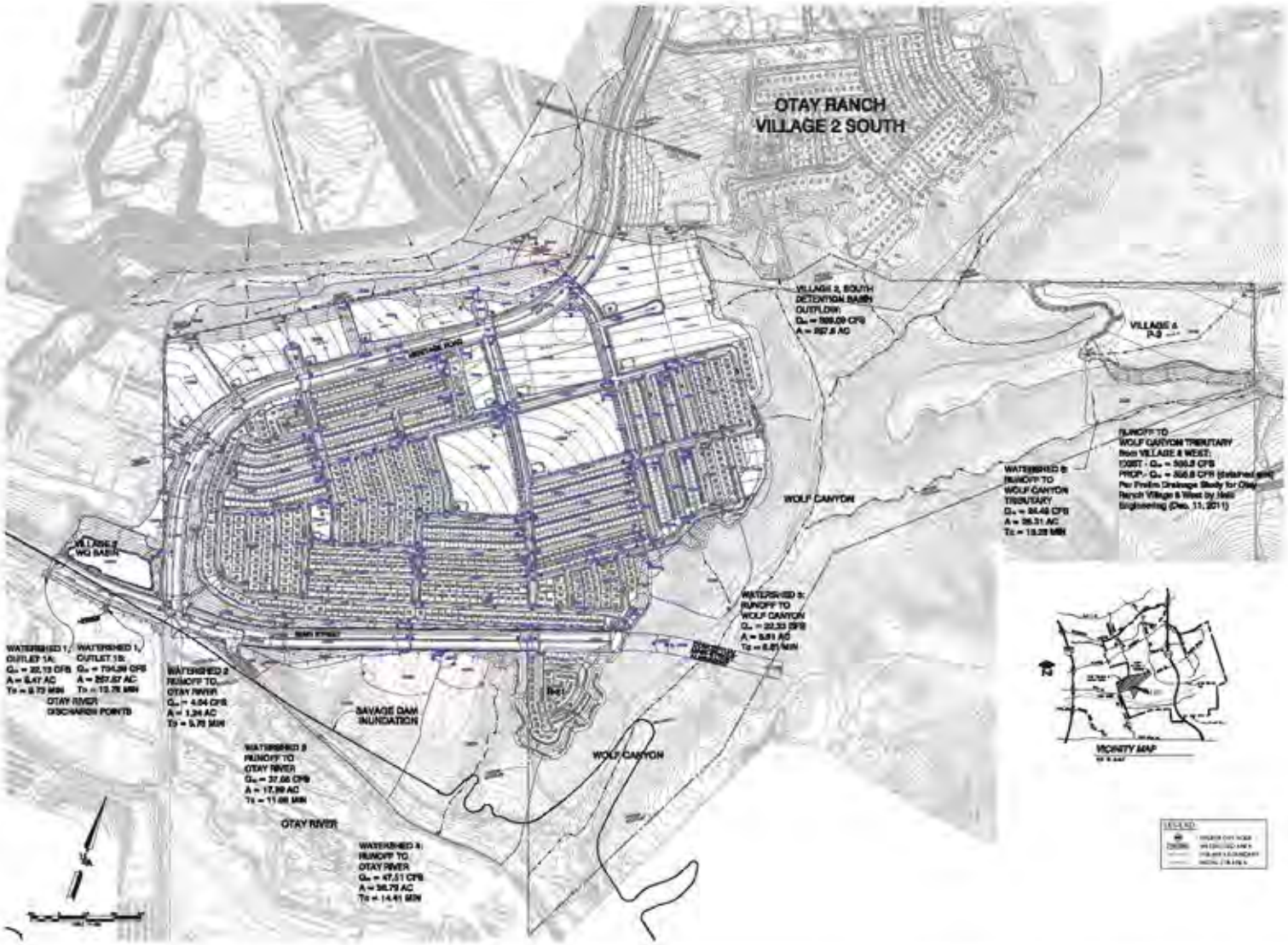

FIGURE 5.10-7
Village Three North and a Portion of Village Four Developed Hydrology Map

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Additionally, the Otay River downstream of the Savage Dam is starved for sediment and peak flows and an increase in peak flow could therefore help the Otay River maintain its original platform. Since the tributary area to the Otay River is over 100 square miles, there would be substantial lag time between the time peak flows from Village Three North and a Portion of Village Four would outlet to the river and the time the peak flows would reach the proposed outlet location. Due to this lag time, the development of Village Three North and a Portion of Village Four would result in no net increase of flows to the Otay River when compared to existing conditions. Therefore, no detention basins are proposed for this project other than for bioretention and as water quality devices.

The combination of the proposed construction and permanent LID BMPs (see Section 5.10.4), which have been incorporated in the design of Village Three North and a Portion of Village Four, are in place to ensure water quality treatment is maximized throughout the development. However, even with implementation of the BMPs listed above, the development of Village Three North and a Portion of Village Four would still have the potential to violate water quality standards or waste discharge requirements. Therefore, impact would be **potentially significant** and mitigation measures would be required.

Village Eight East

There are two storm drain outlets proposed within the Village Eight East SPA Plan area. Due to their proximity and the site topography, one storm drain outlet located has been coordinated between the Village Eight West and Village Eight East property owners in order to co-locate facilities as required the by MSCP Subarea Plan. This western storm drain outlet handles flows from neighboring Village Eight West, the Community Park (P-2) Access Road and a portion of the Community Park (P-2). Stormwater runoff from Village Eight West is treated on site (i.e., within Village Eight West) and conveyed via storm drain within the Community Park (P-2) Access Road west of SR-125. Two inlets will be located at the downstream end of the Community Park (P-2) Access Road. Treatment of runoff from this road would be provided by diverting low flows-toward planters installed adjacent to the two proposed curb inlet locations. The Community Park (P-2) site is assumed to be almost entirely pervious and self-treating. Runoff from this area is conveyed west via a swale or brow ditch which connects to the Village Eight West storm drain prior to discharging directly to the Otay River. Runoff from onsite park facilities would need to receive some type of water quality treatment, which would be dependent on the impervious areas (i.e., buildings, parking lots, sidewalks, etc.) designed into the park, prior to connecting to the proposed storm drain and outletting into the Otay River. All impervious areas within the park site will be treated by a bioretention facility/facilities which will be sited with improvements plans since the final design of the park is not complete.

Table 5.10-7 summarizes the 100-year developed condition peak flows to each of the Village Eight East site's discharge locations (Figure 5.10-8).

Table 5.10-7
Village Eight East
Summary of Developed Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
North Watershed	13.4	45.3
Northeast Watershed	13.0	37.5
Southwest Watershed	246.2	440.4
East Watershed	262.9	674.2
Southeast Watershed	3.1	7.3
Total	**538.6**	**1,204.7**

cfs = cubic feet per second

Table 5.10-8 summarizes the effects of site development at the receiving Otay River. Development of Village Eight East would result in the net increase of runoff discharged to the adjacent Otay River by approximately 332 cfs.

Table 5.10-8
Village Eight East
Summary of Pre vs. Post- Developed Condition Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
Pre-Developed	538.6	872.2
Post-Developed	538.6	1,204.7
Difference	**0.0**	**+332.5**

cfs = cubic feet per second

Landform grading has been incorporated to mimic existing conditions wherever possible. It is intended for the stormwater from the manufactured slopes to follow the existing drainage patterns. A comparison between pre and post condition watersheds indicates a post development acreage reduction for six watersheds; Northwest Basin, West Basin, Northeast Basin, South Basin, East-Central Basin, and Southeast Basin.

The two storm drain outlets proposed for Village Eight East would outlet directly into the Otay River. As described previously, the HMP exempts projects that outlet directly to the Otay River from hydromodification criteria. The areas from which their runoff is generated are, therefore, exempt from hydromodification requirements. Two outlets along the eastern project boundary, Northeast Watershed and Southeast Watershed, would need to address hydromodification requirements since they do not directly discharge into the Otay River.

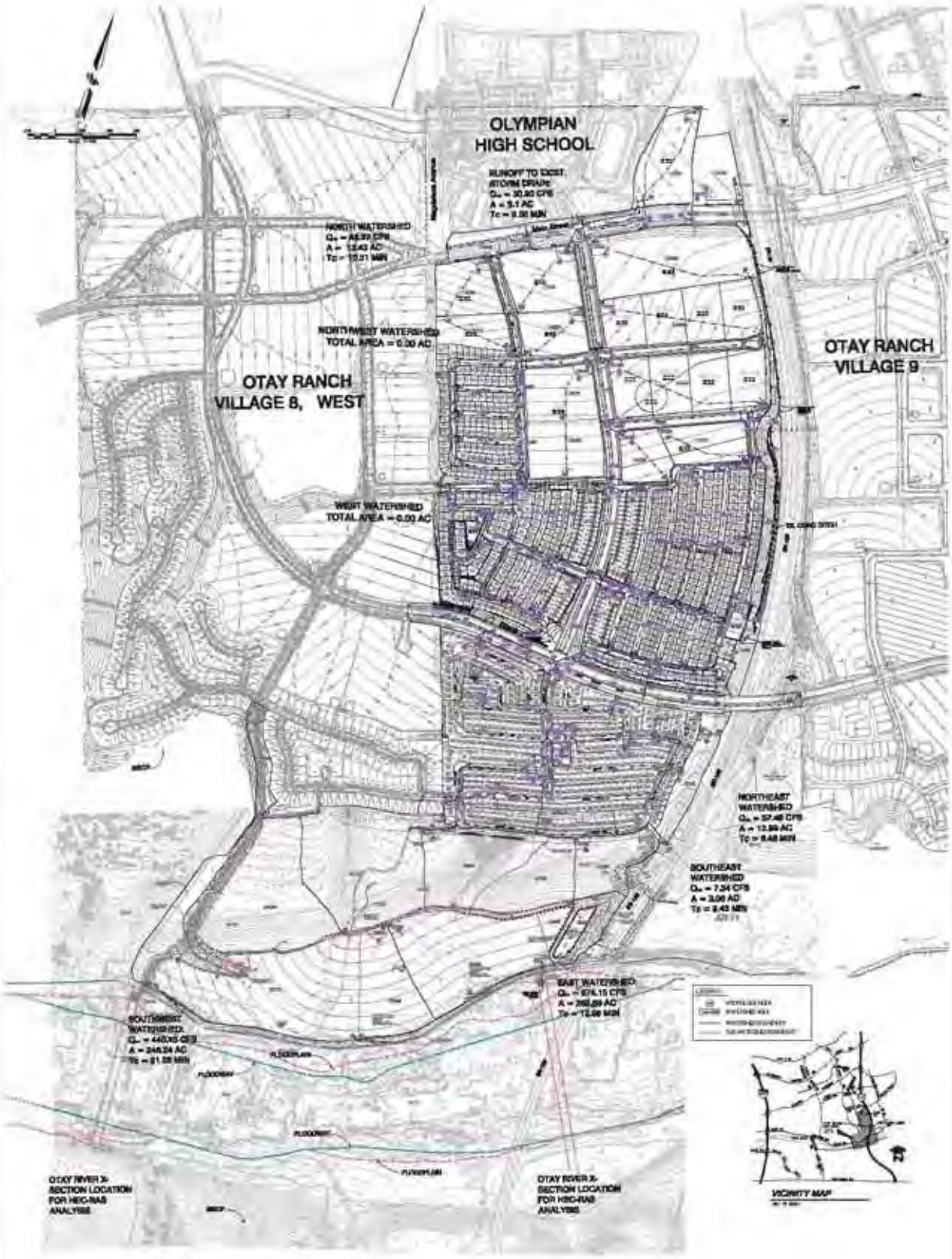

FIGURE 5.10-8
Village Eight East Developed Hydrology Map

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These two watersheds almost entirely consist of pervious areas in both pre and post conditions and would be reduced in size once developed. An HMP exemption, granted through a co-permittee, such as the City of Chula Vista, can be applied to areas that would not experience increases in both imperviousness and in unmitigated peak flows. The Southeast Watershed qualifies for this exemption. However, the Northeast Watershed would increase its impervious areas once the SR-125/ Main Street interchange is constructed. Further hydromodification analysis is required for the Northeast Watershed. As described under Village Three North and a Portion of Village Four, the Savage Dam, located upstream of Village Eight East, impounds runoff from over 60% of the Otay River's tributary watershed, which reduces the increase in flows from development downstream of the dam compared to the flows prior to dam construction. Detention for any development below the dam would be ineffective since the peak flows from these smaller watersheds would pass well before the reservoir outflows would reach the project area.

The hydromodification analysis for the Northeast Watershed is included in Appendix K. Results of the hydromodification analysis determined that the POC analyzed passed. This can be attributed to the considerable reduction in the area at the point of discharge compared to the pre-developed condition. The proposed condition frequency and duration curves would not exceed those during the existing condition more than ten percent, in accordance with the General Permit for Storm Water Discharges. This results in no requirements for additional hydromodification mitigation measures. The results support the determination that there is not an increase in potential for erosion for the proposed conditions when compared to existing conditions.

Additionally, the Otay River downstream of the Savage Dam is starved for sediment and peak flows and an increase in peak flow could help the Otay River maintain its original platform. Since the tributary area to the Otay River is over 100 square miles, there would be substantial lag time between the time peak flows from Village Eight East would outlet to the river and the time the peak flows would reach the proposed outlet location. Due to this lag time, the development of Village Eight East would result in no net increase of flows to the Otay River when compared to existing conditions. Therefore, no detention basins are proposed for this project other than for bioretention and as water quality devices.

The combination of the proposed construction and permanent LID BMPs listed above, that have been incorporated in the design of Village Eight East, to the maximum extent practicable, are in place to ensure water quality treatment is maximized throughout the development. However, even with implementation of the BMPs listed above, development of Village Eight East would still have the potential to violate water quality standards or waste discharge requirements. Therefore, impact would be **potentially significant** and mitigation measures would be required.

Village Ten

Once developed, runoff from the Village Ten site would drain towards the south through one of the two anticipated on-site storm drain systems. The western storm drain system would be used to convey runoff from the university parcel located west of University Drive as well as the western portion of the Village Ten developed areas. This storm drain would direct its water quality flows towards the western basin. Its peak flows would continue south and outlet into the Otay River. A cleanout with an internal diversion weir would be located at the downstream end of the system to divert water quality treatment flows to the water quality basin.

The eastern storm drain system would convey runoff generated from the eastern developed portions of the site including the eastern university parcel. This storm drain system would also convey off-site runoff from Village Eleven by connecting with the existing storm drain at the intersection of Hunte Parkway and Eastlake Parkway. The total area draining to the eastern storm drain system is approximately 244 acres. As in the case of the western storm drain system, the eastern system also has a diversion cleanout which diverts its water quality flow to the eastern water quality basin. Conceptually, the storm drain systems and layouts 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.

Table 5.10-9 below summarizes the 100-year developed condition peak flows to each of the discharge locations (Figure 5.10-9). Peak development flows from both the eastern and western storm drain systems confluence downstream of the bioretention basins prior to outletting into the Otay River at a single outlet location. Runoff coefficients assumed for the proposed roads, commercial development, multi-family development, single family development and park sites are per the City of Chula Vista Subdivision Manual.

Table 5.10-9
Village Ten
Summary of Developed Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
West Watershed	0.0	0.0
Southwest Watershed	4.8	16.4
South Watershed	366.8	1,174
Southeast Watershed, Pt 1	11.2	30.7
Southeast Watershed, Pt 2	7.1	15.1
East Watershed	101.6	185.4
Total	**491.5**	**1,421.6**

cfs = cubic feet per second

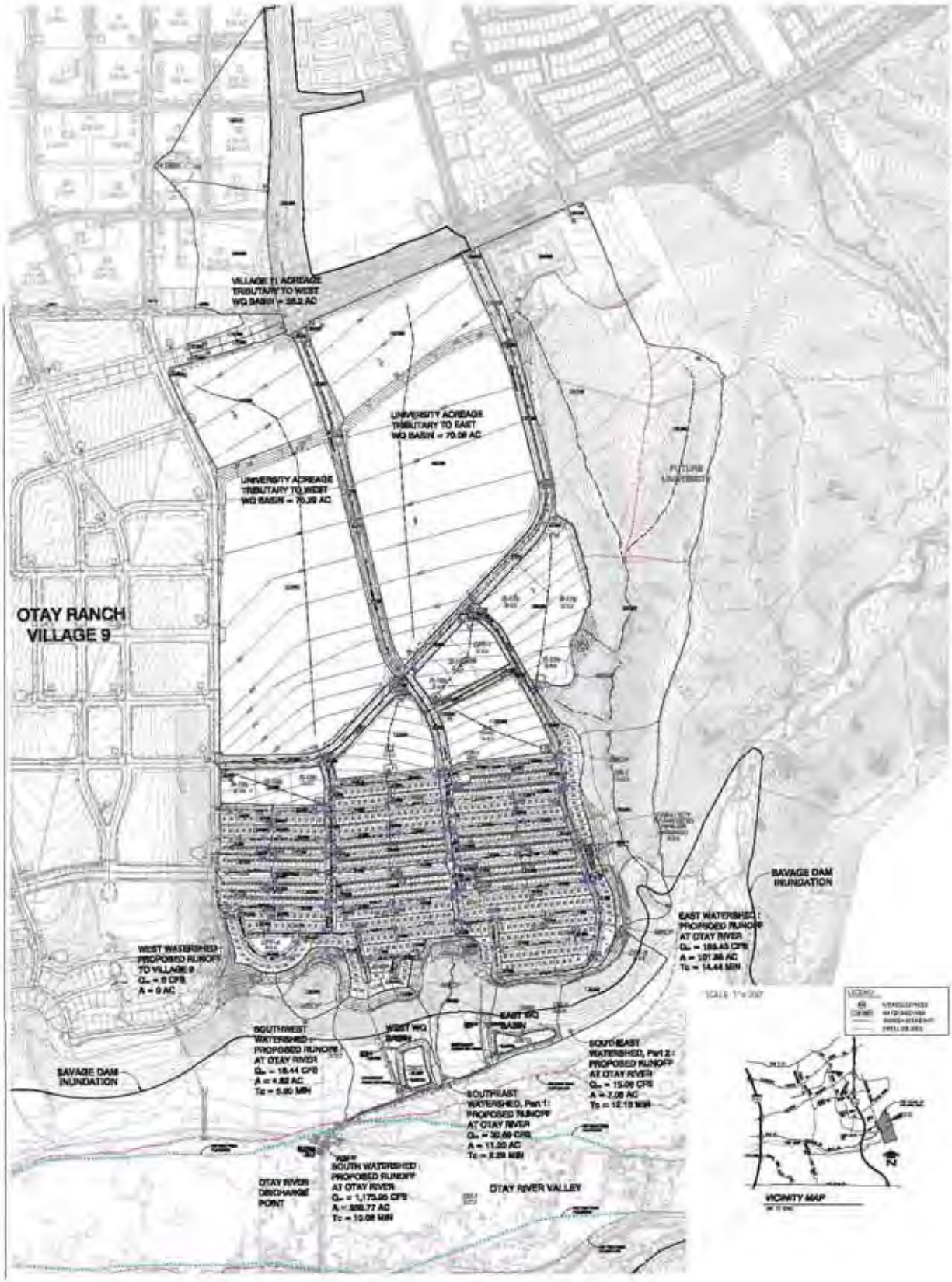

FIGURE 5.10-9
Village Ten Developed Hydrology Map

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Table 5.10-10 summarizes the effects of site development at the receiving Otay River. Development of Village Ten would result in the net increase of runoff discharged to the adjacent Otay River by approximately 537 cfs.

Table 5.10-10
Summary of Pre vs. Post- Developed Condition Flows to the Otay River V10

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
Pre-Developed	490.4	884.8
Post-Developed	491.5	1,421.6
Difference	**+1.07***	**+536.8**

cfs = cubic feet per second
*= area along Hunte Pkwy double-counted in proposed condition hydrology model.

The storm drain outlet proposed for Village Ten would discharge directly into the Otay River. As described previously, the HMP exempts projects that outlet directly to the Otay River from hydromodification criteria. The areas from which their runoff is generated are, therefore, exempt from hydromodification requirements. The West and Southwest Watersheds do not directly outlet into the Otay River and cannot claim this exemption. However, areas which do not increase impervious area and do not increase their unmitigated peak flows, can qualify for HMP exemption. The post condition area and flows to these watersheds are reduced compared to the existing condition and therefore do not require any additional measures for hydromodification. The East Watershed does include impervious areas and requires further hydromodification analysis. As described previously, the Savage Dam, located upstream of Village Ten, impounds runoff from over 60% of the Otay River's tributary watershed, which reduces the increase in flows from development downstream of the dam compared to the flows prior to dam construction. Detention for any development below the dam would be ineffective since the peak flows from these smaller watersheds would pass well before the reservoir outflows would reach the project area.

The hydromodification analysis for the East Watershed is included in Appendix K. Results of the hydromodification analysis determined that the POC analyzed passed. The proposed condition frequency and duration curves would not exceed those during the existing condition more than ten percent, in accordance with the General Permit for Storm Water Discharges. This results in no requirements for additional hydromodification mitigation measures. The results support the determination that there is not an increase in potential for erosion for the proposed conditions when compared to existing conditions.

Additionally, the Otay River downstream of the Savage Dam is starved for sediment and peak flows and an increase in peak flow could therefore help the Otay River maintain its original platform. Since the tributary area to the Otay River is over 100 square miles, there would be

substantial lag time between the time peak flows from Village Ten would outlet to the river and the time the peak flows would reach the proposed outlet location. Due to this lag time, the development of Village Ten would result in no net increase of flows to the Otay River when compared to existing conditions. Therefore, no detention basins are proposed for this project other than for bioretention and as water quality devices.

The combination of the proposed construction and permanent LID BMPs (see Section 5.10.4) that have been incorporated in the design of Village Ten, to the maximum extent practicable, are in place to ensure water quality treatment is maximized throughout the development. However, even with implementation of the BMPs listed above, the development of Village Ten would still have the potential to violate water quality standards or waste discharge requirements. Therefore, impacts would be **potentially significant** and mitigation measures are required.

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 previously discussed, no groundwater was encountered during a site field testing conducted as part of a Geotechnical Investigation in 2013. The groundwater table is expected to occur deeper than 100 feet below the lowest existing grades at the site. However, it is not uncommon for seepage conditions to develop where none previously existed due to the permeability characteristics of the geologic units encountered. During the rainy season, perched water conditions are likely to develop within the drainage areas that 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.

Since no groundwater was encountered during subsurface exploration it is not expected to be a constraint to project development. However, seepage within near surface formational materials and perched groundwater conditions within the canyon drainages may be encountered during grading operations, especially during the rainy seasons. The installation of canyon subdrains, drained buttress, and stability fills would be required to be constructed during grading operations. Potential impacts associated with groundwater would be further reduced through the incorporation of waste management and materials pollution control BMPs and non-stormwater management BMPs included in the SWPPP. Therefore, while construction of the proposed project is not anticipated to deplete groundwater supplies or interfere with groundwater recharge, the necessary RWQCB permit would be obtained and appropriate control measures would be implemented and in place should dewatering be necessary.

Infiltration basins, which can help recharge groundwater, were explored as BMPs for the proposed project. Infiltration basins require a minimum soil infiltration rate of 0.5 inches/hour and are not appropriate at sites with Hydrologic Soil types C and D. Due to the type D clay soils typically located in the region, on-site infiltration basins are not a feasible option for the proposed project. Regardless, the proposed project would not interfere substantially with groundwater recharge, nor would the proposed project use the groundwater supply for any construction or operational use. Compliance with the necessary RWQCB permits would further reduce potential impacts to groundwater. Impacts associated with accidental encounters to groundwater 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.

The proposed project, which would involve the replacement of existing permeable surfaces and exposed soils with impervious surfaces, would substantially increase the amount of impervious surface area within the project area. Site-generated surface water runoff would be directed from the project area to drainage facilities. Nonetheless, with the project area entirely developed, paved, or landscaped, stormwater runoff could result in substantial off-site erosion to downstream facilities. However, the proposed project would only alter the beginning of the drainage pattern and existing drainage patterns would remain in current position.

As described in response to Threshold (A), landform grading proposed within Village Three North and a Portion of Village Four, Village Eight East, and Village Ten 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, the hydromodification analyses for each village support the determination that development of the villages would not result in an increase in the potential for erosion when compared to existing conditions. Lastly, BMPs are proposed for each 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.

However, the proposed project would result in the net increase of runoff discharged to the Otay River by approximately 234cfs in Village Three North and Portion of Village Four, 332cfs in Village Eight East, and 537cfs in Village Ten (shown in Tables 5.10-6, 5.10-8, and 5.10-10 respectively). The net increase in runoff discharged to the Otay River would be a result of an alteration in the existing drainage pattern, which could consequently result in substantial erosion or siltation on- or off-site. Proposed BMPs, listed above, would help reduce potential impacts associated

with project implementation. However, the proposed BMPs would not reduce impacts to a level below significance. Therefore, prior to mitigation, impacts would be **potentially 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 Three North and a Portion of Village Four, Village Eight East, and Village Ten 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, BMPs are proposed for each 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 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. Site-generated surface water runoff would be directed from the project area to drainage facilities and bioretention basins. No drainage systems currently exist; however, the proposed project includes the development of stormwater drainage facilities designed to accommodate the proposed project and to meet the need created by the impervious developments.

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 main storm drain outlet proposed for Village Three North would outlet directly into the Otay River. The development of Village Eight East would consist of one major storm drain system which would be routed toward the southeastern corner of the development in the vicinity the proposed bioretention basin. The storm drain system within the Village Eight East project area would consist of inlets, catch basins, RCP pipe, cleanouts, and headwalls. The Village Ten site design includes Bioretention IMPs in the form of two bioretention basins. The main storm drain outlet proposed for Village Ten would discharge directly into the Otay River.

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, IPM principles, efficient irrigation systems and landscape design, stormwater conveyance systems stenciling an 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 Three North and a Portion of Village Four, Village Eight East and Village Ten would reduce, to the maximum extent practicable, the expected pollutants and would not adversely impact the beneficial uses of the receiving waters.

Stormwater runoff from the Otay Landfill north of Village Three has the potential to impact water quality. Drainage controls at the landfill are intended to separate contact water (water generated from precipitation on the active waste areas) from non-contact water, which is generated from precipitation on the non-landfilled areas, or areas of the landfill that have a cover in place. Contact water is held on site and does not discharge off-site and/or surface water bodies. Non-contact water is channeled to three sedimentation basins to allow for sediment settling before water is discharged off site. Discharges from the three sedimentation basins are monitored according to the water quality monitoring program defined in the Joint Technical Document[1]; the Waste Discharge Requirements (WDR) issued by the Regional Water Quality

[1] The Joint Technical Document (JTD) is a design and operations report required for landfill permitting in California.

Control Board; and the General Permit for Industrial Activities, issued by the State Water Resources Control Board in compliance with the NPDES. Results of surface water/storm water monitoring are reported in the Semi-annual and Annual Monitoring Reports (for WDR compliance), and annually under separate cover for NPDES compliance. As with many landfills in arid regions, surface water/storm water discharges may not occur for long periods of time because non-contact water retained onsite may evaporate, or infiltrate into the subsurface, before reaching the discharge elevation for off-site release. Based on a review of available documents, discharges to surface water are infrequent and there have been no noted concerns regarding the water quality discharged. No violations of storm water provisions in the WDRs or the NPDES permit have occurred. The proposed project would result in the net increase of runoff discharged to the Otay River by approximately 234cfs in Village Three North and Portion of Village Four, 332cfs in Village Eight East, and 537cfs in Village Ten (shown in Tables 5.10-6, 5.10-8, and 5.10-10 respectively). The net increase in runoff discharged to the Otay River would be a substantial contribution to existing conditions. Therefore, even with the reasons described above, and with implementation of the proposed BMPs, the proposed project would create a substantial amount of runoff and new stormwater drainage systems would be necessary. Additionally, the proposed project could create additional sources of polluted runoff; impacts would be **potentially significant** and mitigation measures would be required.

F. Otherwise, substantially degrade water quality.

As described in response to Threshold (A) 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 an 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 minimize the degradation of water quality as a result of the proposed project. However, BMPs would not adequately reduce potential impacts to a level below significance. Impacts would be **potentially significant** and mitigation would be required.

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.

The developed areas of the proposed project would not be within a 100-year flood hazard area as seen in FIRM Map Nos. 06073C2159F, 06073C2178F, 06073C2178, 06073C2179, and 06073C2177F. Therefore, no housing would be placed within a 100-year flood hazard area and **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 place drainage structures within a 100-year flood hazard area. In the event of a 100-year flood, the drainage structures would not impede or redirect flows in the project area. However, do to the fact that these structures would be placed within a 100-year flood hazard area impacts could be **potentially significant** and mitigation would be required.

I. Be inconsistent with General Plan, Otay Ranch GDP or other objectives and policies regarding water quality thereby resulting in a significant physical impact.

Appendix B evaluates the consistency of the project with the applicable General Plan objectives and policies and evaluates the consistency of the project with the applicable Otay Ranch GDP goals and objectives. The proposed project would be consistent with policies regarding drainage and water quality. The drainage studies outline the drainage infrastructure required for detention of storm runoff and sediment control, including incorporation of energy dissipaters to minimize potential erosion. Additionally, 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. As detailed in Appendix B, the proposed project would ensure that water quality within the Otay Ranch area is not compromised. Drainage plans have been prepared for the proposed project that would adequately provide for management and containment of urban runoff. As shown in Appendix B, the project would be consistent with the General Plan and Otay Ranch GDP policies that pertain to hydrology and water quality. Additional analysis is provided in Appendix B.

The project would be consistent with the General Plan's Public Facilities and Environmental Element and the Otay Ranch GDP policies that pertain to protection of water quality. No significant impacts have been identified as the project would be consistent with applicable objectives and policies, thus no mitigation measures are required and the impact 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 shown in Figure 5.10-10, non-residential areas in the southern portions of Village Three and Portion of Village Four, Village Eight East, and Village Ten are within the dam inundation zone for the Savage Dam (Hunsaker and Associates 2014). Project components within the dam inundation zone include a piece of Main Street in Village Three North, the southern corner of open space provided by a Portion of Village Four, Community Park (P-2) and Active Recreation Area (AR-11) in Village Eight East, and the east and west water quality basins in the southern portion of Village Ten. None of the areas within the Savage Dam inundation zone include residential, commercial, or industrial development. Active Recreation Area (AR-11) is located within the Village Eight East footprint; however this area is not proposed as part of the proposed project. In the event that strong seismic activity, slight oscillation could occur causing the reservoir to overtop; however, the amount of water that would potentially release would not be enough to create inundation in the proposed project area. The Savage Dam was constructed in compliance with the California Division of Safety of Dams Department of Water Resources (Division) design requirements and specifications. The Division periodically reviews the stability of Savage Dam and its major appurtenances in light of improved design approaches and requirements, as well as new findings regarding earthquake hazards and hydrologic estimates in California. Therefore, the potential for dam failure is considered minimal and impacts in the event of dam failure would be reduced by not placing residential, commercial, or industrial development within the inundation zone. Impacts would be considered **less than significant**.

K. Inundation by seiche, tsunami, or mudflow.

The proposed project is approximately 8 miles inland from the Pacific Ocean and finish grades would range between 150 and 450 NAVD. The State of California Tsunami Inundation Map for Emergency Planning (CGS 2009) does not show the project area within a tsunami inundation zone. Therefore, risks associated with tsunamis are considered negligible. As previously discussed, in the event of strong seismic activity, slight oscillation could occur causing the reservoir to overtop; however, the amount of water that would potentially release would not be enough to create inundation, seiche, or mudflow in the project area. The Savage Dam was constructed in compliance with the California Division of Safety of Dams Department of Water Resources (Division) design requirements and specifications, and the dam's stability is periodically inspected. Furthermore, although the dam inundation zone runs through the southern portions of the project area, no residential, commercial, or industrial land uses would be placed within the inundation zone. Therefore, potential impacts due to seiche, tsunami, or mudflow would be **less than significant** and no mitigation measures are provided.

SOURCE: HUNSAKER & ASSOCIATES 2014

FIGURE 5.10-10
Developed Condition–Otay River Valley Dam Inundation Map

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UNIVERSITY VILLAGES PROJECT EIR

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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**.

5.10.4 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. However, the proposed project would substantially alter the existing drainage pattern of the project area in a manner which would result in substantial erosion or siltation on- or off-site. Additionally, the proposed project has the potential to substantially degrade water quality. Prior to mitigation impacts would be **significant**.

5.10.5 Mitigation Measures

MM HYD-1 *Erosion Control*. The developer shall monitor any erosion at the project's outfalls at the Otay River and, prior to the last building permit for the project, obtain approval for and complete any reconstructive work necessary to eliminate any existing erosion and prevent future erosion from occurring, all to the satisfaction of the Development Services Director.

MM HYD-2 *Storm Water Pollution Prevention Plan*. Prior to issuance of each grading permit for each village or any land development permit, including clearing and grading, the Project Applicant shall submit a notice of intent and obtain coverage under the NPDES permit for construction activity from the SWRCB. Adherence to all conditions of the General Permit for Construction Activity is required. The Applicant shall be required under the SWRCB General Construction Permit to develop a SWPPP and monitoring plan that shall be submitted to the City Engineer and the Director of Public Works. The SWPPP shall be incorporated into the grading and drainage plans and shall specify both construction and post-construction structural and non-structural BMPs on site to reduce the amount of sediments and pollutants in construction and post-construction surface runoff before it is discharged into off-site storm water facilities. Section 7 of the City's Storm Water Manual outlines construction site BMP requirements. The SWPPP shall also address operation and maintenance of post-construction pollution prevention measures, including short-term and long-term funding sources and the party or parties that will be responsible for said measures. The grading plans shall note the condition requiring a SWPPP and monitoring plans.

MM HYD-3 *Supplemental Water Quality Report.* Prior to issuance of each grading permit, the Applicant shall submit supplemental reports to the Otay Ranch Villages Three North and Portion of Village Four, Village Eight East, and Village Ten Tentative Map Water Quality Technical Reports, respectively, prepared by Hunsaker and Associates San Diego, Inc. (2014) that identifies which onsite storm water management measures from the Water Quality Technical Report have been incorporated into the project to the satisfaction of the City Engineer. If a storm water management option is chosen by the Applicant that is not shown in the water quality technical report, a project-specific water quality technical report shall be prepared for the parcel, referencing the Otay Ranch Villages Three North and Portion of Village Four, Village Eight East, or Village Ten Tentative Map Water Quality Technical Reports, prepared by Hunsaker and Associates and dated March 2014, for information relevant to regional design concepts (e.g., downstream conditions of concern) to the satisfaction of the City Engineer.

MM HYD-4 *Post-Construction/Permanent BMPs*. Prior to issuance of each grading permit, the City Engineer shall verify that parcel owners have incorporated and will implement post-construction BMPs in accordance with current regulations. In particular, Applicants are required to comply with the requirements of Section 2c of the City of Chula Vista's Standard Urban Storm Water Management Plan (SUSMP), the Chula Vista Development Storm Water Manual, and the Otay Ranch Villages Three North and Portion of Village Four, Village Eight East, and Village Ten Tentative Map Water Quality Technical Report, respectively, or any supplements thereto to the satisfaction of the City Engineer. Specifically, the Applicant shall implement low impact development BMPs in the preparation of all site plans and, the Applicant shall incorporate structural on-site design features into the project design to address site design and treatment control BMPs as well as requirements of the hydromodification management plan. The Applicant shall monitor and mitigate any erosion in downstream locations that may occur as a result of on-site development.

MM HYD-5 *Limitation of Grading*. The Project Applicant shall comply with the Chula Vista Development Storm Water Manual limitation of grading requirements, which limit disturbed soil area to 100 acres, unless expansion of a disturbed area is specifically approved by the Director of Public Works. With any phasing resulting from this limitation, if required, the Project Applicant shall provide, to the satisfaction of the City Engineer, erosion and sediment control BMPs in areas that may not be completed, before grading of additional area begins.

MM HYD-6 *Hydromodification Criteria.* The Project Applicant shall comply, to the satisfaction of the City Engineer, with city hydromodification criteria (Municipal Permit Order R9-2007-0001 as may be amended ~~Section D.1.g~~) or the hydrograph modification management plan, as applicable, addressed regionally at the SPA Plan level concurrent with grading and improvement plans for each village.

MM HYD-7 *Scour Analysis.* Concurrent with all grading plan submittals, the Applicant shall prepare a scour analysis for all structures within the 100-year flood hazard area. Additionally, all said structures shall be monitored until the last building permit for the project has been issued.

5.10.6 Level of Significance After Mitigation

With implementation of MM HYD-1 through MM HYD-7 potentially significant impacts associated with erosion or siltation on- or off-site and degradation of water quality as a result of the proposed project would be reduced to **less than significant**.

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5.11 GEOLOGY AND SOILS

This section tiers from the 1993 Otay Ranch GDP Program EIR (Section 3.8), because that Program EIR analyzed geology and soils impacts for the entire Otay Ranch including the project site. The Otay Ranch GDP Program EIR concluded that potentially significant impacts regarding seismic-related hazards, erosion, unstable soils, and expansive soils would occur with implementation of the Otay Ranch GDP. However, the potential geology and soils impacts were able to be mitigated to a less than significant level with incorporation of the mitigation measures recommended in site-specific geotechnical investigations into the design and construction of future development projects.

This section also tiers from the 2005 GPU/GDPA Program EIR, because geologic and soil conditions for the entire Otay Ranch area, including the project site, were analyzed at a programmatic level. The 2005 GPU/GDPA Program EIR found that potentially significant impacts from geologic hazards could occur as a result of planned development. However, the 2005 GPU/GDPA determined that with implementation of General Plan Objective EE 14 and Polices EE 14.1 through EE 14.5, impacts could be avoided and reduced to a less than significant level. No mitigation measures were necessary.

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. The analysis is based on the geotechnical investigations for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten prepared by Geocon, Inc. and dated May 23, 2013; November 21, 2012; and November 20, 2012, respectively. The geotechnical investigations update the applicable information in the previously certified Otay Ranch GDP Program EIR and are provided in Appendix H of the EIR.

5.11.1 Existing Conditions

5.11.1.1 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 2010 CBC is based on the 2009 IBC, which 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 (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 (California Public Resources Code (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 UBC 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.

5.11.1.2 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. Crystalline basement rocks exist along the western side of the Peninsular Ranges and are dominated by pre-batholithic andesitic Metavolcanic Rock previously known as the Santiago Peak Volcanics with a late Jurassic and early Cretaceous age. The Metavolcanic Rock was intruded during the early to mid-Cretaceous by a variety of granitic to gabbroic plutons of the Southern California batholith. 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.

Geologic Materials

Undocumented Fill

Village Three and a Portion of Village Four had undocumented fill soil present on the western boundary of the site adjacent to an existing vehicle salvage yard and north of the proposed water quality basin. The fill was placed within an existing drainage likely overlying alluvium. Village Eight East had undocumented fill soil present on the western portion of the site adjacent to the existing aqueduct. The fill was likely placed during the excavation of the cut area off-site to the west of the site. The undocumented fill will likely have a thickness of at least 10 to 15 feet thick and can be characterized as soft to loose, dry to damp, sandy clay to clayey sand. The undocumented fill is compressible and removal would be necessary within the limits of grading in areas to support proposed fill or structures.

Previously Placed Fill

Village Eight East project site had previously placed fill along the northern portion of the site; placement occurred during grading and construction of Main Street and the adjacent high school. At the Village Ten project site, previous grading occurred consisting of the placement of previously placed fill within High Tech High School to the northeast, and on the northwest corner associated with the construction of Hunte Parkway and Eastlake Parkway. The grading consisted of the removal of surficial soil, placement of a canyon subdrain, and the placement and compaction of fill soil to achieve existing finish grades. In general, the fill consists of medium dense to dense, moist, silt and sand. In its present condition, the fill soil is suitable for support of additional fill or utilities; however, the upper 2 to 3 feet of the fill soil would require remedial grading.

Colluvium

Found only in Village Ten project site, Holocene-age colluvium, derived from weathering of the underlying bedrock material at higher elevations and deposited by gravity and sheet-flow, is locally present on the side slopes of canyon drainages. The colluvium can be characterized as

sandy clay and clayey sand with varying amounts of gravel and cobble. The colluvium generally has a thickness of 4 to 6 feet thick as encountered in exploratory trenches. The colluvium is compressible and removal would be necessary within the limits of grading in areas to support proposed fill or structures.

Topsoil

Holocene-age topsoil is present in Village Three North and a Portion of Village Four, Village Eight East, and Village Ten as a relatively thin veneer locally overlying formational materials across the site. The topsoil has a thickness of approximately 2 to 4 feet and can be characterized as soft to stiff, loose to medium dense, dry to damp, dark brown, sandy clay to clayey sand with gravel and cobble. The topsoil is typically expansive and compressible. Removal of the topsoil would be necessary within the limits of grading in areas to support proposed fill or structures. Due to the relatively thin thickness and discontinuity of these deposits, topsoil is not shown on the Geologic Map.

Alluvium

Holocene-age alluvium is present in Village Three North and a Portion of Village Four, Village Eight East, and Village Ten as sheet-flow or stream deposited material found within the canyon drainages and generally vary in thickness dependent upon the size of the canyon and extent of the drainage area. The alluvium within the canyon drainages is loose to medium dense and can become saturated and difficult to excavate during the rainy season. The thickness of the alluvium could range up to approximately 7 feet within the tributary canyons and 11 feet within the Otay River Drainage on the south side of the site. Due to the relatively unconsolidated nature of these deposits, remedial grading would be necessary in areas to receive proposed fill or structures.

Landslide Debris

Three landslides exist on the northern and middle portions of the Village Three North and a Portion of Village Four project site. In addition, a landslide just north of the northeastern portion of the site was encountered within Village Two. The landslides are typically controlled by a basal bentonite claystone bed. The majority of the landslide debris is generated from the Otay Formation and consists of a mixture of sandstone, siltstone, and claystone fragments with local remolded clays, highly fractured and crushed zones, and soil and carbonate fracture infilling. The landslide debris ranges in thickness from 40 feet to potentially 85 feet at its thickest point. The bases of the landslides are sliding along the top of a bentonitic claystone layer that was undercut during erosion by canyon drainages. The slides generally consist of a loose upper graben zone and a medium dense core zone that has rotated beds with soft fracture zones. The landslide debris would require removal within the limits of grading. The material can be used as fill soil and should be placed within the lower portions of fill areas.

Terrace Deposits

Pleistocene-age Terrace Deposits are present in Village Three North and a Portion of Village Four, Village Eight East, and Village Ten and deposited as shallow marine and non-marine near shore soil located on the southern half of the site. This unit is expected have a maximum thickness on the order of 20 to 25 feet. The Terrace Deposits are generally dense to very dense, reddish brown, silty to clayey sandstone with portions of the unit containing intermittent layers of cobbles and boulders up to about 2 feet in diameter. The Terrace Deposits are suitable for the support of proposed fill and structural loads; however, select grading operations will be required to properly place the cobble and boulders, where encountered.

San Diego Formation

Found only in the Village Three and a Portion of Village Four project site, Tertiary-age (Pliocene) San Diego Formation is exposed in the northern portion of the site overlying the Otay Formation generally above an elevation of 430 feet NAVD. This unit consists of massively bedded, well sorted, fine-grained sandstones with some scattered gravel and cobble lenses. In addition, oversize cemented material may be generated during excavation. Cohesionless, friable sand lenses can also occur and may require remedial grading measures if encountered in proposed cut slopes or at finish pad grade elevations. In general, the cohesive sandstone portions of the San Diego Formation exhibit adequate shear strength and possess a “very low” to “low” expansion potential (expansion index of 50 or less). The San Diego Formation is suitable for use as fill soil or support for cut slopes and improvements.

Otay Formation

Tertiary-age Otay Formation is exposed across Village Three North and a Portion of Village Four, Village Eight East, and Village Ten project sites or located below the surficial soil and Terrace Deposits. The upper sandstone/siltstone/claystone member of this unit consists of interbeds of dense to very dense, slightly cemented, silty to clayey sandstone and hard, siltstone and claystone layers. In addition, several layers of bentonitic claystone with a maximum thickness of approximately 1 foot thick are present within this unit on the northern and middle portions of the site that can create slope instability. Some of the layers are locally discontinuous and range in elevations as high as 573 feet above mean sea level (amsl) to as low as 416 feet amsl. The Otay Formation is suitable for the support of proposed fill and structural loads. The gritstone member of this unit is generally stable when excavated to construct cut slopes. However, the siltstone, claystone, and bentonitic claystone layers within the member will require slope stabilization when exposed in cut slopes, near fill slopes, and behind MSE retaining walls.

Metavolcanic

Metavolcanic Rock is present on the southern portion of the Village Four park site within canyon drainages and varies from weak to moderately strong, highly to moderately weathered, and jointed. Localized areas are moderately fractured. The rock is exposed within canyon drainages as the overlying Otay Formation has eroded away exposing the basement rock material. Highly weathered portions of the Metavolcanic Rock can be excavated and can generate some soil with gravel to boulder size rock materials. The soil generated from excavations within this unit is expected to possess a “very low” to “low” expansion potential (expansion index of 50 or less). The highly weathered portions of the rock will be rippable with heavy-duty grading and trenching equipment. The majority of Metavolcanic Rock that would be encountered would be highly to moderately weathered, week to moderately strong and would generally be rippable in the upper surface of this unit. If deep excavations are required in this unit, rock breaking or blasting would be required to excavate the rock below the weathering profile and would generate oversize material.

Geologic Hazards

Earthquakes

The Newport–Inglewood and Rose Canyon Fault Zones, located approximately 8 to 11 miles northwest of Village Three North and a Portion of Village Four, Village Eight East, and Village Ten project sites. 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 sites. Figure 5.11-1 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 0.27 g, respectively. Table 5.11-1 lists the estimated maximum earthquake magnitude for the most dominant faults in relation to the project sites.

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.

Table 5.11-1
Principal Active Faults near Project Area

Fault Name	Distance From Project Site (miles)	Maximum Earthquake Magnitude (M_{max})
Village Three North and a Portion of Village Four		
Newport–Inglewood	8	7.5
Rose Canyon	8	6.9
Coronado Bank	17	7.4
Palos Verdes Connected	17	7.7
Elsinore	42	7.9
Earthquake Valley	46	6.8
Village Eight East		
Newport–Inglewood	10	7.5
Rose Canyon	10	6.9
Coronado Bank	19	7.4
Palos Verdes Connected	19	7.7
Elsinore	41	7.9
Earthquake Valley	45	6.8
Village Ten		
Newport–Inglewood	11	7.5
Rose Canyon	11	6.9
Coronado Bank	20	7.4
Palos Verdes Connected	20	7.7
Elsinore	40	7.9
Earthquake Valley	44	6.8

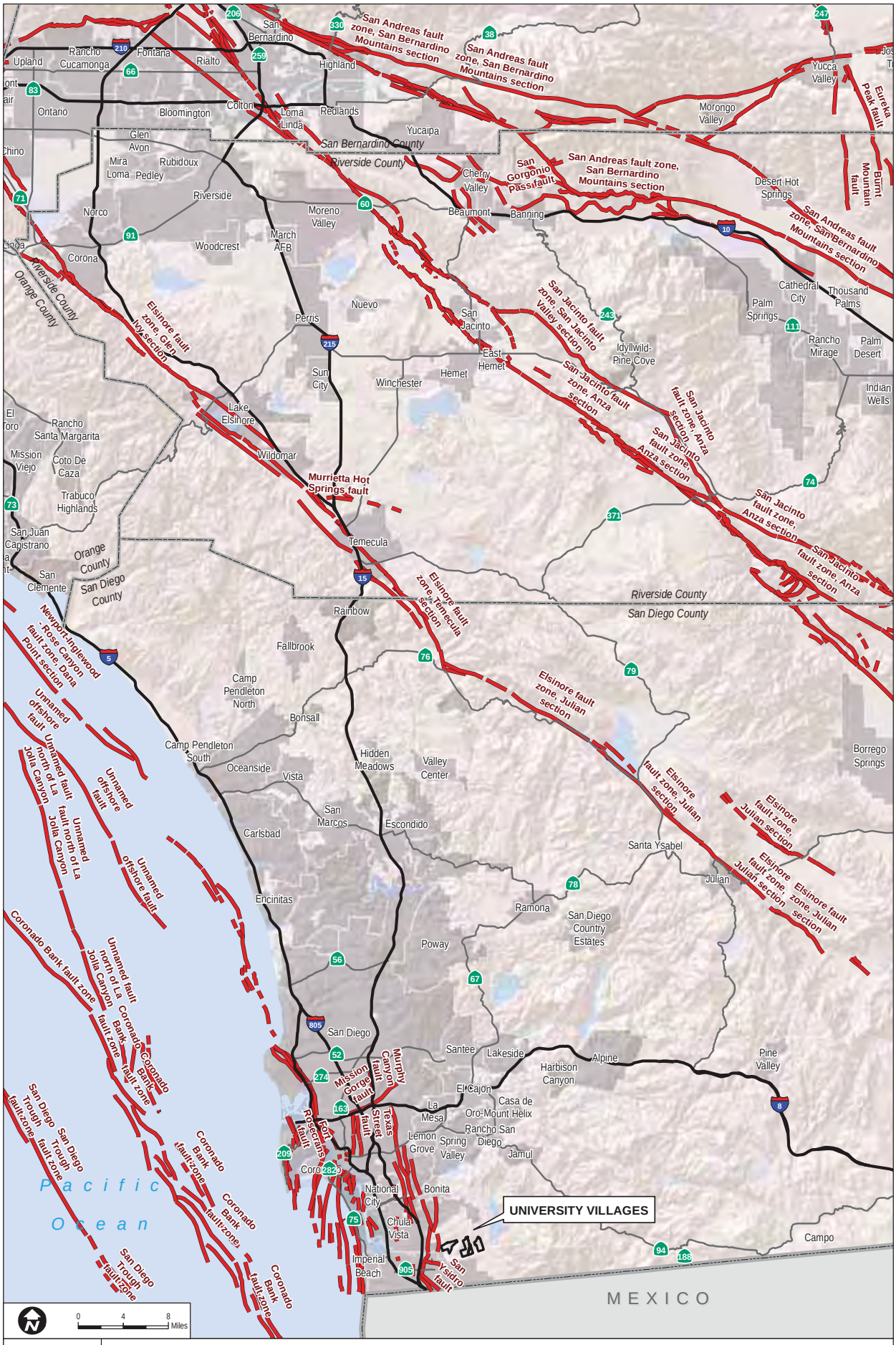
Source: Appendix H of this EIR.

Expansive Soil

The formational units would likely possess a “very low” to “medium” expansion potential. However, the bentonitic claystone possesses a “high” to “very high” expansive potential. The topsoil and alluvium will contain a “medium” to “high” expansion. It is expected that proposed grading would expose bentonitic claystone and siltstone beds within cut slopes and behind retaining walls when the Otay Formation is exposed on the northern and southern portions of the Village Three North and a Portion of Village Four project site, as well as on the northern and middle portions of the Village Eight East site. Proposed grading on the Village Ten project site is not expected to expose bentonitic claystone.

Slope Stability

The portions of Village Three North and a Portion of Village Four, Village Eight East, and Village Ten project sites planned for grading are generally underlain by Quaternary-age surficial soil, Quaternary-age Terrace Deposits, and Tertiary-age Otay Formation. The unit most likely to be subject to slope instability is the bentonitic claystone layers within the upper member of the Otay Formation.



SOURCE: USGS

FIGURE 5.11-1

Southern California Major Faults

7000

UNIVERSITY VILLAGES PROJECT EIR

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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 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.

5.11.3 Impacts

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 8 to 11 miles northwest of Village Three North and a Portion of Village Four, Village Eight East, and Village Ten project sites. 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 Village Three North and a Portion of Village Four, Village Eight East, and Village Ten project sites are 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 8 to 11 miles northwest of Village Three North and a Portion of Village Four, Village Eight East, and Village Ten project sites. Newport–Inglewood and Rose Canyon Fault Zones are the nearest known active faults and are the dominant source of potential ground motion. 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 Three North and a Portion of Village Four, Village Eight East, and Village Ten project sites is considered to be very low due to the dense nature of proposed fill and the very dense nature of the formational materials. 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, Village Three and a Portion of Village Four project site has landslide debris on the northern and middle portion of the project site. The landslide debris was generated from the Otay Formation and composed of a mixture of sandstone, siltstone, and claystone fragments. It is expected that remedial grading consisting of the removal of landslide debris would be sufficient in mitigating a future hazard related to landslides. Evidence of the landslides on the Village Three and a Portion of Village Four project site is not considered to be a significant geologic hazard. Village Eight East and Village Ten do not have any evidence of past landslides or potential for future landslides. 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 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. 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. 99-08-DWQ NPDES General Permit No. CAS00002 (Construction General Permit) and the modifications to the Construction General Permit Order No. 2001-046, adopted by the SWRCB. 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, 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 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. Regardless, the hydromodification analyses for each village support the determination that development of the villages would not result in an increase in the potential for erosion when compared to existing conditions. Lastly, BMPs are proposed for each 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 5.10, 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, Village Three and a Portion of Village Four project site has landslide debris on the northern and middle portion of the project site. It is expected that remedial grading consisting of the removal of landslide debris would be sufficient to mitigate a future hazard related to landslides. Evidence of the landslides on the Village Three and a Portion of Village Four project site is not considered to be a significant geologic hazard. Village Eight East and Village Ten do not have any evidence of past landslides or potential for future landslides.

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. 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 proposed fill and the very dense nature of the formational materials. 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, 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. Village Three North and a Portion of Village Four, Village Eight East, and Village Ten project sites all possess expansive soils. The formational units, bentonitic claystone, topsoil, and alluvium are predominantly clayey sand and sandy clay materials that have 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. However, even with the incorporation of the recommendations, the exterior concrete flatwork has a potential to experience some uplift due to expansive soil beneath grade. Therefore, impacts associated with expansive soil are considered to be **potentially significant**.

E. Be inconsistent with General Plan geotechnical policies thereby resulting in a significant physical impact.

Appendix B provides a comparison of the proposed project with specific General Plan geology and soils policies. The project includes Preliminary Geotechnical Investigations for each village which identifies potential geologic hazards and proposed mitigation to reduce the risk of injury, loss of life, and property damage. Further, the proposed project includes TM-specific geology studies which further pinpoint potential hazards and make site-specific recommendations for minimizing potential impacts. As demonstrated in Appendix B, the proposed project is consistent with the applicable General Plan policies related to geology and soils.

Appendix B provides a comparison of the proposed project with specific Otay Ranch GDP geology and soils policies. The proposed project would 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. the proposed project would be in accordance with the Chula Vista Grading Ordinance, current seismic design specifications of the Structural Engineering Association of California, current CBC standards, and other regulatory requirements. As demonstrated in Appendix B, the proposed project is consistent with the applicable Otay Ranch GDP policies related to geology and soils.

The proposed project is consistent with General Plan and Otay Ranch GDP polices and impacts are considered **less than significant**.

5.11.4 Level of Significance Prior to Mitigation

Prior to mitigation the proposed project would have **potentially significant** impacts associated with expansive soils.

5.11.5 Mitigation Measures

The following mitigation measures are developed from recommendations provided in the geotechnical report, which will minimize or avoid potential impacts related to geologic hazards. These mitigation measures shall be used in conjunction with the Geotechnical Reports for the proposed project prepared by Geocon (Appendix H) to ensure that the measures are implemented in the proper context of the earthwork and grading specifications provided in the report.

MM GEO-1 Prior to the issuance of each grading permit for Village Three North and Portion of Village Four, Village Eight East, and Village Ten, the Applicant shall verify that the applicable recommendations in the Geotechnical Investigation prepared by Geocon, dated May 23, 2013; November 21, 2012; and November 20, 2012, respectively, have been incorporated into the final project design and construction documents to the satisfaction of the City Engineer. These recommendations address issues including but not limited to site grading, retaining walls, seismic design, slope stability, backdrain systems, undercuts, excavation and fill, monitoring, and soil testing. Geotechnical review of grading plans shall include a review of all proposed storm drain facilities to ensure the storm water runoff would not interfere with the proposed geotechnical recommendations.

MM GEO-2 All graded slopes shall have a minimum factor of safety of 1.5. Strategies to increase stability may include, but are not limited to, a stability buttress or shear pins. All slope stability strategies shall be to the satisfaction of the City Engineer.

5.11.6 Level of Significance After Mitigation

The mitigation measures/recommendations listed in Section 5.11.5 would reduce potential impacts associated with geology and soils, to a **less than significant** level.

5.12 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 and emergency medical services are addressed in Subsection 5.12.1; police services are addressed in Subsection 5.12.2; schools in Subsection 5.12.3; parks, recreation, trails, and open space in Subsection 5.12.4; and libraries in Subsection 5.12.5. 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 and utilities.

This section tiers from the 2005 GPU/GDPA Program EIR, because existing conditions regarding fire and police protection, school facilities, library facilities, and park facilities in the Otay Ranch area was analyzed as part of the 2005 GPU/GDPA. The existing conditions discussion of public facilities contained in the 2005 GPU/GDPA Program EIR is applicable to the existing conditions analysis provided herein.

5.12.1 Fire Protection and Emergency Medical Services

The analysis of existing fire protection and emergency medical services is based on information provided by the City of Chula Vista General Plan and the City of Chula Vista Fire Department. The potential impacts on fire protection and emergency medical services and facilities as a result of the proposed project were assessed and described below.

5.12.1.1 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). In addition 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 2005a).

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

Three North and a Portion of Village Four and Village Eight East. Fire Station No. 10 is planned within the EUC and would be the closest station to Village Ten.

Otay Ranch General Development Plan

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 project area and surrounding communities from loss of life and medical emergencies. The 1993 Otay Ranch GDP states that four new fire stations are necessary to serve the Otay Ranch project 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 EUC, as does the EUC SPA Plan. 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.

Chula Vista Facility, Equipment and Deployment Master Plan

The Chula Vista Fire Facility, Equipment and Deployment Master Plan (FFMP), adopted January 28, 2014, sets forth a plan for a Fire/Emergency Medical Services delivery system within the City of Chula Vista that can, upon build-out, meet the expected growth of the City. The FFMP recommends the expansion of one existing fire station and the addition of three new fire stations for a total of 11 fire stations. Two of the new stations are within Otay Ranch, one in Village Eight West, the other in the EUC (consistent with the Otay Ranch GDP and EUC SPA Plan), while the third fire station would serve the Bayfront. Per the FFMP, additional truck companies will be needed within the system and deployment of existing resources will need to take place as they are added. All future growth projected in the City will be properly serviced with the station locations and configuration outlined within the FFMP.

Zoning Code and GMOC Ordinance

CVMC 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 fire and other public services. The preparation of a PFFP is required in conjunction with the preparation of each SPA Plan for the proposed project 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 19.09.040B 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 19.09.050 also requires a PFFP and

the demonstration that public services, such as fire services, meet the GMOC quality of life threshold standards (City of Chula Vista 2013a).

Fire Protection Plans: Brush Management

Fire protection plans (FPPs) have been prepared for each village. Fuel modification zones have been incorporated into the proposed Village Three North and a Portion of Village Four, Village Eight East, and Village Ten 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 2003) 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.

Chula Vista Public Facilities Development Impact Fee

In August 1989, the Chula Vista City Council adopted Ordinance No. 2320 establishing a Public Facilities Development Impact Fee (PFDIF), which helps cover the cost of new or expanding 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. The PFDIF amount is determined through evaluation of the need for new facilities as it relates to the level of service demanded by new development, which varies in proportion to the equivalent dwelling unit (EDU) generated by a specific land use.

The PFDIF addresses the project's proportional impact on capital facilities, such as structures and equipment. 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 services. 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 facilities and equipment determined to be necessary to adequately accommodate new development in the City.

5.12.1.2 Existing Services

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 134 people, including firefighters and administrative staff. There are currently nine fire stations in the City of Chula Vista, serving a population of approximately 253,201 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 2013d). 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 2012.

Table 5.12-1 lists the locations and service areas of the nine fire stations serving the City of Chula Vista. Table 5.12-2 summarizes CVFD staffing. Village Three North and Portion of Village Four, and Village Eight East is located within the service area of Fire Station No. 7, which is located at 1640 Santa Venetia in Otay Ranch Village Two, approximately 2 to 4 miles from the project area. 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 2013a). 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. 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, pers. comm. 2013).

Table 5.12-1
City of Chula Vista Fire Station Facilities

Location	Service Area	Apparatus
Fire Station 1 447 F Street Chula Vista, California 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, California 91910	Central City, I-805/Central, Hilltop, Country Club	Engine 52
Fire Station 3 1410 Brandywine Ave. Chula Vista, California 91911	Sunbow, I-805 South, Woodlawn Park, East/Main Street	USAR 53 USAR 53 Tender/Trailer

Table 5.12-1 (Continued)
City of Chula Vista Fire Station Facilities

Location	Service Area	Apparatus
Fire Station 4 850 Paseo Ranchero Chula Vista, California 91910	Rancho Del Rey, Bonita Long Canyon, Southwestern College	Engine 54
Fire Station 5 391 Oxford Street Chula Vista, California 91911	Montgomery, Harborside, Otay, I-5 South, Southwest City, West/Main Street	Engine 55
Fire Station 6 605 Mt. Miguel Road Chula Vista, California 91914	East Lake, Rolling Hills Ranch, San Miguel Ranch	Engine 56 Brush 52
Station 7 1640 Santa Venetia Chula Vista, California 91913	Otay Ranch, Village of Heritage, Heritage Hills, Village of Countryside	Engine 57 Truck 57 Battalion 52
Station 8 1180 Woods Drive Chula Vista, California 91914	East Lake, Rolling Hills Ranch, San Miguel Ranch, Tour De Elegance, The Woods	Engine 58
Station 9 266 E Oneida Street Chula Vista, California 91911-3637	Sunbow, I-805 South, Woodlawn Park, East/Main Street	Engine 59

Source: City of Chula Vista 2013a

Table 5.12-2
Chula Vista Fire Department Staffing

Position	Number of Employees
Administrative Secretary	1
Battalion Chief	6
Deputy Fire Chief	3
EMS Nurse Coordinator	1
Facility and Supply Specialist	1
Fire Battalion Chief	6
Fire Captain	35
Fire Chief	1
Fire Division Chief	1
Fire Engineer	34
Fire Inspector I/II	6
Fire Engineer/Investigator	1
Firefighter	42
Office Specialist	1
Public Safety Analyst	1
Secretary	1
Senior Fire Inspector/Investigator	1
Total	**142**

Source: City of Chula Vista 2012

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 that had been based on an estimated 1.3-minute dispatch and turnout and 5.7-minute travel time. The Fire Department currently fails to meet the threshold standards established for response time, but is taking measures to address the situation. CVFD purchased the First Watch Real Time Data and Notification Program to help address concerns related to dispatch, turnout, and travel times. The CVFD indicated that aging fleet of fire apparatus combined with a reduction in public works support staff (radio technicians and mechanics), hampered their ability to meet the standards (City of Chula Vista 2013d).

Emergency Medical Services

Emergency medical services for the City of Chula Vista are contracted to the American Medical Response (AMR). There are 4 American Medical Response 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 2013b). 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.

5.12.1.3 Thresholds of Significance

The following significance criteria, included in Appendix G of 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 Threshold Standards Policy 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, Otay Ranch GDP, and other objectives and policies regarding fire protection and emergency medical services thereby resulting in a significant physical impact.

5.12.1.4 Impacts

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?

At buildout the proposed project would result in an incremental increase in the local demand for fire and emergency medical services. While the SPA Plans conditionally permit civic facilities, such as a fire station, the proposed project does not specifically include the development of a fire station or emergency medical facilities. The construction impacts of general development in the proposed project would be generally similar to impacts from construction of a fire station and are evaluated in the various topical sections in Chapter 5, Environmental Impact Analysis, of this EIR, along with mitigation measures to address significant impacts. As discussed in this EIR, project construction impacts would be less than significant for air emissions from building construction, noise, cultural resources, biological resources, hydrology and water quality. Significant and unavoidable construction air emissions from mass grading, surface improvements and simultaneous construction would occur as a result of development across the entire project site and would occur whether or not the proposed development would include civic facilities. Further environmental review would be required if a specific facility is proposed, but such facilities are not proposed as part of the proposed project.

In the event that the Village Eight West or EUC stations identified in the FFMP are not built before the first building permit is issued in Village Ten, construction of a temporary station would be required. The temporary station would adequately accommodate anticipated fire and emergency services generated by Village Ten from a call volume perspective, as well as provide adequate response time coverage. The temporary station would be constructed on the currently designated CPF site within the development boundary of Village Ten. Because the location has been analyzed throughout this EIR as being developed, the construction of a temporary fire station has been covered by the analyses in Section 5.0. No new physical impacts would occur. Therefore, impacts would be **less than significant.**

B. The City's Threshold Standards Policy 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 2012. Buildout of the proposed project would result in a residential population increase of approximately 22,139 people. This increase in residences and office/commercial/retail facilities would result in an increased demand for fire and emergency medical services and an increase for water for fire protection. An increase in demand for fire and emergency medical services could also increase response time. AMR has indicated that one relocated medical unit and one new medical unit would be needed to adequately serve the proposed project and surrounding areas.

As a means of reducing the project's potential impact on fire and emergency medical services, Fire Protection Plans (FPPs) have been prepared for each village within the proposed project, as required by Article 86 of the California Fire Code. The FPPs address several considerations including building construction techniques and plant palettes, and they establish fuel modification zones based on site-specific fire modeling. The intent behind these is to limit the potential for wildland fires from spreading at the wildland urban interface. In addition, the FPPs provide response modeling which analyzes the direct and cumulative impacts from implementation of the proposed project and related increases in service demands from residents or visitors to the area.

The CVFD will provide fire services for the proposed project area. Fire Station No. 7 is located adjacent to the Village Two core, and is the closest fire station to the Village Three North and Portion of Village Four, and Village Eight East. Fire Station No. 3 is also in close proximity located on 1410 Brandywine Avenue, but would only help serve Village Three North. The City of Chula Vista has adopted the updated FFMP which includes additional fire stations in the EUC, Village Eight West Town Center, and Bayfront locations. The future station in the EUC will be the closest station to Village Ten.

Dudek conducted GIS based emergency response modeling from existing and planned fire stations to the project to determine potential response coverage (May 2014). The modeling utilized CVFD input variables that are consistent with the FFMP. Emergency travel time for first arriving engines from each station is provided in Table 5.12-3, Table 5.12-4, and Table 5.12-5.

Village Three North and Portion of Village Four

Village Three North and Portion of Village Four would be serviced by existing Fire Station 7, located 2.9 miles from the furthest point in the project along with existing Fire Station 3, located 3.6 miles from the project. If constructed as anticipated in the approved Chula Vista FFMP, the proposed Village Eight West Fire Station located 3.5 miles (to the most remote portion of the village) from the project area would also respond to emergency calls for service. Existing Fire Station 4 (3.7 miles from the project) and the approved EUC Fire Station (4.9 miles from the project) would possibly also respond.

As indicated in Table 5.12-3 and illustrated in Figures 5.12-1 through 5.12-3, the first arriving engine from Station 7 achieves a 5-minute travel time throughout 90% of the development, consistent with the approved goal of 7 minutes 90% of the time (5 minutes travel + dispatch + turnout). The 90% achievement is based on a study of the number of lots in the project and the percentage of those lots that can be reached within 5 minutes travel. The Effective Fighting Force (EFF) (first 3 engines, 1 truck and battalion chief) could be on-scene within a roughly 6:56 minute travel time from three existing stations and within 6:36 minutes (to the furthest village extent) from the proposed Village Eight West station. In this case, the proposed Village Eight West station does not provide significant time savings, as both EFF responses are under the 8-minute travel time goal. Even with proposed stations, travel time response at 4-minutes or less is only achievable in all portions of Village Three North and Portion of Village Four from Station 7.

Table 5.12-3
Village Three North and Portion of Village Four
CVFD Emergency Response Analysis

Chula Vista Fire Department Station No.	Total Mileage to Village Three North and Portion of Village Four (furthest point)	Estimated Response Travel Time (minutes)	% of Village within 5-minute travel time
		First Arriving	*First Arriving*
7	2.9	5:35	90%
3	3.6	6:46	0%
4	3.7	6:56	0%
Proposed Village Eight West	3.5	6:36	15%
Approved EUC	4.9	8:59	5%

* Table 5.12-3 presents results of response travel time utilized the ISO formula (T=.65+1.7D) that discounts speed to account for slowing along the response route whereas Figures 5.12-1 through 5.12-3 illustrate model runs with a constant speed of 35 mph.

Station 7 can successfully achieve response to 90% of Village Three North and Portion of Village Four within a 5 minute travel time and the remainder areas slightly over 5 minutes. The proposed Village Eight West Station, as well as Stations 3 and 4, can respond within roughly 6:56 minutes, rounding out the EFF. NFPA 1710 sets the 4-minute response travel time standard, but includes a 90% qualifier, meaning 90% of the responses should include a 4-minute travel

time for fire and medical responses. Paramedics are not required to arrive until 8 minutes driving time for 90% of incidents, if there is a Basic Life Support (BLS) engine company with AED on scene sooner. Chula Vista includes paramedics on each engine and therefore, exceeds NFPA 1710 to Village Three North and Portion of Village Four. Based on the portion of Village Three North and Portion of Village Four that is not within the 4-minute travel time coverage and the number of emergency calls anticipated from those areas, the net effect on the City's ability to meet a 4-minute travel time, 90% of the time will not be significantly affected.

Medical response does not meet the 5.5–6-minute critical time standards for first arriving including dispatch and turnout for the entire Village, but does cover a substantial portion of Village Three within that total response timeframe. With build-out of the area, Station 7 may not be available to respond to every medical emergency at Village Three North and Portion of Village Four, thus a slower response may be realized. None of the fire station locations provides an ideal solution to reduce travel times. However, with the addition of the proposed Village Eight West station, Station 7 may be more available to respond to medical and other emergencies in Village Three North and Portion of Village Four, resulting in maintenance of a reasonable response travel time (under 7-minutes for first responding) and adequate resources available to respond to typical wildfire and structure fires. Medical emergencies may be slower, unless contract ambulance response can be used to enhance medical emergency response.

Village Eight East

Village Eight East would be serviced by existing Fire Station 7, located 2.5 miles from the furthest point in the community. If constructed as anticipated in the approved Chula Vista FFMP, the planned Village Eight West Fire Station, located 1.4 miles from the project area, and the proposed EUC Fire Station, located 2.5 miles from the project area, would also respond to Village Eight East. Existing Fire Station 3 (5.2 miles from the project) and existing Fire Station 8 (5.8 miles from the project) may also respond.

As indicated in Table 5.12-4 and Figures 5.12-4 through 5.12-6, the first arriving engine from Station 7 cannot achieve the 4-minute travel time throughout the entire development, but does cover a high percentage of the community, conforming with NFPA 1710. Station 7's engine can respond to the entire community well within the 5 minute travel time, consistent with the approved goal of 7 minutes 90% of the time (5 minutes travel + dispatch + turnout). The EFF cannot meet the proposed 8-minute travel time from existing stations, requiring over 10-minutes, assuming all engines and the truck are available during an emergency. Village Eight East would benefit significantly from construction of the Village Eight West and EUC fire stations (assumes the "B" option for location of the EUC station, but any of the proposed stations would improve response to Village Eight), as planned in the approved FFMP. The proposed Village Eight West station would become the 1st engine in at 3:02 with Station 7 and the proposed EUC engine

arriving at just under 5-minutes travel time. Response to medical emergencies would also be greatly enhanced with the addition of the Village Eight West station, in particular, but also by the EUC station as it provides one additional fast responding paramedic engine.

Table 5.12-4
Village Eight East CVFD Emergency Response Analysis

Chula Vista Fire Department Station No.	Total Mileage to Village Eight East (furthest point)	Estimated Response Travel Time (minutes)	% of Village within 5-minute travel time
		First Arriving	*First Arriving*
7	2.5	4:54	100%
3	5.2	9:29	0%
8	5.8	10.31	0%
Proposed Village Eight West	1.4	3:02	100%
Proposed EUC	2.5	4:54	100%

* Table 5.12-4 presents results of response travel time utilized the ISO formula (T=.65+1.7D) that discounts speed to account for slowing along the response route whereas Figures 5.12-4 through 5.12-6 illustrate model runs with a constant speed of 35 mph.

Medical response from Station 7 is close to meeting the 4 minute travel time standards for first arriving (roughly 6 minutes with dispatch and turnout). With buildout of the area, Station 7 may not be available to respond due to increased call volume, thus a slower response may be realized. However, with the addition of the proposed fire stations, particularly the Village Eight West station, adequate resources would be available to respond to typical wildfire, structure, and medical emergencies anticipated in the vicinity of this site. NFPA 1710 sets the 4-minute response travel time standard, but includes a 90% qualifier, meaning 90% of the responses should include a 4-minute travel time for fire and medical responses. Paramedics are not required to arrive until 8 minutes driving time; 90% of incidents, if there is a BLS engine company with AED on scene sooner. Chula Vista includes paramedics on each engine and therefore, exceeds NFPA 1710 to Village Eight East. Based on the portion of Village Eight East that is not within the 4-minute travel time coverage and the number of emergency calls anticipated from those areas, the net effect on the City's ability to meet a 4-minute travel time, 90% of the time will not be significantly affected.

Village Ten

Of the existing stations, Fire Station 7, located 4.1 miles from the furthest point in the project is the closest to Village Ten. The planned EUC Fire Station (at the "B" location that was analyzed by the City to be the optimal location), located 1.6 miles from the project area would be the primary responding engine once built. If constructed as anticipated in the approved Chula Vista Fire Facility, Equipment and Deployment Master Plan, the proposed Village Eight West Fire Station, located 3.0 miles from the project area would also respond to emergency calls for

service within Village Ten. Existing Fire Station 8 (4.9 miles from the project) and existing Fire Station 6 (5.6 miles from the project) may also respond.

As indicated in Table 5.12-5, and presented graphically in Figure 5.12-7, the first arriving engine from Station 7 cannot meet the 4-minute travel time standard and only achieves a 5-minute response travel time for small northerly areas of the community. No existing station can achieve a 4-minute or 5-minute response travel time and Station 8 and 6 are nearly 4 and 5 minutes over the 5-minute response. Similarly, the EFF cannot meet the proposed 8-minute travel time from existing stations, requiring over 10-minutes if all engines and truck are available during an emergency.

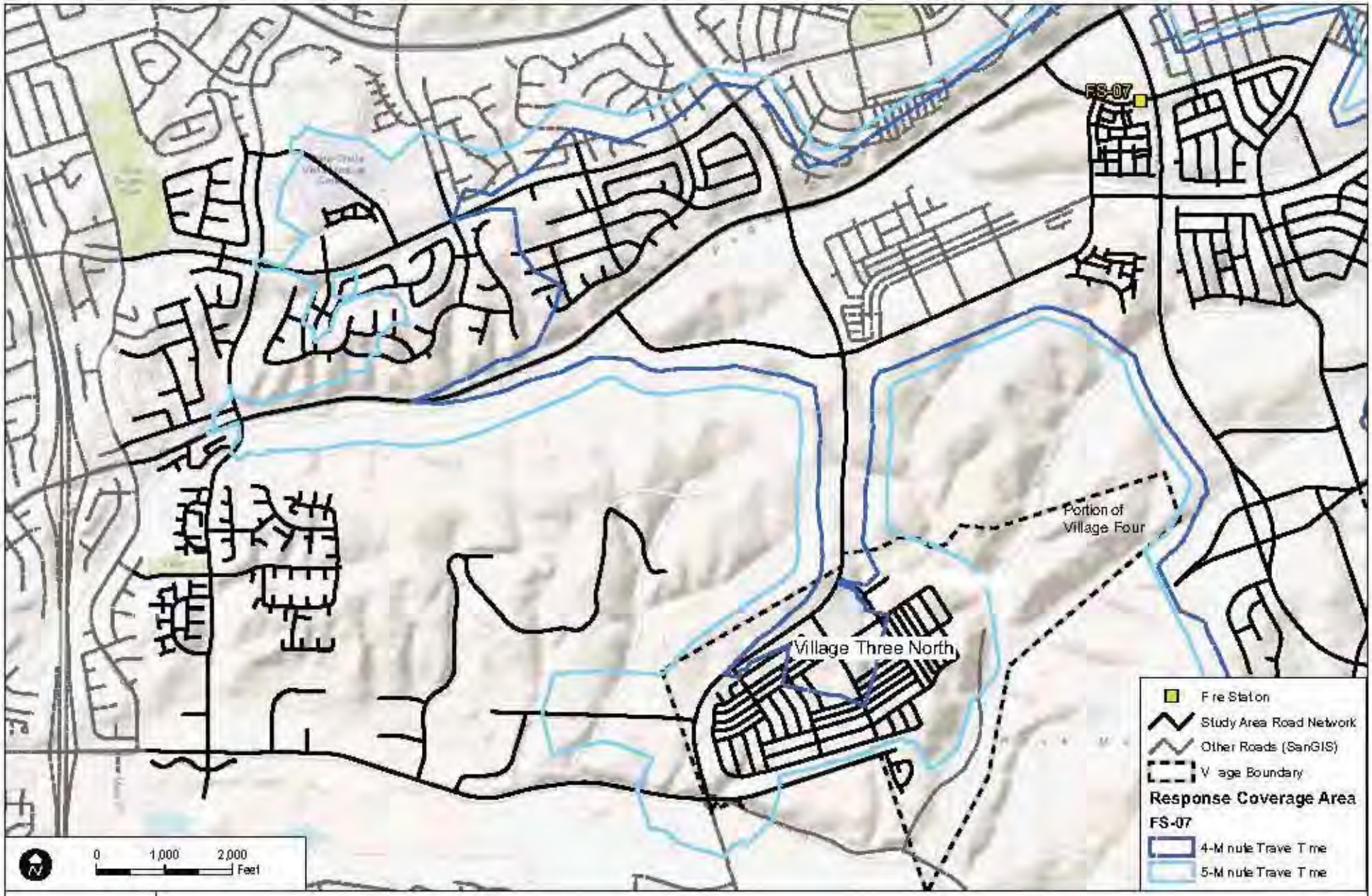
Village Ten would benefit significantly from construction of the Village Eight West and EUC fire stations (assumes the "B" option for location of the EUC station, but any of the proposed stations would improve response to Village Ten). As indicated in Table 5.12-5 and Figures 5.12-8 and 5.12-9, The proposed EUC B station would become the 1st engine in at 3:22 travel time with the Village Eight West Station responding within roughly 5:45. The addition of the proposed stations would round out the EFF, enabling achievement of the 8-minute travel time. Response to medical emergencies would be greatly enhanced with the addition of the EUC station, in particular, but also by the Village Eight West station as it provides one additional fast responding paramedic engine.

Table 5.12-5
Village Ten CVFD Emergency Response Analysis

Chula Vista Fire Department Station No.	Total Mileage to Village Ten (furthest point)	Estimated Response Travel Time (minutes)	% of Village within 5-minute travel time
		First Arriving	*First Arriving*
7	4.1	7:37	0%
8	4.9	8:59	0%
6	5.6	10:10	0%
Planned Village Eight West	3.0	5:45	80%
Planned EUC B	1.6	3:22	100%

* Table 5.12-5 presents results of response travel time utilized the ISO formula (T=.65+1.7D) that discounts speed to account for slowing along the response route whereas Figures 5.12-7 through 5.12-9 illustrate model runs with a constant speed of 35 mph.

Based on the available firefighting resources from existing stations, the call volume currently experienced along with that generated by Village Ten, it is expected that overall response could be adequate at existing response resource levels, but would be notably slower response than is acceptable at any urban standard. Therefore, In the event that the Village Eight West or EUC stations are not built before the first building permit is issued in Village Ten, construction of a temporary station in Village Ten would be required. The temporary station in Village Ten would adequately accommodate anticipated fire and emergency services generated by Village Ten from a call volume perspective, as well as provide adequate response time coverage.



SOURCE: ESRI 2013, SanGIS 2013, Hunsaker 2012, Hale Engineering 2012

FIGURE 5.12-1

Village Three North and Portion of Village Four - Existing Fire Station Response Times for FS-07

UNIVERSITY VILLAGES PROJECT EIR

NOTE: Assumes average roads network speeds of 35 MPH

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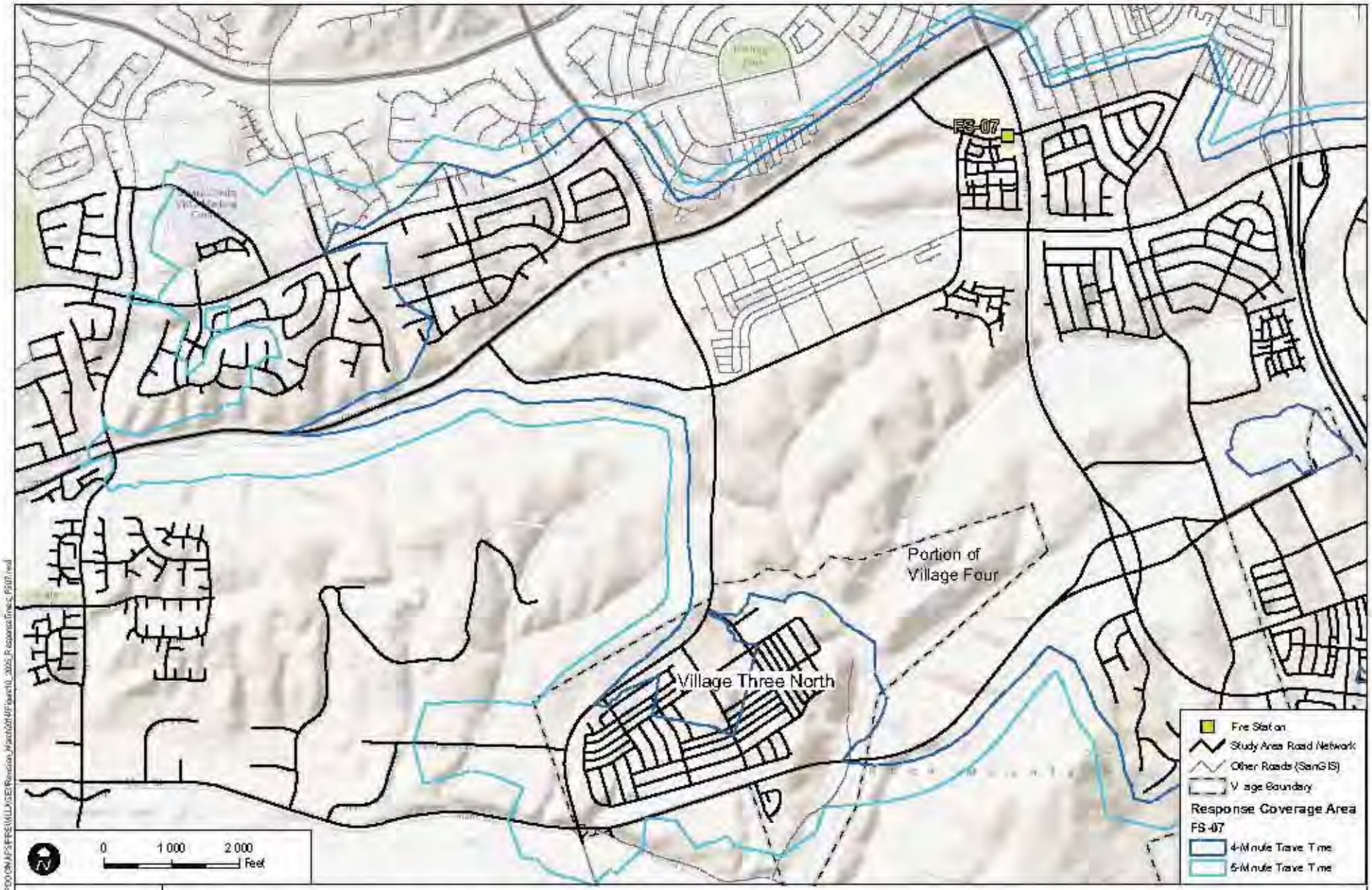

SOURCE: ESRI, 2013; SanGIS 2013; Hunsaker 2012; Hale Engineering 2012

FIGURE 5.12-2

Village Three North and Portion of Village Four 2025 Response Times for Fire Station No. 7

UNIVERSITY VILLAGES PROJECT EIR

NOTE: Assumes average roads network speeds of 35 MPH

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SOURCE: ESRI, 2013; SanGIS 2013; Hunsaker 2012; Hale Engineering 2012

FIGURE 5.12-3

Village Three North and Portion of Village Four 2025 Response Times for Village Eight West Fire Station

UNIVERSITY VILLAGES PROJECT EIR

NOTE: Assumes average roads network speeds of 35 MPH

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SOURCE: ESRI 2013, SanGIS 2013, Hunsaker 2012, Hale Engineering 2012

FIGURE 5.12-4

Village Eight East Existing Response Times for Fire Station No.7

NOTE: Assumes average roads network speeds of 35 MPH

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SOURCE: ESRI 2013, SanGIS 2013, Hunsaker 2012, Hale Engineering 2012

FIGURE 5.12-5

Village Eight East 2030 Response Times for Village Eight West Fire Station

NOTE: Assumes average roads network speeds of 35 MPH

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SOURCE: ESRI 2013, SanGIS 2013, Hunsaker 2012, Hale Engineering 2012

FIGURE 5.12-6

Village Eight East 2030 Response Times for Fire Station EUC-B

NOTE: Assumes average roads network speeds of 35 MPH

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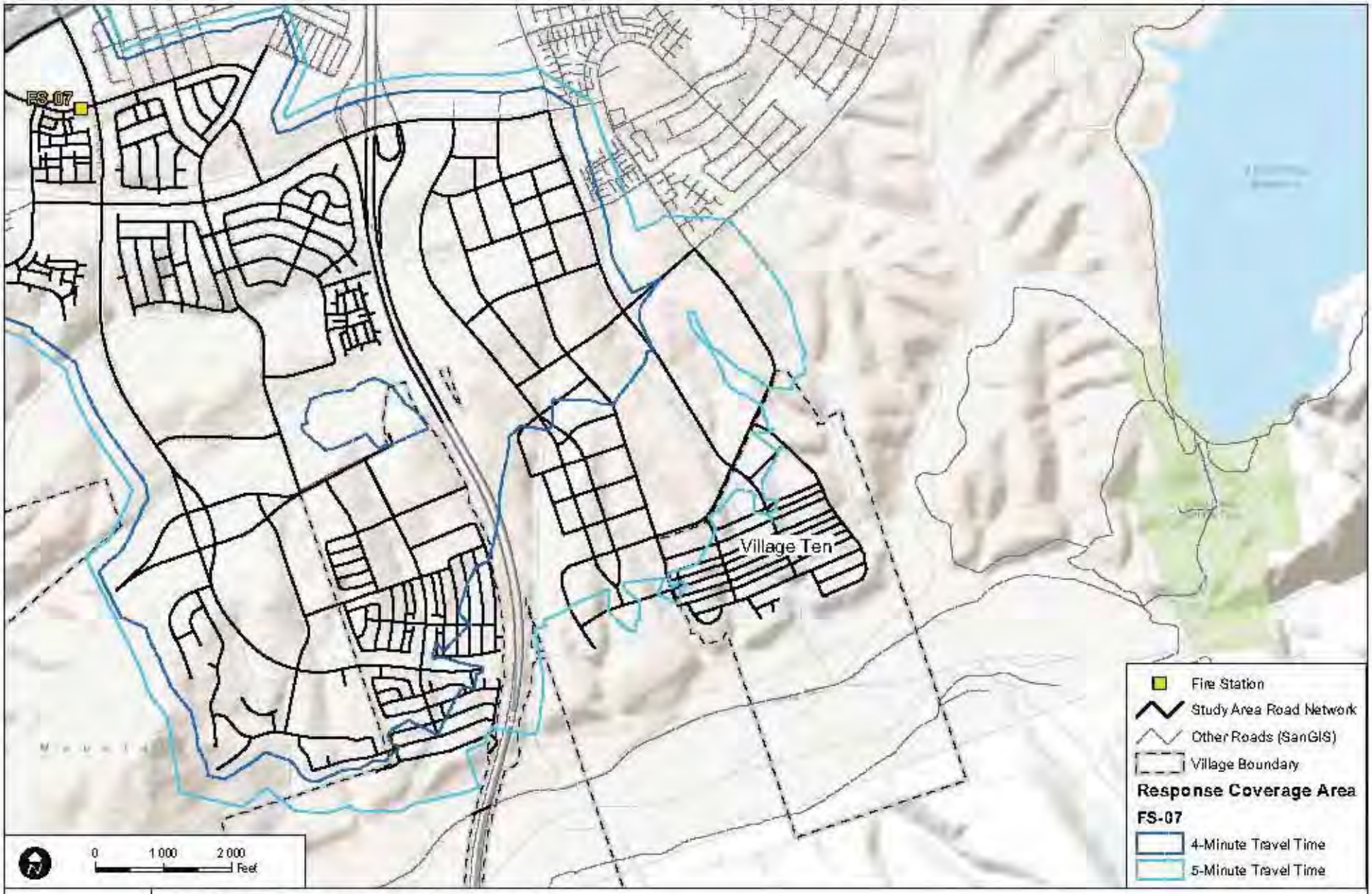

SOURCE: ESRI 2013, SanGIS 2013, Hunsaker 2012, Hale Engineering 2012

FIGURE 5.12-7

Village Ten Existing Response Times for Fire Station No. 7

NOTE: Assumes average roads network speeds of 35 MPH

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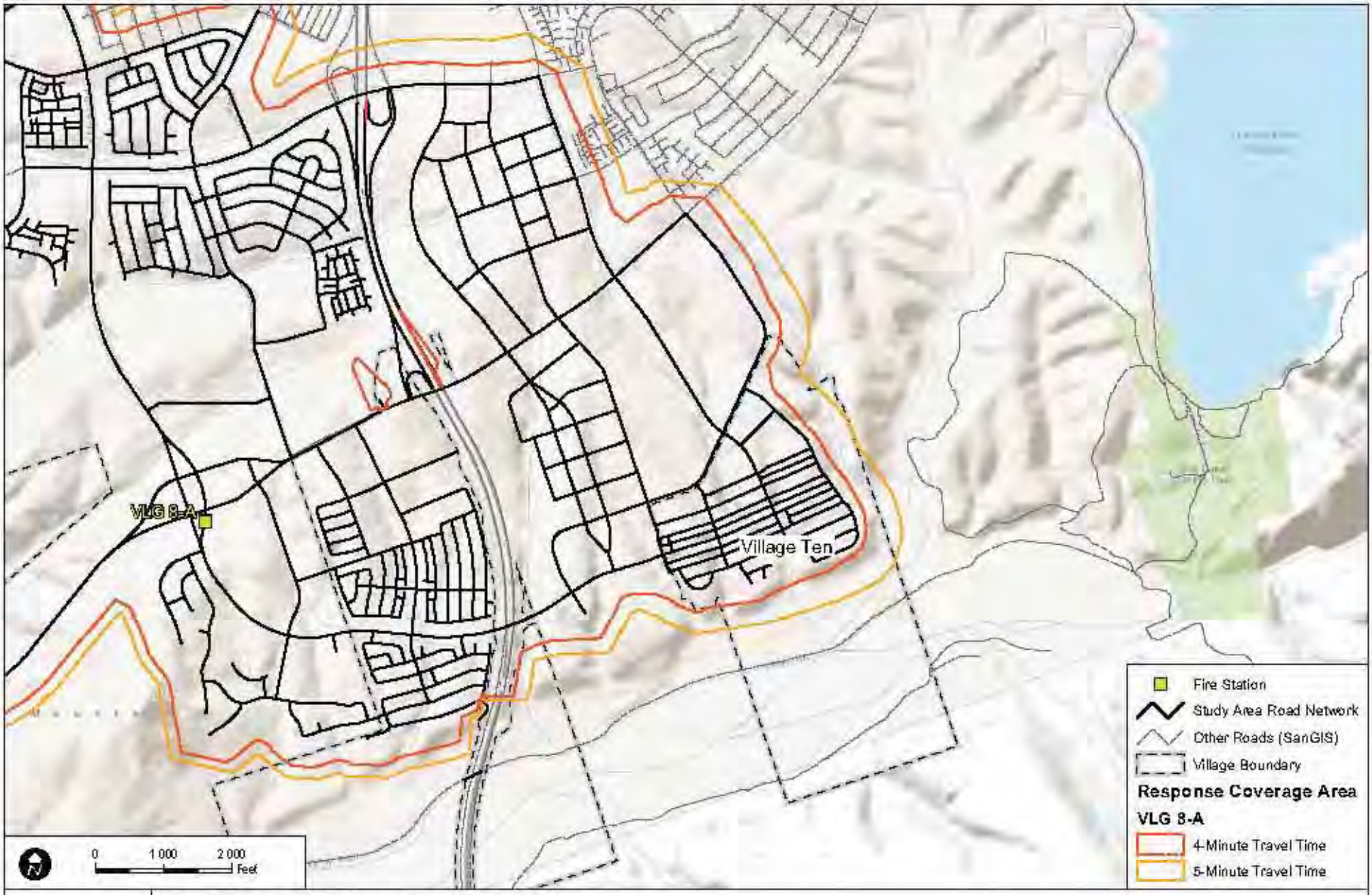

SOURCE: ESRI 2013, SanGIS 2013, Hunsaker 2012, Hale Engineering 2012

FIGURE 5.12-8

Village Ten 2030 Response Times for Village Eight West Fire Station

NOTE: Assumes average roads network speeds of 35 MPH

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SOURCE: ESRI 2013, SanGIS 2013, Hunsaker 2012, Hale Engineering 2012

FIGURE 5.12-9

Village Ten 2030 Response Times for Fire Station EUC-B

NOTE: Assumes average roads network speeds of 35 MPH

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Call volume at Stations 7, 8, and 6 are currently 1,200, 750, and 800 calls per year, respectively. The additional 1.1 calls per day expected to be generated by Village Ten would not significantly stress the emergency response capabilities of existing stations, but when considered cumulatively with surrounding development and related calls, would be significant. Once proposed stations are available, the call volume would be readily absorbed, and would result in successful travel time response (less than 4-minutes) from the EUC station to all portions of Village Ten and under 5-minutes from both the EUC and Village Eight West Station, Station 7 would round out the EFF. With the addition of the EUC station, medical response meets the 4 minute travel time standards for first arriving. With the addition of the proposed fire stations, according to the City's Fire Facility, Equipment, and Deployment Master Plan, adequate resources would be available to respond to typical wildfire, structure, and medical emergencies anticipated in the vicinity of this site.

NFPA 1710 sets the 4-minute response travel time standard, but includes a 90% qualifier, meaning 90% of the responses should include a 4-minute travel time for fire and medical responses. Paramedics are not required to arrive until 8 minutes driving time; 90% of incidents, if there is a BLS engine company with AED on scene sooner. Chula Vista includes paramedics on each engine and therefore, would exceed NFPA 1710 to Village Ten with construction of the EUC station.

In the event that the Village Eight West or EUC stations identified in the FFMP are not built before the first building permit is issued in Village Ten, construction of a temporary station would be required. The temporary station would adequately accommodate anticipated fire and emergency services generated by Village Ten from a call volume perspective, as well as provide adequate response time coverage. The temporary station would be constructed on the currently designated CPF site within the development boundary of Village Ten. Because the location has been analyzed throughout this EIR as being developed, the construction of a temporary fire station has been covered by this analysis. While the use would be different, no new physical impacts would occur.

The capital facilities required to provide fire services as identified in the CVFD's FFMP are funded through the Chula Vista Public Facilities Development Impact Fee (PFDIF) Program. The PFDIF addresses the project's proportional impact on capital facilities, such as structures and equipment, associated with fire 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 fire and emergency medical services. The PFFPs for the proposed project include a fiscal impact analysis to determine the revenues and costs expected to be generated by the development. Net revenues are used to finance costs associated with operations and maintenance associated with the public services required to serve the project. 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.

Overall phasing of the proposed project and nearby projects 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. Payment of PFDIF fees, implementation of the FPPs, compliance with existing city codes, policies and regulations, and implementation of mitigation measures would ensure that the growth management ordinance threshold standard is achieved. This impact would be potentially significant if these mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

C. Would the project be inconsistent with General Plan, Otay Ranch GDP, and other objectives and policies regarding fire protection and emergency medical services thereby resulting in a significant physical impact?

Appendix B, evaluates the consistency of the proposed project with the applicable General Plan and Otay Ranch GDP objectives and policies related to fire protection and emergency medical services. A detailed analysis of the proposed project's consistency with the General Plan is provided in Appendix B.

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 is also required to pay the City's PFDIF which would help subsidize future development of fire facilities. A detailed analysis of the proposed project's consistency with the Otay Ranch GDP is provided in Appendix B.

As shown in Appendix B, the proposed project would be consistent with the applicable policies in the General Plan and in the Otay Ranch GDP. The Otay Ranch GDP objectives and policies related to fire protection and emergency medical services are consistent with those in the City's General Plan. Impacts associated with the proposed project would be **less than significant**.

5.12.1.5 Level of Significance Prior to Mitigation

Prior to mitigation the proposed project would have potentially significant impacts on fire and emergency medical services due to the increase in demand for service and the subsequent increase in average response times.

5.12.1.6 Mitigation Measures

MM PUB-1 Prior to the issuance of each building permit for any residential dwelling units, the Applicant(s) shall pay a Public Facilities Development Impact Fee (PFDIF) in accordance with the fees in effect at the time of building permit issuance and phasing approved in the Public Facilities Finance Plan, unless stated otherwise in a separate development agreement.

MM PUB-2 Prior to issuance of the first building permit for Village Ten, the Applicant(s) will be required to build a temporary fire station in the currently designated Community Purpose Facilities (CPF) site if a fire station has not yet been built in Village Eight West or the EUC as identified in the Fire Facility Equipment and Deployment Master Plan (FFMP).

5.12.1.7 Level of Significance After Mitigation

With implementation of the mitigation measure in Subsection 5.12.1.5, impacts to fire and emergency medical services and facilities as a result of the project would be less than significant.

5.12.2 Police Protection

The analysis of existing police protection services is based on information provided by the City of Chula Vista and the City of Chula Vista Police Department. The potential impacts on police protection services and facilities as a result of the proposed project were assessed and described.

5.12.2.1 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 2005a).

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 to 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 area at build-out (City of Chula Vista 2005b).

Chula Vista Municipal Code Growth Ordinance

CVMC Section 19.80.030 (City of Chula Vista 2013a) 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 Ordinance) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040A specifically requires 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 to demonstrate that public services, such as police services, meet the Growth Management Program quality of life threshold standards (City of Chula Vista 2013a).

Chula Vista Public Facilities Development Impact Fee

In August 1989, the Chula Vista City Council adopted Ordinance No. 2320 establishing a PFDIF, which helps cover the cost of new or expanding 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. The PFDIF amount is determined through evaluation of the need for new facilities as it relates to the level of service demanded by new development, which varies in proportion to the EDU generated by a specific land use.

The PFDIF addresses the project's proportional impact on capital facilities, such as structures and equipment. 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 services. 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 facilities and equipment determined to be necessary to adequately accommodate new development in the City.

5.12.2.2 Existing Police Services

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 307 employees (City of Chula Vista 2013e), a ratio of approximately one sworn personnel per 1,000 residents. The proposed project area is within Patrol Beats 24 and 32. 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 area 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, which provides limited police services to the community (CVPD, pers. comm. 2013).

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 01 seconds during FY 2012. This did not met the growth management ordinance 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. 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 growth management ordinance 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. The City has implemented measures to improve police response times. These measures range from increasing staffing productivity to technological improvements.

5.12.2.3 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. 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) and/or 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.

5.12.2.4 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. While the SPA Plans conditionally permit civic facilities, such as a police station, the proposed project does not specifically include the development of a police station or facilities. The construction impacts of general development in the proposed project would be generally similar to impacts from construction of a police facility and are evaluated in the various topical sections in Chapter 5, Environmental Impact Analysis, of this EIR, along with mitigation measures to address significant impacts. As discussed in this EIR, project construction impacts would be less than significant for air emissions from building construction, noise, cultural resources, biological resources, hydrology and water quality. Significant and unavoidable construction air emissions from mass grading, surface improvements and simultaneous construction would occur as a result of development across the entire project site and would occur whether or not the proposed development would include civic facilities. Further

environmental review would be required if a specific facility is proposed, but such facilities are not proposed as part of the proposed project.

As discussed below under Threshold B, police services are dispatched from "the field" rather than a fixed station. While substations are not precluded in the SPA Plans, none are proposed or required by the proposed project. Therefore, impacts would be considered **less than significant**.

B. Would the proposed 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) and/or 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 CVPD did not meet the growth management response time threshold for Priority One calls, or Priority Two calls in 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 difference 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. Although police substations would be a permitted use in the SPA Plans, construction is not required for several reasons. A substation would not reduce service response times because officers respond to calls for service from the field rather than from a fixed station. Additionally, the cost to build a police substation was estimated at over $15 million. According to the GMOC 2013 Annual Report, the CVPD does not currently meet the growth management ordinance response time thresholds for Priority One or Two calls. The proposed project would incrementally increase Priority One and Two calls, which could make meeting the threshold more difficult. The City has implemented measures to improve police response times. These measures range from increasing staffing productivity to technological improvements.

As described above, the proposed project would be subject to the payment of the PFDIF at the rate in effect at the time building permits are issued. The PFDIF amount is determined through evaluation of the need for new police facilities as it relates to the level of service demanded by new development, which varies in proportion to the equivalent dwelling unit (EDU) generated by a specific land use. When evaluating the level of service demand for new police protection

facilities associated with new development, land uses are assigned an EDU factor that is derived from the number of calls for police services generated for specific land uses (single family residential, multiple family residential, retail commercial, and non-retail commercial).

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 PFFPs for the proposed project include a fiscal impact analysis to determine the revenues and costs expected to be generated by the development. Net revenues are used to finance costs associated with operations and maintenance associated with the public services required to serve the project. 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 physical design and features of a project can also reduce demand on police serviced by affecting the ability of the police to respond to reported activities or reduce/increase the potential for accidents or criminal activity. As the design of the project would affect the impact of the project on police services, all building plans would be submitted to the CVPD for review to determine the use of crime prevention through environmental design (CPTED) features. For the proposed project, CPTED is implemented through Crime Deterrence Design Guidelines, that offer a framework for building a safer community The CPTED strategies and design objectives contained in the Village Design Plan for each village include measures such as Natural Surveillance, Natural Territorial Reinforcement, Natural Access Control, and Community-Based Organizations.

Payment of PFDIF fees, implementation of the CPTED strategies and design objectives, and compliance with existing city policies and mechanisms would ensure that the growth management ordinance threshold standard is achieved. Therefore, impacts would be **potentially significant** and mitigation is required.

C. Would the project be inconsistent with General Plan objectives and policies regarding police protection thereby resulting in a significant physical impact?

The General Plan and Otay Ranch GDP policies require police protection services to keep up with demand and require response times to meet the GMO thresholds. The project consistency with applicable General Plan and Otay Ranch GDP police protection policies, found in Appendix B, evaluates the consistency of the proposed project with the applicable objectives and policies related to police protection. The proposed project PFFPs analyze the required police services

necessary to serve the proposed project and identifies when these services will be needed and requires the project to contribute to the PFDIF program to fund the necessary capital improvements. The proposed project would encourage crime watch programs and demonstrate that development provides adequate access for police vehicles. A detailed analysis of the proposed project's consistency with the General Plan and Otay Ranch GDP Police Protection Policies is provided in Appendix B.

As shown in Appendix B, the proposed project would be consistent with all applicable police protection policies found in the General Plan. The Otay Ranch GDP objectives and policies related to police protection are consistent with those in the City's General Plan (see Appendix B). Therefore the proposed project would also be consistent with the Otay Ranch GDP. Impacts associated with project implementation would be **less than significant**.

5.12.2.5 Level of Significance Prior to Mitigation

Prior to mitigation the proposed project would have **potentially significant** impacts on police services due to the increase in demand for service and the subsequent increase in average response times.

5.12.2.6 Mitigation Measures

MM PUB-3 Prior to the issuance of each building permit for any residential dwelling units, the Applicant(s) shall pay the City's Public Facilities Development Impact Fee (PFDIF) in accordance with the fees in effect at the time of building permit issuance and phasing approved in the Public Facilities Finance Plan, unless stated otherwise in a separate development agreement.

MM PUB-4 The City of Chula Vista will continue to monitor the Chula Vista Police Department responses to emergency calls and report the results to the Growth Management Oversight Commission on an annual basis.

MM PUB-5 Prior to issuance of each building permit, site plans shall be reviewed by the Chula Vista Police Department or its designee to ensure the incorporation of Crime Prevention through Environmental Design Features (CPTED) features and other recommendations of the Chula Vista Police Department, including but not limited to, controlled access points to parking lots and buildings, maximizing visibility along building fronts, sidewalks and public parks, and providing adequate street, parking lot and parking structure visibility and lighting.

5.12.2.7 Level of Significance After Mitigation

With implementation of the mitigation measures above, impacts to police protection services/facilities would be **less than significant**.

5.12.3 Schools

5.12.3.1 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.

Proposition 1A

On November 3, 1998, California voters approved Proposition 1A, the Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998. Prior to the passage of Proposition 1A, school districts relied on statutory school fees established by Assembly Bill 2926 ("School Fee Legislation") which was adopted in 1986, as well as judicial authority (i.e., Mira-Hart-Murrieta court decisions) to mitigate the impacts of new residential development. In a post Proposition 1A environment, the statutory fees provided for in the School Fee Legislation remains in effect and any mitigation requirements or conditions of approval not memorialized in a mitigation agreement, after January 1, 2000 have been replaced by Alternative Fees – sometimes referred to as Level II and Level III Fees. The statutory fee for residential development is referred to in these circumstances as the Level I Fee (i.e., currently at $2.97 per square foot for unified school districts) (CVESD 2011).

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 2005a).

Otay Ranch General Development Plan

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. 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 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. The Otay Ranch 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 2005b).

Chula Vista Municipal Code Growth Ordinance

CVMC 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 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 requires 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 2013a):

1. Amount of current capacity now used or committed
2. Ability to absorb forecast 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 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 growth management ordinance 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.

5.12.3.2 Existing School Facilities

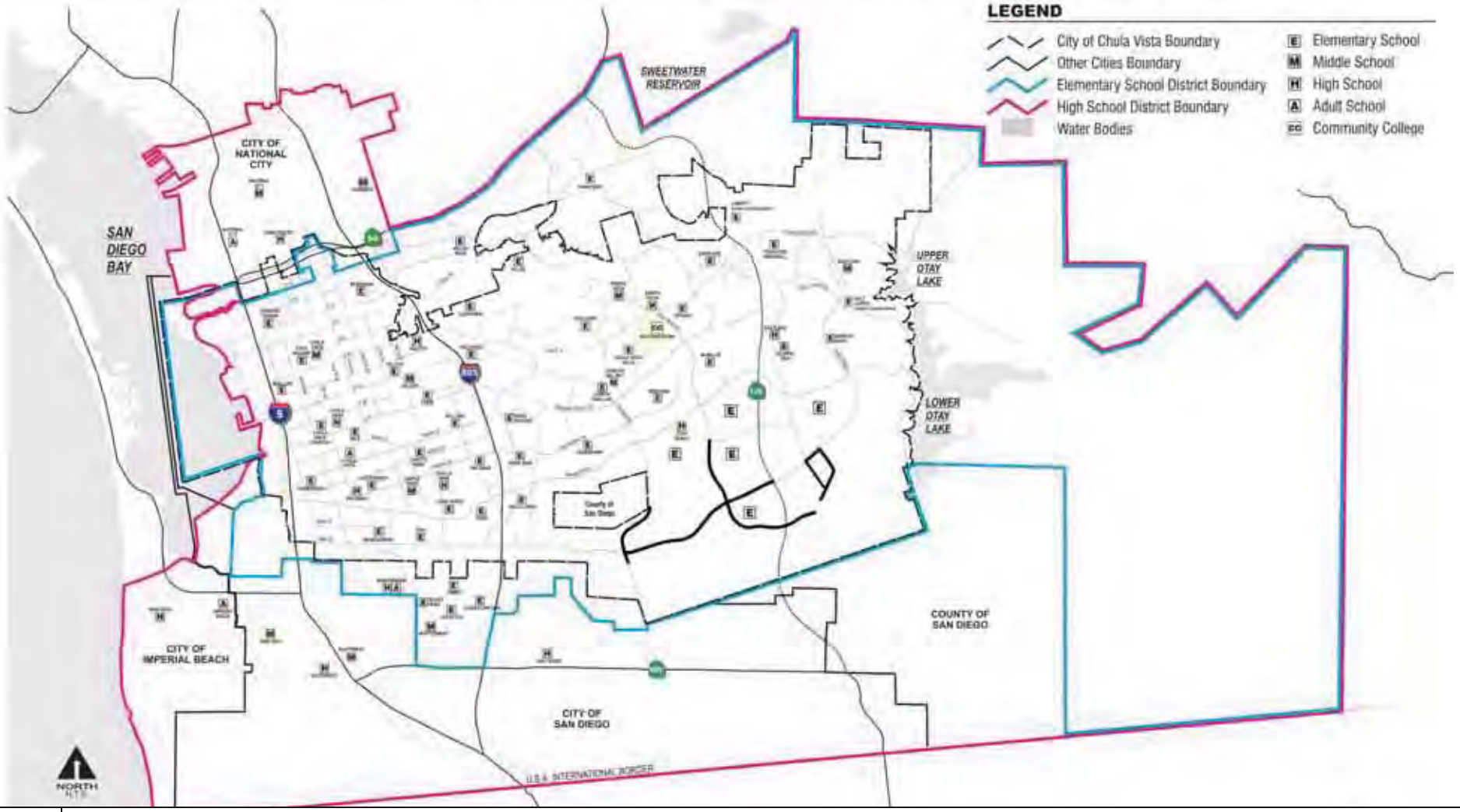
Existing and Planned Educational Facilities

The CVESD, established in 1892, is the largest kindergarten through sixth grade (grades K–6) school district in California, and serves approximately 28,000 students in 45 elementary schools with approximately 2,500 employees (both certified and classified) districtwide (CVESD 2012). Kindergarten through third-grade classrooms have a capacity of 20 students (CVESD 2012). The newest K–6 school in Otay Ranch Village Eleven (Enrique S. Camarena Elementary School) opened in July 2013. 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 elementary school is planned within Village Two. 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 (SUHSD 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. A new 7–12 school is planned within Otay Ranch Village Eleven. There is no construction schedule available. Figure 5.12-10 illustrates the existing and future public school locations. Construction of schools within the villages is at the discretion of the school district and not the developer. The school districts will conduct their own environmental analysis through the Department of Education.

There are six CVESD elementary schools serving Otay Ranch students. These include Heritage Elementary, McMillin Elementary, Hedencamp 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 5.12-6.

Existing Primary and Secondary Schools Serving Chula Vista



SOURCE: CITY OF CHULA VISTA 2010

FIGURE 5.12-10
Existing and Future Public School Locations

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Table 5.12-6
Project Area Schools

School	Enrollment	Capacity
Heritage Elementary	885	863
McMillin Elementary	870	845
Hedencamp Elementary	1,044	1,045
Veterans Elementary	904	850
Wolf Canyon Elementary	989	849
Camarena Elementary	954	900
Rancho del Rey Middle School	1,711	1,700
Eastlake Middle School	1,716	1,871
Otay Ranch High School	2,789	2,432
Olympian High School	1,900	2,600

Source: CDE 2013a; CDE 2013b

5.12.3.3 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), and in the Otay Ranch GDP 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:

   a. In areas where disturbing factors such as traffic hazards, airports, or other incompatible land uses are present

   b. 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

   c. Where private elementary and secondary schools are not spaced far enough from public schools and each other to prevent a concentration of school impacts

   d. Without at least 10 usable acres for an elementary school

   e. Without a central location to residential development

   f. Adjacent to a street or road which cannot safely accommodate bike, foot, and vehicular traffic

g. In areas not adjacent to parks, thereby discouraging joint field and recreation facility uses

h. 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

i. Inside of floodplains; on unstable soils; or near fault lines.

C. Be inconsistent with General Plan, Otay Ranch GDP, and other objectives and policies regarding school services thereby resulting in a significant physical impact.

5.12.3.4 Impacts

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?

While governmental facilities are not specifically planned for the proposed project, the SPA Plans do not preclude them. As it relates to schools each of the project's SPA Plans locates elementary schools within the village core area consistent with the requirements of the Otay Ranch GDP. These school sites have been assumed as part of this environmental analysis. The residential uses including single-family and multi-family dwelling units would generate elementary, middle, and high school aged children. Student generation for the proposed project is provided in Table 5.12-7. Potential environmental impacts related to traffic generated by the proposed schools are addressed in Section 5.3, Transportation and Traffic.

Table 5.12-7
Student Generation for the Proposed Project

		Student Generation Rate			Students Generated		
	Units	*Elementary School*	*Middle School*	*High School*	*Elementary School*	*Middle School*	*High School*
Village Three North							
SF	1,002	0.4114	0.1216	0.2291	412	122	230
MF	595	0.3481	0.0516	0.1057	207	31	63
Subtotal	*1,597*				*619*	*153*	*292*

Table 5.12-7 (Continued)
Student Generation for the Proposed Project

	Units	Student Generation Rate			Students Generated		
		Elementary School	*Middle School*	*High School*	*Elementary School*	*Middle School*	*High School*
Village Eight East							
SF	943	0.4114	0.1216	0.2291	388	115	216
MF/MU	2,617	0.2091	0.0516	0.1057	547	135	277
Subtotal	*3,560*				*935*	*251*	*493*
Village Ten							
SF	695	0.4114	0.1216	0.2291	286	85	160
MF	1,045	0.3481	0.0516	0.1057	364	54	110
Subtotal	*1,740*				*650*	*139*	*270*
Project Total	6,897				2,204	543	1,056

Elementary Schools

The CVESD has estimated that buildout of the proposed project's 6,897 residential units would generate approximately 2,204 elementary school students, as shown in Table 5.12-7. To provide for future elementary school demand, three elementary school sites have been designated within the proposed project: an 8.3-acre site in Village Three North, a 10.8-acre site within Village Eight East, and a 9.2-acre site within Village Ten. If selected by the CVESD, these school sites would be large enough to accommodate approximately 750 students per site and would be adequate to serve the proposed project. The sites would be reserved for acquisition by the school district or dedication by the developer to the school district, pursuant to the PFFPs. Construction timing of the schools would be determined by the school district. Until new schools are constructed, students residing within the project area would attend existing schools in neighboring villages as determined by the school district.

While the Threshold identifies a 10-acre school site, this acreage is based on a recommendation for an "ideal site" along with thirteen other factors from the Otay Ranch GDP. The Otay Ranch GDP recognizes that not all 14 recommendations would be achievable on every schools site; thus, it suggests schools sites meet most of the criteria. In Village Three North and Village Ten, the school sites are less than 10 acres. Each of these villages are expected to generate fewer students than a typical residential village. CVESD typically anticipates approximately 750 to 800 students per elementary school. Villages Three North and Ten are expected to generate approximately 619 and 650 students, respectively. In addition, the 10-acre reference was developed when CVESD was building single story school sites. More recently, CVESD has begun developing two-story elementary schools as the cost of land has increased and the district can achieve the same functionality in a two story configuration on smaller sizes. Each of the

school sites, including Village Eight East, are also located adjacent to neighborhood parks which provides for the opportunity of joint-use of recreational facilities. Finally, CVESD has reviewed the school sites and determined they are of sufficient size.

Although existing schools listed in Table 5.12-6 are over capacity, the school district's practice is to use relocateable classrooms or bussing to schools with capacity to temporarily house the additional students until such a time as a new facility opens. According to the 2012 GMOC Annual Report, both the CVESD and the SUHSD have indicated that facilities will be required to accommodate growth in the next five years, and that the facilities are constructed when funding is available (City of Chula Vista 2011b). In 2012, the CVESD began construction of a new elementary school in Village 11. In recognition of the impact on school facilities created by new development, the District and the development community may enter into various mitigation agreements in order to ensure the timely construction of school facilities to house students from new residential development ("Mitigated Development"). The primary financing mechanism authorized in these mitigation agreements is the formation of a community facilities district ("CFD") pursuant to the Mello-Roos Community Facilities District Act of 1982 (CVESD). Also should discuss mitigation fees.

The proposed project will either pay the State mandated school fees or enter into a School Mitigation Agreement to ensure that schools are built as population increases during the phased development. If the proposed project does not pay the State mandated fees or enter into a school mitigation agreement, which would guarantee construction of the needed school facilities, there would be a **potentially significant** impact to elementary schools.

Middle Schools

The districtwide student enrollment for middle school age children is stable. According to the SUHSD, the proposed project is within the attendance boundaries of two middle schools: Rancho del Rey Middle School (Villages Three North and Eight East) and EastLake Middle School (Village Ten). The SUHSD has estimated that buildout of the proposed project would generate 543 middle school students, as shown in Table 5.12-7. Both Ranch Del Rey and EastLake Middle Schools are either at or near capacity. 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 would be adequate to serve buildout of the proposed project. While the Village Eight West middle school is not yet constructed, SUHSD plans for future capacity and would develop this site when it determines there is sufficient demand.

Additionally, the proposed project may enter into a School Mitigation Agreement to ensure timely construction of school facilities or shall pay State mandated fees, which would mitigate

the additional demand until such time as an additional school is constructed. Students residing within the project site would attend schools in neighboring villages as determined by the school district. If the proposed project does not pay the State mandated fees or enter into a school mitigation agreement, which would guarantee construction of the needed school facilities, there would be a **potentially significant** impact to middle schools.

High Schools

The project would generate approximately 1,056 high school students, as shown in Table 5.12-7. According to the SUHSD, students residing in the project site would be in the attendance boundary of Olympian High School, located in Otay Ranch Village Seven. Olympian High School was constructed according to the Otay Ranch GDP to accommodate planned growth in the area surrounding the school, including the proposed project. However, as shown in Table 5.12-7, this high school does not have the capacity to accommodate all of the high school students from the proposed project. Therefore, until such time that another high school would be completed, the project would result in temporary increases to the number of students in Olympian High School and potentially other area high schools. 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. Construction of the Village Eleven school site would accommodate the remaining highs school students from the proposed project. Additionally, the proposed project may either pay State mandated school fees or enter into a School Mitigation Agreement to ensure timely construction of school facilities. If the proposed project does not pay the State mandated fees or enter into a school mitigation agreement, which would guarantee construction of the needed school facilities, there would be a **potentially significant** impact to high schools.

Provisions for continuing education are not required; however, the project site is located approximately three miles from Southwestern Community College and proximate to the proposed University. In addition, three sites designated for CPF uses within the village cores would provide an opportunity for educational facilities, which could include on-going education.

The PFFPs calculate school demand and analyze how this demand will be met by both existing and planned school facilities. Please refer to the project PFFPs for additional details.

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. Three schools are proposed within the proposed project: an 8.3-acre site in Village Three North, a 10.8-acre site within Village Eight East, and a 9.2-acre site within Village Ten. All elementary school sites would be located in the village core adjacent to the neighborhood park to facilitate joint use opportunities. The sites would be reserved for acquisition by the Chula Vista Elementary School District, as provided in the PFFPs. The nearest airport to the project area is the Brown Field Municipal Airport, which is located approximately three miles south of the project area. Some of Village Three North and a Portion of Village Four and Village Eight East are located within the Brown Field Municipal Airport Influence Area as defined in the Brown Field Airport Land Use Compatibility Plan. However, these areas and all other parts of the project area are not within the flight activity zones, which are the areas adjacent to the ends of the runway that are associated with the greatest risk. In addition, the four-story height limit in the SPA Plans would not interfere with air traffic patterns. Therefore, the proposed schools would not be an incompatible land use with Brown Field.

Regarding traffic hazards, the elementary school sites are located along internal residential collector streets which are low-speed. The village pathway provides a connection between residential uses in the village cores to the school site within each village. In addition, Promenade Trails provide off-street pedestrian connections from the residential neighborhoods outside the village core to the school sites. Residential collector streets also include bike lanes. 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 proposed schools 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 are available 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 5.3, Transportation and Traffic.

Private schools are conditionally permitted throughout the proposed project. 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. As a conditionally permitted use, 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.

While the Threshold identifies a 10-acre school site, this acreage is based on a recommendation for an "ideal site" along with thirteen other factors from the Otay Ranch GDP. The Otay Ranch GDP recognizes that not all 14 recommendations would be achievable on every schools site; thus, it suggests schools sites meet most of the criteria. In Village Three North and Village Ten, the school sites are less than 10 acres. Each of these villages are expected to generate fewer students than a typical residential village. CVESD typically anticipates approximately 750 to 800 students per elementary school. Villages Three North and Ten are expected to generate approximately 619 and 650 students, respectively. In addition, the 10-acre reference was developed when CVESD was building single story school sites. More recently, CVESD has begun developing two-story elementary schools as the cost of land has increased and the district can achieve the same functionality in a two story configuration on smaller sites. Each of the school sites, including Village Eight East, are also located adjacent to neighborhood parks which provides for the opportunity of joint-use of recreational facilities. Finally, CVESD has reviewed the school sites and determined they are of sufficient size.

The proposed elementary school sites must comply with state standards and CVESD standards regarding health and safety issues, including the potential for toxins in the soil. CVESD performs both the preliminary review and the official assessment for each potential school site. As discussed Section 5.15, Hazards and Risk of Upset, potentially contaminated soils may exist due to past agricultural use. However, additional testing would occur prior to grading, and if contaminated soils are identified, soils would be remediated in accordance with County of San Diego Department of Environmental Health and RWQCB requirements. The proposed elementary school site in Village Three North is located outside of the 1,000-foot landfill nuisance easement area and would not be subject to air borne toxics as identified in the Health Risk Assessment (SCS 2014). Additionally, as described in Section 5.1 Land Use and Section 5.4 Air Quality only the northwestern most corner of the proposed elementary school site in

Village Three North would experience odors 200% to 400% (i.e., two to four times greater than) the baseline odor.

Further, as determined in the case *Ballona Wetlands Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, "An EIR must identify and analyze the significant environmental impacts that may result from the project (PRC Section § 21100(a)(b); Guidelines,§§ 15126.2(a), 15143). It must include facts and analysis sufficient to allow the decision makers and the public to understand the environmental consequences of the project. The analysis need not be exhaustive, but it must be reasonably complete and reflect a good faith effort at full disclosure (*Ballona Wetlands Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473-474)." The purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project.

Furthermore, the proposed project area is not located within a floodplain or on an unstable fault line that could result in significant geologic hazards. The project area 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 as possible. Conformance with all mitigation measures in Section 5.15, Hazards and Risk of Upset, and Section 5.11, Geology and Soils, would reduce any potentially significant impacts associated with the location and construction of school facilities. Thus, impacts according to the Otay Ranch GDP, the proposed project would have **less than significant** impacts.

C. Threshold 3. Would the project be inconsistent with General Plan, Otay Ranch GDP, and other objectives and policies regarding school services thereby resulting in a significant physical impact?

Appendix B, evaluates the consistency of the proposed project with the applicable General Plan and Otay Ranch GDP objectives and policies related to school facilities. In coordination with the City of Chula Vista and the CVESD, the proposed project has designated the locations of three elementary schools; one in Village Three North and Portion of Village Four, one in Village Eight East, and one in Village Ten. The proposed project has sited elementary schools adjacent to neighborhood parks, where feasible, to allow for expanded use of the school grounds and classrooms by the general public and the park area by the school children. In addition, new middle/high schools are planned within adjacent Otay Ranch villages to serve buildout of Otay Ranch, including the proposed project. A detailed analysis of the proposed project's consistency is provided in Appendix B.

As shown in Appendix B, Project Consistency with Applicable General Plan and Otay Ranch GDP School Facility Policies (see Appendix B), the proposed project would be consistent with the applicable policies. The Otay Ranch GDP objectives and policies 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**.

5.12.3.5 Level of Significance Prior to Mitigation

Prior to mitigation the proposed project would have **potentially significant** impacts associated with school facilities due to the increase in population, which subsequently increases the demand for school facilities.

5.12.3.6 Mitigation Measures

MM PUB-6 Prior to the issuance of each building permit for any residential dwelling units, the Applicant(s) shall provide evidence or certification by the Chula Vista Elementary School District (CVSD) that any fee charge, dedication or other requirement levied by the school district has been complied with or that the district has determined the fee, charge, dedication or other requirements do not apply to the construction or that the Applicant has entered into a school mitigation agreement. School Facility Mitigation Fees shall be in accordance with the fees in effect at the time of building permit issuance.

MM PUB-7 Prior to approval of a Final Map for private development on parcels S-1 in Village Three North, Village Eight East, and Village Ten, designated for future schools, the Applicant shall provide evidence from the CVESD that the site has been determined by the district to not be needed for future use as a school site.

5.12.3.7 Level of Significance After Mitigation

The proposed project includes 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 schools are provided in conjunction with build-out of the development.

Requiring payment of the school facility mitigation fees would aid in acquiring the additional resources to provide adequate school facilities necessary to accommodate existing and future residents. Therefore, MM PUB-6 and MM PUB-7would reduce potential direct and cumulative school impacts to **less than significant** levels.

5.12.4 Parks, Recreation, and Open Space

This subsection describes the existing park, recreation and open space facilities serving the City as well as existing policies that regulate their provision and assesses the potential for related impacts associated with implementation of the proposed project.

5.12.4.1 Regulatory Framework

Local Level

City of Chula Vista General Plan

The City of Chula Vista's open space and trail network abuts other regional open space areas and trails, including: the Bayshore Bikeway; California Riding and Hiking Trail; Sweetwater Valley trail system; future OVRP trail system; and the open space preserve in the eastern portion of Otay Ranch. The goals of the General Plan 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 park and recreation facilities for residents of new development (Objective PFS 15 and PFS 16). 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 (Objective E.11), including the preservation of open space and development of connecting trails. The City is committed to providing an integrated network of open space areas throughout the City to serve residents, as well as to serve as a regional asset and attractor of visitors. The City of Chula Vista has significant open space areas with a variety of natural resources. The City has taken a multi-track approach to the conservation and management of its open space resources. 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 park threshold standards (City of Chula Vista 2005a).

City of Chula Vista Municipal Code (CVMC) and Growth Management Ordinance

The City of Chula Vista park dedication policies and requirements are contained in CVMC, Section 17.10, Park Lands 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. The Park Land Dedication Ordinance 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 2013a).

CVMC Section 19.80.030 (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 specifically requires "three acres of neighborhood and community park land with appropriate facilities per 1,000 residents east of I-805." This section also requires a PFFP and demonstration that public services, such as parks, meet the Growth Management Ordinance's quality of life threshold standard for parks and recreation (City of Chula Vista 2013a).

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 Greenbelt 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 Greenbelt Trail segment has been added to the Greenbelt Master Plan as a major trail linkage. This trail presents an opportunity as a multi-use trail that would provide mobility for residents between several villages and connectivity between recreation areas in the University Villages project area and future parks along the Greenbelt Trail. According to the City of Chula Vista Greenbelt Maintenance Map, segments of Greenbelt Trail both future and proposed will run through the University Villages project (City of Chula Vista 2003b). The Village Greenbelt Trail is intended to connect active and passive users and provide them with the opportunity to stop and enjoy an enhanced open space paseo. Figure 5.12-11 illustrates the City of Chula Vista's greenbelts, open space, and network trails.

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 serves the community at large through the delivery of a variety of park sites containing a variety of recreational experiences. The Master Plan contains goals and policies that serve as a blueprint for creating a quality park system. The document establishes goals for the creation of a comprehensive parks and recreation system that meet the needs of the public by effectively distributing park types and associated recreation facilities and programs throughout the city (City of Chula Vista 2010).

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

The SPA Park Master Plans strive 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.

5.12.4.2 Existing Facilities

The Chula Vista park system contains 61 public parks and recreation facility sites, including nine community parks totaling 226 acres, 290 acres of neighborhood parks, 12 acres of urban and mini parks, one 3.4-acre special purpose park, four community centers, one senior center, four gymnasiums, and two swimming pools totaling approximately 530 acres (City of Chula Vista 2010). 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

SOURCE: CITY OF CHULA VISTA

FIGURE 5.12-11
Greenbelts, Open Space, and Network Trails

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Vista. The 2013 GMOC Annual Report indicated a parkland ratio of 3.1 acres per 1,000 residents in eastern Chula Vista (City of Chula Vista 2013d).

There are seven existing parks located proximate to the proposed project. These parks are Heritage Park and Community Center, Harvest Park, Santa Cora Park, Santa Venetia Park, Winding walk Park, All Seasons Park, and Cottonwood 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 River Valley, OVRP, and the Otay Reservoirs (City of Chula Vista 2005a). These facilities are described below and illustrated in Figure 5.12-12.

Neighborhood Parks

Heritage Park and Community Center, 1381 Palomar Street. This park encompasses 10.17 acres, facilities include an amphitheater, barbeque facilities, basketball courts, an open green space, a park shelter/gazebo, a picnic area, play equipment, recreation center, restrooms, a multi-purpose field, and skateboard park.

Harvest Park, 1550 East Palomar Street. This park encompasses 6.8 acres, facilities include barbeque facilities, an open green space/multi-purpose field, a park shelter/gazebo, picnic area, play equipment, restrooms, and a soccer field.

Santa Cora Park, 1365 Santa Cora. This park encompasses 5.7 acres, facilities include barbeque facilities, a tennis court, a basketball court, an open green space, a picnic area, and play equipment.

Santa Venetia Park, 1500 Magdalena. This park encompasses 7.7 acres, facilities include picnicking and barbeque facilities, an open green space, a park shelter/gazebo, play equipment, basketball courts, restrooms, a multi-purpose field, and ball field.

Windingwalk Park, 1675 Exploration Street. This park encompasses 7.1 acres, facilities include picnicking and barbeque facilities, an open green space, a park shelter/gazebo, play equipment, restrooms, a ball field, a basketball court, and a tennis court.

Cottonwood Park, 1778 East Palomar Street. This park encompasses 6.57acres, facilities include barbeque facilities, a ball field, a basketball court, an open green space, a park shelter/gazebo, picnic areas, play equipment, restrooms, and a multi-purpose field.

Regional and County Parks and Otay Ranch Preserve

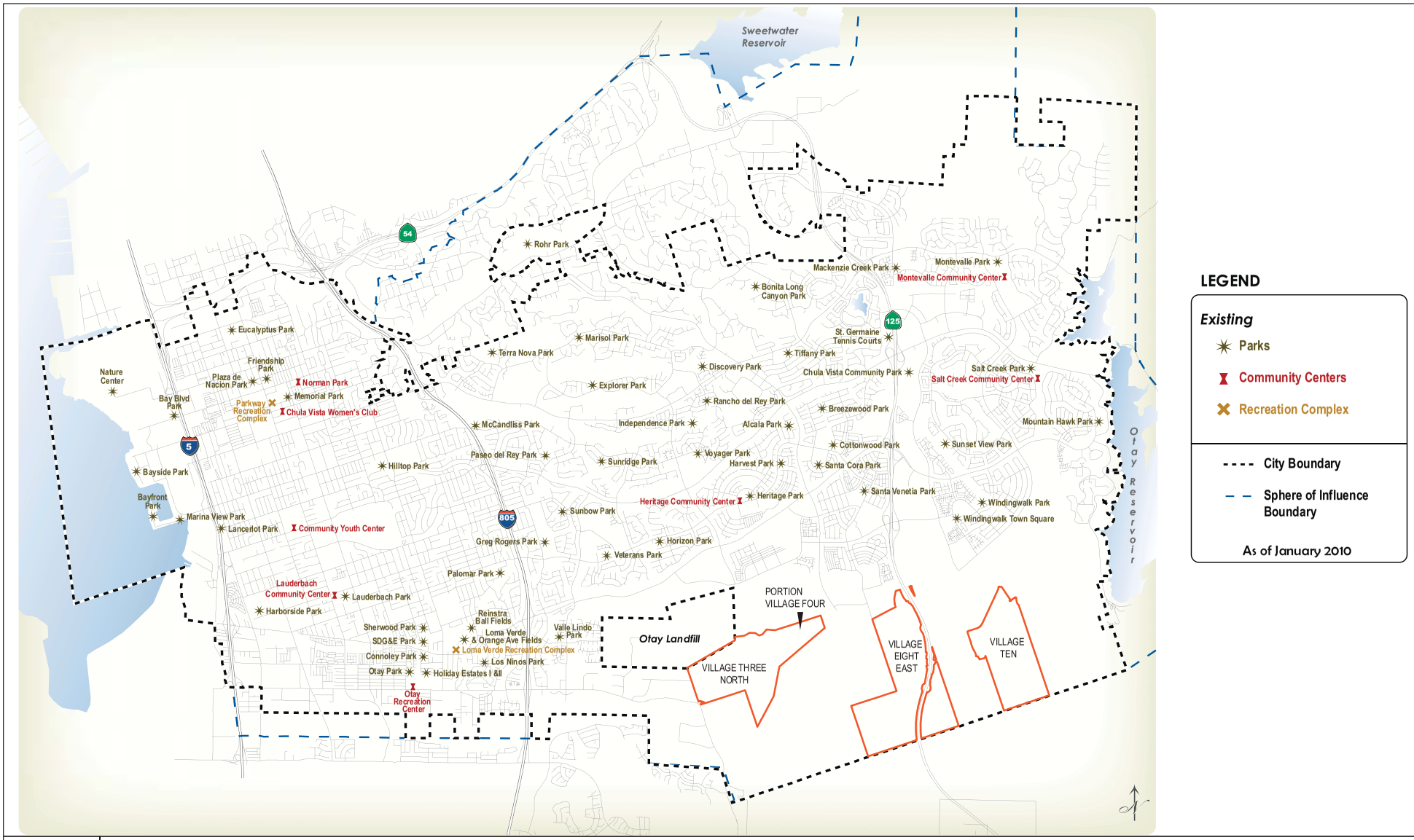
***Otay Valley Regional Park*.** This park is bisected by the SR-125. The OVRP will ultimately encompass 8,000 acres passing through the jurisdictions of the County of San Diego and cities of San Diego and Chula Vista. The regional park is located in the Multiple Habitat Planning Area of the city of 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 OVRP.

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.

General Plan 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.



SOURCE: CITY OF CHULA VISTA 2010

FIGURE 5.12-12
Existing Public Park and Recreation Facilities

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5.12.4.3 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. 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, Otay Ranch GDP or other relevant objectives and policies regarding parks thereby resulting in a significant physical impact.

5.12.4.4 Impacts

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 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. The PLDO requires three acres of neighborhood and community park per 1,000 residents. In addition, the Otay Ranch GDP requires the provision of regional parks and open space at a ratio of 12 acres to every 1,000 residents.

Though the proposed project would potentially increase the use of existing and proposed regional and neighborhood parks and would generate increased demand for parks and recreation facilities the proposed project would provide parks and recreational facilities to serve the population generated by the proposed project. According to the Otay Ranch GDP and the Quimby Act, the project would be required to provide three acres of neighborhood and community parkland for every 1,000 residents based on the population coefficient of 3.24 persons per household, as depicted in Table 5.12-8.

Table 5.12-8
Park Acreage Demand by Village per Otay Ranch GDP

Village	Residential Units	Pop.	Local Park Demand 3 ac/1,000 persons	Parks Identified within Project Area (net ac)
Village Three North and a Portion of Four				
SF	1,002	3,247	9.7	P-1 6.7 ac
MF	595	1,926	5.8	P-2 15.6 ac
Subtotal	*1,597*	*5,174*	*15.5*	*22.3 ac.*
Village Eight East				
SF	943	3,055	9.2	P-1 6.8 ac
MF	2,617	8,479	25.4	P-2 40.0 ac
Subtotal	*3,560*	*11,534*	*34.6*	*46.8 ac.*
Village Ten				
SF	695	2,252	6.8	P-1 6.6 ac
MF	1,045	3,386	10.2	
Subtotal	*1,740*	*5,638*	*16.9*	*6.6 ac*
Total	**6,897**	**22,346**	**67.0**	**75.7 ac**

As presented in Table 5.12-9, Park Acreage Demand by Village per PLDO, the method used to calculate the amount of actual park land required is 460 square feet of developed park per each single-family unit and 341 square feet per each multi-family unit. According to this methodology, the proposed project would be obligated to provide a total of 61.3 acres of parkland (Village Three North – 15.3 acres, Village Eight East – 30.5 acres, and Village Ten – 15.5 acres). The project would exceed the requirements of the Otay Ranch GDP, the Quimby Act, and the PLDO. The project would identify a total of 75.7 acres of parkland eligible for park credit (not including the Active recreation Area (AR-11) site east of SR-125), of which 61.3 acres is needed to satisfy the project parkland obligation. The project also includes approximately 620.1 acres of open space and provides key segments of the Chula Vista Greenbelt Trail through the Otay River Valley. 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 pay the recreation portion of the PFDIF which provides for development of major recreational facilities, including community centers and aquatic facilities.

Table 5.12-9
Park Acreage Demand by Village per PLDO

Village	Residential Units	Pop.	Local Park Demand 460 sq ft/SF 341 sq ft/MF	Parks Identified within Project Area (net ac)
Village Three North and a Portion of Four				
SF	1,002	3,247	10.6	P-1 6.7 ac
MF	595	1,926	4.7	P-2 15.6 ac
Subtotal	*1,597*	*5,174*	*15.3*	*22.3 ac,*
Village Eight East				
SF	943	3,055	10.0	P-1 6.8 ac
MF	2,617	8,414	20.5	P-2 40.0 ac
Subtotal	*3,560*	*11,534*	*30.5*	*46.8 ac.*
Village Ten				
SF	695	2,252	7.3	P-1 6.6 ac
MF	1,045	3,386	8.2	
Subtotal	*1,740*	*5,638*	*15.5*	*6.6 ac*
Total	**6,897**	**22,346**	**61.3**	**75.7 ac**

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 (P-2) represents the aggregation of park obligation from area villages. The portion of the future community park located within Village Four represents aggregated park acreage obligations from Village Three North and Village Ten. In addition, the Village Eight East Community Park (P-2) represents aggregated park acreage obligations from Village Eight East and Village Ten. After the aggregated park acreage obligations for the proposed project are meet (approximately 61.3 acres), the developer would have approximately 15.3 acres of excess parkland credits.

Furthermore, although Village Ten contains a neighborhood park site capable of meeting a portion of the overall Village Ten park acreage obligation, additional park acreage within acceptable service radii would be necessary to demonstrate full compliance. The Otay Ranch GDP characterizes community parks as serving residents of multiple villages within an approximate radius of one to two miles. The planned community park in Village Eight East is within the acceptable service radius of Village Ten residents and adequate park acreage not committed to serving Village Eight East would be available to meet the park obligation generated by Village Ten's residents thereby demonstrating full park obligation compliance for Village Ten.

In addition, the proposed project includes segments of the Chula Vista Greenbelt Trail and OVRP Trail within Village Three North, Village Eight East, and Village Ten. Section 5.8 Biological Resources, analyzes the potential impacts from these future facilities and their compliance with the MSCP Subarea Plan. In total, approximately 1.3 miles of the Greenbelt and OVRP Trails are provided within the project site. The trail would be open to bicycles, pedestrians and other non-motorized modes of transportation. Connections to this trail would be provided by the regional trail along Main Street in Village Three North. The Village Eight East connection is provided along the Community Park (P-2) Entry Drive and Community Park Paseo located south of Village Eight East. The Village Eight East Community Park (P-2) incorporates direct points of connection to the Chula Vista Greenbelt Trail within the OVRP. A Connector Trail is planned from the eastern portion of Village Ten to the Greenbelt Trail within Salt Creek. Internal trail connections provide linkages between villages, consistent with the Greenbelt Master Plan. The Village Pathway links the villages to adjacent villages along a 10-foot wide concrete path. Implementation of the Greenbelt Trail within preserve area would be consistent with the requirements of the Chula Vista MSCP and Otay Ranch RMP to protect natural habitat. Additionally, the trail improvements would include fencing and signage to discourage encroachment into the surrounding natural area, and may include trail grooming and erosion control.

The segments of the Greenbelt and OVRP Trails provided as part of the project are located primarily within the existing Salt Creek Sewer Easement, which consists of a natural soil, pervious surface. The project does not propose changes to the surface improvements within the Easement to implement the Greenbelt and OVRP Trails. Potentially significant contamination of resources would not occur because the Greenbelt and OVRP Trail's pervious surface facilitates self-treating of storm water runoff prior to out letting into the adjacent OVRP. The Village Ten Connector Trail is located within the disturbed footprint of an existing dirt road comprised of a native soil surface. This trail is also pervious and storm water runoff is self-treating prior to out-letting into Salt Creek.

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. However, the proposed project would increase the use of existing neighborhood parks and recreational facilities; therefore, impacts would be **potentially 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, 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. The PLDO requires three acres of neighborhood and community park per 1,000 residents. The development of parks and trails is a component of the proposed SPA Plans and TMs. Construction of parks and open space would occur within the proposed project and would not directly impact off-site areas, including adjacent villages, regional open space or habitat areas, with the exception of the provision of the trail connection from Village Ten to the Chula Vista Greenbelt Trail located with the Salt Creek Preserve Area. Although final site and improvement plans for the proposed parks have not been developed, Chapter 5.0 of this EIR addresses grading and general operational impacts (such as lighting and noise) associated with the parks.

Payment of the recreation portion of the DIF would be used for the development of major recreational facilities, including community centers, and aquatic facilities. Mitigation measures provided through Chapter 5 of this EIR would reduce potential impacts associated with the construction of recreational facilities to a **less than significant** level.

C. 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 residents east of I-805.

As discussed above under Threshold A, according to CVMC Section 17.10, the method used to calculate the amount of actual required park land is 460 square feet of developed park land per single-family unit and 341 square feet per multi-family unit. According to this method, the proposed project would be obligated to provide approximately 61.3 acres of parkland. Village Three North and a Portion of Village Four would provide 22.3 acres of park land, Village Eight East would provide 46.8 acres of park land, and Village Ten would provide 6.6 acres of park land. The SPAs and TMs, in the aggregate, would exceed the City's threshold for parkland following implementation of the proposed parks.

Additionally, in concert with the PLDO, the City of Chula Vista 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, both the Village Four Community Park (P-2) and the Village Eight East Community Park (P-2) represent aggregated park acreages from Village Three North, Village Eight East, and Village Ten. If construction of new parks would not coincide with development of residences within the proposed project, a potentially significant impact would occur.

The proposed project would be in compliance with all applicable rules and regulations regarding parks and recreational facilities and impacts would be **less than significant**.

D. Be inconsistent with General Plan, Otay Ranch GDP or other relevant objectives and policies regarding parks thereby resulting in a significant physical impact.

Chula Vista General Plan

Project Consistency with Applicable General Plan Objectives and Policies Table, found in Appendix B, evaluates the consistency of the project with the applicable objectives and policies related to parks, recreation, and open space. The proposed project is consistent with General Plan because new park and recreation facilities are provided, active and passive recreational uses are provided, and a plan for the long-term preservation and enhancement of open space within the Chula Vista Greenbelt is provided. A detailed analysis of the proposed project's consistency with the General Plan is found in Appendix B.

Otay Ranch General Development Plan

Appendix B evaluates the consistency of the proposed project with applicable Otay Ranch GDP Parks, Recreation and Open Space objectives and policies. The project proposes diverse park and recreational opportunities to meet the recreational, conservation, preservation, cultural and aesthetic needs of all residents. A variety of recreational elements and opportunities for future residents are provided throughout the project. The SPA Park Master Plans identify the proposed types, quantities and location of the facilities provided at each park site within each SPA Plan areas. As shown in Appendix B, the proposed project would be consistent with the Otay Ranch GDP policies related to park, recreation, and open space. A detailed analysis of the proposed project's consistency with the Otay Ranch GDP is found in Appendix B.

Chula Vista Greenbelt Master Plan

The proposed project includes segments of the Chula Vista Greenbelt Trail within Village Three North, Village Eight East, and Village Ten. In total, approximately 1.3 miles of the Greenbelt Trails are provided within the project site. The trail would be open to bicycles, pedestrians and other non-motorized modes of transportation. Connections to this trail would be provided by the regional trail along Main Street in Village Three North. The Village Eight East connection is provided along the Community Park (P-2) Entry Drive and Community Park Paseo located south of Village Eight East. The Village Eight East Community Park (P-2) incorporates two direct points of connection to the Chula Vista Greenbelt Trail within the OVRP. A Connector Trail is planned from the eastern portion of Village Ten to the Greenbelt Trail within Salt Creek. Internal trail connections provide linkages between villages, consistent with the Greenbelt Master Plan. The Village Pathways link the villages to adjacent villages along a 10-foot wide concrete path.

As presented in Table 5.12-10, the project would be consistent with the Greenbelt Master Plan (GMP) 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 whenever possible and to provide other amenities that enhance the greenbelt system. Therefore, the project would be consistent with the applicable GMP policies and would have a less than significant impact with respect to city threshold standards.

Table 5.12-10
Comparison of the SPA Plans to Applicable Greenbelt Master Plan Goals and Policies

Greenbelt Master Plan Goal	Evaluation of Consistency
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.	Consistent. The SPA Plans and TMs would implement a trails program pursuant to the General Plan, Otay Ranch GDP, OVRP Concept Plan and Greenbelt Master Plan. The SPA Plans recognize that the provision of bicycle and pedestrian circulation is fundamental to creating pedestrian-oriented communities and integrating the unique historic and cultural resources, open space areas, creeks and trails. The Greenbelt trails are to be multiuse trails that will include improvements and linkages to and from each village. Each village encompasses distinct segments of the Greenbelt Trail located within the OVRP. Village Three North includes two small segments south of Village Three; Village Eight East includes the segment within the existing Salt Creek Sewer Easement located south of the Village Eight East Active Recreation area (AR-11); and Village Ten includes the segment within the existing Salt Creek Sewer Easement south and east of Village Ten. Improvements such as signage and fencing would be included within these trail segments. These segments provide a variety of trail and recreation experiences from west to east; transitioning from a more urban experience near the intersection of Main Street and Heritage Road; east to the Village Eight East Community Park (P-2); and further east to the more natural open space areas within the eastern portion of the Otay River Valley and Salt Creek. Each village contains a hierarchical trail system that connects to the regional trail network established in the GP, Otay Ranch GDP and Greenbelt Master Plan. Segments of the Chula Vista Regional Trail System, consisting of a 10' concrete or decomposed granite surface, would be provided along circulation element roadways including, Heritage Road, Main Street, Otay Valley Road and the Community Park Entry Drive. The internal village trail system provides connections within each village to the regional trails. Village Pathways are intervillage, multi-purpose trails that link all of the Otay Valley Parcel villages and provide access to the regional transit stations. Village Pathways, consisting of a 10-foot-wide colored concrete path, would be provided through the village cores within Villages Three North, Eight East, and Ten. Promenade trails consist of a 6-foot-wide concrete internal trail separated from the street by landscaped, tree-lined parkways and special pedestrian-scaled lighting, connect village neighborhoods to the village core. These trails would

Table 5.12-10 (Continued)
Comparison of the SPA Plans to the Greenbelt Master Plan Goals and Policies

Greenbelt Master Plan Goal	Evaluation of Consistency
	provide connections to neighborhood parks , the Village Four Community Park (P-2), the Village Eight East Community Park (P-2), proposed school sites, the greenbelt trail and the Otay Ranch Preserve. The width of the trails and connectivity to several park areas would accommodate and allow access to destination uses and activity areas throughout the project. These trails would accommodate pedestrians and bicyclists.
Goal 2.0: To provide connected open space surrounding Chula Vista to enhance the natural beauty and to preserve native biological and cultural resources as well as sensitive habitats.	Consistent. The project would incorporate segments of the Greenbelt Trail that would ultimately provide connectivity between the villages and the natural habitats in Salt Creek, Wolf Canyon, and the Otay River Valley.
Policy 2.1: The City of Chula Vista will strive to ensure the protection of the natural habitat from encroachment of trail users through education, fencing, signing, and design.	Consistent. Implementation of the Greenbelt Trail within preserve area would be consistent with the requirements of the Chula Vista MSCP and Otay Ranch RMP to protect natural habitat. Additionally, the trail improvements would include fencing and signage to discourage encroachment into the surrounding natural area.
Policy 2.5: The city will locate trails in areas that avoid or minimize conflicts with natural resources.	Consistent. The biological resource mitigation measures would reduce all impacts to sensitive natural resources from buildout of the project to a less than significant level, including proposed trails. In addition to the proposed Connector Trail in the Village Ten Preserve area would be consistent with the requirements of the Chula Vista MSCP and Otay Ranch RMP to protect natural habitat.
Policy 2.6: All proposed trails shall adhere to guidelines contained within the city-adopted MSCP as well as stipulations contained in other mitigation agreements.	Consistent. The proposed trail in the Village Ten Preserve area, as well as proposed trails in Village Three North and Village Eight East would be consistent with the requirements of the Chula Vista MSCP and Otay Ranch RMP.
Policy 2.7: Impervious trails should be avoided in watershed and flood plain areas where potential contamination of resources could occur.	Consistent. The segments of the Greenbelt Trail provided as part of the project are located primarily within the existing Salt Creek Sewer Easement, which consists of a natural soil, pervious surface. The project does not propose changes to the surface improvements within the Easement to implement the Greenbelt Trail. Potentially significant contamination of resources would not occur because the Greenbelt Trail's pervious surface facilitates self-treating of storm water runoff prior to out letting into the adjacent Otay River Valley. The Village Ten Connector Trail is located within the disturbed footprint of an existing dirt road comprised of a native soil surface. This trail is also pervious and storm water runoff is self-treating prior to out letting into Salt Creek.
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.	Consistent. Segments of the Greenbelt Trail included within the project provide a variety of trail and recreation experiences from west to east; transitioning from a more urban experience near the intersection of Main Street and Heritage Road; east to the Village Eight East Community Park (P-2); and further east to the more natural open space areas within the eastern portion of the Otay River Valley and Salt Creek.

Table 5.12-10 (Continued)
Comparison of the SPA Plans to the Applicable Greenbelt Master Plan Goals and Policies

Greenbelt Master Plan Goal	Evaluation of Consistency
Policy 3.1: The city will actively pursue open space programs and develop trail links connecting to parks and regional trails.	**Consistent.** The project would support this policy through implementation of the Greenbelt Trail, regional trails, and internal village trail network, as previously discussed under Goal 3.0.
Policy 3.2: The city will design trails that will accommodate a wide range of number of users anticipated.	**Consistent.** Please refer to Goal 1.0, above.
Policy 3.3: The city will develop a greenbelt system that offers a variety of active and passive recreation experiences.	**Consistent.** Please refer to Goal 1.0, above.
Policy 3.4: The city will develop trails, wherever possible, which provide for accessibility for all, including those with disabilities.	**Consistent.** As the village pathway and regional trail would take the form of major pathways throughout the project, these facilities would be consistent with all state-mandated ADA requirements.
Policy 3.5: The city will locate staging areas, parking areas, and other amenities in areas that enhance the greenbelt system.	**Consistent.** The conceptual design for the Village Three North, Village Eight East, and Village Ten Community Parks provide parking, comfort stations, group picnic facilities and active sports fields that serve as staging areas for the OVRP and the Chula Vista Greenbelt Trail. Vehicular access is provided from Otay Valley Road along the Community Park (P-2) Access Drive. Additional pedestrian and emergency access is provided along the Community Park (P-2) Paseo located adjacent to SR-125. Additional pedestrian access is planned along the southern perimeter, providing key links to the Chula Vista Greenbelt Trail.
Goal 4.0: To provide a Greenbelt system that receives the necessary resources for open space acquisition, park and trail development, maintenance, and to establish volunteer programs.	**Consistent.** The SPA Plan provides the necessary resources for acquisition and development of a greenbelt system throughout the project. The SPA Plans include village pathways and regional trails throughout each village, which would be privately developed concurrently with the phased development of the project, would be acquired by the city as public sidewalks. Maintenance districts or other mechanisms may be established to ensure proper management and maintenance. The internal trails would connect to the greenbelt trail system to the south and future trails within adjacent villages to the east and west of the site.
Policy 4.4: The city will collaborate with private organizations for constructing, maintaining, and monitoring trails.	**Consistent.** The project would support this policy through the private development of the Chula Vista Greenbelt Trail, Village Pathway and regional trail, and the Greenbelt Connector trail (Village Ten).

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. As described in Appendix B, the proposed 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 Three North and a Portion of Village Four, Village Eight East, and Village Ten. As presented in Appendix B, Comparison of the SPA Plans to the Applicable Parks and Recreation Master Plan Policies, the proposed project would be generally consistent with the Parks and Recreation Master Plan through implementation of the SPA Plans and would have a less than significant impact with respect to the City's PLDO threshold standards.

As shown in Table 5.12-11, the proposed project would be consistent with the applicable policies related to parks, recreation, and open space found in the General Plan, Otay Ranch GDP, Chula Vista Greenbelt Master Plan, and the Chula Vista Parks and Recreation Master Plan. Therefore, impacts associated with the proposed project would be **less than significant**.

Table 5.12-11
Comparison of the SPA Plans to the Applicable Park and Recreation Master Plan Policies

Parks and Recreation Master Plan Policy	Project Consistency
Policy 1.11. The city will require new community parks and neighborhood parks in the developing master plan communities to be distributed and sized in accordance with the following table in order to maintain a balanced system for both community parks and satellite neighborhood parks. • Village Four Community Park – 70 acres • Village Eight East Active Recreation Area (P-2) – 55 acres • Village Three North Neighborhood Park – 7.0 acres • Village Eight East Neighborhood Park – 7.0 acres • Village Ten Neighborhood Park – 7.0 acres • Active Recreation No. 11 (OVRP) – 10–20 acres	**Consistent.** The project would be generally consistent with the PRMP because the project would provide community and neighborhood parkland and Private Recreation Facilities (PFR) as follows: • The project provides 17.8 acres of the 70-acre Village Four Community Park described in the PRMP. • The project proposes to designate the portion of Active Recreation area (AR-11) west of SR-125 as the Village Eight East Community Park (P-2)and provides 51.5 acres of parkland for implementation of the active recreation park. • An additional 22.6 acres of Active Recreation area (AR-11) east of SR-125 remains available for future development as an active recreation area • The project would provide a 7.9 acre neighborhood park within Village Three North. In addition, 1.6 acres of PFRs would be provided. • The project would provide a 7.3 acre neighborhood park within Village Eight East. In addition, 1.6 acres of PFRs would be provided • The project would provide a 7.6 acre neighborhood park within Village Ten. In addition, 1.7 acres of PFRs would be provided. Minor changes to individual neighborhood and community park sizes are reflected in the proposed project based on refinements to the SPA Plans and due to aggregating park lands within the proposed community parks. Therefore, the project is consistent with the PRMP defined range of recreational experiences anticipated to serve the demands of project residents.

Table 5.12-11 (Continued)
Comparison of the SPA Plans to the Applicable Park and Recreation Master Plan Policies

Parks and Recreation Master Plan Policy	Project Consistency
Policy 1.12: Community parks are redefined as a community park has a minimum net-useable area of 30-acres or more, which is designed to serve more than one neighborhood. The minimum acreage for future community parks, that already have an approved GDP/SPA or are in the Western part of the city, may be waived if the city determines that existing land use constraints prevent development of a 30 acre park. Typical facilities contained in a community park include lighted ball fields and courts, recreation complexes, and parking areas as needed for programmed uses. The field areas provided shall be of a flexible design so they can be scheduled primarily for	**Consistent.** The proposed community parks (Village Four and Village Eight East) would be consistent with Policy 1.12 and Policy 1.14 because they would have useable areas of more than 30 acres, would serve more than one neighborhood and would include a variety of facilities, including play fields, picnic facilities and play areas. The SPA Plans provide conceptual plans for each park facilities which comply with the PRMP facility requirements. However, actual site development may vary from the concept plans.
Policy 1.14: The city will require the following primary facilities and support facilities to be located in future community parks. **Primary Facilities:** Athletic field(s) with lighting, hard court(s) with lighting, picnic shelters, picnic tables, play area with play equipment, in-season league storage area(s), restrooms, maintenance building, community center building and at least two recreation components from the following: gymnasium, gymatorium, community pool, senior annex, or teen annex. **Support Facilities:** Open lawn areas, paved walkways with lighting, parking areas with lighting	
Policy 1.15: Community parks shall be sited adjacent to middle schools where feasible.	**Consistent.** The project would be consistent with this policy because the Village Four Community Park (P-2) and future middle school would both be located along La Media Road, in close proximity. It is infeasible to site the Village Eight East Community Park (P-2) adjacent to a middle school because the Community Park (P-2) is located within the OVRP and there are no middle school planned in the vicinity.
Policy 1.16: Neighborhood park is redefined as a 7-acre (minimum net-useable area) to twelve-acre (maximum net-useable area) sized park that primarily provides for the daily recreation needs of residents within walking distance (approximately ½ to ¾ mile) of the park. Typical facilities contained in a neighborhood park include children's play area, picnic facilities, restroom facilities, informal field areas, hard courts and parking spaces. The field areas provided shall be of a flexible design so that they can be scheduled for informal use, but also for practice games and competition games. Where possible, a neighborhood park should adjoin a school district site to enable the development of joint use policies. **Policy 1.18:** The city will require the following primary facilities and support facilities to be located in future neighborhood parks: **Primary Facilities:** Athletic field(s), hard court(s), picnic shelters, picnic tables, play areas with play equipment and restrooms. **Support Facilities:** Open lawn areas, paved walkways with lighting, maintenance building.	**Consistent.** The project would be generally consistent with these policies because the project would meet the PLDO requirement to provide 3 acres of parkland per 1,000 residents through dedication of 61.3 acres of public park land and identifying 76.6 acres of public park land within the project area (of which 61.3 acres is needed to meet the project park obligation). Minor changes to individual neighborhood and community park sizes is reflected in the proposed project based on refinements to the SPA Plans and due to aggregating park lands within the proposed community parks.

Table 5.12-11 (Continued)
Comparison of the SPA Plans to the Applicable Park and Recreation Master Plan Policies

Parks and Recreation Master Plan Policy	Project Consistency
Policy 1.19: Neighborhood parks will be sited adjacent to elementary and middle schools where feasible.	**Consistent.** The project would be consistent with this policy because the neighborhood parks within Village Three North, Village Eight East and Village Ten are located adjacent to proposed elementary school sites.
Policy 1.21: The city will promote and facilitate the integration of public are in Chula Vista Parks.	**Consistent.** The project would be consistent with this policy because the SPA Plans promote the use of public art in public areas such as mixed use commercial, public parks and community purpose facility uses.

5.12.4.5 Level of Significance Prior to Mitigation

The proposed project would increase the use of existing neighborhood parks and recreational facilities. The following sections and mitigation measures address physical impacts associated with construction with parks and recreational facilities: Section 5.1 Landforms and Aesthetics addresses lighting for ball fields (MM AES-2); Section 5.3 Traffic and Circulation addresses average trips and park access; Section 5.4 Air Quality addresses construction emissions; Section 5.5 Noise addresses noise impacts from park users (MM NOI-6); Section 5.8 Biological Resources addresses indirect impacts from noise to sensitive biological resources (MM BIO-18); and Section 5.10 Hydrology and Water Quality addresses runoff. Prior to mitigation the proposed project would have potentially significant impacts associated with parks, recreation, and open space facilities.

5.12.4.6 Mitigation Measures

MM PUB-8 Prior to the approval of each Final Map for the project, or, for any residential development within the project that does not require a Final Map, prior to building permit approval, the Applicant shall either dedicate parkland and/or pay applicable Park Acquisition and Development in-lieu fees in accordance with the phasing indicated in the project's approved SPA Plan, the PFFP, and a park agreement, if any, subject to approval of the Development Services Director or their designee. In-lieu fees shall be based on the Park Acquisition and Development fees in effect at the time of issuance of building permits, unless stated otherwise in a parks or development agreement.

MM PUB-9 Prior to the issuance of each building permit for any residential dwelling units, the Applicant shall pay recreation facility development impact fees (part of the Public Facilities Development Impact Fee) in accordance with the fees in effect at the time

of building permit issuance and phasing approved in the Public Facilities Finance Plan, subject to approval of the Development Services Director or their designee.

MM PUB-10 Prior to the approval of the first Final Map for each village (Village Three North, Village Eight East, and Village Ten) the Applicant shall enter into an agreement with the City that provide the following: phased dedication of public park sites, payment of Park Improvement Fees, schedule for completion of improvements, including utilities to streets adjacent to the park sites, all to the satisfaction of the Development Services Director or their designee. Under the current method for delivery of new parks the City will award a design-build contract for the project's neighborhood park. The agreement will include provisions that in the event the City chooses not to go forward with a design-build contract, the Applicant will be obligated to fully comply with the Parkland Ordinance and park threshold standards by constructing the parks in accordance with all City standards and under a time schedule as specified in the agreement.

PUB-11 Prior to approval of the first Final Map for each Village, the Applicant shall offer for dedication all public parkland identified in the Project's approved SPA Plan, or as approved by the Development Services Director or their designee. Park facilities required to meet the overall park obligation shall be identified on the first Final Map and shall be publically accessible.

PUB-12 The Applicant shall comply with the Threshold Compliance and Recommendations contained within the PFFPs for Village Three North and Portion of Village Four, Village Eight East and Village Ten.

PUB-13 Prior to the Final Map containing the 1,313th EDU in Village Eight East, the Applicant shall secure and agree to construct the Village 8 East Community Park (P-2) Access Road from Otay Valley Road to the Community Park (P-2). Prior to the issuance of the Final Map containing the 1,313th EDU, the Applicant shall submit to the City and obtain approval for improvement plans for the Community Park (P-2) access road to the satisfaction of the Development Services Director (or their designee). The Community Park (P-2) Access Road shall be completed prior to the issuance of the Final Map containing the 1,929th EDU in Village Eight East.

5.12.4.7 Level of Significance After Mitigation

The proposed project includes development standards, and the City's General Plan and Otay Ranch GDP include policies and measures to ensure that adequate public facilities and services such as parks, recreation, and open space facilities are provided in conjunction with build-out of the development. With implementation of the mitigation measures above, impacts to parks, recreation, and open space facilities would be **less than significant**.

5.12.5 Library

5.12.5.1 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 2005a).

Otay Ranch General Development Plan

The purpose of the Library Facility section of the Otay Ranch GDP is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of library facilities. The Otay Ranch GDP goal is to provide sufficient libraries to meet the information and education needs of Otay Ranch residents. In addition, the Otay Ranch 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 Otay Ranch GDP also states that expansion of other libraries may be necessary (City of Chula Vista 2005b).

City of Chula Vista Library Facilities Master Plan

The purpose of the Chula Vista Public Library Facilities Master Plan is to identify ways to improve library service delivery to the community, particularly to residents of eastern Chula Vista. The Master Plan was developed in 1998 to make recommendations for the future development of the Chula Vista Public Library (CVPL) as surrounding areas continue to grow. The recommendations set forth in the Master Plan include the construction of a full service regional library facility east of I-805 as soon as possible, development of the Rancho del Rey Branch as the next library facility, and planning for a second library facility. Due to the project growth in the Otay Ranch area, the Master Plan states that the EUC "represents an excellent opportunity to establish a library site" (City of Chula Vista 2008).

City of Chula Vista Public Library Strategic Facilities Plan

The CVPL Strategic Facilities Plan is intended as a foundation for the City and the Library in planning the future of library facilities in Chula Vista. The CVPL Strategic Facilities Plan includes goals and objectives for implementing the library's vision and mission. These goals include maintaining an excellent and responsive materials collection, ensuring a high quality of public library services through appropriate planning processes, ensuring that library programs and services are accessible to the broadest range of potential users, and increasing the visibility and community awareness of the library, its services, programs, and funding needs (City of Chula Vista 2011).

Chula Vista Municipal Code Ordinances

CVMC Section 19.80.030 (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 specifically requires "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 2013a).

5.12.5.2 Existing Facilities

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 7 miles from the project 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 facility 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 five miles from the project 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, approximately one mile from the project and consists of approximately 3,400 square feet and one small study room.

In addition to the existing libraries described above, the current Library Facilities Master 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 three 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 379 square feet for every 1,000 residents. Therefore, the city does not current meet the GMOC threshold for libraries.

5.12.5.3 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. 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, Otay Ranch GDP or other objectives and policies regarding library services thereby resulting in a significant physical impact.

5.12.5.4 Impacts

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?

At buildout the proposed project would result in an incremental increase in the local demand for library facilities. While the SPA Plans conditionally permit civic facilities, such as a library, the proposed project does not specifically include the development of a library. The construction

impacts of general development in the proposed project would be generally similar to impacts from construction of a library and are evaluated in the various topical sections in Chapter 5, Environmental Impact Analysis, of this EIR, along with mitigation measures to address significant impacts. As discussed in this EIR, project construction impacts would be less than significant for air emissions from building construction, noise, cultural resources, biological resources, hydrology and water quality. Significant and unavoidable construction air emissions from mass grading, surface improvements and simultaneous construction would occur as a result of development across the entire project site and would occur whether or not the proposed development would include civic facilities. Further environmental review would be required if a specific facility is proposed, but such facilities are not proposed as part of the proposed project.

The growth management ordinance establishes a threshold standard of 500 square feet of adequately equipped and staffed library facilities per 1,000 residents. The proposed project would generate demand for approximately 11,000 square feet of additional library facilities within the city. While the SPA Plans permit public/quasi-public uses such as libraries within the SPA Plan areas, the proposed project does not specifically include the development of a library. However, as discussed in the EUC SPA Plan a site for a future approximately 30,000 square foot library has been approved within the Civic Core of the EUC SPA Plan area. The planned library in the Civic Core of the EUC would provide sufficient library space for Otay Ranch residents in accordance with existing Growth Management Ordinance standards and would provide additional library facilities in the EUC SPA Plan area as envisioned in the Library Master Plan. The addition of 30,000 gross square of additional library space would accommodate the increased population resulting from development of the proposed project and maintain acceptable service ratios. Impacts as a result of the proposed project would be **less than significant**.

B. Would 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 a demand for approximately 11,000 square feet of additional library facilities within the city. As discussed above, the city does not currently meet the growth management ordinance's threshold standard of 500 square feet of library facilities for every 1,000 residents. As previously discussed, a new 30,000 square foot library has been approved for the Civic Core of the EUC and would adequately provide sufficient library space for Otay Ranch residents in accordance with GMO standards

Implementation of the proposed project would require payment of the City's PFDIF. The proposed project's PFFPs analyze the demand for library space in the City and demonstrate how the proposed project complies with the growth management ordinance's threshold standard for library facilities. It 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, which is more conservative than the growth management ordinance's threshold standard of 500 square feet 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 CVPL 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.

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, including operation and maintenance, associated with providing library services and other public services such as parks, police and fire protection, etc. The PFFPs prepared for the SPA Plans include a fiscal impact analysis to determine the revenues and costs expected to be generated by the development. Net revenues are used to finance costs associated with operations and maintenance for public services required to serve the project. Additionally, the GMOC assesses, on an annual basis, compliance with the growth management threshold standards. Should the GMOC determine that the library growth management threshold standard is not being met because of the impacts of growth, the City Council shall consider adopting specific measures to meet the threshold. As previously stated, the proposed project would fail to meet the City's threshold standard of 500 gross square feet of library space per 1,000 population. Funding for required facilities would be necessary to reduce impacts on operations and maintenance of library facilities to less than significant. Future library facilities would be funded in part by payment of the PFDIF. Therefore, prior to payment of the PFDIF, impacts to library facilities would be **potentially significant** and mitigation would be required.

C. Would the project be inconsistent with General Plan, Otay Ranch GDP or other objectives and policies regarding library services thereby resulting in a significant physical impact?

Project Consistency with Applicable General Plan and Otay Ranch GDP Library Policies Table, found in Appendix B, evaluates the consistency of the project with the applicable objectives and policies related to Library facilities. Appendix B also evaluates proposed project consistency with the Otay Ranch GDP. The proposed project would generate demand for approximately 11,000 square feet of additional library facilities within the city. As discussed in the EUC SPA Plan, a site for a future approximately 30,000 square foot library has been approved within the Civic Core of the EUC SPA Plan area. The planned library in the Civic Core of the EUC would provide sufficient library space for EUC residents in accordance with existing Growth Management Ordinance standards and would provide additional library facilities in the EUC

SPA Plan area as envisioned in the Library Master Plan. The addition of 30,000 gross square of library space, would accommodate the increased population resulting from development of the proposed project and maintain acceptable service ratios.

Consistent with the General Plan and the Otay Ranch GDP, the proposed project will satisfy the demand for library facilities through participation in the City's PFDIF as identified in the PFFPs. As shown in Appendix B, the proposed project would be consistent with the applicable objectives and policies in the General Plan and the Otay Ranch GDP related to library facilities. Impacts associated with the proposed project would be **less than significant**.

5.12.5.5 Level of Significance Prior to Mitigation

The proposed project would fail to meet the City's threshold standard of 500 gross square feet of library space per 1,000 population. Funding for required facilities would be necessary to reduce impacts on operations and maintenance of library facilities to less than significant. Therefore, impacts to library facilities could be potentially significant and mitigation would be required The following mitigation measures would reduce **potentially significant** impacts to a level below significance.

5.12.5.6 Mitigation Measures

MM PUB-14 Prior to the issuance of each building permit for any residential dwelling units, the Applicant shall pay the required Public Facilities Development Impact Fee in accordance with the fees in effect at the time of building permit issuance and phasing approved in the Public Facilities Finance Plan.

MM PUB-15 The City of Chula Vista shall continue to monitor library facilities and services and report the results to the Grown Management Oversight Commission on an annual basis.

5.12.5.7 Level of Significance After Mitigation

With implementation of mitigation measures PUB-14 and PUB-15 identified above, library service impacts related to implementation of the proposed project would be reduced to a less than significant level.

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5.13 UTILITIES

This section of the 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 2005 GPU EIR. The 2005 GPU/GDPA EIR concluded that impacts related to water and energy would be significant and unavoidable because there is no assurance that water supply or energy would be available to adequately serve the projected increase in population. The 2005 GPU EIR concluded that impacts to wastewater would be less than significant because the City could withhold discretionary approvals and subsequent building permits from development that would cause the City to exceed its wastewater capacity. The 2005 GPU EIR concluded that impacts related to solid waste would be less than significant.

5.13.1 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. The 2010 UWMP included the water demand for the proposed project, but the estimated water demand has changed slightly based on the current development plan. 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.

Water supply information provided in the following discussions is based on the *Water Supply Assessment and Verification Report* (WSAV) prepared by the Otay Water District (OWD) (OWD 2013a), the *Overview of Water Service for Otay Ranch University Villages 3 North, A Portion of Village Four, 8 East, and 10* (Dexter Wilson 2014a), *Addendum to the Overview of Water Service for Otay Ranch University Villages 3 North, A Portion of Village Four, 8 East, and 10* (Dexter Wilson 2014 Appendix to Final EIR), and the *Otay Ranch Villages 3 North and A Portion of Village Four, Village 8 East, and Village 10 Water Conservation Plans* (Dexter Wilson 2014b-d). These reports are included in Appendix N of this EIR. In addition, the section includes information from the Dexter Wilson Engineering memo that responds to the Governors declaration of a draught state of emergency and the Department of Water Resources (DWR) decision to reduce the State Water Project's (SWP) allocation.

5.13.1.1 Existing Conditions

5.13.1.1.1 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 Urban Water Management Plan (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 (Appendix N (WSAV)).

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 the proposed project. 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 af of water annually, must prepare, adopt, and update a 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.

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 of water through adopted standards and incentive-based policies 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).

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 2013 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 to meet projected demand. The OWD concluded that the near-term water supply outlook has improved due to diversification efforts and conservation measures, while the city's long-term growth should be assured of a reliable water supply through implementation of SB610 and 221 Water Supply Assessment and Verification report protocols. 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 annually provide 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 continuing 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 Ordinance, a WCP must provide an analysis of the water usage requirements of the project. Chula Vista's multi-faceted Growth Management Ordinance 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).

5.13.1.1.2 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 (2004), which is currently being updated. The MWD IRP, to be 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 af 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 af in a dry year and 411,000 af 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 N (WSAV)).

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 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 Otay Ranch University Villages, in average/normal and dry water years, as shown in Tables 5.13-1, 5.13-2, and 5.13-3.

Table 5.13-1
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 5.13-1 (Continued)
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**

Source: Dexter Wilson 2014a; data adapted from the SDCWA 2010 UWMP.
1 With Conservation.

Table 5.13-2
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: Dexter Wilson 2014a; data adapted from the SDCWA 2010 UWMP.
1 With Conservation.

Table 5.13-3
Multiple Dry Year Supply and Demand Assessment (af/yr)

	Near Term			Long Term		
Scenario	*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: Dexter Wilson 2014a; data adapted from the San Diego County Water Authority 2010 Urban Water Management Plan.
1 Potential shortages would be offset through conservation actions as described in the Water Conservation Plan (Dexter Wilson 2014b).

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 80,000 acres and has approximately 47,000 meter connections. OWD has approximately 709 miles of pipelines, 24 pump stations, and 40 reservoirs with a total storage capacity of 226 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 30,000 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 March 2011, Governor Jerry Brown proclaimed an end to the statewide drought. However, in 2014, the Governor again declared a Drought State of Emergency. In response, DWR provided a summary of current drought conditions, snowpack levels, and storage provided in key reservoirs throughout the state in January 2014. The DWR document also established that the State Water Project (SWP) allocation of water will be reduced to zero in 2014 if dry conditions persist.

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 parties are awaiting a decision from the Ninth Circuit, which is expected in 2014. 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.

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 (Appendix N (WSAV)).

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.

<u>340 Zone</u>

There is a small area west of Village Three that is served by the 340 Zone. This area is fed by a pressure reducing station and includes a piping network that extends to the western boundary of Village Three. The proposed project would not be served by the 340 Zone, but improvements to the 340 Zone will be necessary per the OWD WRMP.

<u>624 Zone</u>

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. There are currently no 624 Zone facilities in the vicinity of the project area (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).

Recycled Water

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).

5.13.1.2 Thresholds of Significance

The following criteria 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. Exceed City threshold standards which seek 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.

D. Be inconsistent with General Plan, Otay Ranch GDP or other relevant objectives and policies regarding water supply thereby resulting in a significant physical impact.

E. Require or result in the construction of new recycled water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

5.13.1.3 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 by expanding the existing 624 and 711 zone water systems. Annexation into Improvement Districts 22 and 27 would be required prior to providing water service. Potable water systems for the proposed project utilized the design criteria in the October 2008 Otay Water District Water Resources Master Plan (OWD 2013b). Figures 4-20, 4-21, and 4-22 in Chapter 4, Project Description, of this EIR show the recommended on-site potable water facilities for each village. In general, the proposed project would be phased and must ensure that the OWD looping criteria is met during all phases of development. Final location, sizing, phasing, and hydraulic modeling of the project

water system would be presented in the final Subarea Master Plan (SAMP) prepared for the project and submitted to OWD for review and approval. A brief description of the facilities that would be required to serve the proposed project, based on the SPA Plans and tentative subdivision maps, is provided below.

Potable and Recycled Water Facilities

Village Three North and a Portion of Village Four

Potable water service to the Village Three North development would be provided by extending the 624 Zone 12-inch water lines in Heritage Road and Village Two to the north. On-site development would be served by constructing 8-inch and 12-inch lines from this backbone 624 Zone loop.

The Portion of Village Four that is being processed with the Village Three North project is within the 711 Zone for water service. Water service to this site would be provided by constructing an off-site 12-inch line in La Media Road and extending water service to the P-2 park site.

Village Eight East

The southern portion of Village Eight East would be served from the 624 Zone system. This area would be served from the east and west by a 12-inch line in Otay Valley Road. On-site development would be served by constructing 8-inch and 12-inch lines that are looped off the line in Otay Valley Road.

The northern portion of Village Eight East is within the 711 Zone. This area would be served by a proposed 12-inch line in Main Street. On-site development would be served by constructing 8-inch and 12-inch lines that loop from the 12-inch line in Main Street.

Village Ten

The entire Village Ten project will be supplied by the 624 Zone system by extending a 12-inch 624 Zone line east in Otay Valley Road and extending a 12-inch 711 Zone line south in Discovery Falls Drive and constructing a 711/624 Zone pressure reducing station. On-site development would be served by constructing 8-inch and 12-inch lines that loop from the backbone 12-inch water line.

Generally, the potable water distribution system is designed to maintain static pressures between 65 pounds per square inch (psi) and 200 psi. This criteria is used to initially divide a project between water service zones. The potable water distribution system has been designed to yield a minimum of 40 psi residual pressure at any location under peak hour demand flows, and a minimum residual pressure of 20 psi during maximum day demand plus fire flow conditions. Potable water mains are

sized to maintain a maximum velocity of 10 feet per second under a maximum day demand plus fire flow scenario and a maximum velocity of 6 feet per second under peak hour flow conditions.

Fire flow also was evaluated. The fire flow requirements for each building within the project area will be a function of building design, including height and structure type. Since this level of detail is not known at this planning stage, this analysis uses the OWD fire flow requirements in master planning storage, transmission, and distribution facilities throughout the District. As part of the building permit process, the City of Chula Vista Fire Department will evaluate the fire flow requirements.

The total projected potable water demand for the proposed project is 2.12 mgd or 2,381 ~~3~~ af/yr. Table 5.13-4 provides a summary of the projected potable water demand for the proposed project by village and pressure zone, and Table 5.13-5 provides a summary of the projected potable water demand by land use (Dexter Wilson 2014a).

Table 5.13-4
Projected Potable Water Demand by Village

Village	Average Demand			
	624 Zone (gpd)	*711 Zone (gpd)*	*Total (gpd)*	*Total (af/yr)*
Village Three North/ Portion of Village Four	559,670 ~~555,723~~	0	559,670 ~~555,723~~	627 ~~611~~
Village Eight East	315,231	733,808 ~~733,593~~	1,049,039 ~~1,048,824~~	1,175 ~~154~~
Village Ten	516,929	0	516,929	579 ~~569~~
			Total	**2,125,638 ~~2,121,476~~**	**2,381 ~~34~~**

Source: Dexter Wilson 2014a.

Table 5.13-5
Projected Potable Water Demand by Land Use

Land Use	Quantity	Unit Demand	Total Demand (gpd)	Total Demand (af/yr)
Single Family Residential (3-8 DU/acre)	717 units	500 gpd/unit	358,500	402 ~~394~~
Single Family Residential (>8 DU/acre)	1,923 units	300 gpd/unit	576,900	646 ~~635~~
Multi-Family Residential	4,257 units	255 gpd/unit	1,085,535	1,216 ~~1,194~~
Schools	28.3 acres	1,428 gpd/acre	40,412	45
Commercial/Office	~~16.0~~ 21.2 acres[1]	1,607 gpd/acre	34,068 ~~25,712~~	38 ~~40~~
Industrial	~~20.8~~ 15.6 acres[2]	848 gpd/acre	13,229 ~~17,638~~	15 ~~19~~
CPF	~~7.8~~ 8.1 acres[3]	714 gpd/acre	5,783 ~~5,568~~	6
Parks	92.1 acres	See footnote 4	11,211	13
			Total	**2,125,638 ~~2,121,476~~**	**2,381 ~~34~~**

Source: Dexter Wilson 2014a.
1 Acreage for Mixed Use Commercial site was adjusted to 90% of gross acreage.
2 Net acreage was used for industrial sites.
3 Acreage for small CPF sites was not included since these will be parks that do not require potable water.
4 Parks to be irrigated with recycled water, but a nominal potable usage has been added for drinking fountains, sinks, etc.

As described above, the Applicant will be required to prepare, for review and approval by OWD, a SAMP. The SAMP will be initiated prior to the approval of the project Final Map, and must to be approved by OWD prior to approval of improvement plans. The SAMP would provide the project phasing, recycled water system improvements, processing requirements, and computer modeling to justify recommended pipe sizes. In general, the proposed project would be phased to ensure that the OWD looping criteria is met during all phases of development. This criteria limits development to a maximum of 70 equivalent dwelling units (EDUs) or 1,320 feet of piping on an unlooped system, and see Appendix N for additional details regarding project water facility phasing (Dexter Wilson 2014a).

All facilities within the boundaries of the proposed project would be constructed by the Applicant or his/her designee. Final location, sizing, phasing, and hydraulic modeling of the project water system will be presented in the SAMP prepared for the proposed project. The proposed pipelines would be installed using conventional construction methods, either open trench excavation or a boring and jacking method. Installation of on-site and off-site water lines have the potential to generate vehicle and equipment emissions and dust, increase noise levels, impact undiscovered cultural resources, and cause erosion and potential groundwater contamination. These issues have been addressed as part of the construction analyses presented in EIR Sections 5.4, Air Quality; 5.8, Biological Resources; 5.5, Noise; 5.6, Cultural Resources; 5.7, Paleontological Resources; and 5.10, Water Quality and Hydrology. Mitigation has been provided in these sections to reduce impacts from construction of the proposed project, including utility infrastructure. No additional impacts beyond those identified in the aforementioned EIR sections would occur.

Additionally, the Applicant or his/her designee would be eligible for reimbursement for the construction of facilities included in OWD's Capital Improvement Program. Because the Applicant or his/her designee would build all necessary infrastructure, including water treatment and conveyance facilities, in conjunction with the proposed project, impacts related to construction of new water treatment and conveyance facilities or expansion of existing facilities are evaluated in the project impact analysis, and those impacts are 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?

OWD would provide water service to the proposed project. Annexation into Improvement Districts 22 and 27 would be required prior to providing water service. The OWD has existing and planned facilities in the vicinity of the proposed project and water service can be provided by expanding the existing system, as detailed in the *Overview of Water Service for Otay Ranch University Villages* (see Appendix N).

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 indicates that OWD would 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 concludes 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. This report was approved by OWD in November 2013. The *Overview of Water Service for Otay Ranch University Villages*, prepared by Dexter Wilson Engineering, Inc., also provides information that existing and OWD CIP off-site conveyance and storage facilities would be adequate to serve the proposed project (Dexter Wilson 2014a, Appendix N). Therefore, impacts associated with water supply would be **less than significant**.

Water demand and required facilities for the proposed project were determined based on the October 2008 OWD Water Resources Master Plan. This document was updated in April 2013 to include the proposed project. Table 5.13-5 presents the factors used in projecting the total average day potable water demands. The required fire flows and durations are included in the total water demand. The City utilizes the California Fire Code to determine required fire flows and durations for new development. The Fire Code utilizes a number factors to determine the required fire flow for a building. These factors include building footprint, building construction materials and whether the building has fire sprinklers. Since this level of detail is not known at the planning stage, this EIR uses OWD's fire flow requirements. The projected water demand for the proposed project is summarized in Tables 5.13-4 and 5.13-5. Additional details, such as the projected water demand for each planning areas within each village, is available in the Overview of Water Services (Appendix N). As shown in Tables 5.13-4 and 5.13-5, the total estimated potable water use is approximately 2.12 mgd, or 2,381~~3~~ af/yr.

The SPA Plans allow density transfers between villages and between planning areas (neighborhoods) within a village provided that the overall project units (6,897) is not exceeded. A request for a density transfer must be accompanied by a variety of findings, one of which is that adequate infrastructure exists to support the proposed transfer. This finding must be substantiated by a technical study that demonstrates adequate infrastructure exists to accommodate the transfer. This provision in the SPA Plan ensures that while water demand by planning area/village may shift, the total water demand for the proposed project would not exceed 2.12 mgd or 2,381~~3~~ af/yr. A mitigation measure has been added to enforce this provision in the SPA Plans.

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 plumbing fixtures and the use of recycled water for the irrigation of parks, open space slopes, schools, parkway landscaping, and the common areas of multi-family residential and commercial/ industrial/office sites. 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 WCPs. 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 (Appendix N (WSAV)).

In response to the Governor's draught declaration and the DWR News Release, MWD, CWA and OWD responded by urging increased voluntary water conservation efforts. The current drought conditions are not impacting the Southern California region as much as the central and northern portions of the state because the Southern California region has invested heavily in storage and diversification projects over the last few decades. The Diamond Valley Reservoir project approximately doubled storage in the region and the raising of the San Vicente Dam increased storage in San Diego. Diversification projects completed and in progress include the Colorado River Quantification Settlement Agreement, lining of the All American Canal, and Carlsbad Desalination project.

As concluded by the Dexter Wilson memo (Appendix N to the Overview of Water Services Report), the findings for the WSAV report remain valid. Specifically, the WSAV Report assesses, demonstrates, and documents that sufficient water supplies are planned for and are intended to be acquired, as well as the actions necessary and status to develop these supplies, to meet projected water demands of the project as well as existing and other reasonably foreseeable planned development within the 20-year planning horizon, in normal, single-dry, and multiple-dry years.

In summary, based on the WSAV for the proposed project, 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. Accordingly, despite ever-present water supply challenges including the current Drought State of Emergency, 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. 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 Plans include project WCPs to address water use during project construction and operation. The WCPs provide 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 project WCPs 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 WCPs, 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. The WCPs are estimated to reduce total water demand for the project by ~~783,557~~ 784,096 gpd, or ~~862~~ 878 af/yr which is an overall 29% reduction in estimated water use compared to the usage without the incorporation of the conservation measures (see Table 5.13-6, Projected Recycled Water Demand, and Table 5.13-7, Water Conservation Summary). As the proposed project would implement project WCPs, it would be consistent with this threshold requirement.

Table 5.13-6
Projected Recycled Water Demand

Land Use	Quantity	Percentage to be Irrigated	Irrigated Acreage	Recycled Water Irrigation Factor	Average Recycled Water Demand (gpd)	Average Recycled Water Demand (af/yr)
Village Three North						
Open Space	37.8 ac	100	32.8	2,155	81,459	91 ~~89~~
Parks	25.7 ac	100	25.7	2,155	55,385	62 ~~61~~
Commercial (MU-2)	11.3 ~~6.1~~ ac	10	1.1 ~~0.6~~	2,155	2,371 ~~1,293~~	3 ~~1~~

Table 5.13-6
Projected Recycled Water Demand

Land Use	Quantity	Percentage to be Irrigated	Irrigated Acreage	Recycled Water Irrigation Factor	Average Recycled Water Demand (gpd)	Average Recycled Water Demand (af/yr)
Industrial	27.6 ~~33.8~~ ac	5	1.4 ~~1.7~~	2,155	3,017 ~~3,664~~	4
MF Residential/MU-1 a-d	595 units	15	0	45	26,775	30
School	8.3 ac	20	1.7	2,155	3,660	4
				Subtotal Village Three North	*172,667 ~~236~~*	*194 ~~189~~*
Village Eight East						
Open Space	11.0 ac	100	11.2	2,155	24,136	27
Parks	58.8 ac	100	58.8	2,155	126,714	142 ~~139~~
School	10.8 sc	20	2.2	2,155	4,740	5
CPF	4.2 ac	10	0.4	2,155	970 ~~862~~	1
MF Residential	2,617 units	15	-	45	117,765	132 ~~0~~
				Subtotal Village Eight East	*274,325 ~~217~~*	*307 ~~2~~*
Village Ten						
Open Space	16.5 ac	100	16.5	2,155	35,558	40
Parks	7.6 ac	100	7.6	2,155	16,378	18
School	9.2 ac	20	1.84	2,155	3,965	4 ~~5~~
CPF	4.3 ac	10	0.43	2,155	927	1
MF Residential	1,045 units	15	-	45	47,025	53 ~~2~~
				Subtotal Village Ten	*103,853*	*116*
				Total	**550,845 ~~306~~**	**617 ~~607~~**

Source: Dexter Wilson 2014a.

Table 5.13-7
University Villages Water Conservation Summary

Description	Average Use				
	Village Three North (gpd)	*Village Eight East (gpd)*	*Village Ten (gpd)*	*Total (gpd)*	*Total (af/yr)*
Total Water Use					
Potable Water Use	559,670 ~~555,723~~	1,049,039 ~~1,048,824~~	516,929	2,125,638 ~~2,121,476~~	2,381 ~~34~~
Recycled Water Use	172,667 ~~172,236~~	274,325 ~~274,217~~	103,853	550,845 ~~550,306~~	617 ~~605~~
Total Baseline Water Use	732,337 ~~727,959~~	1,323,364 ~~041~~	620,782	2,676,483 ~~2,671,782~~	**2,998 ~~2,939~~**
Water Conservation Savings					
Recycled Water	172,667 ~~172,236~~	274,325 ~~274,217~~	103,853	550,845 ~~550,306~~	617 ~~605~~
Multi Family Measures	14,428	63,462	25,341	103,231	114
Single Family Measures	49,349	46,443	34,228	130,020	143

Table 5.13-7 (Continued)
University Villages Water Conservation Summary

Description	Average Use				
	Village Three North (gpd)	*Village Eight East (gpd)*	*Village Ten (gpd)*	*Total (gpd)*	*Total (af/yr)*
Total Conservation Savings	236,444 ~~013~~	384,230 ~~122~~	163,422	784,096 ~~783,557~~	874 ~~862~~
Net Potable Water Usage[1]	495,893 ~~491,946~~	939,134 ~~938,919~~	457,360	1,892,387 ~~1,888,225~~	2,124 ~~2,077~~
Reduction from Baseline Usage, %	32.3 ~~4~~	29.0	26.3	29.3	29.2 ~~3~~

Source: Dexter Wilson 2014b.

Finally, as discussed in the response to Threshold B, the WSAV prepared by the OWD describes current and long-range storage capacity and ensures that the OWD would be able to absorb the forecasted growth of the proposed project. The WSAV also provided documentation of entitlements and contracts, and a financial analysis of OWD's maintenance and future water supplies. The WSAV report concludes 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 Overview of Water Service prepared by Dexter Wilson Engineering also provides information that existing and OWD off-site conveyance and storage facilities would be adequate to serve the proposed project (see Appendix N). Future individual developers within the proposed project would be required to obtain service availability letters. The SAMP(s) must be submitted for OWD approval in order to ensure that the project is consistent with city GMO thresholds. Therefore, this impact is **potentially significant**.

D. Would the project be inconsistent with General Plan, Otay Ranch GDP or other relevant objectives and policies regarding water supply thereby resulting in a significant physical impact?

Appendix B evaluates the consistency of the proposed project with applicable objectives and policies related to potable water supply. The Otay Ranch GDP objectives and policies related to water facilities are consistent with those in the City's General Plan. Consistent with the General Plan, the proposed project demonstrates water service availability, encourages efficient use and conservation of water by residents, and increases efficiencies in water use, wastewater generation and its re-use, and handling of storm water runoff. Consistent with the Otay Ranch GDP the proposed project has prepared a WCP to respond to the Growth Management policies of the City of Chula Vista, which are intended to address the long term need to conserve water in new developments, to address short term emergency measures, and to establish standards for water conservation.

As stated above in the section introduction, the 2005 GPU EIR concluded there would be a significant and unavoidable impact related to water supply because there is was no assurance that water supply would be available to adequately serve the projected increase in population. At the time, the City did not have a WSAV Report prepared for the entire General Plan build out area. The City was not required to obtain a WSAV for the GPU, but per the requirements of SB 610 and SB 221, specific development projects are required to secure one.

The proposed project did secure a WSAV as required by SB 610 and SB 221. As stated above under Threshold B, the WSAV for the proposed project, and the UWMPs of MWD, SDCWA, and OWD, document that 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, single and multiple dry years.

As shown in Appendix B, the proposed project would be consistent with applicable water service policies. Impacts would be **less than significant**.

E. Require or result in the construction of new recycled water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

In addition to potable water, OWD would be the purveyor of recycled water to the proposed project. The evaluation of recycled water systems for the proposed project utilized the design criteria included in the October 2008 Otay Water District Water Resources Master Plan (last amended in April 2013).

As shown in Table 5.13-6, the estimated recycled water demand for the proposed project is 550,845 ~~306~~ gpd or 617 ~~607~~ af/yr. The largest potential recycled water use areas in the project area include open space slopes and parks. Recycled water may also be utilized to irrigate the common areas of schools, multi-family residential, industrial, office and commercial sites. The proposed project would be served by extending the 680 Zone recycled water system. The primary source of supply for the 680 Zone is the 680-1 Pump Station and the 3.4 MG 680 Zone reservoir. Figures 4-23 through 4-25, in Chapter 4, Project Description, show the recommended recycled water requirements for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten, respectively.

The proposed project includes construction of the potable and recycled water facilities described above, and as recommended in the Overview of Water Service for Otay Ranch University Villages. Construction of water facilities has the potential to generate vehicle and equipment emissions and dust, increase noise levels, impact undiscovered cultural resources, and cause erosion and potential groundwater contamination. These issues have been addressed as part of

the construction analyses presented in EIR Sections 5.8, Biological Resources; 5.4, Air Quality; 5.5, Noise; 5.6, Cultural Resources; 5.7, Paleontological Resources; and 5.10, Water Quality and Hydrology. No additional impacts beyond those identified in the aforementioned sections would occur. Impacts would be **less than significant**.

F. Be inconsistent with General Plan, Otay Ranch GDP or other relevant objectives and policies regarding recycled water thereby resulting in a significant physical impact.

Appendix B evaluates the consistency of the proposed project with the applicable General Plan objectives and policies related to recycled water use. The Otay Ranch GDP objectives and policies related to recycled water facilities and consumption are consistent with those in the City's General Plan. Consistent with the General Plan the proposed project includes a Water Conservation Plan that requires the use of water efficient landscaping and recycled water for irrigation. The proposed project would also continue to explore opportunities for other uses of recycled water throughout the development. A more detailed analysis of the proposed project's consistency is provided in Appendix B.

As shown in Appendix B, the proposed project would be consistent with applicable water service policies, and impacts would be **less than significant**.

5.13.1.4 Level of Significance Prior to Mitigation

The impact related to water storage and pumping facilities would be significant if construction of facilities does not coincide with anticipated growth. The increase in demand for water would not have a significant impact on the ability of OWD to provide service to the proposed project.

A. New/Expanded Water Treatment Facilities

No significant impacts related to new water treatment facilities have been identified with respect to implementation of the proposed project.

B. Long-Term Water Supply and Entitlements

While long-term water supply availability/reliability is an ever-present challenge in light of climatological, environmental, legal, and other challenges that impact water supply conditions, OWD and the regional water agencies (MWD and SDCWA) have established processes in place that ensure supplies are being planned to meet future growth, including the growth associated with the proposed project. Based on the WSAV for the proposed project, and the UWMP data provided by the water agencies, the proposed project's increase in water demand is accounted for by the water agencies; and, therefore, impacts to long-term water supplies/entitlements are

considered less than significant. The transfer of density between planning areas could have a significant impact to on-site infrastructure.

C. Compliance with City Water Supply Thresholds

Until service availability letters and approval of SAMP(s) from OWD, the project would not be in compliance with the city threshold standards. Impacts would be potentially significant.

D. Consistency with Water Supply Policies

No significant impacts related to consistency with water supply policies have been identified with respect to implementation of the proposed project.

E. New/Expanded Recycled Water Treatment Facilities

No significant impacts related to new or expanded recycled water treatment facilities have been identified with respect to implementation of the proposed project.

F. Consistency with Recycled Water Policies

No significant impacts related to consistency with applicable recycled water policies have been identified with respect to implementation of the proposed project.

5.13.1.5 Mitigation Measures

The following mitigation measures would avoid the potentially significant impact associated with the availability of adequate water facility infrastructure.

MM UTL-1 Prior to issuance of each Final Map for each village, the permit Applicant/developer shall deliver to the City service availability letters from the appropriate water district.

MM UTL-2 Prior to approval of the first Final Map for each village, the Applicant shall provide a Subarea Master Plan to the Otay Water District. Water facilities improvements shall be financed or installed on-site and off-site in accordance with the fees and phasing pursuant to the approved Public Facilities Financing Plan(s) and Subarea Master Plan(s). The Subarea Master Plan shall include, but shall not be limited to:

a. Existing pipeline locations, size, and capacity

b. The proposed points of connection and system

c. The estimated water demands and/or sewer flow calculations

d. Governing fire department's flow requirements (flow rate, duration, hydrant spacing, etc.)

e. Agency Master Plan

f. Agency's planning criteria (see Sections 4.1 through 4.3 of the Water Agencies Standards)

g. Water quality maintenance

h. Size of the system and number of lots to be served.

MM UTL-3 Prior to approval of the first Final Map, the Applicant shall obtain the Otay Water District's approval of the Subarea Master Plan(s) for both potable and recycled water. Any on-site and off-site facilities identified in the Subarea Master Plan required to serve a Final Mapped area, including but not limited to water facilities within the SR-125 overcrossing at Otay Valley Road, shall be secured or constructed by the Applicant prior to approval of the Final Map and in accordance with the phasing in the public facilities finance plans.

MM UTL-4 Prior to design review approval in accordance with the Density Transfer provision in the Village Three and Portion of Village Four, Village Eight East and Village Ten SPA Plans, the Applicant/developer shall provide an update to the Overview of Water Service for Otay Ranch University Villages (Dexter Wilson 2014a) with each proposed project requesting a density transfer. The density transfer technical study shall demonstrate to the satisfaction of the City Engineer that adequate on-site water infrastructure will be available to support the transfer. The transfer of residential density shall be limited by the ability of the on-site water supply infrastructure to accommodate flows.

5.13.1.6 Level of Significance After Mitigation

The mitigation measures listed in Section 5.13.1.5 would reduce water facilities impacts to less than significant. With implementation of mitigation measures UTL-1, UTL-2 and UTL-3 identified above, impacts related to compliance with city thresholds would be reduced to less than significant.

5.13.2 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 *Overview of Sewer Service for Otay Ranch University Villages 3 North, a Portion of Village 4, 8 East and 10* (Dexter Wilson 2014e) and the), *Addendum to the Overview of Sewer Service for Otay Ranch University Villages 3 North, A Portion of Village Four, 8 East, and 10* (Dexter Wilson 2014 Appendix to Final EIR),. This report is included in Appendix O of this EIR.

5.13.2.1 Existing Conditions

5.13.2.1.1 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 2005b). An updated version of the City's Wastewater Master Plan is currently pending and anticipated to be adopted in early 2014. 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[1] 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 2012 GMOC Annual Report concluded the city would not exceed its sewage capacity in the next 5 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.

[1] Regional Wastewater Disposal Agreement between the City of San Diego and the Participating Agencies in the Metropolitan Sewerage System, adopted May 18, 1998 (City of San Diego Ordinance Number 00-18517).

Recommended wastewater unit generation rates for use in design of sewer improvements are shown in Table 5.13-8.

Table 5.13-8
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 2005b.

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 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; and
- 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).

5.13.2.1.2 Existing Sewer Service

There are no existing sewer facilities within the proposed project area.

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 adjacent to the southern edge of each of the SPA Plan areas.

Salt Creek Interceptor

The proposed project is within the Salt Creek Sewer basin. The Salt Creek Interceptor was planned, designed and constructed to convey projected development sewer flows in the eastern portions of Chula Vista and unincorporated San Diego County. The Salt Creek Interceptor was constructed in sections, with the majority completed approximately 6 years ago. This Interceptor starts as a 15-inch line in Hunte Parkway within the Rolling Hills Ranch project. From there, the line increases in size as it heads south along Salt Creek. It then turns westerly and follows the Otay River to a point of connection with the City of San Diego Metro Sewer System. At the location where the Salt Creek Interceptor passes south of Village Ten, this line is 30 inches in diameter. The line increases to 36 inches south of Village Eight East and to 42 inches south of Village Three North.

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 Salt Creek Interceptor Technical Sewer Study for the South Otay Ranch, prepared by Atkins (formerly PBS&J) in November 2010, reviewed the impact of the updates to the General Plan growth projection since approval of the 2005 General Plan. This study determined the City would need to acquire an additional 11.684 mgd of treatment capacity above its current capacity rights. The City may acquire rights for this additional capacity in the Metro system through negotiations with the City of San Diego. However, 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.

5.13.2.2 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 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 or result in 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. Generate sewage flows and volumes that exceed City Engineering Standards as set forth in the Subdivision Manual, as may be amended from time to time.

E. Be inconsistent with General Plan, Otay Ranch GDP or other relevant objectives and policies thereby resulting in a significant physical impact.

5.13.2.3 Impacts

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 will be provided by the City of Chula Vista. The proposed project is 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.

The design criteria used to determine wastewater flow is based on the 2002 Chula Vista Subdivision Manual sewer generation factors. The details of these factors are provided in Appendix O of this EIR. Village Three North and a portion of Village Four has a total generation of 526,355 gpd, Village Eight East has a total generation of ~~849,589~~ 850,839 gpd, and Village Ten has a total generation of 416,769 gdp. As shown in Table 5.13-9, the projected average sewage flow for the proposed project is 1.79 mgd. This results in a projected peak sewage flow of 3.15 mgd for the proposed project. Sewer facility improvements required to serve the proposed project would include on-site gravity sewer lines, connections to the Salt Creek Interceptor, and the payment of fees for capacity in regional treatment facilities (Dexter Wilson 2014c).

Table 5.13-9
Projected Sewage Flow Summary by Land Use

Land Use	Quantity	Unit Demand	Total Demand (gpd)
Single Family Residential	2,640 units	265 gpd/unit	699,600
Multi-Family Residential	4,257 units	198.75 gpd/unit	846,078
Schools	2,699 students	15 gpd/student	40,485
Commercial	~~17.7~~ 22.9acres	2,500 gpd/acre	57,250 ~~44,250~~
Industrial	~~33.8~~ 28.6 acres	2,500 gpd/acre	71,500 ~~84,500~~
CPF	12.7 acres	2,500 gpd/acre	32,500 ~~31,750~~
Parks	92.1 acres	500 gpd/acre	46,050
		Total	1,793,463 ~~1,792,713~~

Source: Dexter Wilson 2014c.

The SPA Plans for the proposed project permit density transfers between villages and planning areas, provided the overall units authorized does not exceed 6,897. A request for density transfer must be accompanied by a variety of findings, one of which is that adequate infrastructure exists to support the transfer. This finding must be substantiated by updated technical studies, in this case a sewer study, which ensures adequate existing infrastructure can accommodate the transfer and that the overall units authorized is not exceeded. This provision ensures that while sewage generation by planning area or village may shift, the total sewage generation for the proposed project would not exceed 1.80 mgd. A mitigation measure has been added to enforce this provision.

The City of Chula Vista has wastewater treatment capacity rights of 20.864 mgd in the Metro system. According to the 2012 GMOC Annual Report, Chula Vista generated an average flow of approximately 16.219 mgd, and has a remaining capacity of approximately 4.645 mgd in the Metro system. Therefore, Chula Vista currently has capacity to serve the project's direct impact on wastewater demand. Development of the proposed project would require 1.796 mgd of treatment capacity. This capacity requirement is 0.018 mgd less than the 1.815 mgd capacity projection in the November 2010 study. Thus, the city's estimated 11.684 mgd capacity requirement would be reduced to a total of 11.666 mgd of treatment capacity needed to serve build-out of the City, including the proposed project. With a limited amount of treatment capacity remaining, the City is working on a variety of alternatives that would provide the additional capacity needed to serve all anticipated development within the City. However, building permits only will be issued if the City Engineer determines that adequate sewer capacity exists.

Salt Creek Interceptor Impact Fees

The Salt Creek Interceptor was completed approximately six years ago to serve regional development in the Otay Ranch area, including the proposed project area. 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) that is in effect at the time building permits are issued. Table 5.13-10 summarizes the Salt Creek Sewer impact fees to be paid by the proposed project.

Table 5.13-10
Salt Creek Sewer Impact Fees

Land Use	EDU Factor	Fee in $[1]
Single Family Residential	1.0 EDU/unit	1,330/unit
Multi-Family Residential	0.75 EDU/unit	997.5/unit
Commercial/Industrial	9.43 EDU/acre	12,541.9/acre
CPF	9.43 EDU/acre	12,541.9/acre

Table 5.13-10 (Continued)
Salt Creek Sewer Impact Fees

Land Use	EDU Factor	Fee in $[1]
Parks	0.06 EDU/student	79.8/student
Elementary School	1.89 EDU/acre	2,513.7/acre

Source: Dexter Wilson 2014c.
1 Current rates; may be amended from time to time.

Like other properties in the area, the intensity of development proposed on the project site has increased from what was proposed in the adopted Otay Ranch GDP. The November 2010 Salt Creek Interceptor Technical Sewer Study for South Otay Ranch specifically reviewed the impact of the revised General Plan, including the increased density of the proposed project and surrounding properties, on the Salt Creek Interceptor. This study concluded that sections of the Salt Creek Interceptor may require upgrades at ultimate buildout, but these sections are upstream of the project. The proposed project's equivalent dwelling unit (EDU) projections (Table 5.13-10) are lower than the projections in the Salt Creek Interceptor Technical Sewer Study for South Otay Ranch. Also, the actual location where the project's flows will connect into the Salt Creek Interceptor is at or slightly downstream of where these flows were assumed to connect in the Salt Creek Interceptor Technical Sewer Study for South Otay Ranch. Therefore, the project would not trigger any upgrades to the Salt Creek Interceptor (Dexter Wilson 2014c).

Treatment Capacity

As described under existing conditions, currently all sewage from the City of Chula Vista is conveyed to the City of San Diego Metro System for treatment and disposal. The City of Chula Vista has capacity rights of 20.9 mgd of flow in the Metro sewer system. Existing average flows in the City are approximately 16.2 mgd. The estimated year 2030 flows based on the 2005 General Plan were 23.3 mgd. The projected year 2030 average flow for the City is 26.2 mgd. Thus, the City of Chula Vista would need to acquire capacity rights for an additional 5.4 mgd to accommodate year 2030 flows. The Salt Creek Interceptor Technical Sewer Study for South Otay Ranch addresses the City's current projections regarding the need to acquire additional treatment capacity. The City may acquire rights for this additional capacity in the Metro system through negotiations with the City of San Diego. In addition, the City of Chula Vista is evaluating construction of a new wastewater treatment plant and other alternatives 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. Building permits will be issued only if the City Engineer has determined that adequate sewer capacity exists.

The Salt Creek Interceptor Technical Sewer Study for South Otay Ranch provided EDU projections based on the 2005 General Plan and current land use agreements. Table 5.13-11

summarizes the proposed project data from the Salt Creek Interceptor Technical Sewer Study for South Otay Ranch and provides a comparison with the projections for the proposed project.

Table 5.13-11
University Villages EDU Summary

Description	EDUs			Average Flow (mgd)			Total	
	Village Three North	*Village Eight East*	*Village Ten*	*Village Three North*	*Village Eight East*	*Village Ten*	*EDUs*	*Average Flow (mgd)*
October 2010 South Otay Ranch Report								
Baseline[1] (PBS&J)	2,138.7	1,957.8	1,713.2	0.567	0.519	0.454	5809.7	1.540
Cumulative[2] (PBS&J)	2,094.4	2,507.4	2,248.8	0.555	0.664	0.596	6850.6	1.815
Net Change (PBS&J)	**(44.3)**	**549.6**	**535.6**	**(0.012)**	**0.145**	**0.142**	**1040.9**	**0.275**
Current University Villages								
Baseline[1]	2,138.7	1,957.8	1,713.2	0.567	0.519	0.454	5,809.7	1.540
Proposed Project	1,986[3]	3,206	1,573	0.526[3]	0.850	0.417	6,765[3]	1.793[3]
Net Change	(152.7)	1,248.2	(140.2)	(0.041)	0.331	(0.037)	955.3	0.253
Cumulative								
Baseline[1]	2,138.7	1,957.8	1,713.2	0.567	0.519	0.454	5,809.7	1.540
Proposed Project	**1,986[3]**	**3,206**	**1,573**	**0.526[3]**	**0.850**	**0.417**	**6,765[3]**	**1.793[3]**
Village Two SPA Amend[4]	484	0	0	0.128	0	0	484	0.128
Net Change	331.3	1,248.2	(140.2)	0.087	0.331	(0.037)	1,439.3	0.381

Source: Dexter Wilson 2014c.

1 The Baseline Condition in the PBS&J report is defined as from land use projections in the 2005 Sewer Master Plan as updated to reflect the adopted 2005 General Plan.

2 The Cumulative Condition in the PBS&J report is defined as the Baseline Condition plus the cumulative impact of any reasonably foreseeable project.

3 Does not include P-2 flows since these areas are in Village Four and are projected as part of Village Four in the PBS&J study.

4 The March 4, 2014, Sewer System Analysis for the Village Two SPA Amendment projects an increased flow of 128,315 gpd from the baseline condition.

As shown in Table 5.13-11, the increased density of the project area would require the City to obtain an additional 0.275 mgd of treatment capacity per the Salt Creek Interceptor Technical Sewer Study for South Otay Ranch. Based on projections in Table 5.13-11, the proposed project would decrease the additional capacity required from 0.275 mgd to 0.253 mgd (approximately 1.793 mgd projected average flow less 1.540 mgd baseline equals 0.253 mgd) (Dexter Wilson 2014c).

The proposed project would be phased over a period of 15 years and 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 with respect to capacity to serve the proposed project itself and in conjunction with existing commitments.

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?

Installation of new on-site and off-site wastewater conveyance lines that would contribute to or expand existing facilities would be required to serve the proposed project. Gravity sewer lines would be constructed to serve the proposed project, to convey flows south to points of connection with the Salt Creek Interceptor. A description of the proposed on-site sewer system for each Village is provided below.

Village Three North

The Village Three North area would be served by constructing on-site gravity sewer lines that convey flow south to Main Street. The sewer line in Main Street would connect to the Salt Creek Interceptor at the southwest corner of the project. Sewer facilities in Village Three North will be oversized to accommodate flows from off-site development in the southern portion of Village Two. Based on the February 2006 *Overview of Sewer Service for Otay Ranch Village 2, 3, and a Portion of 4*, a flow of 292,080 gpd would be conveyed from this area. Additional flows of 128,315 gpd resulting from the proposed Village Two SPA Amendment are also taken into consideration in the proposed sizing of facilities.

The park located in Village Four would not connect to the sewer line to Main Street. To serve the park site, a small sewer pump station to access flows to the gravity sewer system in La Media Road would be constructed.

The proposed on-site sewer facilities for Village Three North are provided in Figure 4-26 in Chapter 4, Project Description. The sewer line sizing is preliminary and is based on assumed slopes and will be confirmed during final engineering when actual slopes have been determined.

Village Eight East

Village Eight East would be served by constructing on site sewer facilities to convey flow south to a point of connection with the Salt Creek Interceptor. The sewer lines within Village Eight East would be sized to serve Village Eight East only, as flows from surrounding properties, including Village Eight West, are not proposed to flow through Village Eight East. The recommended sewer system for Village Eight East is provided on Figure 4-27 in Chapter 4,

Project Description. The sewer line sizing is preliminary and is based on assumed slopes and will be confirmed during final engineering when actual slopes have been determined.

Village Ten

Village Ten will be served by constructing gravity sewer lines to convey flow south to a point of connection with the Salt Creek Interceptor. The backbone sewer line through Village Ten will be oversized to accommodate flows from the portion of the future university site located north of Village Ten. The quantity and location of flows from the university site are currently unknown. The sewer line in Discovery Falls Road and a backbone sewer line in Village Ten have been upsized to accommodate the university site, but these line sizes will need to be verified during final engineering. Figure 4-28 in Chapter 4, Project Description, provides the recommended sewer facilities for Village Ten. The recommended sewer line sizing is preliminary and is based on assumed sewer line slopes that will be confirmed during final engineering of these lines.

Regional Facilities

Regional facilities that will serve the proposed project include the Salt Creek Interceptor and treatment plant capacity. To convey flow to the Salt Creek Interceptor, a single point of connection is proposed from each of the three village areas.

The sewer pipelines would be installed using conventional construction practices, either open trench excavation or a boring and jacking method. Construction of on- and off-site sewer facilities has the potential to generate vehicle and equipment emissions and dust, increase noise levels, impact undiscovered cultural resources, and cause contamination of groundwater and erosion. These issues have been addressed as part of the construction analyses presented in EIR Sections 5.2, Biological Resources; 5.4, Air Quality; 5.5, Noise; 5.6, Cultural Resources; 5.7, Paleontological Resources; and 5.10, Water Quality and Hydrology. Mitigation has been provided in these sections to reduce impacts from construction of the proposed project, including utility infrastructure. No additional impacts beyond those identified in the aforementioned EIR sections would occur.

As described under Threshold (A), the projected EDUs from the proposed project are based on sewage generation factors established in the City's Subdivision Manual. Development of the proposed project would require the construction of gravity sewer lines to handle increased flow, as described and shown above. Design and construction of these facilities will comply with the City's Threshold Standards, and would be provided commensurate with development phasing. Therefore, impacts would be **less than significant**.

The proposed project, in conjunction with other cumulative development within the City, could require sewage treatment capacity beyond the City's existing wastewater treatment capacity rights and allocated additional treatment capacity. Implementation of respective General Plan policies would ensure that treatment capacity would be provided by the City; however, the

means by which additional treatment capacity would be acquired is unknown at this time. The City's options include the acquisition of treatment capacity from a San Diego Metropolitan Sewer Authority member agency, including the City of San Diego, or construction of a Chula Vista treatment facility. Final determination on the means by which additional treatment capacity would be acquired has not yet been made. As the location and scope of construction for any newly developed treatment facility are unknown, and the development of treatment capacity beyond the City's existing and allocated capacity may result in impacts on the environment, it is conservatively concluded that a **potentially significant** environmental impact associated with construction of new or expanded treatment facility may occur.

C. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

As described under Threshold (A), 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 there would be **no impact**.

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 may be amended from time to time

As described under Threshold (A), the proposed project includes new and expanded sewer facilities to serve the proposed development. Proposed sewer facility improvements necessary to serve the proposed project were determined by Dexter Wilson Engineering Inc. and are provided in Appendix O of the EIR. Proposed sewer facility improvements include on-site gravity sewer lines and on- and off-site connections to the Salt Creek Interceptor. The design of the 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, **no impact** would result from the proposed project.

E. Would the project be inconsistent with General Plan, Otay Ranch GDP or other relevant objectives and policies regarding water supply thereby resulting in a significant physical impact?

Appendix B evaluates consistency of the proposed project with the applicable General Plan and Otay Ranch GDP objectives and policies related to wastewater. The analysis demonstrates that the proposed project would be consistent with applicable General Plan and Otay Ranch GDP policies. Consistent with the General Plan, 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. Consistent with the Otay Ranch GDP a sewer plan was developed for the proposed project, provided as Appendix O of this EIR, which includes the infrastructure required to serve the entire project site. A complete analysis of consistency with General Plan policies is provided in Appendix B of the EIR.

These 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. As demonstrated in Appendix B, the proposed project would be consistent with applicable General Plan and Otay Ranch GDP policies, and impacts would be **less than significant**.

5.13.2.4 Level of Significance Prior to Mitigation

A. Adequate Wastewater Utilities

The proposed project would be phased over a period of 15 years and 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 with respect to capacity to serve the proposed project and the project in conjunction with other existing commitments ; nonetheless, mitigation is recommended below to ensure adequate wastewater facilities are provided commensurate with demand.

B. New Wastewater Treatment Facilities

With respect to sewer conveyance lines, impacts would be less than significant. However, the proposed project, in conjunction with other cumulative development within the City, could require sewer treatment capacity beyond the City's existing wastewater treatment capacity rights and allocated additional treatment capacity. Therefore, additional capacity would need to be acquired from the San Diego Metropolitan Sewer Authority or other sources. The means by which additional treatment capacity would be acquired by the City is unknown at this time, but

the development of additional capacity could require construction of a new treatment facility. As the location and scope of construction of any newly development treatment facility is unknown, the development of treatment capacity beyond the City's existing and allocated capacity may result in a potentially significant environmental impact, even though such a project would likely be subject to its own environmental review in compliance with CEQA.

C. 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, the project would not exceed wastewater treatment requirements.

D. Consistency with City Engineering Standards

No impact related to consistency with City engineering standards has been identified should the proposed project be implemented.

E. Consistency with City Wastewater Policies

No impact related to consistency with City wastewater policies has been identified should the proposed project be implemented.

5.13.2.5 Mitigation Measures

MM UTL-5 The Applicant shall finance or install all on-site and off-site sewer facilities required to serve development in each village in accordance with the fees and phasing in the approved Public Facilities Finance Plan to the satisfaction of the City Engineer.

MM UTL-6 Prior to issuance of each building permit, the Applicant 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 UTL-7 Prior to design review approval in accordance with the Density Transfer provision in the Village Three North and Portion of Village Four, Village Eight East and Village Ten SPA Plans, the Applicant shall provide an update to the Overview of Sewer Service for Otay Ranch University Villages (Dexter Wilson 2014c) with each proposed project requesting a density 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.

5.13.2.6 Level of Significance After Mitigation

A. Adequate Wastewater Facilities

With implementation of mitigation measures UTL-5 through UTL-7, no significant impacts with respect to wastewater conveyance facilities would occur and adequate treatment capacity to serve new development within the proposed project would be ensured through review of available capacity by the City Engineer prior to approval of building permits.

B. New Wastewater Treatment Facilities

As the location and scope of construction of future expanded or newly developed treatment facilities is unknown, the development treatment capacity beyond the City's existing and allocated capacity may result in significant and unavoidable impacts.

However, the project, in combination with other cumulative development within the City, may require sewerage treatment that exceeds the City's existing wastewater treatment capacity. Therefore, additional capacity may need to be acquired from the San Diego Metropolitan Sewer Authority or other sources to support treatment needs through the Year 2030. The means by which additional treatment capacity would be acquired by the City is unknown and could include the acquisition of available sewerage treatment capacity from another participating agency, including the City of San Diego, or the construction of a new treatment facility. As the location and scope of construction for any future expanded or newly developed treatment facility is unknown, the development of treatment capacity beyond the City's existing and allocated capacity would result in potentially significant and unavoidable impacts associated with construction of a new or expanded facility.

C. Exceedance of Wastewater Treatment Requirements

Impacts would be less than significant without mitigation.

D. Consistency with City Engineering Standards

Impacts would be less than significant without mitigation.

E. Consistency with Wastewater Policies

Impacts would be less than significant without mitigation.

5.13.3 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.

5.13.3.1 Existing Conditions

5.13.3.1.1 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 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.

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.

5.13.3.1.2 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) currently 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 & 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.

5.13.3.2 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 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.

C. Be inconsistent with General Plan, Otay Ranch GDP, or other relevant objectives and policies regarding solid waste thereby resulting in a significant physical impact.

5.13.3.3 Impacts

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 collected by Republic Services and 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. The 2005 General Plan Update EIR (City of Chula Vista 2005c) concluded that there is sufficient capacity within the Otay Landfill to accommodate project solid waste generated anticipated under the General Plan Update.

The 2013 SEIR cumulative analysis, which analyzed Village Eight East and Village Ten with different land uses than the proposed project, projected 13,014 tons, which is 1,074 tons less than the proposed project. Additionally, as stated in the 2013 SEIR, General Plan buildout would generate approximately 274,063 tons of solid waste. The addition of solid waste generated under the City's General Plan buildout would result in a remaining landfill capacity of 26,211,147 million tons (City of Chula Vista 2012). The project site was included as part of the cumulative analysis in the Village Nine EIR as well. The Village Nine EIR included 5,765 multi-family units, 176.6 acres of industrial, 45 acres of parks, 18.2 acres of CPF and 20 acres of schools. The Village Nine EIR projected the project site would generate approximately 9,0389 tons of solid waste. As shown in Table 5.13-12, the proposed project would generate 5,050 tons of solid waste per year more than what the Village Nine EIR Cumulative Analysis assumed for the project site.

Table 5.13-12 shows solid waste generation by land use as a result of the proposed project.

Table 5.13-12
Proposed Project Solid Waste Generation

Land Use	Units	Solid Waste Generation rate (tons/unit/yr)	Estimated Solid Waste Generation Per Year (tons)
Residential:			
Single-Family	2723 DU	2.2300	6,072.29
Multi-Family	4,174 DU	1.1700	4,883.58
Office	701,316 sf	0.0108	7,574.21
Mixed Use Commercial	40,000 sf	0.0046	184.00
Light Industrial	1,006,236 sf	0.0011	1,106.86
CPF	466.092 sf	0.0013	605.92
Elementary School	1,219,680 sf	0.0013	1,585.58
		Total	14,088

Source: Dudek 2014
1 Includes mixed-use space/units
2 Does not include Preserve Open Space acreage
3 sf calculated by multiplying acres by 43,560
4 tons = lbs x 0.0005

As shown in Table 5.13-12, the proposed project would generated approximately 14,088 tons of solid waste per year. This is approximately 5,049.5 tons of solid waste per year more than what the Village Nine EIR Cumulative Analysis assumed for the project site. While this

represents an increase from what was previously considered, there would still be remaining landfill capacity; therefore, 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). Currently, the Sycamore Landfill has a permitted maximum disposal rate of 3,800 tons per day. Total permitted capacity at the Sycamore Landfill is approximately 71.2 million cubic yards and the landfill has a remaining capacity of 59%, or 42.2 million cubic yards and is expected to close in October 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?

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 2005b). 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.

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.

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.

C. Be inconsistent with General Plan, Otay Ranch GDP, or other relevant objectives and policies regarding solid waste thereby resulting in a significant physical impact.

Appendix B demonstrates the proposed project's consistency with General Plan and Otay Ranch GDP objectives and policies regarding solid waste. Consistent with the General Plan, the proposed project's waste pickup and disposal would include a recycling program for the reuse of numerous residential, commercial and industrial materials, curbside pickup, and waste management. Consistent with the Otay Ranch GDP, a recycling/drop-off center will be located within the mixed-use area of the village cores and/or within industrial development areas. This central location will encourage residents and businesses in the village to participate in recycling programs.

As described above, the project site was included as part of the cumulative analysis in the Village Nine EIR which projected the project site would generate approximately 9,039 tons of solid waste. As shown in Table 5.13-12, the proposed project would generate 5,050 tons of solid waste per year more than what the Village Nine EIR Cumulative Analysis assumed for the project site. While this represents an increase from what was previously considered, there would still be remaining landfill capacity.

As shown in Appendix B, the proposed project would be consistent with applicable General Plan policies, and impacts would be **less than significant**.

5.13.3.4 Level of Significance Prior to Mitigation

A. Insufficient Landfill Capacity

Impacts would be less than significant without mitigation.

B. Compliance with Solid Waste Regulations

Impacts would be less than significant without mitigation.

C. Consistent with City Solid Waste Polices

Impacts would be less than significant without mitigation.

5.13.3.5 Mitigation Measures

Since the proposed project would not result in any significant impacts associated with solid waste, no mitigation would be required.

5.13.3.6 Level of Significance After Mitigation

The proposed project would not require mitigation and impacts would remain below a level of significance.

5.13.4 Energy

5.13.4.1 Existing Conditions

5.13.4.1.1 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:*** This 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 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 recently updated 2013 standards will continue to improve upon the current 2008 standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2013 standards have been adopted by the California Energy Commission and will go into effect on July 1, 2014.

California Long-term Energy Efficiency Strategic Plan

In 2008, the California Energy Commission and the California Public Utilities Commission, working with a broad range of stakeholders, developed the first long-term strategic plan for California's energy efficiency efforts. The Strategic Plan was most recently updated in January 2011. The plan outlines numerous policy and program objectives, including net-zero goals for residential (2020) and (2030) commercial new construction. The Plan seeks to effect substantial and sustained progress towards more efficient technologies and practices in each of the customer end use sectors (e.g., Commercial, Industrial, Residential, Agricultural). Likewise, the Plan describes the market transformation efforts necessary in each of the cross-cutting areas discussed (e.g., Codes and Standards, Workforce Education and Training, Marketing Education and Outreach, and Research and Technology) (CPUC 2011).

Energy Upgrade California

Energy Upgrade California is a statewide energy management initiative designed to help residents and small businesses learn the best ways to take action on energy to save money and be more comfortable at home and at work. This new initiative will help our communities meet our energy efficiency and clean energy goals. Energy Upgrade California is a program of the CPUC in collaboration with the CEC, California counties, cities, nonprofit organizations, and the state’s investor-owned utilities. Funding comes from the utilities' ratepayers under the auspices of the CPUC in addition to incremental funding from the DOE. Energy Upgrade California offers a wide variety of incentives and rebates to choose from to help homeowners replace appliances, pool pumps, HVAC systems, hot water heaters, install windows, insulation, and more. Incentives and rebates can help offset the cost of energy efficient products (Energy Upgrade California 2014).

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 California Public Utilities Commission to outline its resource portfolio to meet future demand.

SDG&E's 20-year resource plan offers an analytical basis for the California Public Utilities Commission 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. Using the Balanced Portfolio, SDG&E's 2012 energy mix would be comprised of roughly 14% renewable, 53% natural gas, 14% nuclear, and 19% off-system resources.

Local Level

City of Chula Vista Climate Action Plan

Since 2000, Chula Vista has been implementing a Climate Action Plan to address climate change issues and it's impacts on the City. The City's Climate Action Plan is a group of documents including various GHG emission inventories, the original Carbon Dioxide Reduction Plan (2000), Mitigation Strategy Updates (2008), and new Climate Adaptation Strategies (2010). The City's Increased Energy Efficiency Ordinance, Green Building Standards, and Solar Ready Ordinances are products of the Climate Action Plan. Based on available funding, staff has been implementing the 18 climate-related actions and their 57 associated components.

City of Chula Vista Increased Energy Efficiency Code

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 (SANDAG 1994). The San Diego Regional Energy office worked with SANDAG to update the plan with Energy 2030, the San Diego Regional Energy Strategy. 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 (Objective PFS 22) and in the Environmental Element to promote conservation through the efficient use of energy and through the development of local, non-fossil fuel-based renewable sources of energy (Objective E 7).

<u>2005 GPU Program EIR Mitigation Measure 5.8-1:</u> The City shall continue to implement the Energy Strategy and Action Plan that addresses demand side management, energy efficient and

renewable energy outreach programs for businesses and residents, energy acquisition, power generation, and distribution energy resources and legislative actions, and continue to implement the CO2 Reduction Plan to lessen the impacts on energy.

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. The objectives address land use patterns and project features to conserve non-renewable energy resources, and the policies require the preparation of energy conservation plans and call for reducing reliance on the automobile.

Sectional Planning Area Energy Conservation Plan and Air Quality Improvement Plan

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. In addition, each SPA Plan with more than 50 units must prepare an Air Quality Improvement Plan (AQIP), consistent with CVMC Section 19.09.050B.

5.13.4.1.2 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). SDG&E's 2012 power mix included 19.2% renewables including wind (9.4%), biomass and waste (3.9%), solar (3.4%), geothermal (2.4%), and small hydroelectric (0.1%). Non-renewable energy sources included natural gas (63.1%), coal (2.3%), nuclear (0.9%), large hydroelectric (-0.1%) and unspecified sources (14.6%) which consist of electricity from transactions that are not traceable to specific generation sources (SDG&E 2013a).

The largest electricity consumption was from commercial uses, followed by residential, industrial, and agriculture. Average energy consumption rates are based on CARB's 2011 California Emissions Estimator Model (CalEEMod) obtained from the CEC end-use surveys for residential and non-residential uses. For ease of comparison, all rates have been calculated into annual rates. Table 5.13-13 shows average existing annual consumption rates.

Table 5.13-13
Average Existing Energy Consumption Rates

Land Use Type	Electricity	Natural Gas
Residential	7,090.56.0 kWh/single-family unit 4,324.68 kWh/multi-family unit	62,384.40 cubic feet/single-family unit 37,547.64 cubic feet/multi-family unit
Schools	6.35 kWh/square feet	15.50 cubic feet/square feet
Commercial	14.10 kWh/square feet	34.8 cubic feet/square feet
Industrial (Regional Technology Park)	17.6 kWh/square feet	2,899,332 cubic feet/consumer/year
Community Purpose Facility	9.38 kWh/square feet	33.20 cubic feet/square feet
Parks	9.38 kWh/square feet	3.0 cubic feet/square feet

Source: CalEEMod 2013.

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).

Natural gas consumption for this analysis is likewise calculated using rates obtained from CARB's 2011 CalEEMod. Table 5.13-13 shows average existing annual consumption rates for natural gas.

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).

5.13.4.2 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 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.

B. Result in the wasteful, inefficient, or unnecessary use of energy.

C. Be inconsistent with General Plan, Otay Ranch GDP, or other relevant objectives and policies regarding energy thereby resulting in a significant physical impact.

5.13.4.3 Impacts

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?

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. discussed in the project's Air Quality and Global Climate Change Technical Report (Appendix D), the proposed project would use approximately 65,751,692 kilowatt-hours (kWh) of electricity per year at full buildout.

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 5.14, Global Climate Change, and Appendix D). 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 *Otay Ranch Villages 3 North and, a Portion of 4, Village 8 East, and Village 10 Water Conservation Plans* (Dexter Wilson 2014b) 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 3171 (2010) 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.

As stated in the project's *Air Quality and Global Climate Change Technical Report*, the URBEMIS 2007 model was used to estimate project emissions from area sources, which include natural gas combustion. All residential units under the proposed project would be constructed with natural gas fireplaces and wood-burning fireplaces would not be used.

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 5.14 and Appendix D). Additionally, as described above, 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, 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.

The various statewide, regional and City programs and policies aimed at reducing energy consumption would result in more efficient use of energy; however, there is no guarantee energy resources will be available at the time of full project buildout. 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 require approximately 18 to 24 months from initial site development through energization and testing (SDG&E 2013b). 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 the site at full buildout and beyond, impacts would be considered **potentially significant** because the proposed project could increase the demand for energy resources that exceed the City's available supply. Planning for the new SDG&E substation is under way and subject to separate environment review. Construction of the SDG&E substation would be analyzed as part of that separate environmental review and could result in potentially significant impacts.

B. Threshold 2: Result in the wasteful, inefficient, or unnecessary use of energy.

As discussed above, future development of the proposed project would be required to meet the mandatory energy standards of the Chula Vista Energy Code, current CCR Titles 24, Part 6 California Energy Code, Part 11 California Green Building Standards, and the Chula Vista Energy Code. Additionally, the SPA Plan includes a non-renewable energy conservation plan addressing preservation of energy resources. As a result, and as further described in Section 5.44, Global Climate Change, the proposed project is expected to use 30% less energy compared to business as usual. Compliance with these policies and the energy conservation plan would ensure that average energy consumed by future occupants would not be wasteful, inefficient, or unnecessary, and would in fact be less than the regional average and less than statewide business-as-usual projections. Therefore, this impact would be **less than significant**.

C. Threshold 3: Be inconsistent with General Plan, Otay Ranch GDP, or other relevant objectives and policies regarding energy thereby resulting in a significant physical impact.

Appendix B evaluates the consistency of the proposed project with the applicable General Plan policies and with applicable Otay Ranch GDP goals and objectives. Consistent with the General Plan, 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. Additionally, the SPA Plans include Non-Renewable Energy Conservation Plans which identify feasible methods to reduce the consumption of non-renewable energy resources, including methods for land use and community design, building siting and construction techniques, and the transit facilities and alternative transportation modes. Consistent with the Otay Ranch GDP, the design of Village Three North and Portion of Village Four, Village Eight East, and Village Ten encourages walking, bicycling, and public transit use to lower fuel consumption. Implementation of these design strategies would support the overarching goals of the California Long-Term Energy Efficiency Strategic Plan; however, the proposed project would not achieve net-zero energy use and emissions goals as outlined in the plan. A more detailed analysis of the proposed project's consistency with local plans is provided in Appendix B.

As shown in Appendix B, the proposed project would be consistent with General Plan and Otay Ranch GDP policies that pertain to energy. Therefore, energy impacts would be **less than significant** related to consistency with existing policies pertaining to energy.

5.13.4.4 Level of Significance Prior to Mitigation

While energy consumed by future occupants of the proposed project would not be excessive, implementation of the SPA Plans and TMs has the potential to result in impacts due to increased

consumption of electricity and natural gas above that analyzed in the 2005 GPU EIR, which identified a significant and unavoidable impact related to energy demand. Even though the proposed project would reduce energy usage by 30% compared to business as usual, no guarantee can be made that long-term energy resources would be available as needed to support the future development of the site; therefore, impacts associated with energy consumption would be considered **potentially significant**.

5.13.4.5 Mitigation Measures

The Supplemental Environmental Impact Report for Amendments to the City of Chula Vista General Plan (GPA-09-01) and Otay Ranch General Development Plan (PCM-09-11) included mitigation measure 5.3.5-1, which would encourage energy efficient development throughout the SPA through implementation of the City of Chula Vista Energy Strategy & Action Plan including implementation of the Adaptation Strategies to prepare the City for impacts associated with climate change. The proposed project would comply with this mitigation measure because it includes a non-renewable energy conservation plan to reduce energy use. Implementation of the energy conservation plan would aid in the implementation of energy efficient measures throughout project design; however, there is no assurance that long-term energy resources would be supplied to the project site following full project buildout. No additional mitigation measures are available to reduce impacts related to energy consumption to a less than significant level.

5.13.4.6 Level of Significance After Mitigation

Compliance with the Supplemental Environmental Impact Report for Amendments to the City of Chula Vista General Plan (GPA-09-01) and Otay Ranch General Development Plan (PCM-09-11) mitigation measure 5.3.5-1, in conjunction with Statewide and City programs and policies identified above, would reduce impacts related to energy; however, because there is no guarantee that long-term energy resources will be available to serve the proposed project, impacts would remain **significant and unavoidable**.

5.14 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 *Air Quality and Global Climate Change Technical Report for the Otay Ranch University Villages Project*, prepared by Dudek in March 2014. The complete report is contained in Appendix D.

The 1993 Otay Ranch GDP Program EIR and the 2005 GPU/GDPA Program EIR did not provide an analysis of GHG emissions, or an assessment of impacts on global climate change. Therefore, unlike the other sections within Chapter 5.0 of this EIR, the analysis herein does not tier from either the 1993 Otay Ranch GDP Program EIR or the 2005 GPU/GDPA Program EIR. Rather, this section tiers from the 2013 GPA/GDPA Supplemental EIR, which included Village Eight East and Village Ten in the cumulative analysis. The calculations provided an estimate of the magnitude of GHG emissions that would occur under cumulative conditions. The 2013 GPA/GDPA Supplemental EIR concluded, that individual projects (within the cumulative area) would be subject to the City's existing Green Building Standards and Increased Energy Efficiency Standards ordinances, and would therefore, not be cumulatively considerable.

Similarly, the Village Eight West and Village Nine EIRs, which included Village Three North, Village Eight East and Village Ten in the cumulative analysis, determined that cumulative projects would be subject to the city's existing Green Building Standards, Increased Energy Efficiency Standards, and General Plan policies. Compliance with such standards would ensure that cumulative projects would be at least 20% below business as usual GHG emissions consistent with AB32 and would not create a cumulatively considerable impact.

5.14.1 Existing Conditions

5.14.1.1 Regulatory Framework

Federal Level

Massachusetts vs. EPA. On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497, the U.S. 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 U.S. EPA Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the CAA:

- 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 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.

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 vehicle standards that reduce GHG emissions and improve fuel economy. The standards for passenger cars and light trucks are being 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 will cut GHG 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 will 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 July 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. 20% mandatory reduction in indoor water use.
2. 50% 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 include 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 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. The near-term (2009–2012) standards resulted in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards – when fully phased in – will result in a reduction of about 30%.

Before these vehicle standards could go into effect, the U.S. EPA had to grant California a waiver under the federal CAA, which ordinarily preempts 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 standards to harmonize the state program with the national program for 2012 to 2016 model years (see "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.
- 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 February 2014, CARB released the draft of its first update to the Scoping Plan (CARB 2014). 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 Low Carbon Fuel Standard (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 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 GHG 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 GHG emissions on the environment:
    - The extent to which the project may increase or reduce GHG 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 GHG emissions (Section 15064.4(b)).

- Allowing lead agencies to consider feasible means of mitigating the significant effects of GHG 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 GHG 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 GHGs?

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 released a draft iteration of the updated report for public review and comment in December 2013 (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

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 that, 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 to develop 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 further 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. As of November 2013, all 11 strategies have either been successfully implemented and completed, or are in progress, except for one component of Adaptation Strategy #9 – Wetlands Preservation, which has been put on hold due to funding restrictions. This component involves amending the Otay Valley Regional Park (OVRP) Habitat Restoration and Non-Restoration Plan Removal Plans to promote climate resiliency.

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.

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 University Villages project site 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.

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; and,
- 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.

5.14.1.2 Existing Setting

Global Climate Change

Global climate change is an alteration in the average weather of the earth, which can be measured by wind patterns, storms, precipitation, and temperature. The earth's climate is in a state of constant flux with periodic warming and cooling cycles. For most of the earth's geologic history, these periods of warming and cooling have been the result of many complicated, interacting natural factors. However, since the beginning of the Industrial Revolution around 1750, the average temperature of the earth has been increasing at a rate that is faster than can be explained by natural climate cycles alone. With the Industrial Revolution came an increase in the combustion of carbon-based fuels such as wood, coal, oil, natural gas, and biomass. Industrial processes have also created emissions of substances that are not found in nature. This in turn has led to a marked increase in the emissions of gases that have been shown to influence the world's climate. These gases, termed GHGs, influence the amount of heat that is trapped in the earth's atmosphere. Because recently observed increased concentrations of GHGs in the atmosphere are related to increased emissions resulting from human activity, the current cycle of "global warming" is generally believed to be largely due to human activity.

The primary effect of global climate change has been a rise in average global tropospheric temperature of 0.2°C per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming would occur, which would induce further changes in the global climate system during the current century.

According to CARB, some of the potential impacts in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CARB 2006). Several recent studies have attempted to explore the possible negative consequences that climate change, left unchecked, could have in California. These reports acknowledge that climate scientists' understanding of the complex global climate system, and the interplay of the various internal and external factors that affect climate change, remains too limited to yield scientifically valid conclusions on such a localized scale. Substantial work has been done at the international and national level to evaluate climatic impacts, but far less information is available on regional and local impacts.

Changes to the global climate system and ecosystems and to California would include, but would not be limited to:

- The loss of sea ice and mountain snowpack resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures (IPCC 2007).
- Rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps, the Greenland and Antarctic ice sheets (IPCC 2007).
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic and aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones (IPCC 2007).
- Decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 70% to as much as 90% over the next 100 years (CAT 2006).
- Increase in the number of days conducive to ozone formation by 25% to 85% (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century (CAT 2006).
- High potential for erosion of California's coastlines and sea water intrusion into the Delta and levee systems due to the rise in sea level (CAT 2006).

The Greenhouse Effect and Greenhouse Gases

The greenhouse effect traps heat in the troposphere through a three-fold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit this long-wave radiation into space and toward the Earth. This "trapping" of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

The greenhouse effect is a natural process that contributes to regulating the earth's temperature. Without it, the temperature of the Earth would be about 0°Fahrenheit (F)(−18°Celcius (C)) instead of its present 57°F (14°C). Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect (National Climatic Data Center 2009).

Gases that trap heat in the atmosphere are often called GHGs. Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and water vapor (H_2O). Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted to the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results mostly from off-gassing associated with agricultural practices and landfills. Man-made GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3), which are associated with certain industrial products and processes (CAT 2006).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and its potential to trap heat in the atmosphere, known as its global warming potential (GWP). The GWP varies between GHGs; for example, the GWP of CH_4 is 21, and the GWP of N_2O is 310. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG gas emissions are typically measured in terms of pounds or tons of "CO_2 equivalent" (CO_2e).[3]

Greenhouse Gas Emissions Inventories

Global

In 2006, worldwide anthropogenic emissions of GHGs were approximately 49,000 MMT CO_2e, including ongoing emissions from industrial and agricultural sources and emissions from land

[3] The CO_2 equivalent for a gas is derived by multiplying the mass of the gas by the associated GWP, such that MT CO_2e = (metric tons of a GHG) x (GWP of the GHG). For example, the GWP for CH_4 is 21. This means that 1 metric ton of methane is equivalent to 21 metric tons of CO_2.

use changes (i.e., deforestation, biomass decay) (IPCC 2007). Carbon dioxide emissions from fossil fuel use accounted for 56.6% of the total emissions. All carbon dioxide emissions were 76.7% of the GHG total. Methane emissions accounted for 14.3% and nitrous oxide emissions for 7.9% (IPCC 2007).

United States

The U.S. EPA publication, *Inventory of U.S. GHG Emissions and Sinks: 1990-2012*, provides a comprehensive emissions inventory of the nation's primary anthropogenic sources and sinks of GHGs. Overall, GHG emissions in the United States in 2012 totaled 6,526 MMT CO_2e. U.S. emissions decreased by 3.4% from 2011 to 2012, a trend that was attributed to multiple factors, including a decrease in the carbon intensity of fuels consumed by power producers to generate electricity due to a decrease in the price of natural gas, a decrease in transportation sector emissions attributed to a small increase in fuel efficiency across different transportation modes and limited new demand for passenger transportation, and much warmer winter conditions resulting in a decreased demand for heating fuel in the residential and commercial sectors (EPA 2014). Relative to 2005 levels, U.S. emissions have decreased by 10% (EPA 2014).

State

According to the 2011 GHG inventory data compiled by CARB for the California Greenhouse Gas Inventory for 2000–2011, California emitted 448 MMT CO_2e of GHGs, including emissions resulting from out-of-state electrical generation (CARB 2013b). The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture, and other sources, which include commercial and residential activities. These primary contributors to California's GHG emissions and their relative contributions in 2011 are presented in Table 5.14-1, GHG Sources in California.

Table 5.14-1
GHG Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	% of Total
Agriculture	32.24	7.19%
Commercial and residential	45.47	10.15%
Electricity generation	86.57[a]	19.32%
Industrial uses	93.24	20.81%
Recycling and waste	7.00	1.56%
Transportation	168.42	37.58%
High-GWP substances	15.17	3.39%
Totals	**448.11**	**100.00%**

Source: CARB 2013.
Notes:
[a] Includes emissions associated with imported electricity, which account for 46.86 MMT CO2e annually.

Local

As part of monitoring its progress in attaining the goals of its Carbon Dioxide Reduction Plan, the City of Chula Vista inventoried citywide GHG emissions in 2005, 2008, 2009, 2010 and 2012. The 2005 GHG Emissions Inventory was the first formal evaluation of the City's progress in reaching its emissions goals, and the most recent inventory was conducted in 2012 (City of Chula Vista 2005; 2008; 2009; 2010; 2012).

In 2012, community GHG emissions in the City totaled 1,011,481 MT CO_2e. This is 8% higher than 2005 levels. Transportation and mobile sources accounted for more than 50% of this total. However, 2012 per capita emissions are approximately 33% below 1990 levels. GHG emissions from municipal sources (i.e., operations, facilities, and vehicle fleet) in 2012 were lower than 1990 and 2005 levels, approximately 41% and 8% respectively.

Existing Project Site GHG Emissions

The project site is located in the south portion of the Otay Ranch General Development Plan (GDP) area. The Otay Ranch GDP area is former agricultural ranch land historically used for ranching, grazing, and dry farming. The project site is currently vacant of development and is thus not a source of anthropogenic GHGs. Therefore, for purposes of establishing the existing environmental conditions on the project site in accordance with CEQA Guidelines section 15125, GHG emissions on the project site are assumed to be zero.

5.14.2 Thresholds of Significance

OPR's Technical Advisory titled *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review* states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008). Furthermore, the advisory document indicates in the third bullet item on page 6 that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice" (OPR 2008).

Therefore, the following significance criteria, as required by the City of Chula Vista, will determine the significance of a climate change impact. Impacts to climate change would be significant if the proposed project would:

A. Conflict with or obstruct goals or strategies of the California Global Solutions Act of 2006 (AB 32) or related Executive Orders.

To conform to AB 32 and related executive orders, a project's operational emissions would have to provide the same proportional reduction relative to business-as-usual (BAU) conditions that the Scoping Plan identifies for implementation of its quantifiable measures. The BAU scenario represents GHG emissions that would occur without the implementation of GHG reduction emissions. As the proposed project is contemplated for approval prior to AB 32's target year of 2020, a mid-point of 20% in the proportional reduction is appropriate to utilize when assessing the project's significance.

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).

In identifying these significance criteria, the City of Chula Vista reviewed available materials published by CARB and the San Diego Air Pollution Control District (SDAPCD). Based on that review, it was determined that neither CARB nor the SDAPCD has adopted thresholds that can be utilized to assess the significance of GHG emissions under CEQA. Further, Appendix G of the CEQA Guidelines only contains qualitative standards that may be considered.

Therefore, in accordance with the discretion afforded to it under CEQA, the City decided to utilize to utilize AB 32 as its benchmark of significance, which contains the only codified reduction target established in state law. Also, while the purpose of CEQA is to disclose the significant impacts of a project on the environment (and not vice versa), the City decided to study the effects of climate change on the proposed project in order to provide the decision-makers and public with information concerning the project's preparedness for and adaptation to the effects of climate change.

5.14.3 Impacts

A. Conflict with or obstruct goals or strategies of the California Global Solutions Act of 2006 (AB32) or related Executive Orders.

Construction Emissions

GHG emissions would be associated with the construction phase of the proposed project through the use of construction equipment and vehicle trips. Emissions of CO_2 were estimated using the URBEMIS 2007, Version 9.2.4, land use and air emissions model (Jones and Stokes 2007). Construction of the proposed project is anticipated to begin with Village Three North and a Portion of Village Four in March 2014. Project construction would end with buildout of Village Ten, which is anticipated to occur in July 2029[4]. The model results

[4] The original construction schedule beginning in March 2014 is analyzed for the Proposed Project; however, construction would start at a later date. The construction scenario and schedule analyzed as part of the Proposed

were adjusted to estimate CH_4 and N_2O emissions in addition to CO_2. Table 5.14-2, Estimated Construction GHG Emissions, shows the estimated annual GHG construction emissions associated with the proposed project.[5]

Table 5.14-2[1]
Estimated Construction GHG Emissions (metric tons/year)

Construction Year	CO_2e Emissions
2014	1,117.58
2015	2,396.80
2016	3,867.28
2017	4,544.40
2018	3,085.30
2019	2,382.27
2020	2,391.37
2021	2,382.19
2022	2,373.07
2023	3,303.83
2024	2,753.49
2025	2,073.77
2026	2,073.80
2027	2,073.80
2028	1,773.19
2029	513.36
Total Construction Emissions	39,105.53
Amortized Annual Construction Emissions	1,303.52

Source: URBEMIS 2007 Version 9.2.4. See Appendix D for complete results.

1 Construction emissions that would be generated under the Village Eight East Alternative Development Scenario would be essentially the same to those shown in Table 5.14-2. Although the construction footprint under the Alternative Development Scenario would be slightly greater than that of the proposed Village Eight East, overall construction emissions would be essentially the same and would occur over the same length of time, as construction equipment fleet, equipment and construction crew operations, and construction-related trips to and from the site would be the same as those analyzed under the proposed project. Therefore, the quantitative analysis under both the proposed project and alternative scenario would be essentially the same.

Operational Emissions

Operation of the proposed project would result in GHG emissions from vehicular traffic generated by residents, area sources (natural gas appliances, hearth combustion, and landscape maintenance),

Project analysis is considered conservative because over time, emissions for both the construction and operational scenario would decrease due to more stringent air quality standards implemented over time, vehicle fleet turnover to more efficient engines, fuel mix, etc. As the duration of construction would not change (i.e., construction would occur over a 16-year period regardless of start date), the scenario analyzed as part of this analysis is considered conservative for the purposes of quantitatively analyzing air quality impacts.

5 For additional information regarding the technical methodology utilized to estimate construction emissions, please see Appendix D.

electrical generation, water supply and solid waste. Emissions associated with these GHG sources would be reduced by implementing GHG reduction measures described below.[6]

Vehicular Traffic

Annual CO_2 emissions from motor vehicle trips for full project buildout were quantified using the URBEMIS 2007 model (refer to Appendix D for additional details and model assumptions).

Several regulatory initiatives have been passed to reduce on-road vehicle emissions, as previously discussed in Section 5.14.1. These initiatives (Pavley and EPA/NHTSA standards for light-duty vehicles, and the LCFS) have been estimated to reduce emissions from motor vehicles by approximately 32% by the year 2020 (University of San Diego 2008).

The estimated GHG emissions associated with vehicular traffic sources are shown in Table 5.14-3.

Area Sources

Annual CO_2 emissions from natural gas combustion for space and water heating, hearth combustion, and gas-powered landscape maintenance equipment were estimated using URBEMIS 2007.

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, which is approximately 30% more efficient than the 2005 Energy Code. As such, building design would employ energy efficient measures beyond that required by the Energy Code, resulting in a 30% reduction in emissions generated by natural gas use.

The estimated GHG emissions associated with area sources are shown in Table 5.14-3.

Electrical Generation

Annual electricity use for the proposed project was based upon estimated generation rates for land uses in the San Diego Gas and Electric service area. The proposed project would consume approximately 65,459,438 kilowatt-hours per year (see Appendix D for calculations).

Again, the proposed project would be required to comply with Section 15.26.030 of the City's Municipal Code, which would result in a 30% reduction in emissions generated by electricity use.

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[6] For additional information regarding the technical methodology utilized to estimate operational emissions, please see Appendix D.

The estimated GHG emissions associated with electricity use are shown in Table 5.14-3.

Water Supply

Water supplied to the proposed project requires the use of electricity. Accordingly, the supply, conveyance, treatment, and distribution of water would indirectly result in GHG emissions through use of electricity. Water usage rates were obtained from the Overview of Water Service completed for the proposed project (Dexter Wilson Engineering 2014a). The estimated electrical usage associated with supply, conveyance, treatment, and distribution of water was obtained from a California Energy Commission report on electricity associated with water supply in California (CEC 2006).

Per Section 15.12 of the City's Municipal Code, all new residential construction, remodels, additions, and alterations must provide a schedule of plumbing fixture fittings that will reduce the overall use of potable water by 20%. Further, the proposed project includes a Water Conservation Plan for Otay Ranch University Villages, which identifies proposed water conservation measures that would result in a 29.2% reduction in potable water usage (Dexter Wilson Engineering 2014b). As such, the GHG emissions from electricity generated for supply, conveyance, treatment, and distribution of water would also be reduced by 29.2%.

The estimated GHG emissions associated with water supply are shown in Table 5.14-3.

Solid Waste

The proposed project would generate solid waste, and would therefore result in CO_2e emissions associated with landfill off-gassing. Solid waste generation rates and CO_2e conversion factors were obtained from the Bay Area Air Quality Management District's Greenhouse Gas Model, Version 1.1.9 Beta (BAAQMD 2010).

The estimated GHG emissions associated with solid waste sources are shown in Table 5.14-3.

Summary of Operational Emissions

The estimated GHG emissions associated with vehicular traffic, area sources, electrical generation, water supply, and solid waste are shown in Table 5.14-3. Additional detail regarding these calculations can be found in Appendix D. The estimated emissions of CO_2e would be 203,688 metric tons per year without the GHG reduction measures ("business as usual"), and 144,520 metric tons per year with the GHG reduction measures. As indicated in Table 5.14-3, the GHG reduction measures would reduce GHG emissions by approximately 29.0%.

Table 5.14-3
Estimated Operational GHG Emission (metric tons/year)

Source	Existing CO_2e Emissions	Project CO_2e Emissions	Project CO_2e Emissions w/ GHG Reduction Measures	Percent Reduction
Motor Vehicles	0	138,188	93,968	32%
Area Sources	0			
Natural Gas Combustion	0	18,213	12,749	30%
Hearth (Fireplace) Combustion	0	26	26	0%
Landscaping	0	39	39	0%
Electrical Generation	0	22,031	15,422	30%
Water Supply	0	9,844	6,970	29%
Solid Waste	0	14,043	14,043	0%
Amortized Annual Construction Emissions	0	1,304	1,304	0%
Total	**0**	**203,688**	**144,520**	**29.0%**

Source: See Appendix D for complete results.

Assessment of GHG Impacts

As previously disclosed, existing GHG emissions on the project site are conservatively assumed to be zero. As a result, the proposed project would increase GHG emissions by approximately 144,520 metric tons per year relative to the existing environmental conditions. While this numeric delta is disclosed in this EIR in accordance with CEQA Guidelines section 15064.4(b)(1), due to the absence of (i) adopted "bright line" numeric thresholds by applicable regulatory agencies (i.e., CARB and SDAPCD) and (ii) scientific, factual and regulatory consensus regarding what particular quantities of GHG emissions are significant for purposes of CEQA, this number (i.e., 144,520 metric tons per year) is uninformative and does not provide a meaningful indicator of the proposed project's impacts. This numeric delta, when disclosed in a vacuum, also is not informative because of the global nature of climate change.

Therefore, this EIR also considers – in accordance with CEQA Guidelines section 15064.4(b)(2) – the proposed project's consistency with AB 32 and related executive orders. As shown in Table 5.14-3, with implementation of GHG reduction measures, the proposed project would reduce GHG emissions by 29.0%. The proposed project, therefore, would exceed the target of 20% below business as usual that has been established for the purposes of assessing operational GHG emissions of projects in the City of Chula Vista, and this reduction would be consistent with the goals of AB 32.

Furthermore, the City of Chula Vista has a number of GHG-reducing programs and strategies in place, as summarized in Section 5.14.1.1. 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 30% reduction in emissions generated by energy use. Additionally, the proposed project would reduce the overall use of potable water by 29.2%, consistent with the Municipal Code. The proposed project also would be consistent with all 20 action measures identified in the City of Chula Vista's Carbon Dioxide Reduction Plan and would not conflict with the applicable policy objectives of SANDAG's 2050 Regional Transportation Plan/Sustainable Communities Strategy (see Appendix D). Therefore, the project would comply with regional and local plans to reduce GHG emissions, which is established as a factor to consider in evaluating a project's significance in CEQA Guidelines section 15064.4(b)(3). Lastly, the project design features identified in Chapter 4, Project Description, would help to further reduce GHG emissions.

Although Executive Order S-3-05 included a post-2020 target (i.e., reduce GHG emissions to 80% below 1990 levels by 2050), that target has not been adopted by the California legislature and codified. CARB also has noted that the measures needed to meet the 2050 goal are too far in the future to define in detail (CARB 2008). In light of the above, determining impacts relative to Executive Order S-3-05's horizon-year goal is speculative.

In summary, the proposed project would be consistent with AB 32 and related Executive Orders, and impacts would be **less than significant**.

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 5.14.1 and 5.14.2, 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 5.4, 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.

Through previous planning efforts, the project area was allocated a total of 1,570 residential units, including 928 units in Village Eight and 624 units in Village Ten. Village Three North and the Portion of Village Four were not allocated any residential units. The proposed project includes a total of 6,897 residential units. As such, the proposed project would result in an additional 5,327 residential units above the planned/allocated 1,570 residential units.

This increase in land use intensity and associated increase in vehicle trips has not been anticipated in local air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the RAQS. Furthermore, as discussed in Section 5.4, the emissions VOCs and NO_x (precursors of O_3), as well as those of PM_{10} and $PM_{2.5}$, would exceed operational significance thresholds. As a result, operation of the proposed project would result in significant impacts to air quality. Project design features identified in Section 1.3 would help to reduce operational emissions; however, significant reductions in ozone precursor 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. Therefore, even with incorporation of these design features, emission for ozone precursors are anticipated to be above the thresholds. As a result, and as discussed further in Section 5.4, this impact is considered **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 will 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 5.13, Utilities, a *Water Supply Assessment and Verification* (WSA&V) report prepared by the Otay Water District (OWD) for the proposed project describes the current and long-range storage capacity and ensures that OWD would be able to absorb the project's forecasted growth. The WSA&V also provides documentation of entitlements and contracts, and a financial analysis of OWD's maintenance and future water supplies. The WSA&V report concludes that adequate long-term water supply will be available to the proposed project. The *Overview of Water Service for Otay Ranch University Villages*, prepared by Dexter Wilson Engineering, Inc. also provides information that existing and OWD Capital Improvement Program off-site conveyance and storage facilities would be adequate to serve the project (see Appendix N).

In addition, the *Otay Ranch University Villages Water Conservation Plan* was prepared for the proposed Sectional Planning Area (SPA) plans (Village Three North, Village Eight East, and Village Ten) by Dexter Wilson Engineering, Inc. (Appendix N). This plan presents water conservation measures that will 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). The project will install hot water pipe insulation, pressure reducing valves, and water efficient dishwashers in all single- and multi-family residential units. Additionally, water efficient landscaping and dual flush toilets will be installed in the single- and multi-family residential units, and water efficient irrigation systems and dual flush toilets will be utilized at the non-residential sites. The project also will 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 has been 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 (Dexter Wilson 2014a).

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, in addition to the WSA&V report concluding that adequate long-term water supply will be available to the proposed project, 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

As discussed in Section 5.10, Hydrology and Water Quality, 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. Therefore, the proposed project's impact associated with damage to marine ecosystems would be **less than significant**.

Additionally, as discussed in Section 5.10, 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's impact associated with damage to the natural environment would be **less than significant**.

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. Several water quality and drainage basins are proposed as part of the project. However, the water in these basins would evaporate or flow off the site to the

Otay River and continue downstream. Therefore, the proposed project's impact associated with vector-borne diseases would be **less than significant**.

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's impact associated with heat-related ailments would be **less than significant**.

5.14.4 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. However, the project would have significant impacts related to substantially increased exposure to the potential adverse effects of global warming, specifically further degradation to regional and local air quality resulting from the formation of ozone precursors.

5.14.5 Mitigation Measures

Since the proposed project would not result in a significant impact related to compliance with AB 32, no mitigation would be required under that significance threshold. For purposes of mitigating the formation of ozone precursors and minimizing the project's exposure to the effects of global warming, Section 1.3 of this EIR identified project design features that would assist with the reduction of operational emissions contributing to ozone formation. However, no feasible mitigation measures are available to reduce impacts to levels below significant. (See also EIR Section 5.4, Air Quality.)

5.14.6 Level of Significance After Mitigation

Impacts related to compliance with AB 32 would be **less than significant** without mitigation. However, the project's potential to exacerbate air quality problems resulting from global warming as a result of ozone formation is a **significant and unavoidable** impact due to the unavailability of feasible mitigation.

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5.15 HAZARDS AND RISK OF UPSET

This section tiers from the 2005 GPU/GDPA Program EIR, because potentially hazardous conditions for the entire Otay Ranch area, including the proposed project areas, were analyzed as part of the 2005 GPU/GDPA. The analysis within the 2005 GPU/GDP Program EIR determined that with compliance with General Plan objectives and policies, potential impacts would be self-mitigated and not significant. No mitigation measures were proposed related to hazards or risk of upset.

This section of the EIR describes existing hazards and hazardous materials within the project area and surrounding areas and evaluates potential for hazards and hazardous materials impacts due to implementation of the project. The basis for the following evaluation of hazards and risk of upset is the Phase I Environmental Site Assessment (Phase I ESA), prepared by Coast 2 Coast Environmental Inc. (November 11, 2011) and Fire Protection Plans for Villages Three North and a Portion of Village Four, Village Eight East, and Village Ten (FPPs), prepared by Dudek. The Phase I ESA is contained in Appendix I of this EIR, and FPPs are contained in Appendix J. In addition, this section includes health risk impact analyses based on the Air Toxics Health Risk Assessment (HRA), prepared by SCS Engineers (January 2014) for Village Three North, which is included in Appendix D, Part II of this EIR. Additionally, an Air Toxics HRA, prepared by Scientific Resources Associated (March 2014) for Village Eight East, is included in Appendix D, Part III of this EIR.

5.15.1 Existing Conditions

5.15.1.1 Regulatory Framework

Federal Level

Federal Toxic Substances Control Act and Resource Conservation and Recovery Act

The Federal Toxic Substances Control Act of 1976 (15 U.S.C. 2601–2697) and the Resource Conservation and Recovery Act (RCRA) of 1976 (42 U.S.C. 6901–6992) established a program administered by the U.S. Environmental Protection Agency (EPA) for regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (PL 98-616), which affirmed and extended the “cradle-to-grave” system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Act. Under the authority of RCRA, the regulatory framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, and dispose of hazardous waste is found in 40 CFR, Parts 260–299.

Hazardous Materials Transportation Act

The U.S. Department of Transportation regulates hazardous materials transportation under Title 49 of the United States Code (U.S.C.). State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. These agencies also govern permitting for hazardous materials transportation. Title 49 CFR reflects laws passed by Congress as of January 2, 2006.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA; 42 U.S.C. 9601–9675), commonly known as "Superfund," was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan. The National Contingency Plan provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants.

International Fire Code

The International Fire Code (IFC; ICC 2012), created by the International Code Council (ICC), is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code (IBC) use a hazard classification system to determine what protective measures are required to protect life safety in relation to fire. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is updated every 3 years.

Federal Aviation Administration Functions

The Federal Aviation Administration (FAA) has primary responsibility for the safety of civil aviation. The FAA's major functions regarding hazards include the following: (1) developing and operating a common system of air traffic control and navigation for both civil and military aircraft, (2) developing and implementing programs to control aircraft noise and other environmental effects of civil aviation, (3) regulating U.S. commercial space

transportation, and (4) conducting reviews to determine that the safety of persons and property on the ground are protected.

Federal Response Plan

The Federal Response Plan of 1999 (FEMA 1999) is a signed agreement among 27 federal departments and agencies, including the American Red Cross, that (1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of state and local governments overwhelmed by a major disaster or emergency; (2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and (3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a presidential declaration of a major disaster or emergency.

State Level

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (CalOSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. CalOSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 330 et seq.). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings.

California Hazardous Waste Control Act

The Department of Toxic Substances Control is responsible for the enforcement of the Hazardous Waste Control Act (California Health and Safety Code, Section 25100 et seq.), which creates the framework under which hazardous wastes are managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA cradle-to-grave waste management system in California. It also provides for the designation of California-only hazardous waste and development of standards that are equal to or, in some cases, more stringent than federal requirements. While the Hazardous Waste Control Act is generally more stringent than RCRA, until the EPA approves the California hazardous waste control program (which is charged with regulating the generation, treatment, storage, and disposal of hazardous waste), both the state and federal laws apply in California. The Hazardous Waste Control Act lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying,

packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

According to 22 CCR 66001 et seq., substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered hazardous waste. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, contaminated, or are being stored prior to proper disposal.

Toxic substances may cause short-term or long-lasting health effects ranging from temporary effects to permanent disability or death. For example, toxic substances can cause eye or skin irritation, disorientation, headache, nausea, allergic reactions, acute poisoning, chronic illness, or other adverse health effects if human exposure exceeds certain levels (the level depends on the substance involved). Carcinogens (substances known to cause cancer) are a special class of toxic substances. Examples of toxic substances include most heavy metals, pesticides, and benzene (a carcinogenic component of gasoline). Ignitable substances (e.g., gasoline, hexane, and natural gas) are hazardous because of their flammable properties. Corrosive substances (e.g., strong acids and bases such as sulfuric (battery) acid or lye) are chemically active and can damage other materials or cause severe burns upon contact. Reactive substances (e.g., explosives, pressurized canisters, and pure sodium metal, which react violently with water) may cause explosions or generate gases or fumes.

Other types of hazardous materials include radioactive and biohazardous materials. Radioactive materials and wastes contain radioisotopes, which are atoms with unstable nuclei that emit ionizing radiation to increase their stability. Radioactive waste mixed with chemical hazardous waste is referred to as “mixed wastes.” Biohazardous materials and wastes include anything derived from living organisms. They may be contaminated with disease-causing agents, such as bacteria or viruses (22 CCR 66261.1 et seq.).

California Accidental Release Prevention Program

Similar to the EPA Risk Management Program, the California Accidental Release Prevention (CalARP) Program (19 CCR 2735.1 et seq.) regulates facilities that use or store regulated substances, such as toxic or flammable chemicals, in quantities that exceed established thresholds. The overall purpose of CalARP is to prevent accidental releases of regulated substances and reduce the severity of releases that may occur. The CalARP Program meets the requirements of the EPA Risk Management Program, which was established pursuant to the Clean Air Act Amendments.

California Health and Safety Code

In California, the handling and storage of hazardous materials is regulated by Division 20, Chapter 6.95, of the California Health and Safety Code (Section 25500 et seq.). Under Sections 25500–25543.3, facilities handling hazardous materials are required to prepare a hazardous materials business plan. Hazardous materials business plans contain basic information about the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state.

Chapter 6.95 of the Health and Safety Code establishes minimum statewide standards for Hazardous Materials Business Plans. Each business shall prepare a Hazardous Materials Business Plan if that business uses, handles, or stores a hazardous material (including hazardous waste) or an extremely hazardous material in disclosable quantities greater than or equal to the following:

- 500 pounds of a solid substance
- 55 gallons of a liquid
- 200 cubic feet of compressed gas
- A hazardous compressed gas in any amount (highly toxic with a Threshold Limit Value of 10 parts per million or less)
- Extremely hazardous substances in threshold planning quantities (California Health and Safety Code, Section 25503.5).

In addition, in the event that a facility stores quantities of specific acutely hazardous materials above the thresholds set forth by California code, facilities are also required to prepare a risk management plan and California accidental release prevention plan. The risk management plan and accidental release prevention plan provide information about the potential impact zone of a worst-case release and require plans and programs designed to minimize the probability of a release and mitigate potential impacts.

California Fire Code

The California Fire Code (CFC) is Chapter 9 of Title 24 of the CCR. It was created by the California Building Standards Commission, and it is based on the IFC created by the ICC. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized

equipment. To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is updated every 3 years.

California Emergency Services Act

Under the Emergency Services Act (California Government Code, Section 8550 et seq.), the State of California developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an integral part of the plan, which is administered by the Governor's Office of Emergency Services. The Office of Emergency Services coordinates the responses of other agencies, including the EPA, California Highway Patrol, Regional Water Quality Control Boards (RWQCBs), air quality management districts, and county disaster response offices.

CCR Title 5, Division 1, Chapter 13, Subchapter 1 – School Facilities Construction

CCR Title 5, Division 1, Chapter 13, Subchapter 1 establishes minimum standards for siting of schools and school construction to provide safety for students and staff. The regulation establishes minimum distances that schools can be located from potential hazards such as power line easements, and sets screening distances for other hazards that would require a safety study, such as a railroad track easement. Section 14010(h) states that school shall not be located near an above-ground water or fuel storage tank or within 1,500 feet of the easement of an above-ground or underground pipeline that can pose a safety hazard as determined by a risk analysis study. Section 14010(t) states that if the proposed site is on or within 2,000 feet of a significant disposal of hazardous waste, the school district shall contact the Department of Toxic Substance Control for a determination of whether the property should be considered a hazardous waste property or border zone property and unsuitable for school development.

Regional

Regional Water Quality Control Board (RWQCB)

The RWQCB implements the California Water Code which regulates waste discharges to land. If a discharge of waste threatens a water of the state, a report waste discharge or an application for a waiver of a report of waste discharge must be filed with the RWQCB. The RWQCB accomplishes its permitting responsibility by issuing either a general or site-specific permit (Waste Discharge Permit) or a waiver of a permit.

Local Level

San Diego County Emergency Plan

The San Diego County Emergency Plan is a comprehensive emergency management system that provides for a planned response to disaster situations associated with natural disasters, technological incidents and nuclear defense operations. The Plan includes operational concepts relating to various emergency situations, identifies components of the Emergency Management Organization and describes the overall responsibilities for protecting life and property and assuring the overall well-being of the population. The plan also identifies the sources of outside support that might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, state and federal agencies and the private sector.

San Diego County Multi-Jurisdiction Hazard Mitigation Plan

The San Diego County Multi-Jurisdiction Hazard Mitigation Plan was prepared in July 2010 to meet federal and state requirements for disaster preparedness to make the county eligible for funding and technical assistance from state and federal hazard mitigation programs. The plan includes a risk assessment to enable local jurisdictions to identify and prioritize appropriate mitigation actions that will reduce losses from potential hazards, including flooding, earthquakes, fires, and man-made hazards. To address potential hazards, the plan then incorporates mitigation goals and objectives, mitigation actions and priorities, an implementation plan, and documentation of the mitigation planning process for each of the twenty-one participating jurisdictions, including Chula Vista.

California Disaster and Civil Defense Master Mutual Aid Agreement

As provided for in the California Emergency Services Act, this agreement was developed in 1950 and adopted by all 58 California counties. This statewide mutual aid system is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation. San Diego County is located in Mutual Aide Region 6 of the state system, which also includes Imperial, Riverside, San Bernardino, Inyo, and Mono counties.

Unified County Emergency Services Organization

The City of Chula Vista has comprehensive agreements with the Bureau of Land Management, California Department of Forestry, California Conservation Corps, Urban Search and Rescue Corps, San Diego County Fire Mutual Aid, and other agencies in conjunction with the California Disaster and Civil Defense Master Mutual Aid Agreement. Village Three North and Portion of Village Four, Village Eight East, and Village Ten are

incorporated into Chula Vista's existing emergency disaster programs, including all fire and emergency services and mutual aid agreements.

Community Emergency Response Team Program

The City of Chula Vista provides a CERT program that offers training to citizens to teach them how to effectively and efficiently respond to emergency situations without placing themselves or others in unnecessary danger. CERT training includes lessons on managing utilities, putting out small fires, providing basic emergency medical aid, searching and rescuing victims safely, effectively organizing volunteers, and collecting disaster information to support first responders.

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Unified County Emergency Services Organization

The Unified San Diego County Emergency Services Organization consists of the County and the cities within the County. It was established in 1961 and provides for "preparing mutual plans for

the preservation of life and property and making provisions for the execution of these plans in the event of a local emergency, state of emergency, and to provide for mutual assistance in the event of such emergencies."

Brown Field Airport Land Use Compatibility Plan

The Plan is mandated by Section 21675 of the Public Utilities Code. Local agency adoption or amendment of general and specific plans, zoning ordinances, building regulations, or other land use ordinances or regulations which affect land within the airport influence area, and individual development proposals, airport master plans, construction plans for new airports, and expansion plans for existing airports that are within the airport influence area are required to be submitted to the Airport Land Use Commission (ALUC) for a determination of consistency with the Plan. The Plan was financed with local funds. Local actions or individual development proposals are required to be submitted to the ALUC for a consistency review only when a local agency has neither revised its general plan or specific plan to be consistent with the commission's compatibility plan.

City of Chula Vista General Plan

The goals of the General Plan to remediate future development sites in accordance with applicable state and federal standards are to manage household hazardous waste and to minimize the risk of injury and property damage associated with wildland fire hazards (Objective E 16) and ensure that adequate remediation of contaminated sites as redevelopment occurs in order to protect public health and safety (Objective E 17) and ways to minimize damage due to flooding (Objective E 15).

5.15.1.2 Regulatory Databases

The Phase I ESA for the project area evaluated current environmental conditions and the presence of hazardous materials or substances. As part of the Phase I ESA, a search of environmental records was conducted by Environmental Data Resources Inc. (EDR) to determine if any listed hazardous sites are located within the project area, or within an established radius that would expose the project area to air or waterborne toxic or hazardous materials. Exposure radii depend on the type of list and vary from adjacent sites to locations up to one or two miles from the project area.

Standard Environmental Record Sources

The project area was not found on the Standard Environmental Record sources required to be reviewed under ASTM Standard E1527-05, including the following:

- United States Environmental Protection Agency (EPA) National Priorities List (NPL) (including delisted sites)
- State- and tribal-equivalent priorities list

- EPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) (including sites requiring no further action [NFRAP])
- State- and tribal-equivalent CERCLIS
- EPA Resource Conservation and Recovery Act (RCRA) Treatment, Storage and Disposal Facilities (TSDF) and CORRACTS Facilities
- EPA RCRA Generators
- EPA Emergency Response Notification System (ERNS)
- Federal Institutional Control (IC) or Engineering Control (EC) Registries
- State- and tribal-equivalent IC and EC Registries
- State Leaking Underground Storage Tank Program (LUST) and tribal equivalent
- State Registered Underground Storage Tank (UST) and tribal equivalent
- State Solid Waste Information System (SWIS) and tribal equivalent
- State and tribal Voluntary Cleanup Program (VCP/ENVIROSTOR) sites
- State and tribal Brownfields sites

Fourteen sites were found within the prescribed ASTM radii of the Property and appear on one or more of the regulatory database lists provided by various government agencies. While the presence of these sites in the vicinity of the project area may constitute an environmental risk to future development, evidence was not found during the course of the Phase 1 assessment which would indicate that the project area has been adversely impacted by these sites nor that they represent an imminent threat to the project area with the following exceptions:

The Otay Landfill

The Otay Landfill adjoins the northwest corner and north side of Village Three North. It appears on several databases including the SWIS, LUST, RCRA-TSDF, CERC-NFRAP, CORRACTS and ENVIROSTOR. Information reviewed during Phase I ESA concerning groundwater contamination at the landfill indicates that the area of concern is hydraulically down gradient of Village Three North project site.

Information found concerning the management of methane gas at the landfill has raised one potential issue. In 2006, 2008 and 2009, methane gas was detected on many occasions above the lower explosive limit of 5% methane gas by volume. This elevated level was found in several monitoring probes including one probe (GP-4) located south of Canyon 3 in the landfill and next to Village Three North. The landfill operator has adjusted the methane gas collection system and the most recent landfill gas monitoring reports for the landfill indicate that methane gas

concentrations within the probes are back within compliance parameters for the landfill. The methane gas collected at the landfill is used to operate a power plant on the site and the remainder is burned off through a flare system.

Brown Field FUDS

The Brown Field FUDS consists of real property formerly owned, leased, or otherwise controlled by U.S. military services (U.S. Navy) during which contamination occurred, and where such property was disposed of prior to 1986. Specifically, the Brown Field FUDS was used by the Navy between 1942 and 1960 for practice dive-bombing and later as an aerial rocket range (Parsons 2007). By mid-1961, the Brown Field FUDS area was determined to be surplus and was sold or otherwise disposed of through the General Services Administration (Parsons 2007).

The only structures within the former Brown Field FUDS-eligible property boundary are buildings associated with the state's Richard J. Donovan State Correctional Facility. Another portion of the Brown Field FUDS area consists of Preserve land. The Village Ten subdivision project area is northwest and outside of the Brown Field FUDS-eligible property boundary.

Prior Agricultural Uses

According to the Phase I ESA, flatter areas of the project area were cultivated for agricultural use (primarily dry farmed grain crops) from at least 1928 through 2007. The site history is similar to the history of other Otay Ranch Villages which have undergone assessment for organochlorine pesticides (OCPs), organophosphorous pesticides (OPPs), organochlorine herbicides (OCHs) and metals including arsenic and lead associated with former agricultural use. In some areas these analytes (e.g., 4,4'-DDE) have been detected in soil samples above their respective EPA Region IX Preliminary Remediation Goals (PRGs) for residential use.

<u>Village Three North and a Portion of Village Four</u>

The south and east adjoining sites of Village Three North and a Portion of Village Four have not been developed, but have been historically farmed. Approximately 1,000 feet southeast of Village Three North and a Portion of Village Four is the Otay Valley Rock Quarry, which has been in operation since approximately 1970. Issues of further environmental concern associated with the past use of these adjoining and nearby sites were not found.

<u>Village Eight East</u>

In the late 1920s an aqueduct was built, which traverses east to west through the southern portions of Village Eight and Village Ten. It appears from historic aerial photographs that

portions of the Village Eight East project site were dry farmed at some point in the mid-twentieth century. During the construction of Main Street and Olympian High School, land was assessed for agricultural chemicals prior to development. Some remediation was required, which involved the removal of top soil for disposal off site.

Village Ten

Other than the development of the aqueduct across the southern end of Village Ten in the late 1920s, there has been no major development activity on the site or within areas adjoining Village Ten. Wiley Road was partially visible along the south end of Village Ten in a 1949 photograph. Flat areas on the adjoining sites which were similar to those on Village Ten were dry farmed during the same period as the fields on Village Ten. Other than the possibility of agricultural chemical use, issues of further environmental concern associated with the past use of these adjoining sites were not found.

5.15.1.3 Existing Setting

The 1,375-acre project area is currently undeveloped and unoccupied land which appears to have been periodically plowed and/or farmed. The topography of the project area is characterized by a broad mesa sloping to the south, broken by several steep canyons generally draining from north to south. The relatively flat mesa slopes southward into the Otay Valley Regional Park (OVRP). Elevations of the project site range from approximately 200 feet to 450 feet above mean sea level (amsl) in Village Three North and a Portion of Village Four, 185 feet to 600 feet amsl in Village Eight East, and 300 feet to 475 feet amsl in Village Ten. Planned open space within the project area includes similar elevations. The site's perimeter slopes vary from approximately 2% to 40% and slope down and away from the development footprint. The steeper slopes are primarily to the south of the villages and along manufactured slopes within the three villages.

Hazardous Risks

Village Three North and a Portion of Village Four

Energy Way was developed west of the project area between 1976 and 1978. On the north side of Energy Way, an auto wrecking/parts recycling business was present by 1981 at 891 and 895 Energy Way. According to LUST records, 881 Energy Way was first occupied by a trash truck depot in 1986. On the south side of Energy Way, an auto wrecking/parts recycling business was present by 1981 at 880 and 894 Energy Way. Issues of further environmental concern associated with the past use of these adjoining sites were not found.

Except for the existence of Otay Valley Road, the area surrounding Village Three North and a Portion of Village Four was undeveloped land until the development of the Otay Landfill.

Former Otay Ranch land immediately north of the project area was acquired by the landfill in 1976. Though issues of further environmental concern exist at the landfill, information was not found during the Phase I ESA that indicated soil and groundwater beneath Village Three North had been impacted by the landfill. In order to adequately assess potential hazardous conditions at the project site a health risk assessment (HRA) was prepared.

The HRA was prepared for Village Three North to evaluate the Landfill for potential health risk impacts resulting from the emission of airborne toxic air pollutants (TAPs), as well as to assess the potential for subsurface landfill gas (LFG) migration. The HRA was prepared using guidance from the Assembly Bill (AB) 2588 risk guidance document, *Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2003), with additional guidance from San Diego Air Pollution Control District (SDAPCD) guidance documents. Risks were evaluated to determine if residential populations within the nuisance easement area would have significant airborne health impacts from the Otay Landfill. Residential receptors have the highest level of exposure and represent the most conservative receptor scenario. Industrial/commercial receptors were also evaluated to determine whether significant health impacts would occur to workers in zones not designated for residential use.

Village Eight East

Other than the development of the aqueduct across the southern end of Village Eight East in the late 1920s, there has been no major development activity on the site or within areas adjoining Village Eight East. Approximately 500 feet west of Village Eight East is the Coronado Wye which is the point at which the aqueduct goes into a westward flowing tunnel. The Wye has a small reservoir associated with it. The Wye was covered with a metal warehouse sometime between 1966 and 1974.

In December 2005 the City Council adopted the General Plan Update that includes Policy EE6.10. Policy EE6.10 is based on the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005), which provides informal guidance on the siting of sensitive receptors and land use planning. The CARB has not established regulatory guidance for land use, and the Handbook is only designed to provide guidance. Policy EE6.10 was adopted in response to the issuance of the Handbook, and states:

> "The siting of new sensitive receivers within 500 feet of highways resulting from development or redevelopment projects shall require the preparation of a health risk assessment as part of the CEQA review of the project. Attendant health risks identified in the Health Risk Assessment (HRA) shall be feasibly mitigated to the

> maximum extent practicable, in accordance with CEQA, in order to help ensure that applicable federal and state standards are not exceeded."

State Route 125 (SR-125) was developed along the east side of Village Eight East between 2004 and 2006. Due to the fact that development of Village Eight East would place residents within 500 feet of SR-125, in accordance with Policy EE 6.10 of the General Plan, a HRA was conducted. The HRA focuses on emissions of TACs due to traffic on SR-125. The analysis was prepared in accordance with the California Office of Environmental Health Hazard Assessment's (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2003).

Village Ten

On a mesa above the south side of the Otay River, the Brown Field Bombing Range was actively used from 1944 through at least 1950 and the Navy did not sell it off as excess land until the early 1960s. The bombing range is visible on the 1949 aerial photograph. The site is undergoing a Remedial Investigation and Feasibility Study to consider removal of metal debris from practice bombs and unexploded practice bombs (if found). The Brown Field Bombing Range has been identified as FUDS-eligible. The southern end of Village Ten falls within the "FUDS-eligible property boundary." It does not appear that the Village Ten area was physically walked to look for metal bomb debris during the 2007 Site Inspection; as was the case for land within the "bomb target boundary." The possibility of unexploded practice bombs poses a low to moderate potential environmental concern for Village Ten. However, bombing activities could have directly affected soil. The potential for soil contamination on the FUDS-eligible property could pose an unacceptable risk to human health or ecological receptors.

The FUDS-eligible property is currently owned by several private individuals and the State of California, which uses their property for the Richard J. Donovan State Correctional Facility at Rock Mountain. Most of the land inside the correctional facility fence has been cleared of surface debris by correctional facility security, but there is still a possibility that practice bombs and debris may remain below the surface. In addition, fill has been added in an area outside the fence line on the northwest side of the facility, which was to be an area of future expansion. The remainder of the land is undeveloped (Parsons 2007).

Wildfire Risk

Climate influences overall fire risk because it affects the type of fuels (vegetation) in an area, the predisposition of that fuel to ignition and the fire behavior if ignition occurs. The project area climate is typical of a Mediterranean area, with warm, dry summers and more precipitation during winters. Precipitation typically occurs between December and March with an average annual rainfall total of 12.8 inches. The prevailing wind is an on-shore flow with fall Santa Ana

winds from the northeast that may gust to 50 miles per hour (mph) or higher. Drying vegetation (fuel moisture of less than 5% for 1- hour fuels is possible) during the summer months becomes fuel available to advancing flames should an ignition occur.

Vegetative cover data for the project area was collected and reported in the project's Biological Technical Report (Appendix E). The vegetation cover data for the project area was derived from regional vegetation data. This fuel model data was then used in the fire behavior modeling efforts conducted in support of the Village-by-Village Fire Protection Plans. Vegetation types were assigned fuel model and canopy cover values, each of which are included in Table 5.15-1. Based on the general vegetation type category included in this data set, the dominant vegetative cover for the project area is non-native grassland, covering 73% of Village Three North and a Portion of Village Four, 71% of Village Eight East, and 59% of Village Ten. Non-native grasslands become seasonally prone to ignition and produce lower intensity, higher spread rate fires. Coastal sage scrub occurs in all three Villages and covers 16% of Village Three North and a Portion of Village Four, 11% of Village Eight East and 35% of Village Ten.

Table 5.15-1
General Vegetation Types and Related Fuel Model Assignments in Vicinity of Project

General Vegetation Type	Fuel Model	Canopy Cover	Acreage	Percentage Cover
Non-Native Vegetation	GS2	0	91.5	0.2%
Eucalyptus Woodland	TU5	3	65.2	0.2%
Disturbed Wetland	NB8	0	24.1	0.1%
Disturbed Habitat*	1	0	2,296.8	6.0%
Urban/Developed	NB1	0	8,138.0	21.2%
Open Water	NB8	0	4.0	0.0%
Estuarine	NB8	0	3.8	0.0%
Freshwater	NB8	0	887.2	2.3%
Non-Vegetated Channel, Floodway, Lakeshore Fringe	NB8	0	34.3	0.1%
General Agriculture	NB3	0	77.3	0.2%
Intensive Agriculture - Dairies, Nurseries, Chicken Ranches	NB3	0	462	0.1%
Extensive Agriculture - Field/Pasture, Row Crops	1	0	6,581.1	17.2%
Maritime Succulent Scrub	SCAL18	0	405.2	1.1%
Diegan Coastal Sage Scrub	SCAL18	0	9,763.6	25.5%
Chaparral	SH7	0	1,030.7	2.7%
Southern Mixed Chaparral	SH7	0	810.9	2.1%
Mafic Southern Mixed Chaparral	SH7	0	4.1	0.0%
Mafic Northern Mixed Chaparral	SH7	0	1.0	0.0%

Table 5.15-1 (Continued)
General Vegetation Types and Related Fuel Model Assignments in Vicinity of Project

General Vegetation Type	Fuel Model	Canopy Cover	Acreage	Percentage Cover
Chamise Chaparral	SH7	0	913.6	2.4%
Scrub Oak Chaparral	SCAL14	0	0.7	0.0%
Coastal Sage-Chaparral Scrub	SCAL18	0	36.8	0.1%
Valley and Foothill Grassland	1	0	3,126.3	8.2%
Native Grassland	1	0	30.8	0.1%
Valley Needlegrass Grassland	1	0	205.3	0.5%
Non-Native Grassland	1	0	1,999.6	5.2%
San Diego Mesa Vernal Pool	GR2	0	440.9	1.2%
Cismontane Alkali Marsh	3	0	58.4	0.2%
Freshwater Marsh	3	0	106.1	0.3%
Coastal and Valley Freshwater Marsh	3	0	31.0	0.1%
Riparian and Bottomland Habitat	9	3	3.2	0.0%
Riparian Forests	9	3	0.6	0.0%
Southern Riparian Forest	9	3	8.5	0.0%
Southern Riparian Scrub	SH3	0	30.0	0.1%
Mulefat Scrub	SH3	0	60.0	0.2%
Southern Willow Scrub	9	0	46.6	0.1%
Arundo donnax Dominant/Southern Willow Scrub	3	0	3.7	0.0%
Tamarisk Scrub	SH3	0	419.8	1.1%
Coast Live Oak Woodland	9	3	39.8	0.1%
Southern Interior Cypress Forest	TL3	3	499.9	1.3%
		Total	**38,326.6**	**100.00**

* Assumes conversion to grassland-type fuels

This fuel type can produce higher heat intensity and higher flame lengths under strong, dry wind patterns, but does not typically ignite or spread as quickly as light, flashy grass fuels. On-site vegetation will be converted to lower flammability development and landscaping. Off-site, adjacent vegetation in Preserve areas will be preserved in their present state and therefore will continue to contain fuel for wildfire ignition and spread. Off-site fuels are consistent with on-site fuels with regard to type, densities, and loading (Dudek 2014).

The project development area has been used historically for agricultural purposes and is void of wildland areas. In addition, the project area does not adjoin a wildland or Very High Hazard area, as designated on Figure 9-9 of the City's General Plan. However, a site fire risk analysis for the project area was completed as part of the Fire Protection Plans (FPP), which determined that wildfire has occurred and will likely occur in the open space preserve areas adjacent to portions of the project area again, but with moderate overall intensity. Only a small portion of Village Ten has burned over the recorded fire history period, with no recorded fires occurring in Village

Three North and a Portion of Village Four or Village Eight East. It is expected that fires have not consistently spread into the area where the villages will be located due to several factors:

- The position of urban development to the north which is newer and ignition resistant,
- The position of Otay Lake to the east, presenting a very wide fuel break,
- The position of the OVRP to the south, where fire spread is inhibited due to higher vegetation moisture and less ignition prone vegetation types, and
- The narrow opening south of Otay Lake and north of the OVRP which can be more easily defended under typical fire conditions.

Figure 5.15-1 depicts regional fuels distribution on and around the project area. Figure 5.15-2 provides a summary of fire histories on and around the project area. Fire history information can provide an understanding of fire frequency, fire type, most vulnerable areas, and significant ignition sources,. In turn, this understanding of why fires occur in an area and how they typically behave can be used for pre-planning and designing defensible communities. Figure 5.15-3 and Figure 5.15-4 depict the modeled flame lengths of summer and fall wildfires, respectively, based on existing fuel loads.

Airports

The nearest airport to the project area is the Brown Field Municipal Airport, which is located approximately three miles south of the project area. Some of Village Three North and a Portion of Village Four and Village Eight East are located within the Brown Field Municipal Airport Influence Area (see Figure 5.1-1) as defined in the Brown Field Airport Land Use Compatibility Plan (San Diego County Regional Airport Authority 2004). However, these areas and all other parts of the project area are not within the flight activity zones, which are the areas adjacent to the ends of the runway that are associated with the greatest risk.

5.15.2 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 hazards and hazardous materials impact. Impacts related to hazards and risk of upset would be significant if the proposed project would:

A. Creates a significant hazard to the public or environment through the routine transport, use or disposal of hazardous materials.

B. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

D. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, a significant hazard to the public or the environment is created.

E. Is 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 and would result in a safety hazard for people residing or working in the project area.

F. Impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan.

G. Exposes people or structures to a significant risk or loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

H. Be inconsistent with General Plan, Otay Ranch GDP, and other objectives and policies regarding hazards thereby resulting in a significant physical impact.

I. According to the Otay Ranch GDP Program EIR, impacts to public health and safety would be significant if:

   i. The increase in urbanization would result in an increase in the uses, transport, storage, and disposal of hazardous waste materials and an associated increase in the risk of an upset condition in the area.

   ii. The historic use of pesticides would result in soil contamination and health effects.

5.15.3 Impacts

A. Create a significant hazard to the public or environment through the routine transport, use or disposal of hazardous materials.

Construction Impacts

Construction of the proposed project would involve the transport of commonly used hazardous substances, such as gasoline, diesel fuel, lubricating oil, grease, and solvents. These materials would be used and stored in designated construction staging areas within the project site boundaries. These materials would be transported, handled, and disposed of in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, use of these materials for their intended purpose would not pose a significant risk to the public or environment. Therefore a **less than significant** impact would occur.

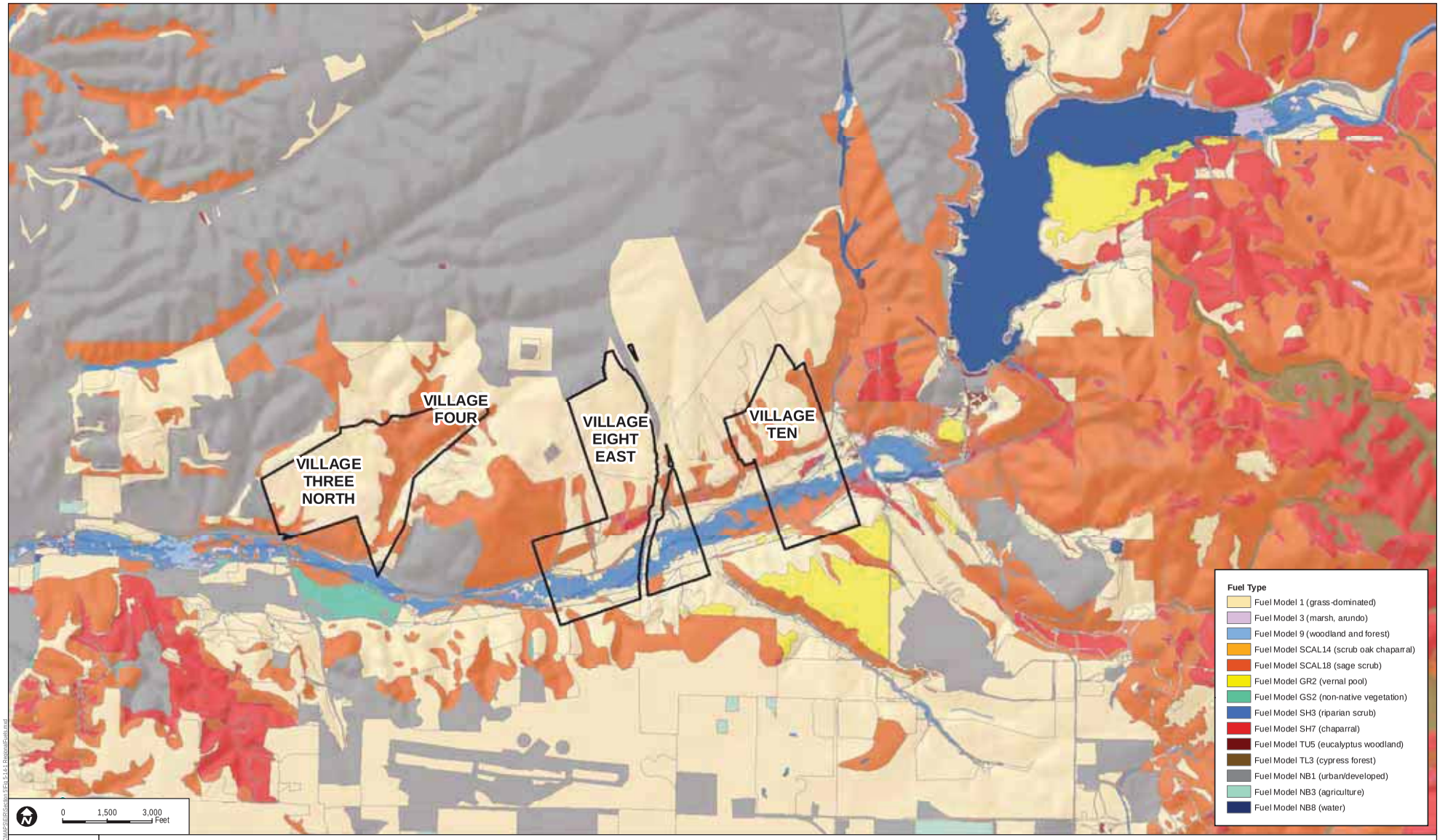

FIGURE 5.15-1

Regional Fuels Distribution

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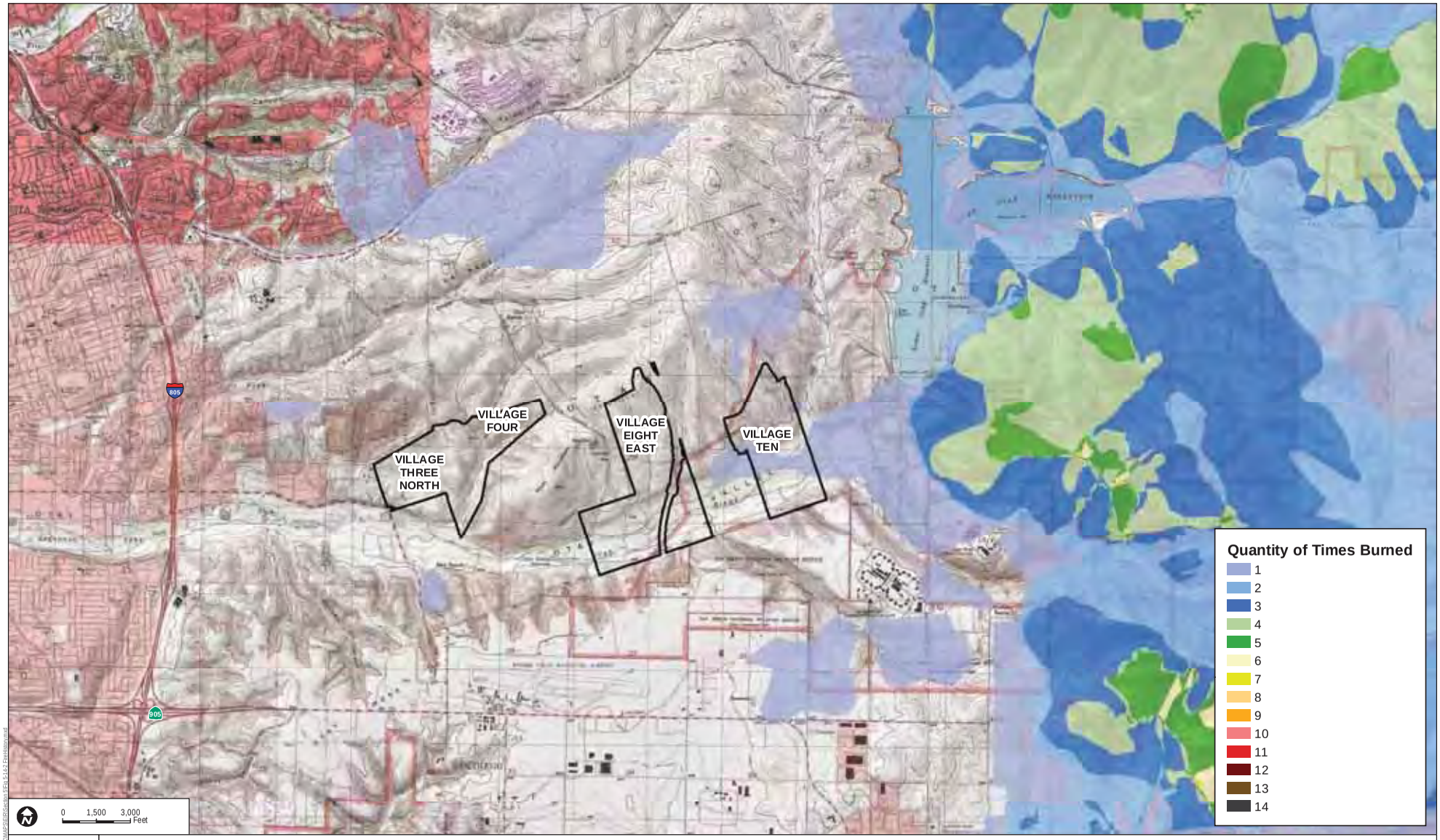

SOURCE: FRAP 2011

FIGURE 5.15-2
Fire History

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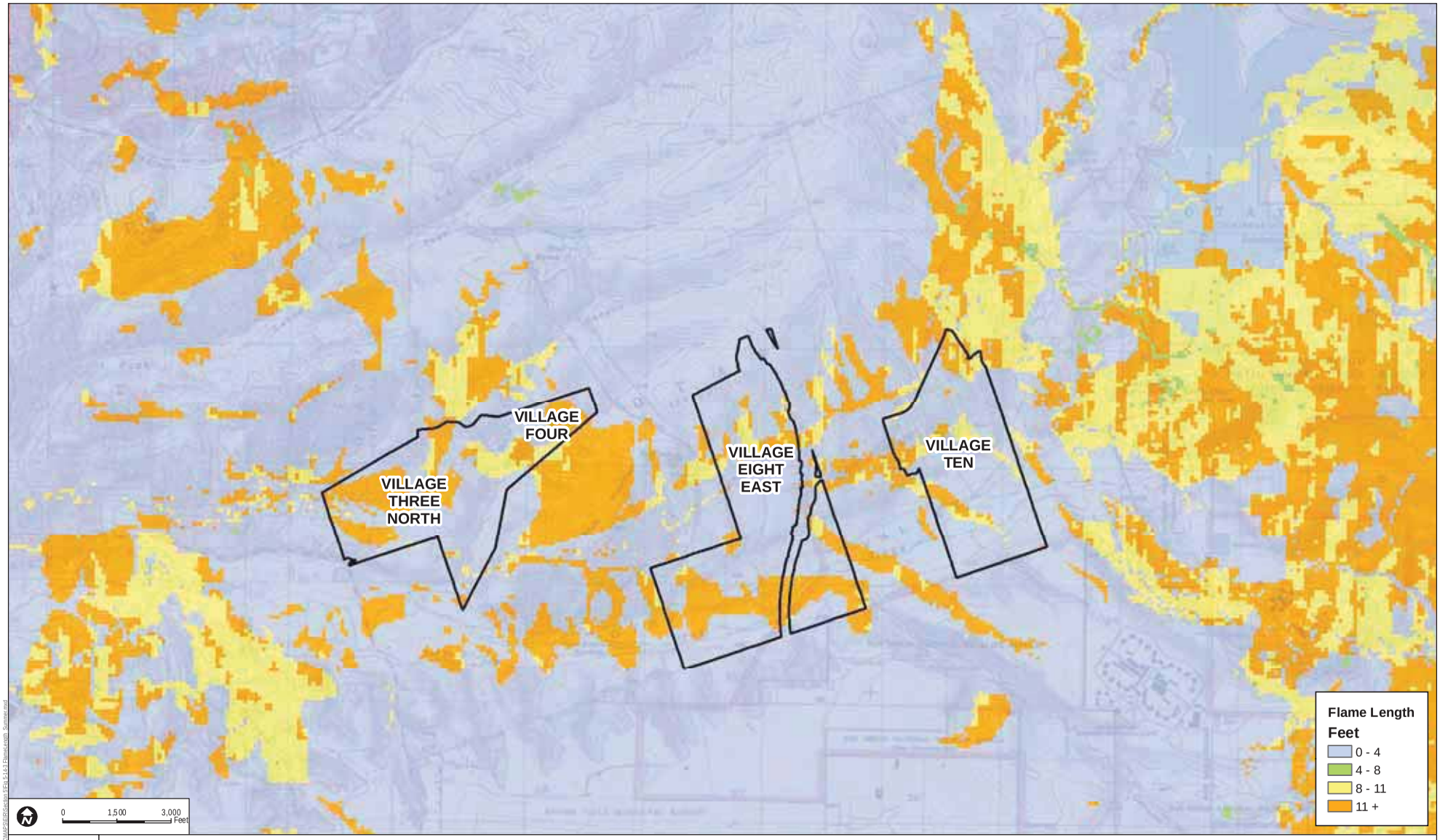

FIGURE 5.15-3

FlamMap Flame Length Analysis - Summer Fire

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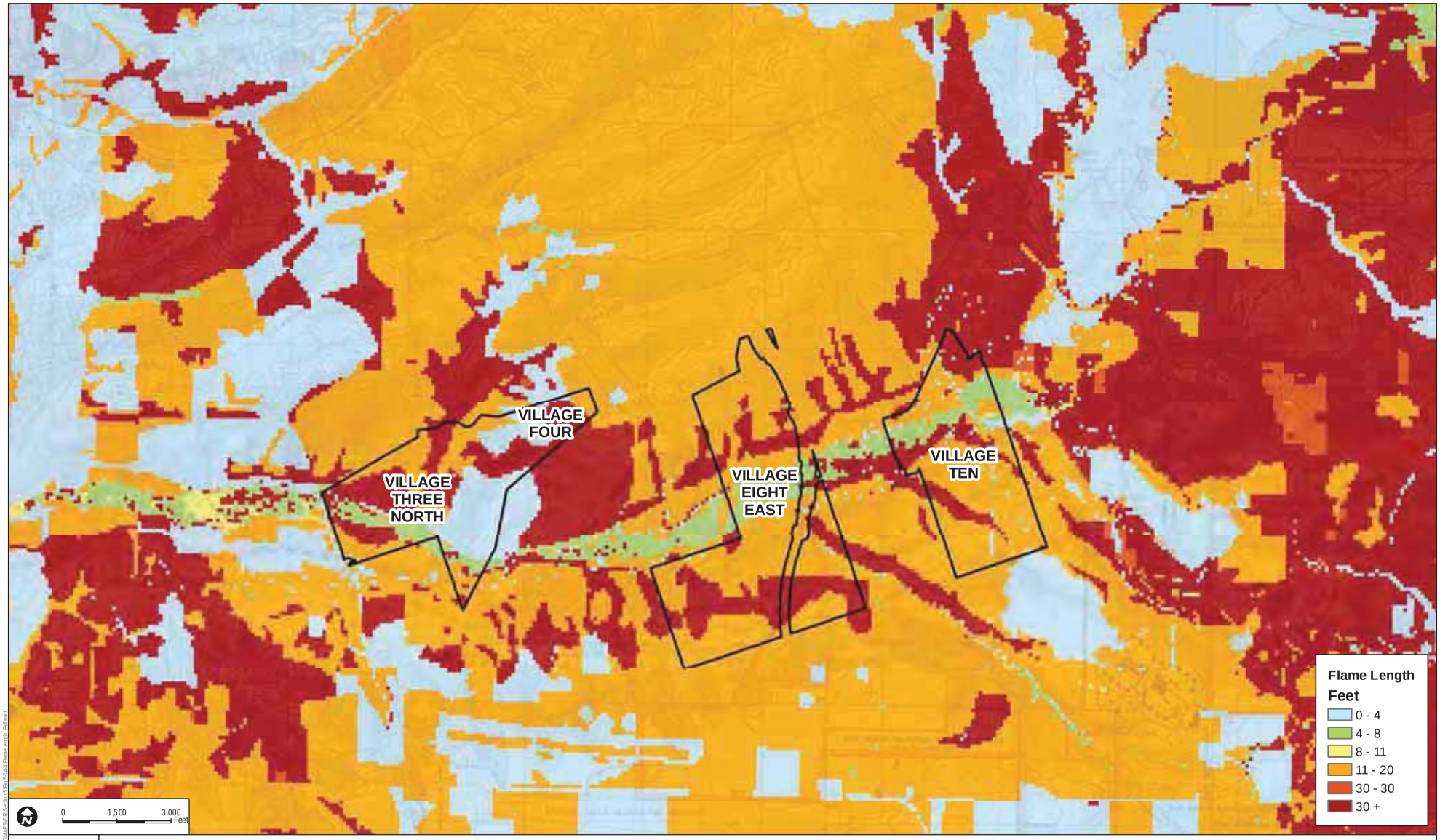

FIGURE 5.15-4

FlamMap Flame Length Analysis - Fall Fire

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Operational Impacts

Once project construction is complete, the transport, use or disposal of hazardous materials would be limited to household cleaning products, landscaping chemicals and fertilizers, and other substances associated with residential and recreation (park) uses and such items that may be available for resale in future industrial and commercial uses. While the proposed project would result in the increase in routine transport, use and disposal of hazardous materials and/or wastes generated by future growth, all hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Therefore a **less than significant** impact would occur.

B. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Construction Impacts

Construction activities on the project site would involve the use and storage of commonly used hazardous materials such as gasoline, diesel fuel, lubricating oil, grease, solvents, and other vehicle and equipment maintenance fluids. These materials would be used and stored in designated construction staging areas within the project site boundaries. These materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, the materials alone, and use of these materials for their intended purpose, would not pose a significant risk to the public or environment.

Otay Ranch land was historically cultivated for agricultural use (primarily dry farmed grain crops). In some areas contaminated soils associated with former agricultural use have been identified. Soils in the project area may contain organochlorine pesticides, organophosphorous pesticides, organochlorine herbicides, and metals including arsenic. In the event that the proposed project encounters contaminated soils during grading and excavation it could result in increased health risks to construction workers, future residents, and potentially impact water quality. Additional testing would be required prior to grading, and contaminated soils would be remediated in accordance with County of San Diego Department of Environmental Health and RQQCB requirements. However, accidental spills or unauthorized releases of hazardous materials during construction, including ground clearing, access road construction and foundation excavation could potentially result in soil contamination, which would be a **potentially significant** impact. In order to reduce this potential impact, mitigation is provided.

Operational Impacts

Once project construction is complete, the transport, use or disposal of hazardous materials would be limited to household cleaning products, landscaping chemicals and fertilizers, and other substances associated with residential and recreation (park) uses and such items that may be available for resale in future commercial uses. While the proposed project would result in the increase in routine transport, use and disposal of hazardous materials and/or wastes generated by future growth, all hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Therefore a **less than significant** impact would occur.

C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Existing schools near the project area include Olympian High School, Wolf Canyon Elementary School, and High Tech High School. Olympian High School is located within 0.25 mile north of Village Eight East project site and Wolf Canyon Elementary School is located approximately 0.50 mile north of Village Eight East. High Tech High School is located within 0.25 mile north of Village Ten. To meet elementary school requirements the Otay Ranch GDP provides for the siting of one elementary school in each village. In Village Three North and a Portion of Village Four the SPA Plan reserves 8.3 acres for an elementary school site; in Village Eight East the SPA Plan reserves 10.8 acres for an elementary school site; and in Village Ten the SPA Plan reserves 9.2 acres for an elementary school site.

The proposed elementary school sites must comply with state standards and CVESD standards regarding health and safety issues, including the potential for toxins in the soil. The northern portion of Village Three near the Otay Landfill, and the FUDS-eligible property, located in the southern portion of Village Ten, were both identified for areas of environmental concern. Additionally, in some areas contaminated soils associated with former agricultural use have been identified. Soils in the project area may contain organochlorine pesticides, organophosphorous pesticides, organochlorine herbicides, and metals including arsenic. In the event that the proposed project encounters contaminated soils during grading and excavation it could result in increased health risks to construction workers, future residents, and potentially impact water quality. However, additional testing would occur prior to grading and contaminated soils would be remediated in accordance with County of San Diego Department of Environmental Health and RQQCB requirements. As previously discussed, the use of hazardous materials during construction and operation of the proposed project would not result in a significant risk to the public from the use, transport, or disposal of hazardous materials and wastes. However, due to the proximity of the project area to the schools listed above and potential for hazardous impacts

due to the Otay Landfill, FUDS-eligible property, and potentially contaminated soils, impacts to schools could be **potentially significant**.

D. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, a significant hazard to the public or the environment is created.

Fourteen sites were found within the prescribed ASTM radii of the Property and appear on one or more of the regulatory database lists provided by various government agencies. While the presence of these sites in the vicinity of the project area may constitute an environmental risk to future development, evidence was not found during the course of the Phase 1 assessment which would indicate that the project area has been adversely impacted by these sites nor that they represent an imminent threat to the project area with the exception of the Otay Landfill located north of the Village Three project site, and the FUDS-eligible property located 1,500 feet south of Village Ten.

Village Three and a Portion of Village Four HRA for Otay Landfill

Air Borne Toxics

The HRA was performed as an evaluation of the current 1,000-foot nuisance easement area to determine whether significant cancer risks related to air borne toxics would occur, see Figure 5.15-5. Cancer risks are summed across all carcinogens to arrive at a total increased lifetime cancer risk for each receptor population. Several agencies have established cancer risk thresholds for purposes of evaluating impacts from a source or determining whether remediation or control should be required. Those agencies include the DTSC, OEHHA, the EPA, and the County, which has established CEQA guidance to protect residents from adverse health impacts. The City of Chula Vista does not have adopted health risk thresholds but recognizes the SDAPCD guidance threshold of increased cancer risk of $1x10^{-6}$ as significant.

The HRA determined that all calculated risks are below the threshold for each respective receptor within the development and are not significant under CEQA. The HRA concluded that the 30-year and 9-year cancer risk, as well as the cancer risk to commercial and industrial workers in the Village Three North development is less than significant (SCS 2014). A more detailed analysis of the Village Three North HRA can be found in Section 5.1, Land Use and 5.4 Air Quality.

Landfill Gas

At any Municipal Solid Waste (MSW) landfill, there is always a potential for Landfill Gas (LFG) to escape the landfill and migrate laterally in the subsurface despite the best efforts to

collect it. This creates a risk for vapor intrusion of the LFG into structures creating an explosion hazard due to the presence of methane, which is a flammable/explosive gas at certain concentrations. In 2006, 2008 and 2009, methane gas was detected on many occasions above the lower explosive limit of 5% methane gas by volume. This elevated level was found in several monitoring probes including one probe (GP-4) located south of Canyon 3 in the landfill and next to Village Three North and a Portion of Village Four. The landfill operator has adjusted the methane gas collection system and the most recent LFG monitoring reports for the landfill indicate that methane gas concentrations within the probes are back within compliance parameters for the landfill.

The presence of methane is explicitly regulated in California under Cal Recycle, the state solid waste agency, as well as by the local enforcement agency (LEA) for landfills. Title 27 of the California Code of Regulations (CCR) has specific criteria limiting LFG migration away from the landfill to mitigate this hazard. The regulations prohibit concentrations of methane from exceeding 5% by volume in monitoring probes installed along the permitted facility boundary. In addition to 27 CCR, there are several other regulations that indirectly reduce subsurface LFG migration. The Otay Landfill is subject to Rule 59 in the SDCAPCD jurisdiction, the federal New Source Performance Standards (NSPS) for landfills (40 CFR Part 60, Subpart WWW), and the state AB 32 landfill methane rule under 17 CCR. Each of these regulations mandate the collection and control of LFG to limit surface emissions and migration. Collectively, they represent the most stringent set of LFG control requirements anywhere in the country. Through compliance with these regulations, LFG is collected and controlled to the maximum extent feasible, which further ensure that LFG migration will be eliminated or reduced to a minimum.

Stormwater

An additional area of concern regarding proximity to the Otay Landfill is stormwater. Drainage controls at the landfill are intended to separate contact water (water generated from precipitation on the active waste areas) from non-contact water, which is generated from precipitation on the non-landfilled areas, or areas of the landfill that have a cover in place. Contact water is held on site and does not discharge off-site and/or surface water bodies. Non-contact water is channeled to three sedimentation basins to allow for sediment settling before water is discharged off site. Discharges from the three sedimentation basins are monitored according to the water quality monitoring program defined in the Joint Technical Document[1]; the Waste Discharge Requirements (WDR) issued by the Regional Water Quality Control Board; and the General Permit for Industrial Activities, issued by the State Water Resources Control Board in compliance with the National Pollutant Discharge Elimination System (NPDES).

[1] The Joint Technical Document (JTD) is a design and operations report required for landfill permitting in California.

Image from Google Earth
Landfill layout provided by Hunsaker and Associates
Existing 1,000 foot buffer shown in Red.
Values represent the cancer risk in a million for that isopleth.

SOURCE: SCS ENGINEERS 2013

FIGURE 5.15-5

Potential Risk Zone for Village Three North and a Portion of Village Four

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Results of surface water/storm water monitoring are reported in the Semi-annual and Annual Monitoring Reports (for WDR compliance), and annually under separate cover for NPDES compliance. As with many landfills in arid regions, surface water/storm water discharges may not occur for long periods of time because non-contact water retained on site may evaporate, or infiltrate into the subsurface, before reaching the discharge elevation for off-site release. Based on a review of available documents, discharges to surface water are infrequent and there have been no noted concerns regarding the water quality discharged. No violations of storm water provisions in the WDRs or the NPDES permit have occurred.Based on the fact that all calculated carcinogenic (cancerous) and non-carcinogenic (non-cancerous) risks are below the identified SDAPCD CEQA thresholds for each respective receptor within the development, LFG monitoring reports indicate compliance with methane gas concentrations, and the fact that no stormwater violations have occurred, impacts are not considered significant. Furthermore, based on the regulations described above and the periodic monitoring conducted to ensure continued compliance, it has been determined that impacts due to implementation of the proposed project would be **less than significant**.

Village Ten FUDS Report

As shown in Figure 5.15-6, there are 153.9 acres in the southern portion of Village Ten that are within the Brown Field FUDS-eligible property boundary. These 153.9 acres are designated as part of the Otay Ranch Preserve. Although a portion of the area within the Village Ten project boundary is within the Brown Field FUDS-eligible property boundary, no Village Ten housing development is proposed in this area. However, the project proposes certain improvements within the Preserve at the outer perimeter of the Brown Field FUDS-eligible property boundary. The proposed improvements consist of: (a) construction of two water quality basins; (b) installation an access road for maintenance of the basins; and (c) installation of the OVRP/Greenbelt trail. All such improvements would be situated outside the former target boundary within the Brown Field FUDS-eligible property boundary, as shown in Figure 5.15-6.

As previously noted, the Brown Field FUDS-eligible property was used by the Navy between 1942 and 1960. A target was marked at the site and used for practice dive-bombing and later as an aerial rocket range. Military munitions debris (e.g., projectiles, shell casings, penetrators) from practice bombs and rockets were discovered during a site investigation performed by Parsons in 2007. Therefore the potential for contamination due to munitions constitutes (MC) (i.e., materials from exploded or unexploded ordinance) does exist and former military activities could have directly affected soil (Parsons 2007). Human and ecological receptors may come in contact with MC in the soil by dermal exposure or incidental ingestion.

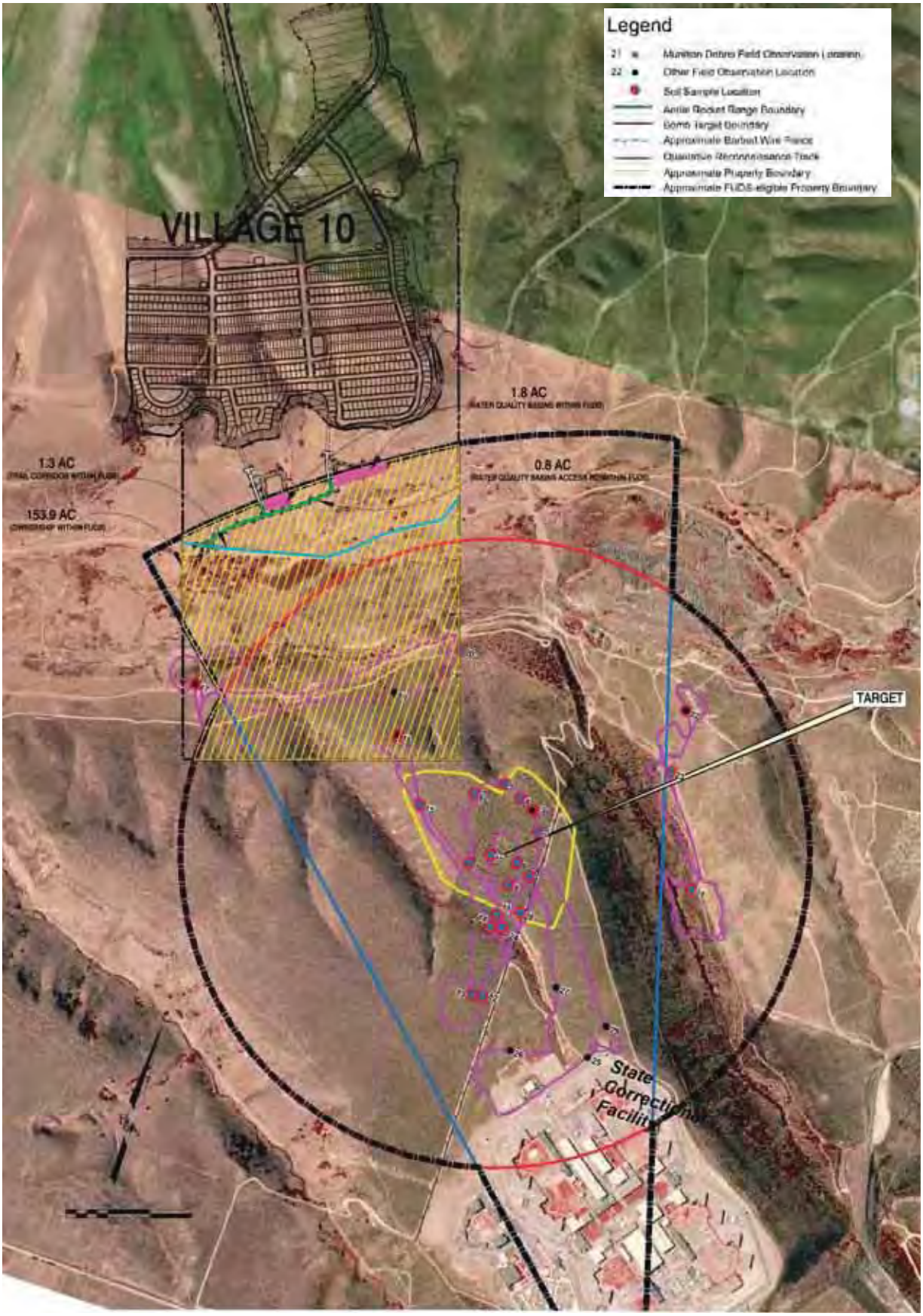
As part of Parsons 2007 site investigation, soil samples were collected and screened against several criteria to evaluate whether or not MC contamination is present. The site inspection consisted of a qualitative reconnaissance of the site area and munitions constituent sampling

(Parsons 2007). Seven MC metals (aluminum, copper, iron, lead, manganese, potassium, and zinc) were detected above the background/ambient concentrations in the samples collected (Parsons 2007). However, potassium and iron are essential nutrients that are not expected to pose an unacceptable risk to human health or ecological receptors and, therefore, they are not considered further. Aluminum, copper, lead, manganese, and zinc were retained for consideration in the 2007 site inspection and risk assessment.

A risk assessment is a qualitative risk evaluation, which was conducted to assess potential safety risk to the public within the Brown Field FUDS-eligible property boundary. The purpose of the risk evaluation is to qualitatively communicate the magnitude of the potential safety risk within the FUDS-eligible property boundary and the primary causes of that potential risk. The concentration of each analyte in the soil samples collected during the site investigation were compared to the most conservative screening levels for the USEPA Region 9 and CAL-Modified Industrial PRG values for soil. In order for an analyte to be considered a possible health concern related to a release from munitions-related activities at the site, the maximum detected concentration of the analyte must be present above the selected screening level. No explosive compounds were detected in any of the soil samples collected. Additionally, none of the maximum detected concentrations of any of the metals exceed the screening levels for the USEPA Region 9 and CAL-Modified Industrial PRG values for soil (Parsons 2007). Therefore, exposure to aluminum, copper, lead, manganese, and zinc in the surface soil are not expected to pose an unacceptable human health risk within the Brown Field FUDS-eligible propery.

After conducting screening level risk assessments, Parsons determined that the area does not pose an unacceptable risk to human health or ecological receptors due to exposure to hazardous munitions constituents in the soil at the site. Further, Parsons concluded that the presence of munitions and explosives of concern, along with munitions debris, have the potential for harm to human health, if there is contact to still functioning munitions. However, Parsons determined that immediate removal action was not warranted; instead, Parsons recommended a remedial investigation and feasibility study with surface water and sediment sampling as the next step in ACOE's phased cleanup process (Parsons 2007).

Total improvement areas within the Brown Field FUDS-eligible property boundary in Village Ten would equal 3.9 acres. The balance of 150 acres of FUDS-eligible property within Village Ten would remain undisturbed Preserve land and public access would be restricted. Wall and fence plans prepared as part of the proposed project (MM BIO-17) will depict appropriate barriers to prevent unauthorized access into the Preserve. Well-installed signage would also be placed along the fencing to warn trial users of the potential hazards beyond the boudnaries of the fenced trail.



SOURCE: HUNSAKER & ASSOCIATES, INC. 2014

FIGURE 5.15-6
Brown Field Formerly Used Defense Site Overview

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The Corps also can and should implement various measures to further enhance public safety associated with the FUDS-eligible property boundary. In addition, through the remedial investigation and feasibility study process, the Corps will evaluate and balance site remediation against the potential damage that may occur to sensitive resources within the FUDS-eligible project boundary, including further coordination/consultation with U.S. Fish and Wildlife Service officials, the Department of Toxic Substances Control, and California Department of Fish and Wildlife (see Parsons 2007, p. 2-1, 8-1).

Due to the determinations found during the risk assessment, although unlikely, the presence of munitions and explosives of concern, along with munitions debris, have the potential for harm to human health, if there is contact to still functioning munitions. Parsons recommended a remedial investigation and feasibility study with surface water and sediment sampling as the next step in ACOE's phased cleanup process. Impacts would be **potentially significant** and mitigation would be required.

E. Is 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 and would it result in a safety hazard for people residing or working in the project area.

The nearest airport to the project area is the Brown Field Municipal Airport, which is located approximately three miles south of the project area. Although portions of the project area are within the Airport Influence Area, the site does not lie within the Flight Activity Areas on either the runway approach or departure paths. However, the proposed project is located within the Brown Field Airport FAA height notification boundary (FAR Part 77). FAR Part 77 is issued by the FAA and establishes the standards which govern the height of objects on and around an airport. If the project results in development that would obstruct the flight approach paths for Brown Field, a potentially significant safety hazards from flight operations at Brown Field would occur. The maximum height allowed by the Planned Community District Regulations as part of each SPA Plan is 60 feet. Although the project does not propose any buildings that create a hazard for aircrafts, the proposed project would be required to show compliance with FAA regulations. In order to show compliance, the Applicant must prepare and file Form 7460-1, Notice of Proposed Construction or Alteration; obtain and provide proof of FAA clearance; and record the Airport Overflight Agreement with the County Recorder's office. Therefore, prior to compliance with these FAA specifications, the proposed project would result in a **potentially significant** impact associated with airport hazards.

F. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Construction of the proposed project is not anticipated to interfere with an adopted emergency response plan or evacuation plan, nor would it substantially impede public access

or roadway circulation. There may be a temporary increase in traffic on roadways surrounding the project area due to increased truck loads or the transport of construction equipment to and from the project area during the construction period. However, the proposed project would not obstruct any existing roadways or evaluation routes. The proposed project is incorporated into the City of Chula Vista's existing emergency disaster programs, including all fire and emergency services and mutual aid agreements. Emergency response to the project area would be serviced by the City of Chula Vista Fire Department, Police Department, and other responsible agencies. The proposed roadways in the project area would increase regional connectivity and provide new potential emergency evacuation routes. Therefore, the proposed project would not interfere with an adopted emergency response or emergency evacuation plan; impacts would be **less than significant**.

G. Expose people or structures to a significant risk or loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Given the climatic, vegetation, and topographic characteristics of the project area, along with the fire history and fire behavior modeling results discussed in the FPPs, the project area, post development, would be considered potentially vulnerable to wildfire encroaching or spotting into the retained open space fuels. Since these fuels would be preserved adjacent to the village development areas, fire-protection design features have been included in the development of the proposed project.

FPPs have been prepared for the University Villages project, as required by Article 86 of the California Fire Code. The FPPs address the risk analysis and code compliance components that are common to all three proposed villages, as well as village-specific fire protection features. The FPPs provide details regarding site-specific policies and implementation measures that would govern the proposed project concerning fire protection. Further, the FPPs outline a "systems approach" to fire prevention, protection, suppression, and emergency relocation to ensure proposed improvements and uses would reduce potential risks associated with fire hazard. The structures in the project area would include ignition resistant materials per the latest (2010) Chula Vista Fire and Building Codes. Structure protection would be complemented by a system of improved water availability, capacity and delivery; fire department access; monitored defensible space/fuel modification; interior fire sprinkler systems in all structures, monitored interior sprinklers in applicable structures; and other components that would provide properly equipped and maintained structures with a high level of fire ignition resistance.

The FPPs outline defensible space requirements based on the potential risk and predicted fire behavior (Appendix J). The modeling and fire risk analysis of the Project site helps assess its unique fire risk and fire behavior, and this process helped determine that a 100-foot wide fuel

modification zone will be suitable for anticipated fire intensity. The fuel modification zones will perform as designed if they are maintained to original specifications; therefore, the fuel modification zones will be maintained in perpetuity by a Community Facilities District or Homeowner's Association (or similarly funded entity), ensuring the required inspections and fuel reduction work occur annually. Implementation of the FPPs would reduce wildland fire risk to a **less than significant** level.

H. Be inconsistent with General Plan, Otay Ranch GDP, and other objectives and policies regarding hazards thereby resulting in a significant physical impact.

Village Three and a Portion of Village Four HRA and Nuisance Study

General Plan Policy E 6.4 does not allow sensitive receptors, such as a residential land use, within 1,000 feet of a major toxic emitter. In the case of proposed Village Three North land uses, planned residential land uses are considered sensitive receptors, and the landfill to the north of Village Three is considered a toxic emitter. Although the landfill property's southern boundary is within 750 feet of planned residential land uses within Village Three North, the active landfill[2] is 1,000 feet away from planned residential land uses. In order to ascertain potential impacts to sensitive receptors within 1,000 feet of the southern property boundary of the landfill, a Health Risk Assessment (HRA) was performed for Village Three North. The HRA found potential impacts to be less than significant (see Appendix D to this EIR). Based on the fact that all calculated carcinogenic (cancerous) and non-carcinogenic (non-cancerous) risks are below the identified SDAPCD CEQA thresholds for each respective receptor within the development, impacts are not considered significant.

The Village Three North development would include approximately 1,597 additional residential units, and approximately 5,174 residents. Of these 5,174 residents, 259 would be located in the 200% to 400% zone (compared to zero residents currently) and 3,904 would be located in the 100% to 200% zone (compared to 39 residents currently). This zone represents exposure to the maximum current odor exposure for an existing resident. 1,011 residents would be located in the 50% to 100% zone, (compared to 7,128 residents currently) meaning they would be exposed to expected odor impacts equal to or below the current maximally exposed resident. Thus, impacts were found to be less than significant. A General Plan Amendment is proposed to allow residential land uses within the nuisance easement area. With the adoption of the General Plan Amendment, the proposed project will be consistent with the General Plan and impacts would be **less than significant** with implementation of MM LU-4.

As determined in the case *Ballona Wetlands Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, "An EIR must identify and analyze the significant environmental impacts that

[2] The "active portion" of the landfill is defined as cells which have accepted waste but have not undergone final closure. This represents portions of the landfill which could become the "working face," or the area being filled with waste.

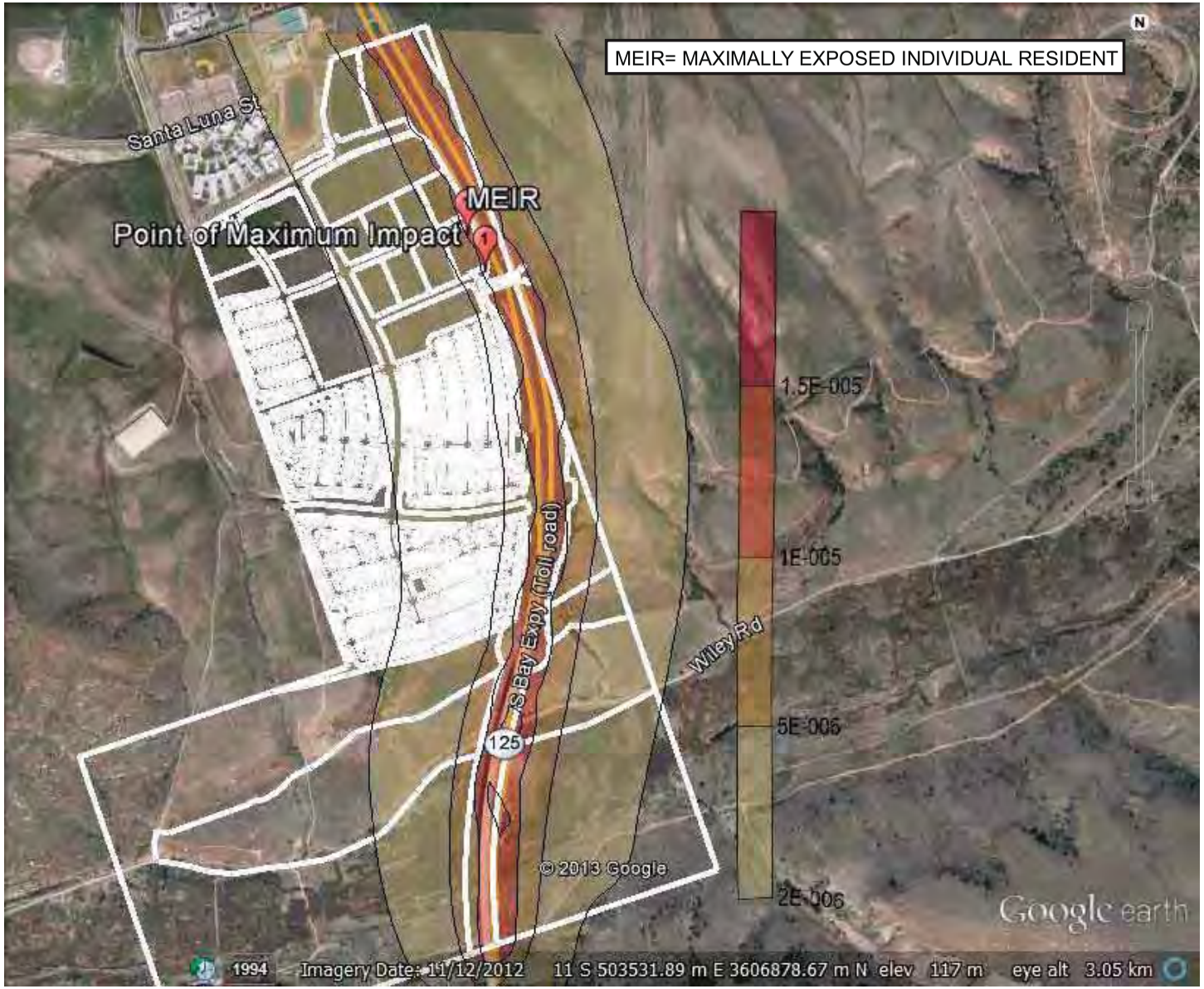
may result from the project (PRC Section § 21100(a)(b); Guidelines,§§ 15126.2(a), 15143). It must include facts and analysis sufficient to allow the decision makers and the public to understand the environmental consequences of the project. The analysis need not be exhaustive, but it must be reasonably complete and reflect a good faith effort at full disclosure (*Ballona Wetlands Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473-474)." The purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project. Additional information regarding the Village Three North HRA and Nuisance Study can be found in Section 5.1 Land Use, and Section 5.4 Air Quality.

Village Eight East HRA

SR-125 was developed along the east side of Village Eight East between 2004 and 2006. Due to the fact that development of Village Eight East would place residents within 500 feet of SR-125, in accordance with Policy EE 6.10 of the General Plan, a HRA was conducted. The HRA focuses on emissions of TACs due to traffic on SR-125. The evaluation conducted was based on assumptions regarding emissions from diesel-fueled truck traffic on SR-125. Risks were calculated for a 70-year residential exposure scenario (Figure 5.15-7) and a 9-year residential exposure scenario (Figure 4.15-8). As shown in Figure 5.15-7 and 5.15-8, the maximum risk is predicted at a receptor located adjacent to the SR-125 freeway in the open space area adjacent to the proposed pedestrian bridge across SR-125. This location is called out as the point of maximum impact. There are no residents located at this point. The nearest residential unit in this location is called out on Figure 5.15-7 and 5.15-8 as the maximally exposed individual resident (MEIR).

Due to the fact that it is unlikely that an individual would reside in this location for the entire 70-year exposure period, the 9-year exposure scenario presents a more realistic estimate of the potential excess cancer risk to an individual residing at this point, given that 9 years is the average duration at any single residence. This is especially likely to be applicable within the mixed-use area, where multiple uses and multi-family dwellings would be constructed. For the 9-year residential exposure scenario, the highest individual cancer risk is 2.98 in a million. The City relies on a threshold of 10 in a million for increased health risks. Due to the relatively low risk associated with a 9-year exposure scenario, impacts would be considered **less than significant** and no mitigation would be required.

As described above, the purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project (*Ballona Wetlands Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473-474). Therefore, the Village Eight East HRA is included herein for land use compatibility and emissions purposes. Additional information regarding the Village Eight East HRA can be found in Section 5.1 Land Use, and Section 5.4 Air Quality.



SOURCE: SCIENTIFIC RESOURCES ASSOCIATED 2013

FIGURE 5.15-7

70-year Residential Exposure Scenario, Village Eight East

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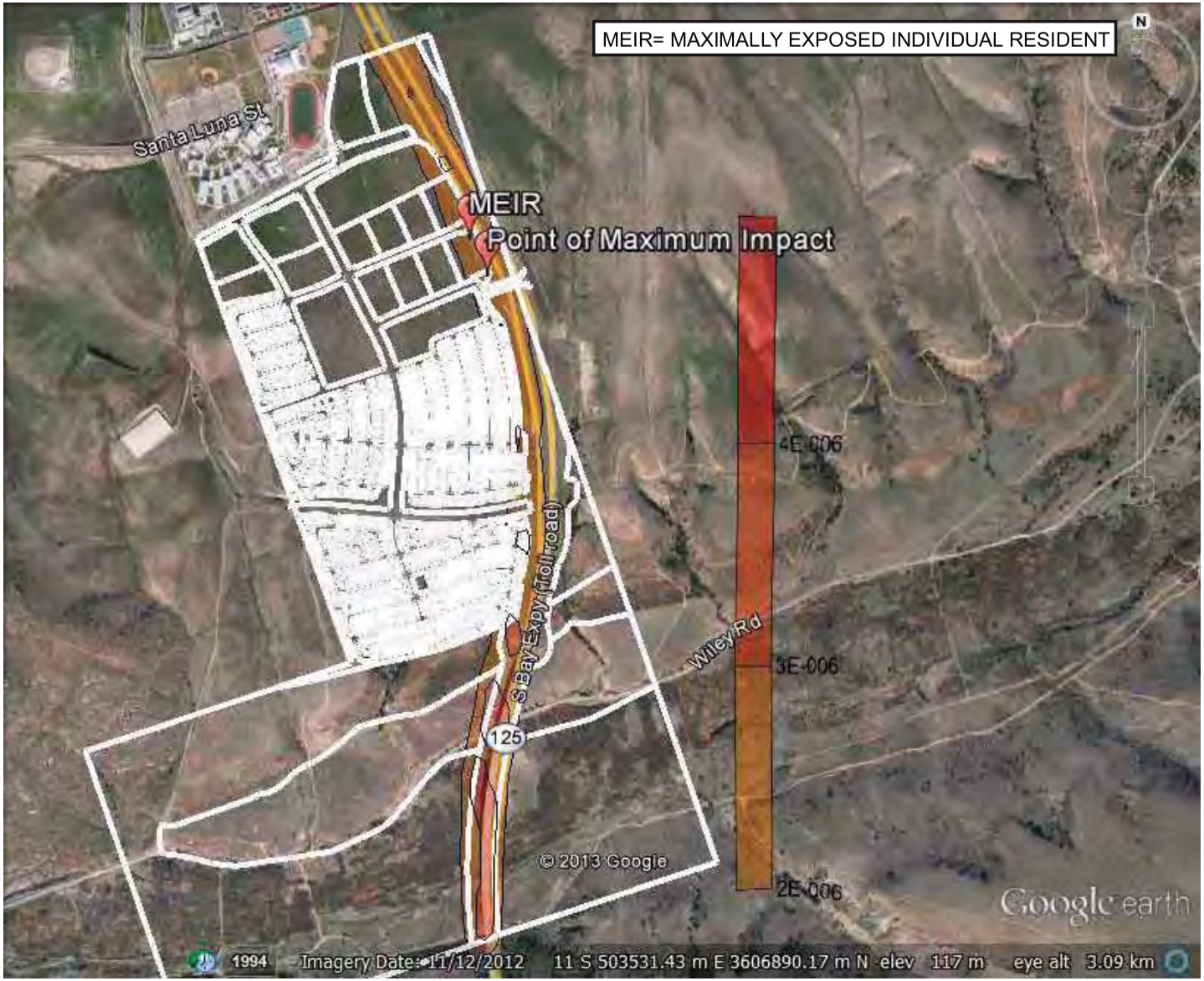

SOURCE: SCIENTIFIC RESOURCES ASSOCIATED 2013

FIGURE 5.15-8

9-year Residential Exposure Scenario, Village Eight East

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General Plan Policy LUT 6.8 – Hazardous Materials

The proposed project is consistent with General Plan and Otay Ranch GDP goals, objectives, and policies. General Plan Policy LUT 6.8 requires land uses that handle, generate, or transport hazardous materials to not negatively impact existing or future sensitive receptors. Construction of the proposed project would involve the transport of commonly used hazardous substances, such as gasoline, diesel fuel, lubricating oil, grease, and solvents. Once project construction is complete, the transport, use or disposal of hazardous materials would be limited to household cleaning products, landscaping chemicals and fertilizers, and other substances associated with residential and recreation (park) uses and such items that may be available for resale in future commercial uses. While the proposed project would result in the increase in routine transport, use and disposal of hazardous materials and/or wastes generated by future growth, all hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. A detailed analysis of the proposed project's consistency with General Plan and Otay Ranch GDP goals, objectives, and policies associated with hazards and hazardous materials is provided in Appendix B. Impacts associated with consistency of General Plan and Otay Ranch GDP policies and objectives would be **less than significant** and no mitigation is required.

I. According to the Otay Ranch GDP Program EIR, impacts to public health and safety would be significant if:

i. The increase in urbanization would result in an increase in the uses, transport, storage, and disposal of hazardous waste materials and an associated increase in the risk of an upset condition in the area.

The proposed project would result in an increase in routine transport, use and disposal of hazardous materials and/or wastes generated by future growth. The transport, use or disposal of hazardous materials would be limited to household cleaning products, landscaping chemicals and fertilizers, and other substances associated with residential and recreation (park) uses and such items that may be available for resale in future industrial and commercial uses. All hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Therefore, although the proposed project would increase the transport, use, and disposal of hazardous materials, impacts would be **less than significant**.

ii. The historic use of pesticides would result in soil contamination and health effects.

According to the Phase I ESA, flatter areas of the project area were cultivated for agricultural use (primarily dry farmed grain crops) from at least 1928 through 2007. The site history is similar to

the history of other Otay Ranch Villages which have undergone assessment for organochlorine pesticides, organophosphorous pesticides, organochlorine herbicides, and metals including arsenic and lead associated with former agricultural use. In some areas these analytes have been detected in soil samples above their respective EPA Region IX Preliminary Remediation Goals for residential use. In the event that the proposed project encounters contaminated soils during grading and excavation it could result in increased health risks to construction workers, future residents, and potentially impact water quality. Remediation may be required that would involve the removal of top soil and disposing of it. Considering the potential consequences of encountering contaminated soils, impacts would be **potentially significant**.

5.15.4 Level of Significance Prior to Mitigation

Prior to mitigation the proposed project would have potentially significant impacts associated with exposure of construction workers and future residents to pesticide residue. Due to the determinations found during the MEC Risk Assessment, there is a likely potential that MEC exists at the Brown Field Bombing Range located in Village Ten. Impacts prior to mitigation would be **potentially significant**. The remaining issues addressed in this section would be less than significant.

5.15.5 Mitigation Measures

The following mitigation measures would reduce identified significant impacts associated with potential hazards and risk of upset to a less than significant level.

MM HAZ-1 Prior to issuance of a mass grading permit for each village, the Applicant shall prepare a soils assessment to the satisfaction of the City Engineer to determine if residual pesticides, herbicides, and/or arsenic are present on site. The assessment shall be prepared by a Registered Environmental Assessor in accordance with Department of Toxic Substances Control guidance document. The assessment shall include analysis for organochlorine pesticides that include compounds such as toxaphene, dichlorodiphenyldichloroethane (DDD), dichlorodiphenyltrichloroethane (DDT), and dichlorodiphenyldichloroethylene (DDE), which have been historically identified at properties in the site vicinity. The concentrations of the contaminants shall be compared to regulatory agency soil screening levels for residential land use (e.g., U.S. EPA Region IX Soil Screening Levels). If levels of contamination exceeding the soil screening levels are found on site, a Soil Reuse Plan shall be prepared prior to construction on site. The Soil Reuse Plan shall include a determination of the suitability of the soils for on-site or off-site reuse, any special handling provisions that shall be incorporated as part of the site grading activities, and the procedure for the proper remediation and disposal of the contaminated soils, either on site or off site. The results of the limited soil assessment and the Soil Reuse

Plan shall be submitted to the County of San Diego Department of Environmental Health, the Development Services Director (or their designee), and/or the Regional Water Quality Control Board for review and approval, prior to implementation.

MM HAZ-2A Prior to approval of the Village Ten Final Map, the Applicant shall retain a Unexploded Ordnance (UXO) specialist to prepare a Safety Plan for the approximately 154 acres of the Village Ten Sectional Planning Area (SPA) Plan area that is within the boundaries of the Formerly Used Defense Site (FUDS)-eligible property as defined in the *Final Site Inspection Report for the Former Brown Field Bombing Range* (hereinafter referred to as the Site Inspection Report) prepared by Parsons for the UD Army Corps of Engineers (ACOE) dated December 2007. The Safety Plan shall be prepared to the satisfaction of the Director of Development Services or their designee. The Safety Plan shall include, but not be limited to, the following:

- Findings based on a current visual inspection of the approximately 154-acre SPA Plan area within the FUDS-eligible property including a description of evidence of current activity and uses.
- A discussion on the prior use of the site and the types of munitions used, dates of use, etc.
- Review of prior US Army Corps of Engineers Site Inspection Reports and historical data and summaries of those reports' conclusions.
- Review of current site inspection data to determine trail access to and through the FUDS area.
- A detailed characterization of the site and its risk profile, based on a combination of the reports to date, the types of munitions uses and found in the prior investigation and current site inspection.
- Hazard mitigation measures, such as fencing and signage, appropriate for this site given its risk profile and planned land use in accordance with applicable Federal, State and local requirements and best practices.
- As part of implementation of the Safety Plan, specifically the installation of fencing and/or signage determined to be appropriate for the site, or the dedication of any trails, the following shall be performed:
    - A surface visual survey (SVS) of future dedication trails within the approximately 154-acre Village Ten SPA Plan Area within the FUDS-eligible property boundaries shall be conducted.

- UXO anomaly avoidance - performed by a UXO technician using a handheld detector at each point where intrusive activities will be performed for the installation of a fence/sign post. If subsurface metal is indicated at the desired installation point, the fence/sign post will be moved slightly to avoid the subsurface metal. If multiple fencing/signage teams are fielded, it is recommended that a UXO Technician accompany each team to provide UXO anomaly avoidance during intrusive activities such as fence and sign post installation.

MM HAZ-2B Prior to the approval of ~~a grading permit~~ trail improvement plans for the OVRP/Greenbelt trail (approximately 1.3 acres), or grading plans for water quality basins (approximately 1.8 acres) and any associated access roads (approximately 0.8 acre) that are within the Village Ten SPA Plan boundary and FUDS-eligible property boundaries (hereinafter referred to as the "Cleanup area"), the applicant shall develop and implement a Village Ten FUDS Cleanup Plan in cooperation with the appropriate agencies, including but not limited to the Army Corps of Engineers (ACOE) and Department of Toxic Substances Control (DTSC), as applicable. The purpose of the Village Ten FUDS Cleanup Plan is to identify and clean up any risks of munitions or other FUDS associated risks within the Cleanup area in order to render the area suitable for the intended uses.

The Village Ten FUDS Cleanup Plan shall include a risk assessment that identifies the nature and extent of munitions, explosives, munitions debris or other FUDS associated risks within the Cleanup area. Enough data shall be gathered to assess the threat to human health, safety and the environment, as well as to support the detailed cleanup program for any portion of the site anticipated to be impacted by grading activity, signage and fence installation, future trail users and/or future maintenance activities for the basins. The Village Ten FUDS Cleanup Plan shall be developed in cooperation with the appropriate agencies and shall be implemented by a qualified UXO specialist prior to issuance of the grading permit for the Cleanup area.

Upon completion of the Cleanup Plan, and prior to issuance of construction permits for construction within the Cleanup area, the Applicant shall provide verification by the appropriate agency that the site is suitable for the intended uses to the satisfaction of the Development Services Director (or their designee).

MM HAZ-3 Prior to issuance of a building permit for the first structure and/or dwelling unit within the Airport Influence Area of Brown Field, the Applicant shall prepare and file a Form 7460-1, Notice of Proposed Construction or Alteration, with the Federal Aviation Administration to ensure that no objects related to development would present a hazard to air navigation.

MM HAZ-4 Prior to the issuance of a building permit for the first structure and/or dwelling unit within the Airport Influence Area of Brown Field, the Applicant shall obtain and provide proof of Federal Aviation Administration clearance to the satisfaction of the Development Services Director (or their designee).

MM HAZ-5 Prior to approval of the first Final Map for those areas within the overflight notification area for Brown Field, the Applicant shall record the Airport Overflight Agreement with the County Recorder's office, and provide a signed copy of the recorded Airport Overflight Agreement to the City's Development Service Director (or their designee).

5.15.6 Level of Significance After Mitigation

The mitigation measures listed in Section 5.15.5 would reduce potential impacts associated with hazards and risk of upset to a **less than significant level**.

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5.16 HOUSING AND POPULATION

This section tiers from the 1993 Otay Ranch GDP Program EIR, because the proposed project is within the boundaries of the Otay Ranch GDP and potential impacts to housing, population, and employment as a result of implementation of the Otay Ranch GDP were analyzed as part of the Program EIR. The 1993 Otay Ranch GDP Program EIR determined that growth-inducing impacts as a result of implementation of the proposed land plan would be significant and unavoidable, because there were no feasible mitigation measures. However, the Chula Vista City Council determined that housing and population impacts identified in that EIR were acceptable because of specific overriding considerations.

This section also tiers from the 2005 GPU/GDPA Program EIR, because existing conditions related to housing and population for the entire Otay Ranch area were assessed as part of the 2005 GPU/GDPA Program EIR. The 2005 GPU/GDPA Program EIR identified a significant and unmitigable impact to housing and population because it resulted in a substantial increase in the population and no mitigation was available to avoid this impact.

This section of the 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 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.).

5.16.1 Existing Conditions

5.16.1.1 Regulatory Framework

Regional

San Diego Association of Governments

The SANDAG 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, published October 2011, predicts the following for the San Diego region (shown in Table 5.16-1): 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 5.16-1
San Diego Regional Population, Housing, and Employment Forecast

Planning Area	Year 2008	Year 2020	Year 2030	Year 2050	Increase	% Change
Population						
Incorporated Cities	2,641,594	2,989,591	3,253,630	3,691,950	1,050,356	40%
Unincorporated Area	489,985	545,409	616,370	692,917	202,959	41%
San Diego Region	3,131,552	3,535,000	3,870,000	1,253,315	1,253,315	40%
Housing						
Incorporated Cities	973,772	1,082,028	1,166,983	1,306,712	332,920	34%
Unincorporated Area	166,882	180,460	202,824	222,378	55,516	33%
San Diego Region	1,140,654	1,262,488	1,369,807	1,529,090	388,436	34%
Employment						
Incorporated Cities	1,363,816	1,470,644	1,913,566	1,810,936	447,120	33%
Unincorporated Area	137,264	148,971	160,936	192,102	54,838	40%
San Diego Region	1,501,080	1,619,615	1,752,630	2,003,038	501,958	33%

Source: SANDAG 2011a, 2011b.

SANDAG's 2050 Regional Growth Forecast update predicts the following for the City of Chula Vista (see Table 5.16-2): 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 5.16-2
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	39,527	38%
Employment						
City of Chula Vista	70,230	82,146	101,001	121,555	51,325	73%

Source: SANDAG 2011a, 2011b.

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. The City of Chula Vista provided SANDAG with the number of expected dwelling units as part of current applications (LOA); therefore, the growth forecasts for San Diego Forward are expected to accommodate population growth and trip generation resulting from the proposed project.

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 2011c). 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. Within the East Planning Area, the University Villages project is

located within the Western District, Central District, Otay Valley District, and Eastern University District (City of Chula Vista 2005a).

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 2005a). Projected growth in the City's five planning areas is summarized in Table 5.16-3. The General Plan's projected population exceeds the SANDAG 2050 Regional Forecast for the year 2030 by 34,922 persons. As shown in Table 5.16-3, 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 5.16-3
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
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 2005a.

The project area is within the East (incorporated area) Planning Area. The total units and population by Village is shown in Table 5.16-4a.

Table 5.16-4a
Existing Chula Vista GP Planned Residential in the Project Area

Village	Total Units	Approximate Population
Village Three North and a Portion of Village Four	0	0
Village Eight East	928	3,007
Village Ten	0	0
Total	**928**	**3,007**

The Chula Vista General Plan incorporates a Housing Element (adopted April 23, 2013) 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.

Goals and policies listed in the General Plan 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. General Plan goals and polices 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 and support efforts to increase homeownership rates to build individual wealth.

Otay Ranch General Development Plan

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 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. Polices identified in the Otay Ranch GDP encourage each village to offer a variety of housing types, densities, and prices to enable affordability while addressing issues such as energy and water conservation, air quality improvements and recycling. Policies also encourage housing opportunities for very-low, low, and moderate-income households in order to promote a balanced community.

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 each village included in the proposed project is provided in Table 5.16-4b. As described in Chapter 3, Environmental Setting, the boundaries of the villages included in the proposed project differ from those identified in the Otay Ranch GDP due to ownership patterns that do not match the Otay Ranch GDP village boundaries. Through previous planning efforts, the proposed project area was allocated a total of 1,570 residential units, including 928 units in Village Eight East and 642 units in Village Ten (Table 5.16-4b). Because the Otay Ranch GDP designates Village Three North as Industrial and the Portion of Village Four included in the proposed project as Parks and Recreation, no residential units were allocated to those areas. Based on the household coefficient of 3.24 persons per household that applies to the project area (CDF 2013), the planned population associated with the 1,570 allocated residential units would be 5,040. To be conservative, a household coefficient of 3.24 persons per residential unit is used throughout this EIR.

Table 5.16-4b
Existing Otay Ranch GDP Planned Residential in the Project Area

Village	Total Units	Approximate Population
Village Three North and a Portion of Village Four	0	0
Village Eight East	928	3,007
Village Ten	642*	2,080
Total	**1,570**	**5,087**

* 642 units allocated to Village Ten per the existing Otay Ranch GDP Secondary Land Use.

5.16.1.2 Existing Setting

The project area has been used primarily for agricultural purposes. No former or current residential uses are located within the project area.

5.16.2 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, Otay Ranch GDP, and other objectives and policies regarding housing and population thereby resulting in a significant physical impact.

5.16.3 Impacts

The following impact analysis is based on the overall unit counts within the proposed land use plans for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. As described in Chapter 4, Project Description, the Village Eight East land use plan includes an Optional Development Scenario for neighborhoods R-11a and R-12a, which would enable these neighborhoods to develop as either single- or multi-family. Although the mix of unit types under the Optional Development Scenario would be variable, the overall unit count of Village Eight East would not be exceeded because any unit increase in R-11a and R-112a would be a transfer from another neighborhood in Village Eight East. Because the population per household coefficient is the same (3.24 pph) for single family and multi-family homes and the maximum number of homes would be the same under either scenario, the overall population of either would be the same.

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 5.16.1.1, 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. A majority of this growth (58,990 persons) is planned in the East Planning Area, where the project area is located.

The project proposes a total of 6,897 residential units, including 1,597 units in Village Three North and a Portion of Village Four, 3,560 units in Village Eight East, and 1,740 units in Village Ten (Table 5.16-5a). 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 22,346. This proposed population growth is within the planned growth for the East Planning Area; however, the East Planning Area is divided into five subareas (Western, Central, Eastern University, Otay Valley) and planned population for the Western, Central and Eastern University subareas, as identified in the General Plan, would be exceeded by the proposed project (an increase of 19,339 persons).

Table 5.16-5a
Estimated Residential Buildout – Chula Vista GP Planned vs. Proposed

Village	Total GP Planned Units	Approximate GP Planned Population*	Total Proposed Units	Approximate Proposed Population	Δ Total Units	Δ Approximate Population*
Village Three North and a Portion of Village Four (Western District)	0	0	1,597	5,174	1,597	5,174
Village Eight East (Central District)	928	3,007	3,560	11,534	2,632	8,527
Village Ten (Eastern University District)	0	0	1,740	5,638	1,740	5,638
Total	**928**	**3,007**	**6,897**	**22,346**	**5,969**	**19,339**

* Population estimates per City of Chula Vista household coefficient of 3.24 persons per residential unit.

Additionally, the proposed project is subject to the Otay Ranch GDP, which more precisely allocates planned population growth within the project area. As described in Section 5.16.1.1, through previous Otay Ranch GDP planning efforts, the project area was allocated a total of 1,570 residential units, resulting in a planned population increase of 5,087 persons. Village Three North and a Portion of Village Four and the University site[1] were not allocated any residential units. As shown in Table 5.16-5b, the proposed project includes an additional 5,327 residential units above the planned 1,570 residential units, and this increase would result in population

[1] No units allocated to University site per the GDP Primary Land Use.

growth that exceeds the growth planned for the project area by 17,259 persons. Although the density will increase as a result of the proposed project, the increase in dwelling units will accommodate the population growth anticipated. Additionally, although the proposed project would exceed the planned growth identified in the General Plan and Otay Ranch GDP, with adoption of the proposed General Plan and Otay Ranch GDP amendments, which increase the dwelling unit and population allocation, implementation of the University Villages project would not exceed anticipated population growth. The General Plan and Otay Ranch GDP amendments will ensure the consistency of the proposed project.

Table 5.16-5b
Estimated Residential Buildout – Chula Vista Otay Ranch GDP Planned vs. Proposed

Village	Total GDP Planned Units	Approximate GDP Planned Population*	Total Proposed Units	Approximate Proposed Population	Δ Total Units	Δ Approximate Population*
Village Three North and a Portion of Village Four	0	0	1,597	5,174	1,597	5,174
Village Eight East	928	3,007	3,560	11,534	2,632	8,527
Village Ten	642**	2,080	1,740	5,638	1,098	3,558
Total	**1,570**	**5,087**	**6,897**	**22,346**	**5,327**	**17,259**

* Population estimates per City of Chula Vista household coefficient of 3.24 persons per residential unit.
** 642 units allocated to Village Ten per the existing Otay Ranch GDP Secondary Land Use.

Furthermore, adjacent development in 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 proposes an additional 1.5 million square feet of commercial/office space. While these are not part of the proposed project, they are important because they would increase the number of employment opportunities in the immediate vicinity of the project site. Therefore, although the density as a result of the proposed project would increase the number of dwelling units, this increase will accommodate both the population and employment growth anticipated. The proposed project would not introduce so much commercial/office space as to indirectly induce additional population growth.

Additionally, the proposed project would be in compliance with the City of Chula Vista Growth Management Ordinance (GMO), 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. Project sizing is based both on meeting the needs of the proposed project (i.e., water lines in streets internal to project), as well as cumulative demand (i.e., traffic study, sewer and water lines in major roads, and drainage facilities for Village Ten/University site). Refer to Section 5.12, Public Services

and Section 5.13, Utilities for a detailed analysis of sizing and meeting future demands. The PFFP will address the proposed project's facilities and the adequacy to support anticipated project growth as well as future growth. 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 Public Facilities Development Impact Fee (PFDIF), 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.

This increase in land use intensity and associated increase in vehicle trips has not been anticipated in local air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the RAQS, which would be a significant and unavoidable impact (see Section 5.4 Air Quality). However, the proposed project would be consistent with all applicable transportation and area source control measures proposed in the RAQS to reduce emissions in the region. The proposed project includes pedestrian and bicycle facilities, smart growth principles, transit improvements, and traffic calming techniques.

Furthermore, 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. Population growth as a result of the proposed project would conflict with currently adopted growth forecasts as developed by SANDAG.

Therefore, although the proposed project would result in substantial population growth, the General Plan and Otay Ranch GDP amendments, compliance with the GMOC and related thresholds, preparation of a PFFP, payment of DIFs and TDIFs, as well as the updated 2050 SANDAG Regional Growth Forecast, 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.

No existing or former residential uses occupy the project area. 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 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 affordable housing program has assigned an obligation of approximately 690 affordable units to the proposed project. 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 impact** associated with displacement of households or people.

C. Be inconsistent with General Plan, Otay Ranch 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 applicable General Plan objectives and policies, as shown in Appendix B. Consistent with the General Plan's Housing Element objectives and policies, the proposed project includes a variety of housing types from high-density multi-family to single-family detached and also includes townhomes, condos, alley product, and small lot single-family attached and detached homes, and complies with the City's requirement to provide affordable housing.

Appendix B also demonstrates the proposed projects consistency with Otay Ranch GDP objectives and policies related to population and housing. The housing policies included in the Otay Ranch GDP are consistent with the City's Housing Element. The policies focus on the provision of a range of housing types for all income levels to meet a proportionate share of housing needs for all groups. While the proposed project would exceed the maximum residential buildout for the villages set forth by the General Plan and Otay Ranch GDP, as discussed in the response to Threshold A, the proposed project would be consistent with the housing policies contained in the General Plan and Otay Ranch GDP. Therefore, since the proposed project would be consistent with the applicable objectives and policies included in both the General Plan and Otay Ranch GDP, it would result in a **less than significant** impact.

5.16.4 Level of Significance Prior to Mitigation

The proposed project would exceed the maximum residential buildout anticipated in the Otay Ranch GDP and the General Plan's East Planning Area, which is based on the Otay Ranch GDP. However, for the reasons described above, 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 Otay Ranch GDP regarding housing and population; therefore, the proposed project would result in a **less than significant** impact in this regard.

5.16.5 Mitigation Measures

Impacts to population and housing would be **less than significant**; therefore, no mitigation is required.

5.16.6 Level of Significance After Mitigation

Impacts to population and housing would be **less than significant**; therefore, no mitigation is required.

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5.17 MINERAL RESOURCES

This section tiers from the 1993 Otay Ranch GDP Program EIR (Section 3.8, Mineral Resources) because that Program EIR analyzed mineral resource impacts for the entire Otay Ranch, including the project site. The 1993 Otay Ranch GDP Program EIR concluded that phasing of development on Rock Mountain and on the San Ysidro and Proctor Valley parcels of Otay Ranch to allow for the extraction of mineral resources before construction would effectively mitigate impacts to mineral resources.

This section of the EIR also tiers from the 2005 GPU/GDPA Program EIR, because potential impacts to mineral resources due to development in the entire Otay Ranch area were also analyzed as part of the 2005 GPU/GDPA. The 2005 GPU/GDPA determined that due to the limited area affected by development in accordance with the Open Space Active Recreation designation, and compliance with General Plan policies and objectives, impacts to mineral resources would not be significant.

This section of the EIR addresses potential impacts associated with mineral resources, which are generally conditions that may result in the loss of valuable mineral resource sites as a result of the proposed project.

5.17.1 Existing Conditions

5.17.1.1 Regulatory Framework

State Level

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (PRC, Section 2710 et seq.) required that the California State Geologist implement a mineral land classification system to identify and protect mineral resources of regional or statewide significance in areas where urban expansion or other irreversible land uses may occur, thereby potentially restricting or preventing future mineral extraction on such lands. It is also the intent of this process, through the adoption of general plan mineral resource management policies, that this information be considered in local land use planning activities (PRC, Section 2762). The California State Mining and Geology Board classifies such urban and non-urban lands according to a priority list, or when the Board is otherwise petitioned to classify a particular land area. As mandated by the Surface Mining and Reclamation Act, aggregate mineral resources within the state are classified by the State Mining and Geology Board through application of the Mineral Resource Zone (MRZ) System. The MRZ is used to map all mineral commodities within identified jurisdictional boundaries, with priority given to areas where future mineral resource extraction may be prevented or restricted by land

use compatibility issues, or where mineral resources may be mined during the 50-year period following their classification. The MRZ classifies lands that contain mineral deposits and identifies the presence or absence of substantial sand and gravel deposits and crushed rock source areas (i.e., commodities used as, or in the production of, construction materials). The State Geologist classifies MRZs within a region based on the following factors:

- **MRZ-1.** Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2.** Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- **MRZ-3.** Areas containing mineral deposits for which the significance cannot be determined from available data.
- **MRZ-4.** Areas where available information is inadequate for assignment of any other MRZ category.

Mining operations and mine reclamation activities are required to be performed in accordance with laws and regulations adopted by the State Mining and Geology Board, as contained in 14 CCR 3500 et seq. The State Department of Conservation's Office of Mine Reclamation oversees reclamation requirements.

Division of Oil, Gas, and Geothermal Resources

The California State Department of Conservation maintains the Division of Oil, Gas, and Geothermal Resources. This division is responsible for monitoring the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells with the intention of environmental protection, public health and safety, and general environmental conservation methods. The Division of Oil, Gas, and Geothermal Resources is also responsible for collecting groundwater, oil, gas, and geothermal resource data for maintaining a record of all drilled and abandoned well locations.

Division of Mines and Geology

The California Division of Mines and Geology operates within the Department of Conservation. The division is responsible for assisting in the utilization of mineral deposits and the identification of geological hazards.

State Geological Survey

Similar to the California Division of Mines and Geology, the California Geological Survey is responsible for assisting in the identification and proper utilization of mineral deposits, as well as the identification of fault locations and other geological hazards.

Local Level

The City of Chula Vista assesses and mitigates the potential impacts of private development and public facilities and infrastructure to mineral resources pursuant to the provisions of the CEQA. Pursuant to Section 15382 of the CEQA Guidelines, a lead agency must find that a project will have a significant effect on the environment where the project results in a substantial, or potentially substantial change in the physical conditions within the affected project area, which includes mineral resources (14 CCR 15000 et seq.).

Chula Vista General Plan

The Environmental Element of the Chula Vista General Plan (City of Chula Vista 2005) contains Objective E 5 and supporting policies to support the efficient extraction of regionally significant mineral resources and requires the appropriate reclamation of mined areas for suitable future development, recreation, open space, and/or habitat restoration.

5.17.1.2 Existing Setting

Most of the western portions of Chula Vista are fully developed so that the potential for mineral resources and production in the General Plan area is generally limited to undeveloped portions of the eastern area of the city, including Otay Ranch, floodplains, or biologically sensitive preserve areas. According to the 2005 GPU EIR, the Otay Valley Regional Park (OVRP) area has been a major source of aggregate (sand and gravel) production for the south San Diego County area in the past. Aggregate material is important to the construction industry. This area may contain up to 100 million tons of Portland cement concrete (PCC)-grade quality sand and an additional 70 million tons of PCC-grade quality gravel. Replenishment of any mined resources occurs only from tributaries, as the dam forming Otay Lakes prevents transport of sediment from upstream sources.

Mineral resources of economic value on the Otay Ranch property include sand, gravel, crushed rock, and bentonitic clay. These mineral resources are important to the local construction industry for uses such as concrete, fill, road base, and building materials. Most of these resources are found within the MRZ-2 zones within the OVRP and Rock Mountain, immediately north of the Otay River. The Otay Mesa Pit at Rock Mountain is the only active mining operation currently permitted to operate within the city. The Otay Mesa Pit, located approximately 0.5 mile west of Village Eight East, produces quarried rock from a metavolcanic deposit at Rock Mountain, which meets the quality specifications for PCC-grade aggregate.

According to the County of San Diego General Plan, the proposed project is located within MRZ-2 and MRZ-3 zones (see Figure 5.17-1), which applies to areas where adequate information indicates that there is a high likelihood for significant mineral deposits to exist, and

to areas containing mineral deposits for which the significance cannot be determined from available data (County of San Diego 2011). In addition, the City's General Plan anticipates that mining within the City beyond Rock Mountain will be very limited or nonexistent in the long term (City of Chula Vista 2005).

5.17.2 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 mineral resources impact. Impacts to mineral resources would be significant if the proposed project would:

A. Result in the loss of availability of a valuable mineral resource that would be of value to the region and the residents of the state.

B. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

C. Be inconsistent with General Plan, Otay Ranch GDP, and other objectives and policies regarding mineral resources thereby resulting in a significant physical impact.

5.17.3 Impacts

A. Result in the loss of availability of a valuable mineral resource that would be of value to the region and the residents of the state.

The proposed project is within MRZ-2 and MRZ-3 zones (Figure 5.17-1). The MRZ-2 classification for mineral resources represents areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence. The MRZ-3 classification for mineral resources represents an area that has the potential for mineral deposits, but no resources have been identified. Planned development would occur almost entirely within in the MRZ-3 zone. Only a small portion of planned development, approximately 60 acres, is proposed within the MRZ-2 zone located in Village Eight East and Village Ten. In Village Eight East the Community Park (P-2), a portion of the associated access road and the emergency access roads are located within the MRZ-2 zone. In Village Ten, two water quality basins and an access road are located within the MRZ-2 zone.

SOURCE: Mineral Resoruce Zones-SANDAG; Aerial-Bing Maps

FIGURE 5.17-1

Mineral Resource Zones

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Furthermore, the adopted General Plan land use designations in the MRZ-2 and MRZ-3 zones that would be impacted by the proposed project are currently designated for Open Space and Residential Low Medium in Village Eight East, and University land use designation in Village Ten and not for extractive uses. This demonstrates that the city would not allow or plan for mining operations as future use in these areas. Further, while not proposed as part of the SPA Plans at this time, the on-site resources could still be made available. As such, there would be no loss of availability of this regionally valuable aggregate resource. Given these factors, while the proposed project would be located on MRZ-2 and MRZ-3 land, it 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. As such, impacts would be less than significant.

B. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

The Chula Vista General Plan does not identify any mineral resource recovery sites within the City. Therefore, construction and operation of the proposed project would not result in the loss off availability of a locally important mineral resources recovery site, and there would be **no impact**.

C. Be inconsistent with General Plan, Otay Ranch GDP, and other objectives and policies regarding mineral resources thereby resulting in a significant physical impact.

Appendix B evaluates the consistency of the proposed project with the applicable General Plan and Otay Ranch GDP goals and objectives related to mineral resources, respectively. The 2005 GPU/GDPA determined that due to the limited area affected by development in accordance with the Open Space Active Recreation designation, and compliance with General Plan policies and objectives, impacts to mineral resources would not be significant. The proposed project does not involve the extraction of any minerals nor would the proposed project interfere with operations at the existing Otay Valley Rock Quarry. As shown in Appendix B, the proposed project would be consistent with all applicable mineral resource policies. No impacts to mineral resources would occur and no mitigation measures are required to reduce or avoid impacts. Since the project would be consistent with the General Plan and Otay Ranch GDP policies regarding mineral resources, potential impacts would be **less than significant** with respect to this threshold.

5.17.4 Level of Significance Prior to Mitigation

As described in Section 5.17.3, impacts to mineral resources resulting from the proposed project would be less than significant.

5.17.5 Mitigation Measures

Because impacts to mineral resources are found to be less than significant, no mitigation measures are necessary.

5.17.6 Level of Significance After Mitigation

There would be no significant impacts to mineral resources.

CHAPTER 6
CUMULATIVE IMPACTS

6.0 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 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 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.

6.1 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, greenhouse gas emissions, noise, and transportation/traffic 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/ Planning	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.
Aesthetics	The cumulative study area associated with aesthetics impacts is the viewshed of Village Three North and Portion of Village Four, Village Eight East, and Village Ten, which is geographic area from which a proposed project is likely to be seen, based on topography and land use patterns. The cumulative study area for light and glare is the City of Chula Vista. The cumulative study area for steep slopes is Otay Ranch.
Transportation/ Traffic	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 M). 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 Three North and Portion of Village Four, Village Eight East, and Village Ten. 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.
Cultural and Paleontological Resources	The geographic context for the analysis of cumulative impacts to archaeological resources, historic resources, paleontological resources, and human remains includes the San Diego region, which has a similar archaeological, ethnohistoric, historic, and prehistoric setting as the 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 for public services.
Global 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.
Hydrology/ Water Quality	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.
Agricultural Resources	The City of Chula Vista is the geographic scope of cumulative impacts to agricultural resources.
Hazards and Hazardous Materials	The geographic context for the analysis of cumulative impacts relative to the transport, use and disposal of hazardous materials, and associated accidental releases, encompasses the roadways and freeways used by vehicles transporting hazardous materials to and from the project sites. The geographic context for the analysis of cumulative impacts relative to wildland fires and emergency response and evacuation plans is the City of Chula Vista. Impacts relative to listed hazardous materials sites and airport hazards are generally specific to the project site.

Table 6-1 (Continued)
Geographic Scope of Cumulative Impact Analyses

Topic	Geographic Scope of Cumulative Impact Analyses
Housing and Population	The City of Chula Vista is the geographic scope of cumulative impacts to housing and population.
Public Utilities	The City of Chula Vista is the geographic scope of cumulative impacts to public utilities.
Mineral Resources	The geographic scope for the analysis of cumulative impacts related to mineral resources is the area of Chula Vista designated MRZ-2, which identifies the area that contains regionally significant aggregate resources.

6.2 CUMULATIVE PROJECTS

6.2.1 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, and the numbers correspond to the numbers shown on Figure 6-1.

Table 6-2
Cumulative Projects

Project #	Name	Location	Description	Status
1	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 park land.	Approved
2	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 park land, 85.0 acres of Industrial/Research Technology Park, and 50.0 acres for future University site.	Approved
3	Village Two	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.	Draft EIR circulated for public review

Table 6-2 (Continued)
Cumulative Projects

Project #	Name	Location	Description	Status
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

6.2.2 Adopted Plans

From a regional approach, the cumulative analysis relies on SANDAG's RCP, along with other regional planning documents, including the MSCP Subarea Plan, and RAQS in accordance with CEQA Section 15130(b)(1)(B). The cumulative analysis herein tiers from the 1993 Otay Ranch GDP Program EIR, the 2005 Chula Vista General Plan Update and Otay Ranch GDP Amendment (GPU/GDPA), and the 2013 Supplemental EIR for Amendments to the City of Chula Vista General Plan and Otay Ranch GDP (GPA/GDPA) (City of Chula Vista 2013).

Other environmental documents have included the proposed project in cumulative analyses as a reasonably foreseeable project including the Village Eight West EIR, Village Nine EIR, and Village 2, 3, and Portion of 4 EIR. These environmental documents are summarized herein as they pertain to the proposed project. For more information on relevant previous planning documents see Section 2.0, Introduction.

6.2.3 Previously Analyzed Land Uses

As discussed above in Section 6.2.2, aspects of the proposed project have been analyzed at some level in both programmatic and project specific EIRs.

The 1993 Otay Ranch GDP Program EIR analyzed the following in Village Three: 176.5 acres of industrial land use, 34.8 acres dedicated to the circulation system, and 10.2 acres for community purpose facility (see Table 4-4). The proposed project would result in a decrease of 147.9 acres of industrial, 0.9 acres dedicated to the circulation system, and six acres of community purpose facility in Village Three. The proposed project would result in an increase of 1,597 residential units, 8.2 acres of mixed-use, 5.2 acres of office use, 7.9 acres of parkland, and 8.3 acres of schools (see Table 4-5) as compared to the Village Three land uses analyzed in the 1993 Otay Ranch Program EIR.

AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 6-1

Cumulative Projects

7000

UNIVERSITY VILLAGES PROJECT EIR

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The 1993 Otay Ranch GDP Program EIR analyzed the following in Village Eight East: 635 single-family units, 293 multi-family units, 5.9 acres for parks, 2.9 acres for community purpose facilities, ten acres for schools, 8.9 acres of commercial, 15.1 acres of open space, and 9.1 acres for arterial roadways. As compared to that EIR, the proposed project would result in an increase of 308 single-family units, 2,324 multi-family units, 1.4 acres for parks, 1.3 acres for community purposed facilities, 0.8 acres for schools, and 0.4 acres for arterial roadways. The proposed project will result in a decrease of 3.9 acres of open space. The proposed project would allow for 20,000 square feet of commercial space, compared to the 8.9 acres identified by the 1993 Otay Ranch GDP Program EIR.

The 1993 Otay Ranch GDP Program EIR analyzed the following in Village Ten: 307 single-family units, 335 multi-family units, 7.3 acres for parks, 2.5 acres for community purpose facilities, 4.6 acres for schools, 3.1 acres of commercial, 24.9 acres of open space, and 12.7 acres for arterial roadways. As compared to that EIR, the proposed project would result in an increase of 388 single-family units, 710 multi-family units, 0.3 acres of parks, 1.8 acres of community purposed facilities, 4.6 acres for schools, and 0.4 acres for arterial roadways. The proposed project will result in a decrease of 8.4 acres of open space.

The 2005 GPU/GDPA Program EIR analyzed all of Village Three as limited industrial and no residential units were proposed. Village Eight East was analyzed as a Regional Technology Park (RTP) (approximately 150-200 acres). Village Ten was analyzed as a future University site and was designated public and quasi-public land use. A small portion of low-medium residential and medium residential were, also included in the southern portion of Village Ten. As compared to the 2005 GPA/GDPA Program EIR, the proposed project would reduce the amount of limited industrial in Village Three to 28.6 acres and increase the amount of dwelling units by 1,597 units (the economic and fiscal impacts associated with the reduction in industrial land is analyzed below in Section 6.3.1). Village Three North would be designated low-medium residential and medium residential, mixed-use commercial and mixed-use residential, research and limited industrial, and open space preserve. Village Eight East would not be developed as a RTP and would instead be developed with 3,560 residential units also with a variety of complimentary land uses. The proposed project would the remove a portion of the future University site from Village Ten and would instead include medium residential, medium-high residential, public and quasi-public, and open space preserve land uses.

The 2013 GPA/GDPA Supplemental EIR, Village Eight West EIR, and Village Nine EIR all analyzed the following land uses for Village Eight East and Village Ten: 5,756 units, 45.1 acres of parkland, 20 acres for schools, eight acres of community purpose facilities, and 210 acres designated as future university. The 2013 GPA/GDPA Supplemental EIR did not include Village Three North in the cumulative analysis. The Village Eight West and Village Nine EIRs analyzed 176.6 acres of industrial land use and 10.2 acres for community purpose facility in Village Three North.

The proposed project would result in an increase of 1,141 units, 135.8 acres of parkland and open space, 8.3 acres for schools, 4.7 acres of community purpose facilities, beyond what was analyzed in the 2013 GPA/GDPA SEIR, Village Eight West EIR, and Village Nine EIR. The proposed project would decrease the amount of industrial acreage by 148 acres.

The Village 2, 3 and Portion of Village 4 EIR included most of the Village Three North SPA Plan area and covered on-the-ground impacts for Biology, Cultural and Paleontological Resources, Geology and Soils, and Landform Alterations. As compared to the Village 2, 3 and Portion of 4 EIR, the portion of Village Three included in the project would include roughly 5.0-acres of additional impacts associated with the proposed MSCP Boundary Adjustment "Take" and provide for approximately 0.8 acres of "Give" to the Preserve of areas previously assumed to be impacted.

6.3 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 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.

6.3.1 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

This section tiers from the 1993 Otay Ranch GDP Program EIR, because the proposed project is within the boundaries of the Otay Ranch GDP and implements land uses (although at a different intensity), a circulation network, and village design policies that were analyzed in the 1993 Otay Ranch GDP. This section also tiers from the 2005 GPU/GDPA Program EIR, because existing conditions for the entire Otay Ranch area were assessed as part of the 2005 GPU/GDPA Program EIR. The 1993 Otay Ranch GDP Program EIR determined that cumulative land use impacts would be significant and unavoidable. However, the Chula Vista City Council determined that land use impacts identified in the Program EIR were acceptable because of specific overriding considerations. The 2005 GPU/GDPA determined that

cumulative impacts related to land use would be less than significant with adherence to the smart-growth principles in the RCP, and through conformance with the policies and objectives of the General Plan.

The 2013 GPA/GDPA SEIR included Village Eight East and Village Ten as part of the cumulative analysis; however, the land uses analyzed were different than the proposed project (see Section 6.2.3 above). The 2013 GPA/GDPA SEIR concluded that cumulative projects would be required to conform to the smart growth principals and goals and policies in the RCP due to the projects intents to promote mobility, increase jobs/housing balance, foster transit-oriented development, increase density and promote mixed-use development. As such, cumulative projects in the Otay Ranch area would serve to implement SANDAG's overarching planning goals and the incremental land use effect of adopting the proposed GPA/GDPA would not be cumulatively considerable.

As described above, the Village Eight West and Village Nine EIRs included Villages Three, Eight East and Ten in their cumulative analysis. These EIRs analyzed Villages Eight East and Ten in accordance with the Land Offer Agreement in place at the time these EIRs were prepared; however, they analyzed Village Three North as an industrial village consistent with the 2005 GPU/GDPA land uses, because this use was considered a worst case from an impact standpoint (see Section 6.2.3 above). These EIRs concluded Village Eight West and Village Nine in combination with the cumulative projects would promote mobility, increase jobs/housing balance, provide schools, parks and residential development in conformance with City policies and ordinances. The EIRs concluded that the cumulative projects, including the proposed project as assumed above, would not result in a significant cumulative land use impact. The Village 2, 3, and Portion of 4 EIR included Village Three North in its project specific and cumulative analysis. The Village 2, 3, and Portion of 4 EIR determined that cumulative impacts to land use would be cumulatively considerable because cumulative projects would contribute to the conversion of over 30,000 acres of vacant land to urban uses. However, this was determined to be acceptable because of overriding considerations.

As discussed in Section 6.2.3, previously analyzed land uses in Village Three were primarily industrial land uses. The 1993 Otay Ranch Program EIR, the 2005 GPU/GDPA, the Village 2, 3, and Portion of 4 EIR, Village Eight West EIR, and the Village Nine EIR all analyzed roughly 176.5 acres of industrial land uses in Village Three. The proposed project would only designate 28.6 acres to industrial land use, which would be a decrease of 147.9 acres of industrial land compared to what was previously analyzed. An Employment Land Analysis (ELA) and Fiscal Impact Analysis (FIA) was prepared in 2012 (AECOM 2012). The 2012 ELA/FIA estimated the loss of industrial land as a result of the proposed project to be roughly equal to 129 net acres or 2.25 million square feet of industrial capacity in the City. From the cumulative perspective, the combination of the anticipated high density office development and higher density industrial development at the Regional Technology Park combined with a

decrease in projected employment demand by 2030, suggests sufficient capacity for employment serving land under the General Plan horizon.

The proposed project's combination of uses in Village Three North also appears to meet the goal of creating an environment for higher value jobs based on mix of office and light industrial uses, as envisioned for the Village Three North site. The proposed land use in Village Three North creates capacity for an estimated 460 additional jobs over the previous employment estimates, not including additional capacity for an estimated 100 retail jobs. The fiscal analysis shows that total fiscal revenue generated by the cumulative projects exceeded total fiscal expenditures at buildout.

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 be consistent with the SANDAG RCP, City of Chula Vista Zoning Code, Park Land Dedication Ordinance, Parks and Recreation Master Plan, Otay Valley Regional Park (OVRP) Concept Plan, Airport Land Use Compatibility Plan – Brown Field, Growth Management Ordinance, Tentative Map requirements, and Greenbelt Master Plan. However, the project proposes amendments to the General Plan and Otay Ranch GDP to convert land uses, and increase densities, within Villages Three North, Four, Eight East and Ten and to amend the Circulation Plan as described in Chapter 4.0, Project Description, Section 5.1, Land Use and Section 5.16, Housing and Population. With adoption of the proposed amendments, the proposed project would be consistent with the General Plan and Otay Ranch GDP.

The Otay Ranch GDP established the general development program for the entire Otay Ranch, which includes each of the projects on the cumulative list and the proposed project. In compliance with the Otay Ranch GDP, each of the projects in the cumulative list is required to prepare a SPA Plan which further details how that specific project fits within the Otay Ranch GDP. Each SPA Plan is designed to facilitate a high level of compatibility between adjoining land uses within the SPA Plan Area. The SPA Plan establishes a development program that would ensure each project site is developed with compatible land uses. SPA Plans also include Planned Community District Regulations that specify development standards, establishes neighborhoods and zoning, and includes allowable land uses. Additionally, Village Design Plans establish design guidelines for development of each SPA Plan Area. Development standards that ensure compatibility between different land uses include requirements for building configuration, open space, parking, design considerations, frontage types, performance standards, and sign regulations.

The proposed project is within planned development areas in accordance with the Otay Ranch GDP and GDP Program EIR, and includes SPA Plans for each village as required by the Otay Ranch GDP. As explained above, the preparation of a SPA Plan and SPA Plan Elements such as the P.C. District Regulations, Village Design Plan and PFFP ensure each project site is developed with compatible land uses and provides the necessary services and facilities in a timely manner.

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 RMP are the applicable natural resource plans for the project and cumulative projects. Although the proposed project includes MSCP Boundary Adjustments and a Boundary Modification to the Otay Ranch RMP to adjust the boundaries of the Otay Ranch Preserve, 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, project impacts to applicable habitat conservation plans or natural community habitat conservation plans would be less than significant. The cumulative projects, including the University Villages project, would be required to demonstrate compliance with the MSCP Subarea Plan and the RMP as part of project approval. None of the cumulative projects proposes to adjust the boundary of the MSCP or amend the Otay Ranch RMP.

In an effort to reduce direct and cumulative impacts on the Preserve, the proposed project in combination with Village Eight West, have co-located utility facilities where feasible. The Village Eight West EIR includes an analysis of impacts within the Preserve associated with the extension of a utility corridor into the river valley. The proposed project and the Village Eight West Tentative Map co-located facilities as required by the MSCP Subarea Plan to minimize impacts to the Preserve for this utility corridor, which is under the Village Eight East Community Park Access Road. Therefore, cumulative land use impacts associated with potential conflicts with HCPs or NCCPs would be less than significant.

6.3.2 Landform and Aesthetics

This section tiers from the 1993 Otay Ranch GDP Program EIR because the proposed project is within the boundaries of the Otay Ranch GDP and development of the proposed project area was analyzed in the 1993 Otay Ranch GDP. This section also tiers from the 2005 GPU/GDPA Program EIR, because existing conditions for the entire Otay Ranch area were assessed as part of the 2005 GPU/GDPA Program EIR. The 1993 Otay Ranch GDP Program EIR determined that cumulative impacts to visual character, alteration of landforms, and development in highly visible areas as a result of development planned in the 1993 Otay Ranch GDP would be

cumulatively considerable. However, the Chula Vista City Council determined that impacts were acceptable because of specific overriding considerations.

The Village 2, 3, and Portion of 4 EIR included Village Three North in the analysis. The Village 2, 3, and Portion of 4 EIR determined that cumulative impacts related to the change in visual character for the Otay Ranch and other projects in the region would be significant and unavoidable. Similarly, a Statement of Overriding Considerations was adopted by the City Council.

Village Eight East and Village Ten were included in the cumulative analysis for the 2013 GPA/GDPA SEIR as reasonably foreseeable projects; however, the land uses analyzed were different than the proposed project (see Section 6.2.3 above). As concluded in the 2013 GPA/GDPA SEIR, cumulative projects would result in the permanent alteration to the open, undeveloped rolling hills of the East Planning Areas, and increased intensity of development as a result of the cumulative projects would be a significant cumulative impact to the local area's visual quality, landforms and overall aesthetic character. Cumulative visual impacts were determined to be significant and unavoidable. Similarly, the Village Eight West and Village Nine EIRs, which included Villages Three, Eight East and Ten as reasonably foreseeable projects in their cumulative analysis. These EIRs analyzed Villages Eight East and Ten in accordance with the Land Offer Agreement in place at the time these EIRs were prepared; however, they analyzed Village Three North as an industrial village consistent with the 2005 GPU/GDPA land uses (see Section 6.2.3 above). The Village Eight West and Nine EIRs determined that impacts to aesthetics and landform alteration would contribute to a significant and unavoidable cumulative impact.

As described in Section 5.2, Landforms and Aesthetics, development of the proposed project would alter the visual quality of the surrounding area. Scenic resources, such as the Otay River Valley, would remain intact and visible from the future residential communities and scenic corridors, however, development of the project site would change the undeveloped, open and natural character of the on-site rolling hills to high-density urbanized areas. This alteration in the visual character and quality of the site, combined with cumulative project development, is considered cumulatively considerable. However, the project SPA Plans establish compatible design guidelines including landscape design for roadways, parks and other common use areas and architectural guidelines for all residences, commercial and mixed-use development. These guidelines will ensure consistent development standards throughout the project that will reduce degradation of the existing visual character or quality of the site and its surroundings. Even with implementation of design standards delineated in the SPA Plan for the project, when considered in combination with other projects, cumulative visual impacts would be significant and unavoidable.

Scenic Vistas and Scenic Resources

The list of cumulative projects in Table 6-2 consists of primarily new residential projects similar in size, scale and scope to the proposed project. Although the visual quality or character would be impacted as a result of the proposed project and cumulative projects, none of the projects would substantially degrade a scenic resource or unique topographic feature or result in a substantial impediment to scenic views provided such development is consistent with planned land uses in the vicinity of the project and with General Plan development and design guidelines. However, the proposed project, in combination with the cumulative projects, would contribute to a cumulative loss of views of natural open space. Therefore, due to the cumulative permanent conversion of the existing rural setting that characterizes Otay Ranch to an urban/built up setting, the project, in combination with planning future development, would result in a cumulatively considerable contribution to a significant and unavoidable cumulative impact.

Visual Character or Quality

As discussed above for Section 6.3.2, grading and development of the project site's vacant land with 6,897 residential units, 40,000 square feet of commercial land use, 28.6 acres of industrial land use, parks, and schools would incrementally contribute to the cumulative loss of open, rolling topography. Therefore, the project would result in a cumulatively considerable contribution to a significant and unavoidable cumulative impact.

Landform Alteration

Implementation of the proposed project would preserve existing major landforms such as the Otay River Valley and Wolf Canyon within the individual SPA boundaries; however, the project would include grading within steep sloped areas (i.e., areas greater than 25% slope) that are unique to the Otay Ranch areas and considered sensitive landforms in the Otay Ranch GDP. A ranch-wide steep slope standard requiring preservation of 83% of the natural steep slopes throughout the Otay Ranch to protect these resources was established in the Phase 2 RMP. Table 5.2-1 analyzes how the proposed project, in combination with all projects developed in Otay Ranch (including the projects on the cumulative list), have minimized impacts to steep slopes consistent with the Phase 2 RMP requirement. Cumulative development, including the proposed project, would be required to adhere to such standards, which would reduce potentially cumulative impacts to landform alteration less than significant.

Lighting and Glare

Development in the vicinity of the project area include sources of nighttime lighting in the form of interior and exterior security lighting and parking, architectural highlighting, landscape lighting and illuminated signage (architectural highlighting, landscape and signage lighting is associated with Sleep Train Amphitheatre to the southwest). In addition, automobile headlights streetlights and stoplights along Main Street, Heritage Road, La Media Road, and Santa Luna Road contribute to ambient nighttime lighting levels in the project area. Development of the proposed project

would contribute new sources of light to the surrounding area. The SPA Plan includes lighting performance standards to minimize the proposed projects contribution to nighttime lighting and light sources. Lighting would be consistent with lighting standards prevalent in urbanized and rural areas of San Diego County and lighting would adhere to all applicable City and County ordinances and standards. Also, compliance with the City and State energy conservation measures currently in place would limit the amount of unnecessary interior illumination during evening and nighttime hours. Therefore, in combination with all other cumulative projects, the proposed project would not considerably contribute to lighting and glare.

6.3.3 Transportation and Circulation

A cumulative traffic impact analysis was conducted for the proposed project as part of the Traffic Impact Analysis, which is provided as Appendix M of this Draft EIR. While traffic from the proposed project site is included in other previously certified environmental documents, because the Traffic Impact Analysis 2030 Plus Project analysis is considered a cumulative analysis which includes the projects on the cumulative list, the follow Cumulative Impact Analysis is based specifically on the conclusions from the Traffic Impact Analysis. This cumulative analysis estimated cumulative impacts on the studied roadway system (intersections and street segments) and analyzed whether the proposed project's contribution would be significant (or, for purposes of this analysis, cumulatively considerable). By Year 2030 the proposed project would be fully developed, and would generate a total of 77,663 daily trips, including 6,819 AM peak hour trips and 7,816 PM peak hour trips. This would contribute to a cumulatively considerable impact. A brief summary of the cumulative conclusions are provided below.

Cumulative Trip Generation

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 (proposed project)	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 park land.	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 park land, 85.0 acres of Industrial/Research Technology Park, and 50.0 acres for future University site.	34,067

Table 6-3 (Continued)
Cumulative Trip Generation

Project #	Name	Location	Description	Average Daily Trips
4	Village Two	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
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.

Cumulatively impacted intersections, roadway segments, and freeways/state highways analyzed under the proposed project are described below.

Intersections

The proposed project would have cumulative significant impacts at the following intersection in the City of Chula Vista:

- I-805 SB Ramps / Olympic Parkway (CV).

The improvement necessary to mitigate the significant cumulative impact at the intersection of I-805 SB Ramps and Olympic Parkway is to construct an additional left-turn lane at the I-805 southbound off-ramp, as well as a third through lane along the Olympic Parkway eastbound approach. However, there are right-of-way constraints that would make the recommended

widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward such improvement. There are no other feasible physical improvements that would reduce the remaining cumulative impact to less than significant. Therefore, mitigation is infeasible and the impact at this location will remain cumulatively significant and unavoidable at this location.

Roadway Segments

The following roadway segment in the City of Chula Vista would be significantly cumulatively impacted by the proposed project traffic under the Year 2030 conditions:

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

The improvement necessary to mitigate the significant cumulative impact on Orange Avenue between Melrose Avenue and I-805 SB Ramps is to widen this segment from 4 lanes to 6 lanes. However, as previously noted, there are right-of-way constraints that would make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward such improvement. There are no other feasible physical improvements that would reduce the remaining cumulative impact to less than significant. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Freeways/State Highways

The following eleven freeway/state highway segments would be significantly cumulatively impacted by the buildout of the proposed project under Year 2030 conditions:

- 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
- SR-905 from I-805 to Caliente Avenue
- SR-905 from Caliente Avenue to Heritage Road

- SR-905 from Heritage Road to Britannia Boulevard
- SR-905 from Britannia Boulevard to La Media Road.

Additional lanes would be required to maintain acceptable LOS at these facilities. Continuing freeway planning and demand managing efforts by SANDAG and Caltrans will determine appropriate mitigation strategies for the freeway system in our region. However, at this time, 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 toward the cost of such improvements. No other feasible mitigation measures exist that would reduce these impacts to less than significant. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

Ramp Metering

Under the year 2030 conditions, the peak hour capacity expected to be processed through the ramp meter would continue to be greater than the peak hour demand at the I-805 northbound onramp at Olympic Parkway. However, the peak hour demand at the I-805 northbound on-ramp at Main Street would be greater than the capacity that the ramp meter provides under the 2030 conditions and thus result in 13.8 minutes and 33.1 minutes of delay w/o and with the proposed project, respectively. Therefore, based upon the SANTEC/ITE Guidelines for Traffic Impact Analysis in the San Diego Region, the proposed project would result in a significant impact at the I-805 northbound on-ramp at Main Street.

Based on the ramp meter rates provided by Caltrans, the Traffic Impact Analysis (Chen Ryan 2014) identified that the rate at Main Street on ramp is approximately half of the rate at Olympic Parkway. Therefore, mitigation is recommended that prior to project buildout, the Project Applicant shall work with Caltrans to adjust the ramp meter rate at the I-805 northbound on ramp at Main Street such that the ramp meter reflects the additional vehicle traffic attributable to the project. This mitigation would reduce the cumulative impact to a less than significant level.

6.3.4 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 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).

A major source of pollutants is mobile-source emissions, which result from traffic. As mentioned above in Section 6.3.3, the Traffic Impact Analysis 2030 Plus Project scenario included all the trips associated with the proposed project and all cumulative projects, thus, all mobile source emissions are captured. The other major sources of emissions come from on-site construction activity. While the phasing for the cumulative projects is not known precisely, it is likely that construction of the Village Eight West and Village Nine project sites, as well as the Village Two and Freeway Commercial projects could coincide with construction of the proposed project, which would be the worst case scenario.

The 2005 GPU/GDPA EIR concluded that cumulative air quality impacts would be significant and unmitigated stemming from consistency with the RAQS and the non-attainment status of the region with respect to PM_{10}. The cumulative analysis in the Village 2, 3, and Portion of 4 EIR determined that a cumulatively considerable contribution to the emissions of ozone precursors and a significant and unavoidable cumulative air quality impact would occur.

The 2013 GPA/GDPA SEIR included Village Eight East and Village Ten as part of the cumulative analysis; however the land uses analyzed were different than the proposed project (see Section 6.2.3 above). The 2013 GPA/GDPA SEIR concluded that air quality impacts would be significant and unmitigated due to nonconformance with the RAQS. The Village Eight West and Village Nine EIRs included Villages Three, Eight East and Ten in their cumulative analysis. These EIRs analyzed Villages Eight East and Ten in accordance with the Land Offer Agreement in place at the time these EIRs were prepared; however, they analyzed Village Three North as an industrial village consistent with the 2005 GPU/GDPA land uses, (see Section 6.2.3 above). The Village Eight West and Village Nine EIRs developed a similar conclusion that those projects would result in a cumulatively considerable and unavoidable impact to consistency with adopted air quality plans.

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 PM_{10} and $PM_{2.5,}$ as well as those of VOCs and NO_x (precursors of O_3), would exceed the applicable significance threshold levels during construction. As a result, construction of the proposed project would result in a cumulatively considerable contribution to regional O_3, PM_{10}, and $PM_{2.5}$ concentrations. Impacts would be significant and unavoidable. If any cumulative project is constructed during the same time

period, emissions of criteria pollutants would combine to further exacerbate the violations. Construction 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 significant. Mitigation measures have been provided to reduce impacts but not to below the significance thresholds. 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. As such, the project's contribution to cumulative construction emissions would be significant and unavoidable.

Sensitive Receptors

Carbon Monoxide. Carbon monoxide concentrations were analyzed for the worst case scenario. As shown in Section 5.4, 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. Carbon monoxide emissions for Village 2, 3, and Portion of 4 were found to exceed the SCAQMD and SDAPCD incremental thresholds.

Stationary Source- and Construction-Related Toxic Air Contaminants. Impacts related to siting new sensitive receptors near sources of 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 CARB regulations that would reduce emissions to the extent feasible. During construction, the grading phases for each village would last for 7 months. Thus, the proposed project would not result in a long-term (i.e., 70 years) source of TAC emissions. For an analysis of operational (traffic) TAC emissions, please refer to the discussion below.

Village Eight East HRA – Traffic-Related Toxic Air Contaminants. Due to the fact that development of Village Eight East would place residents within 500 feet of SR-125, in accordance with Policy EE 6.10 of the General Plan (City of Chula Vista 2005a), a HRA was conducted. The HRA focuses on emissions of TACs due to traffic on SR-125. The HRA was required to analyze exposure scenarios for 9 years, 30 years, and 70 years. The HRA was based on freeway volumes on SR-125. The Traffic Impact Analysis estimated the number of ADT on SR-125 in the cumulative scenario, thus the inputs into the HRA analysis include trips and emissions from the other projects on the cumulative list.

Due to the fact that it is unlikely that an individual would reside in this location for the entire 70-year exposure period, the 9-year exposure scenario presents a more realistic estimate of the potential excess cancer risk to an individual residing at this point, given that 9 years is the average duration at any single residence. For the 9-year residential exposure scenario, the highest individual cancer risk is 2.98 in a million. The HRA determined that due to the relatively low cancer risk associated with a 9-year exposure scenario, impacts would be considered less than significant and no cumulatively considerable impacts would occur. The Village Nine EIR also includes an analysis of health risks due to the proximity to SR-125 and reaches the same conclusion.

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. Similar to the proposed project, none of the adjacent villages propose land uses that are a typical source of odor complaints. Therefore, a cumulatively significant impact associated with objectionable odors would not occur.

Air Quality Plans

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.

Through previous planning efforts, the project area was allocated a total of 1,570 residential units, including 928 units in Village Eight East and 642 units in Village Ten. Village Three North and the Portion of Village Four were not allocated any residential units. The proposed project includes a total of 6,897 residential units. As such, the proposed project would result in an additional 5,327 residential units above the planned/allocated 1,570 residential units. The proposed project's increase in land use intensity and associated increase in vehicle trips as well as the cumulative projects has not been anticipated in local air quality plans; therefore, the proposed project in combination with the cumulative projects would be inconsistent at a regional level with the underlying growth forecasts in the RAQS and would result in a cumulatively considerable and unavoidable impact to consistency with adopted air quality plans.

6.3.5 Noise

The 1993 Otay Ranch GDP determined significant cumulative impacts would occur due to exposure of residential and other noise sensitive land uses to vehicular noise levels exceeding local noise standards. The 2005 GPU/GDPA determined that a significant cumulative impact would occur to existing receivers adjacent to circulation element roadways where traffic volumes are projected to result in noise level increases of more than 3 decibels. Similarly, the 2013 GPA/GDPA SEIR, which included Village Eight East and Village Ten in the cumulative analysis, as described above in Section 6.2.3, determined that cumulative traffic would result in significant unmitigated cumulative noise impacts. However, the Village 2, 3, and Portion of 4 EIR, which included Village Three North as part of the analysis, determined that there were no significant cumulative noise impacts.

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 from the proposed project would pose a potentially significant impact on noise-sensitive receptors if construction hour limitations are not imposed. Blasting may be required in the Village Four community park area. Although this would not exceed any City thresholds, blasting, if determined to be necessary, is considered to have a potentially significant impact unless mitigated. 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 Three North, the Portion of Village Four, Village Eight East and Village Ten would be adjacent to future development proposed in the Otay Ranch GDP (Villages 2, 4, 7, 8 West, and

9). According to the Otay Ranch GDP, these villages would be developed with similar land uses compared to the proposed project, including commercial, residential, and parkland development (City of Chula Vista 2005b). Commercial equipment, including 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.

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. 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 1 dB increase at most, which by itself is not a discernible increase. The significance threshold for traffic-related noise increases is 3 dBA CNEL. Additionally, the project would not contribute any increase in noise levels at locations equal to or exceeding the City's 65 dB CNEL noise standard for residential land use under the "without project conditions" scenario, although project traffic would incrementally contribute to an already noisy environment. Noise effects of the project would, for the most part, be confined to the project area and are evaluated on a project-specific basis. 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 as well as the cumulative projects 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

While none of the cumulative projects would contribute to noise generated by airport activity, the project site and several of the cumulative projects will be subject to overflights of planes and helicopters taking off from Brown Field, which are currently 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, 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. Compliance with the City's Subdivision Manual would require potential nuisance noise from aircraft overflights to be disclosed to future residents. All cumulative projects, except Project #4, 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.

6.3.6 Cultural Resources

This section of the EIR tiers from the 1993 Otay Ranch GDP Program EIR, because potential impacts to cultural resources due to development in the entire Otay Ranch area was analyzed as part of the 1993 Otay Ranch GDP including the project site. The 1993 Otay Ranch GDP Program EIR determined that impacts to cultural resources would be significant and unmitigable; however, the Chula Vista City Council determined that the significant impacts identified in that EIR were acceptable because of specific overriding considerations.

This section of the EIR also tiers from the 2005 GPU/GDPA Program EIR, because potential impacts to cultural resources due to development in the entire Otay Ranch area were also

analyzed as part of the 2005 GPU/GDPA. According to the 2005 GPU/GDA, the continued pressure to develop or redevelop areas would result in incremental impacts to the historical record in the San Diego region. Regardless of the efforts to avoid impacts to cultural resources, the more land that is converted to developed uses, the greater the potential for impacts to cultural resources. While any individual project may avoid or mitigate the direct loss of a specific resource, the effect is considerable when considered cumulatively.

The 2013 GPA/GDPA SEIR, which included Village Eight East and Village Ten as part of the cumulative analysis as described in Section 6.2.3, concluded that the loss of historic or prehistoric resources from the past, present, and probable future projects in the Southern California/Northern Baja California, Mexico areas would contribute to cumulatively significant impacts to cultural resources. The Village 2, 3, and Portion of 4 EIR, which includes Village Three North as part of the analysis, as described in Section 6.2.3, determined that cumulative impacts to cultural resources would be significant and unavoidable due to the continuing depletion of the archaeological record through general development.

A cumulative impact, in terms of cultural resources, refers to the mounting aggregate effect upon cultural resources due to modern or recent historic land use, such as residential development, and natural processes, such as erosion, that result from acts of man. The issue that must be explored in a cumulative impact analysis is the aggregate loss of information as well as the loss of recognized cultural landmarks and vestiges of our community cultural history. A total of 17 projects have been identified within a one-mile radius of the proposed project. Some of these projects have centered on residential development, although other projects have included a transmission line, a commercial quarry, public service infrastructure that involve sewer and water lines, cell towers, and planning studies. Collectively, these projects reflect the eastward expansion of planned residential communities in Chula Vista and the concomitant need for improved and additional infrastructure. In addition to modern development, much of the area has been previously disturbed by agriculture activities, including plowing, disking, and grazing. Over eight linear miles and 31,511 acres in the University Villages project area have been subjected to cultural resource investigations in the past 28 years. Nearly all of the land within a one-mile radius of the current project has been surveyed for cultural resources, and several archaeological sites located within this survey area have been identified, tested, and evaluated for significance.

There have been 419 prehistoric archaeological sites recorded within a one-mile radius of the project area. Scant, surface lithic scatters, temporary camps/artifact scatters, and habitations are the types of sites identified in, or immediately near, the project area. The sparse, surface scatters can be characterized as part of the “Otay Smear” and are generally located atop the mesa. The other sites, temporary camps/artifact scatters and habitation locales, are located along the canyon and drainages that feed into the Otay or Tijuana Rivers. One key fact that must be considered as

part of this cumulative analysis is that no records exist that provide an inventory of archaeological sites that were flooded and covered by the upper and lower Otay reservoirs after 1920. One can only speculate that several archaeological resources would have been located along the flood plain of the Otay River where it intersects the drainage from the Proctor Valley. This modern/historic development is certainly a contributing factor to any discussion of cumulative impacts to this area; however, there is no data available from which to assess the actual effect upon cultural resources represented by the reservoir.

The current status of the majority of archaeological sites in a one-mile radius of the proposed project area is unknown; however, all of these sites have been impacted to a varying degree by roads, agriculture, and erosion. Thirteen sites, including one habitation locale and twelve superficial artifact scatters, or "non-sites," have been destroyed or have likely been destroyed in a one-mile radius of the project area. Twelve sites, including two habitation and eight temporary camps/artifact scatters, remain intact in a one-mile radius of the proposed project.

Given the loss of prehistoric resources from pasts projects, especially habitation sites and temporary camps in the generally vicinity and on the Otay Mesa in combined with the previous impacts of roads, plowing, and erosion, the proposed University Villages project is considered to contribute to a cumulative impact on prehistoric cultural resources, since it represents the continued destruction of non-renewable cultural resources. Together, the development of the proposed project on two of the three habitation sites within the project area, and other minor sites identified as non-significant shell and lithic scatters, would contribute to a cumulative impact to prehistoric cultural resources. Furthermore, these sites are positioned along the Otay River and, as such, are ideally suited for answering important questions regarding subsistence and settlement, chronology, technology, and trade.

Mitigation can be implemented to reduce impacts of the proposed project by ensuring the scientific recovery, study, documentation, and curation of significant sites to be impacted. Important information about prehistory would not be lost through a well-planned and executed mitigation program that documents and gathers all data from these non-replaceable and non-renewable resources. While any individual project may avoid or mitigate the direct loss of a specific resource, the effect is considerable when considered cumulatively. Although the actions of the proposed project would be mitigated through data recovery, curation, and reporting, the proposed project's contribution to a cumulatively considerable impact would not be reduced to a less than significant level. Therefore, the cumulative impact on cultural resources would be cumulatively considerable.

6.3.7 Paleontological Resources

This section of the EIR tiers from the 1993 Otay Ranch GDP Program EIR, because potential impacts to paleontological resources due to development in the entire Otay Ranch area were analyzed as part of the 1993 Otay Ranch GDP. The 1993 Otay Ranch GDP Program EIR determined that cumulative impacts to paleontological resources would be less than significant with implementation of specific mitigation measures.

This section of the EIR also tiers from the 2005 GPU/GDPA Program EIR, because potential impacts to paleontological resources due to development in the entire Otay Ranch area were also analyzed as part of the 2005 GPU/GDPA. Similar to the 1993 Otay Ranch GDP Program EIR, the 2005 GPU/GDPA determined that a cumulative impact on paleontological resources would be significant and unmitigable.

The Village 2, 3, and Portion of 4 EIR, which included Village Three North as part of the analysis, determined that cumulative buildout would result in an increased probability of disturbance to paleontological resources, causing potentially significant cumulative impacts. However, implementation of mitigation measures similar to those proposed in the 1993 Otay Ranch GDP for all developments within the cumulative impact area would mitigate cumulative impacts to below a level of significance.

The Village Eight West and Village Nine EIRs included Villages Three, Eight East and Ten in their cumulative analysis. These EIRs analyzed Villages Eight East and Ten in accordance with the Land Offer Agreement in place at the time these EIRs were prepared; however, they analyzed Village Three North as an industrial village consistent with the 2005 GPU/GDPA land uses, (see Section 6.2.3 above). These EIRs determined that impacts to paleontological resources would be cumulatively considerable and unavoidable consistent with the 2005 GPU/GDPA EIR..

Cumulative projects in the surrounding area are likely to have similar paleontological resources as the project, and may contain the Sweetwater Formation, the upper sandstone-mudstone member of the Otay Formation and San Diego Formation, the Lindavista Formation, and Quaternary terrace deposits. The Sweetwater Formation and the upper sandstone-mudstone member of the Otay Formation and San Diego Formation are rated as highly sensitive paleontological areas, and the Lindavista Formation and Quaternary terrace deposits are rated as moderately sensitive paleontological areas. Grading activities in such areas could potentially destroy fossil remains, which are a non-renewable resource. Development within the region will continue and will have the potential to continue to disturb these geologic units. Monitoring for paleontological resources is required for projects that require significant earthwork in geologic units with higher paleontological sensitivities. Because the extent of potential paleontological resources is unknown at this time, cumulative impacts are concluded to be significant. However,

implementation of proposed mitigation measures would reduce the proposed project's potentially cumulative impact on paleontological resources and impacts would be less than significant and not cumulatively considerable.

6.3.8 Biological Resources

The 1993 Otay Ranch GDP determined that cumulative impacts to biological resources would be significant and unavoidable even with required mitigation measures. The City Council determined that the cumulative impact to sensitive biological resources was acceptable because of specific overriding considerations. The 2005 GPU EIR was prepared after the adoption of the MSCP Subarea Plan and was therefore compliant with the regulations set forth in the plan. Because compliance with the MSCP Subarea Plan reduces significant impacts to biological resources, the effect of the GPU was found to be less than cumulatively considerable.

The Village 2, 3, and Portion of 4 EIR, which included Village Three North as part of the analysis, determined that the reconfiguration of the Preserve would provide increased biological value; therefore, cumulative impacts would be minimized, but not to a level below significance. A Statement of Overriding Considerations was adopted.

The Village Eight West and Village Nine EIRs included Villages Three, Eight East and Ten in their cumulative analysis. These EIRs analyzed Villages Eight East and Ten in accordance with the Land Offer Agreement in place at the time these EIRs were prepared; however, they analyzed Village Three North as an industrial village consistent with the 2005 GPU/GDPA land uses, (see Section 6.2.3 above). These EIRs determined that compliance with the MSCP Subarea Plan, the Otay Ranch RMP, conveyance of compensatory mitigation lands to the Preserve, and compensatory wetland mitigation required by state and federal wetlands permitting agencies would ensure long-term sustainability of sensitive species and their habitats; therefore, a cumulatively considerable impact to biological resources would not occur.

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 GDP 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 GDP EIR identified significant unavoidable impacts to biological resources in Otay Ranch due to loss of raptor foraging habitat. Subsequent to the certification of the Otay Ranch GDP EIR and adoption of the Otay Ranch 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 GDP 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 Otay Ranch GDP EIR to raptor foraging habitat is now available to mitigate project-level impacts.

The proposed project in combination with other reasonably foreseeable 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 1.188 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 MSCP Subarea Plan and Otay Ranch RMP mitigates cumulative biological impacts to MSCP Covered Species and their associated habitats. Similarly, Village Two, 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 the other development projects proposed would not result in a cumulatively considerable contribution to biological impacts.

Local Policies, Ordinances, HCP and NCCP

Implementation of the proposed project would contribute to the cumulative loss of biological resources within Otay Ranch and City of Chula Vista Subarea. Compliance with the MSCP 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. Although portions of the project would designate open space that is in addition to existing planned Preserves, encroachment into both the RMP and MSCP Subarea Plan Preserves requires a demonstration that the modified Preserve would provide for an equal or higher biological value. As noted in Section 5.8.5, the proposed reconfiguration of the Preserve provides for a relatively equal biological value to the original Preserve, and therefore, the proposed project is consistent with the RMP and MSCP Subarea

Plan. Significant cumulative impacts related compliance with local plans or ordinances would be avoided through implementation of a Boundary Modification to the RMP and Boundary Adjustment to the MSCP Subarea Plan.

6.3.9 Agricultural Resources

The 1993 Otay Ranch GDP concluded that impacts to agricultural resources would be cumulatively considerable and no feasible mitigation measures would reduce impacts to less than significant. The 2005 GPU/GDP EIR concluded that impacts to agricultural resources would not be cumulatively considerable because the project would not alter the land use designations for the small amount of Prime Farmland and would not contribute to the general conversion of farmland in the area. However, the Village 2, 3, and Portion of 4 EIR, which included Village Three North as part of the analysis, determined that the cumulative commitment of agricultural land to urban uses would be irreversible and unmitigable. The Village Eight West and Village Nine EIRs concluded that no mitigation measures are available to reduce long-term impacts to agricultural lands and therefore determined that the impact to agricultural resources would remain cumulatively considerable, similar to the 1993 GDP EIR.

Development of the proposed project would result in the loss of Farmland of Local Importance. Placing agricultural easements or restrictions on new parcels is possible, but would not feasibly result in the economical use or operation of other agricultural lands due to high land costs, high water and labor costs, restrictive water use regulations, restrictive environmental regulations related to air quality and use of pesticides, agricultural competition from other parts of the State and from foreign countries, and the likelihood of incompatibility with other existing and planned land uses due to growing urbanization within the Otay Ranch area. Also, restriction of other properties to agricultural or farmland uses would not facilitate the achievement of City objectives to provide sufficient housing units to meet identified housing needs and obligations, to improve the existing jobs/housing balance, to increase property values and related property-based municipal revenues, and to preserve biological habitat and open space. Further, there are no fee-based programs in the City that would facilitate the purchase of economically viable farmland resources based on the cost and regulatory factors.

The incremental and cumulative loss of agricultural lands as a result of development of the Otay Ranch was considered a significant impact in the Otay Ranch GDP Program EIR. The proposed project would contribute to this significant cumulative impact. When combined with the other surrounding projects which also involve conversion of agricultural resources into suburban uses, a significant decrease in agricultural land use within the City of Chula Vista would occur. The proposed project would result in significant, unmitigable impacts to agricultural resources. Without property owner cooperation and substantial financial incentives, it is infeasible to provide permanent on or off-site mitigation to replace converted farmland. In summary, the

project, when combined with many of the cumulatively considerable projects listed in Table 6-2, would contribute to a significant, unmitigable cumulative impact to agricultural resources.

6.3.10 Water Quality and Hydrology

This section tiers from the 1993 Otay Ranch GDP Program EIR. The 1993 Otay Ranch GDP Program EIR analyzed the potential impacts and identified mitigation measures related to hydrology and drainage for the entire Otay Ranch GDP area, including the proposed project area. The 1993 Otay Ranch GDP concluded that implementation of the Otay Ranch GDP land plan would result in significant and mitigable cumulative impacts upon regional hydrology and drainage.

This section also tiers from the 2005 GPU/GDPA. The 2005 GPU EIR concluded that compliance with General Plan Objective E 2 and applicable policies, and to all federal, state, and regional water quality regulations would ensure that impacts associated with water quality would not be significant. No cumulative impacts were identified related to water quality because these regulations, including the General Construction Permit and the Chula Vista Development Storm Water Manual, are intended to mitigate cumulative impacts from all new development and redevelopment.

The Village 2, 3, and Portion of 4 EIR, which included Village Three North as part of the analysis, determined the increase in runoff and decrease in water quality would have a significant cumulative impact on drainage basins; however, with mitigation measures incorporated cumulative impacts could be reduced to below a level of significance. Additionally, the Village Eight West and Village Nine EIRs included Villages Three, Eight East and Ten in their cumulative analysis. These EIRs analyzed Villages Eight East and Ten in accordance with the Land Offer Agreement in place at the time these EIRs were prepared; however, they analyzed Village Three North as an industrial village consistent with the 2005 GPU/GDPA land uses (see Section 6.2.3 above). These EIRs, determined that cumulatively considerable impacts related to hydrology and water quality would not occur.

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 5.10, 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 SWPPPs, impacts would remain below a level of significance. Furthermore, because 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.

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, and comply with standard mitigation measures for water quality and drainage features (See Section 5.10); therefore, impacts would not be cumulatively considerable.

6.3.11 Geology and Soils

This analysis tiers from the Otay Ranch GDP Program EIR which concluded that all significant cumulative geologic and soil impacts would be mitigated through appropriate site-specific investigations and implementation of standard construction and design methods. This section also tiers from the 2005 GPU/GDPA Program EIR, because geologic and soil conditions for the entire Otay Ranch area, including the project site, were analyzed at a programmatic level in that EIR. The Village 2, 3, and Portion of 4 EIR, which included Village Three North as part of the analysis, determined that geologic and soils impacts associated with development were site-specific and not additive with other projects; and therefore, not cumulatively considerable.

The Village Eight West and Village Nine EIRs included Villages Three, Eight East and Ten in their cumulative analysis. These EIRs analyzed Villages Eight East and Ten in accordance with the Land Offer Agreement in place at the time these EIRs were prepared; however, they analyzed Village Three North as an industrial village consistent with the 2005 GPU/GDPA land uses(see Section 6.2.3 above). These EIRs determined that cumulative projects are geographically removed to the extent that a hazardous geologic event at one site would not necessarily occur at the other; therefore, potential geologic impacts would not be cumulatively considerable.

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. 2013) 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.

6.3.12 Public Services

The 2005 GPU/GDPA, which analyzed different land uses than the proposed project, determined that there were no significant impacts for the provision of public facilities or services and no impacts would result from buildout of the GPU. The 2013 GPA/GDPA SEIR, which analyzed Village Eight East and Village Ten as part of the cumulative analysis (see Section 6.2.3), determined that compliance with the General Plan would allow individual development projects to avoid adding a cumulatively considerable drain on City resources; therefore, cumulative impacts associated with public services would be less than significant.

The Village 2, 3, and Portion of 4 EIR, which included Village Three North as part of the analysis, determined that cumulative impacts would be reduced to less than significant with implementation of the financing mechanism under the PFFP, which would provide for new services and public facilities incrementally and concurrent with need. The Village Eight West and Village Nine EIRs, which included Village Three, Village Eight East and Village Ten in the cumulative analysis as described in Section 6.2.3, determined that cumulative projects would be required to pay the PFDIF. Individual project payments of the PFDIF would represent a fair share

contribution to the program that funds public facilities and services. Therefore, Village Eight West and Village Nine EIRs determined that impacts would not be cumulatively considerable.

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 Services

Development of the proposed project and anticipated population growth combined with other potential development projects in the surrounding area would create a demand for additional police personnel, support staff, related equipment, and police facilities. 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.

CVMC Section 19.80.030 (City of Chula Vista 2013a) 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 projects are consistent with the overall goals and policies of the General Plan and would not degrade public services. Similarly, CVMC Section 19.09 (Growth Management Ordinance) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040A specifically requires 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. The cumulative projects would therefore be required to be consistent with the city GMO quality of life threshold standards. In addition, cumulative projects would be required to pay a Public Facilities Development Impact Fee (PFDIF) that would be applied to public services and infrastructure needed commensurate with demand. Therefore, the cumulative projects would not result in a cumulatively considerable impact on police services.

Fire Protection and Emergency Medical Facilities

Development of the proposed project in combination with identified cumulative projects would increase the overall population growth of the City beyond that analyzed in the 2005 GPU/GDP EIR, resulting in increased demands for fire and emergency medical services. The increased demands, however, will be accommodated through the maintenance of Threshold Standards prior to discretionary project approval. Fire protection and emergency medical services would be available to residents of the City in a timely manner as development occurs in phases. Similar to the Police Service requirement, the GMO requires that 90% of calls for fire service be responded to within a 5 minute response time. The FMMP uses this standard to locate fire stations throughout Chula Vista. The FFMP locates two additional fire stations that would respond to the cumulative project areas, one each in Village Eight West and the Eastern Urban Center. The FFMP concluded that the GMO threshold would be maintained with the addition of the new fire stations.

The FFMP is the basis for the fee charged to keep up construction of new fire stations with the demand for fire services. As required by CVMC Section 19.09, the construction of new fire stations, and other public facilities, would be supported on a fair share basis through payment of the City's PFDIF. Cumulative projects, as well as the proposed project, would be required to pay the City's PFDIF in order to ensure fire protection and emergency medical facilities are constructed concurrently with demand. Therefore, impacts related to fire protection and emergency medical services would not be cumulatively considerable consistent with the 2013 GPA/GDPA SEIR.

Schools

The proposed project would generate approximately 2,207 elementary school students, 542 middle school students, and 1,057 high school students. To provide for future elementary school demand, three elementary school sites have been designated within the proposed project: 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. Student generation rates for cumulative projects are identified in Table 6-4.

As shown in Table 6-4 cumulative projects would generate approximately 4,709 elementary students, 1,295 middle school students, and 2,257 high school students. CVMC 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 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.

Table 6-4
Cumulative Student Generation

	Elementary Students	Middle School Students	High School Students
Proposed Project	2,207	542	1,057
Village Eight West	556	175	291
Village Nine	890	327	488
Village Two	914	223	378
Planning Area 12	142	28	43
Total	**4,709**	**1,295**	**2,257**

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 requires 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 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 growth management ordinance 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. Therefore, impacts would not be cumulatively considerable.

Parks

The proposed project would increase population in the surrounding area, which would subsequently increase the use of existing neighborhood and regional parks, and create a demand for additional parkland. 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. CVMC Section 19.80.030 (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 and the cumulative projects to ensure that development is consistent with the overall goals and policies of the General Plan and would not degrade public services. Each PFFP includes threshold compliance and recommendations to achieve park requirements based on the project's development plan. 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 specifically requires "three acres of neighborhood and community park land with appropriate facilities per 1,000 residents east of I-805." This section also requires a PFFP and demonstration that public services, such as parks, meet the GMO's quality of life threshold standard for parks and recreation.

The proposed project has a total park demand of 61.2 acres. The project proposes a total of 76.3 acres (net) of parkland which is 15.1 acres more than the project is required to provide. All of the cumulative projects, including the proposed project, are required to comply with the parkland requirements in the CVMC and PFFP triggers for the provision of parks. Compliance with provisions in the CVMC and PFFPs would ensure that cumulatively considerable impacts would not occur.

6.3.13 Public Utilities

This section tiers from the 2005 GPU EIR. The 2005 GPU/GDPA EIR concluded that cumulative impacts related to water and energy would be significant and unavoidable because there is no assurance that water supply or energy would be available to adequately serve the projected increase in population. The 2005 GPU/GDPA EIR concluded that cumulative impacts to wastewater would be less than significant because the City could withhold discretionary approvals and subsequent building permits from development that would cause the City to exceed its wastewater capacity. The 2005 GPU/GDPA EIR concluded that the Otay Landfill would have sufficient capacity for approximately 25 years and could accommodate projected population at buildout; therefore, no significant impacts would occur and no mitigation was identified.

The 2013 GPA/GDPA SEIR included Village Eight East and Village Ten in the cumulative analysis (see Section 6.2.3). The 2008 WRMP Update (revised November 2010), the CWA 2010 UWMP, and the OWD 2010 UWMP are all long-term water supply documents that included the list of cumulative projects in their list of major development plans. The 2013 GPA/GDPA SEIR determined that while cumulative projects were accounted for in long-term water supply documents they would be required to comply with the requirements of SB 610 and SB 221, apply General Plan and Otay Ranch GDP objectives, and implement project-specific mitigation measures, to assure that water supply would be specifically available to adequately serve cumulative projects. This programmatic level of analysis determined that cumulative water supply impacts would be significant and unmitigable.

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 indicates that OWD would 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 expected potable water demands for the University Villages Project is 2.12 ~~4~~ million gallons per day (MGD) or about 2,381 ~~93~~ acre-feet per year (ac-ft/yr). This is 41 ac-ft/yr higher than the demand estimate in the 2010 Otay WD Water Resources Master Plan Revision (2010 WRMP Revision) of the 2009 Otay WD Water Resources Master Plan. The projected recycled water demand for the proposed project is approximately 0.55 MGD or about 617 ~~6~~ ac-ft/yr, representing about 20% of total project water demand. The 41 AFY increase in demand is accounted for through the Accelerated Forecast Growth demand increment of the Water Authority's 2010 Urban Water Management Plan (UWMP).

As documented in the Water Authority's 2010 UWMP, the Water Authority is planning to meet future and existing demands which include an increment associated with the accelerated forecasted growth. The Water Authority will assist its member agencies in tracking the environmental documents provided by the agencies that include water supply assessments and verification reports that utilize the accelerated forecasted growth demand increment to demonstrate supplies for the development. The WSAV report concludes 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.

Village Nine and Village Eight West are within the same water district and included within the 2010 UWMP. Potable water demands for Village Nine are expected to be 1.35 mgd or about 1,507 ac-ft/yr and recycled water demand is expected to be approximately 0.166 mgd or about 130 ac-ft/yr. The WSAV for Village Nine determined that water supplies necessary to serve the demand, along with existing and other projected future uses, will be sufficient and are intended to be available over a 20-year planning horizon. Potable water demands for Village Eight West are expected to be 786,575 gpd. The WSAV for Village Eight West determined that water supplies necessary to serve the demand, along with existing and other projected future uses, will be sufficient and are intended to be available over a 20-year planning horizon. Therefore, cumulative impacts associated with adequate water supply would not result in a cumulatively considerable impact.

Wastewater

The City of Chula Vista has wastewater treatment capacity rights of 20.864 mgd in the City of San Diego Metro System for treatment and disposal. According to the 2012 GMOC Annual Report, Chula Vista generated an average flow of approximately 16.219 mgd, and has a remaining capacity of approximately 4.645 mgd in the Metro system. Development of the proposed project would require 1.796 mgd of treatment capacity. Therefore, Chula Vista currently has capacity to serve the project's direct impact on wastewater demand.

The estimated year 2030 flows based on the 2005 General Plan were 23.3 mgd. The projected year 2030 average flow for the City is 26.2 mgd. Thus, the City of Chula Vista would need to acquire capacity rights for an additional 5.4 mgd to accommodate year 2030 flows. The Salt Creek Interceptor Technical Sewer Study for South Otay Ranch addresses the City's current projections regarding the need to acquire additional treatment capacity. The City may acquire rights for this additional capacity in the Metro system through negotiations with the City of San Diego. In addition, the City of Chula Vista is evaluating construction of a new wastewater treatment plant and other alternatives to meet its future treatment capacity and disposal requirements. The cumulative projects will be timed to proceed with the City's acquisition of additional treatment capacity. Building permits will be issued only if the City Engineer has determined that adequate sewer capacity exists.

Furthermore, all developments are required to prepare a PFFP that articulates needed facilities and funding mechanisms. The proposed project includes a PFFP and requires 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. 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 2005a) 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 generated approximately 14,088 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. 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 65,751,692 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 5.13, 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 5.13 and Appendix D). 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 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 the site, and other planned sites, at full buildout and beyond, impacts would be considered cumulatively considerable.

6.3.14 Climate Change

This section tiers from the 2013 GPA/GDPA SEIR, which included Village Eight East and Village Ten in the cumulative analysis. The 2013 GPA/GDPA SEIR determined that cumulative projects annual GHG emissions would total approximately 333,426.06 $MTCO_2E$ per year. These calculations provide an estimate of the magnitude of GHG emissions that would occur under cumulative conditions. The 2013 GPA/GDPA SEIR concluded, that

individual projects (within the cumulative area) would be subject to the City's existing Green Building Standards and Increased Energy Efficiency Standards ordinances, and would therefore, not be cumulatively considerable.

The Village Eight West and Village Nine EIRs, which included Village Three, Village Eight East and Village Ten in the cumulative analysis as described in Section 6.2.3, determined that cumulative projects would be subject to the city's existing Green Building Standards, Increased Energy Efficiency Standards, and General Plan policies. Compliance with such standards would ensure that cumulative projects would be at least 20% below business as usual GHG emissions consistent with AB32 and would not create a cumulatively considerable impact.

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 5.14, 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. 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.

6.3.15 Hazards and Risk of Upset

This section tiers from the 2005 GPU/GDPA Program EIR, because potentially hazardous conditions for the entire Otay Ranch area, including the proposed project areas, were analyzed as part of the 2005 GPU/GDPA. The analysis within the 2005 GPU/GDP Program EIR determined that with compliance with General Plan objectives and policies, and increased connectivity through circulation plan improvements as a result of cumulative projects, cumulatively considerable impacts would be avoided. The Village 2, 3, and Portion of 4 EIR, which included Village Three North as part of the analysis, determined that potentially significant cumulative impacts would be reduced to a level less than significant with implementation of the mitigation measures identified in the 1993 Otay Ranch GDP Program EIR and adherence to applicable laws and regulations. Similarly, the 2013 GPA/GDPA, which

included Village Eight East and Village Ten in the cumulative analysis, determined that impacts would also not be cumulatively considerable.

Cumulative impacts related to hazards and hazardous materials would result from projects that combine to increase exposure to hazards and hazardous materials. As discussed in Section 5.15, Hazards and Risk of Upset, the proposed project would have less than significant impacts after mitigation. A Health Risk Assessment was also prepared for Village Eight East to determine potential hazards resulting from proximity to State Route 125 (SR-125), which determined that residents would be exposed to a relatively low cancer risk and impacts would be less than significant. Mitigation measures were required for future development on Village Ten, the former Brownfield Bombing Range, which could potentially contain contaminated soils as well as Munitions and Explosives of Concern (MEC). Soil contamination may also exist due to historical agricultural activities in Otay Ranch, and mitigation measures are provided to reduce potentially significant hazardous impacts.

Furthermore, due to the fact that the project area was historically used for agricultural purposes, in the event that contaminated soils are encountered during grading and excavation it could result in increased health risks to construction workers, future residents, and potentially impact water quality. Prior to major grading the proposed development would be required to further test soils for contamination. Remediation may be required that would involve the removal of top soil and disposing of it. A majority of cumulative projects listed in Table 6-2 would also take place in Otay Ranch on lands that were historically used for agriculture. Therefore, potential soil contamination could create a similar hazard to public health during grading and excavation. These lands would also be required to further analyze soils and mitigate any potentially significant hazards. Therefore, with additional testing and compliance with applicable mitigation measures the proposed project would not be cumulatively considerable.

Given the climatic, vegetation, and topographic characteristics of the project area, along with the fire history and fire behavior modeling results discussed in the FPPs, the project area, post development, would be considered potentially vulnerable to wildfire encroaching or spotting into the retained open space fuels. Since these fuels would be preserved adjacent to the Village Development Areas, fire-protection design features have been included in the development of the proposed project. The cumulative projects are also in the same surrounding area and would be vulnerable to wildfires as well.

Development of the proposed project would include ignition resistant materials per the latest (2010) Chula Vista Fire and Building Codes. Structure protection would be complemented by a system of improved water availability, capacity and delivery; fire department access; monitored defensible space/fuel modification; interior fire sprinkler systems in all structures, monitored interior sprinklers in applicable structures; and other components that would provide properly

equipped and maintained structures with a high level of fire ignition resistance. Implementation of the FPPs would reduce wildland fire risk to a less than significant level. Cumulative projects would also be required to implement similar fire safety features and structure protection features to reduce impacts. Preparation of FPPs would further reduce cumulative project impacts.

6.3.16 Housing and Population

This section tiers from the 1993 Otay Ranch GDP Program EIR, because the proposed project is within the boundaries of the Otay Ranch GDP and potential impacts to housing, population, and employment as a result of implementation of the Otay Ranch GDP were analyzed as part of the Program EIR. The 1993 Otay Ranch GDP Program EIR determined that growth-inducing impacts as a result of implementation of the proposed land plan would be significant and unavoidable, because there were no feasible mitigation measures. However, the Chula Vista City Council determined that housing and population impacts identified in that EIR were acceptable because of specific overriding considerations.

This section also tiers from the 2005 GPU/GDPA Program EIR, because existing conditions related to housing and population for the entire Otay Ranch area were assessed as part of the 2005 GPU/GDPA Program EIR. Similar to the 1993 Otay Ranch GDP Program EIR, the 2005 GPU/GDPA Program EIR identified cumulatively considerable and unmitigable impacts associated with housing and population, because there were no feasible mitigation measures.

Conversely, the 2013 GPA/GDPA SEIR, which included Village Eight East and Village Ten in the cumulative analysis, also determined that cumulative impacts to housing and population would not be significant. The Village 2, 3, and Portion of 4 EIR, which included Village Three North as part of the analysis, determined that cumulative projects in the region would incorporate mixed-use projects to accommodate the goals and policies as set forth in SANDAG's Grown Management Plan, therefore, no significant cumulative impacts to housing and population would occur.

As discussed in Section 5.16, Housing and Population, the proposed project would include development of 6,897 residential units and is expected to generate a buildout population of 22,139. 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 University Villages project would not exceed anticipated population growth. The General Plan and Otay Ranch GDP amendments will ensure the consistency of the proposed project. Additionally, SANDAG's growth forecasts associated with the updated 2050 Regional Growth Forecast are expected to accommodate population growth resulting from the proposed project.

The additional population generated by the proposed project would generate the need for additional employment opportunities. Village Eight West was approved for 300,000 square feet

of employment/commercial space, the EUC (not a cumulative project, but a project in close proximity to the project site) 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. While these are not part of the proposed project, they are important because they would increase the number of employment opportunities in the immediate vicinity of the project site. Therefore, while the proposed project would increase the number of dwelling units as currently planned, employment growth will be accommodated in the adjacent approved developments (Village Eight West, Village Nine and the EUC. The proposed project would not introduce so much commercial/office or industrial space as to indirectly induce additional population growth.

Additionally, the proposed project would be in compliance with the City of Chula Vista GMO, and established "quality of life" threshold standards. The proposed project and cumulative projects would be subject to the payment of PFDIFs 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 projects.

Furthermore, the proposed project and cumulative projects would not displace any existing households or people, or necessitate the construction of replacement housing elsewhere.

Overall, the cumulative increase in housing stock would make a variety of dwelling unit types available to accommodate SANDAG's 2050 Regional Growth Forecast. The cumulative projects would provide inclusive communities, maintain a balance between housing and employment, and allow population to grow adjacent to existing urban areas in proximity to public transit. Cumulative projects, including the proposed project, would be required to comply with the GMO thresholds, prepare a PFFP, and pay PFDIFs and TDIFs; therefore, impacts would not be cumulatively considerable.

6.3.17 Mineral Resources

This section tiers from the 1993 Otay Ranch GDP Program EIR because that Program EIR analyzed mineral resource impacts for the entire Otay Ranch, including the project site. The Otay Ranch GDP Program EIR analyzed impacts relating to mineral resources for the entire Otay Ranch area and concluded that there would be no feasible mitigation to reduce cumulative impacts to mineral resources. The 1993 Otay Ranch GDP Program EIR determined that the loss of aggregate mineral resources would be cumulatively significant and unmitigable.

This section of the EIR also tiers from the 2005 GPU/GDPA Program EIR because potential impacts to mineral resources due to development in the entire Otay Ranch area were also analyzed as part of the 2005 GPU/GDPA. The 2005 GPU/GDPA determined that due to the

limited area affected within the Open Space Active Recreation designation, and compliance with General Plan policies and objectives, cumulative impacts to mineral resources would not be significant.

The proposed project in combination with the cumulative projects could potentially impact mineral resources within the MRZ-2 zone; however, as described in the existing conditions in Section 5.17, a majority of this area is within the Chula Vista MSCP Preserve and any development would be required to comply with applicable regulations. Only a small portion of planned development is proposed within the MRZ-2 zone located in Village Eight East and Village Ten. In Village Eight East the Community Park (P-2), a portion of the associated access road and the emergency access roads are located within the MRZ-2 zone. In Village Ten, two water quality basins and an access road are located within the MRZ-2 zone. These uses would not preclude potential future extraction because they generally would not be built upon or buried under severe fill. The MSCP does not preclude mining operations and cumulative projects would have the option of extracting aggregate prior to development. Because the majority of resources would be available for extraction and extraction of resources outside of the quarry would not be precluded, a significant cumulative impact would not occur. As such, cumulative projects would be expected to result in a less than significant impact on mineral resources, and the proposed project's potential impact on mineral resources would not be cumulatively considerable.

CHAPTER 7
GROWTH INDUCEMENT

Section 15126.2(d) of the 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 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 6,897 residential dwelling units, including 1,597 units in Village Three North, 3,560 units in Village Eight East, and 1,740 units in Village Ten. 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 2010), the proposed project is expected to generate a buildout population of 22,346 persons. 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 University Villages project would not exceed anticipated population growth. The General Plan and Otay Ranch GDP amendments will ensure the consistency of the proposed project.

Additionally, 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. As part of the regional planning effort for San Diego Forward, SANDAG solicited input from the City for projects which were in the planning process to include in the newest projects. The proposed project was among the list of projects provided to SANDAG and thus 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 fosters a development pattern which promotes orderly growth and prevents urban sprawl by comprehensively planning Village Three North, Eight East, and Ten simultaneously. 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 through conveyance to the Chula Vista MSCP Subarea, the Otay Valley Regional Park (OVRP), 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. 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.

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 6,897 residential dwelling units. Through previous Otay Ranch GDP planning efforts, the project area was allocated a total of 1,570 residential units, resulting in a planned population increase of 5,040 persons. Village Three North and a Portion of Village Four and the University site[1] were not allocated any residential units. The proposed project includes an additional 5,327 residential units above the planned 1,570 residential units, and this increase would result in population growth that exceeds the growth planned for the project area by 17,099 persons. While the proposed project would exceed the maximum residential buildout for the villages set forth by the Otay Ranch GDP, 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.

[1] No units allocated to University site per the Otay Ranch GDP Primary Land Use.

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 Villages Three North, a portion of Village Four, Village Eight East and Village Ten, and specific surrounding development proposed in the General Plan and Otay Ranch GDP. Infrastructure would not provide surplus capacity that would allow for additional, unplanned development. Public Facilities Financing Plans (PFFPs) 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 5.16, Housing and Population, the proposed project would be in compliance with the City of Chula Vista Growth Management Ordinance (GMO), and established "quality of life" threshold standards. The Growth Management Oversight Commission (GMOC) is charged with reviewing the GMO annually to ensure compliance and make recommendations, as necessary. The GMO requires 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 PFFPs ensure development of the SPA Plans will not adversely impact the city's quality of life standards by requiring public facilities and services be provided concurrent with demand. 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 Main Street extension is needed to mitigate the impacts of the proposed project. The mitigation improvement is the extension of Main Street in the City of Chula Vista as a Six-Lane Prime Arterial, extending 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. General Plan Figure 5-13E, Circulation Plan–East, illustrates the route of the planned Main Street extension (referred to on the Circulation Plan as "Rock Mountain Road"). Six-Lane Prime Arterials are designed to carry high volumes of traffic and serve to distribute traffic to and from the freeway system; the Prime Arterials are designed to move traffic between major generators.

The Main Street extension is part of the City's adopted Circulation Plan, and the full cost of the project from Heritage Road to La Media Road is included within the City's Transportation Development Impact Fee Program. In addition, the portion of the Main Street extension from Heritage Road, across Wolf Canyon and connecting to La Media Road is included in the City's Capital Improvement Program (STM357). The project is anticipated to be constructed by 2025, prior to the estimated impact. In this case, the proposed project will pay the Transportation Development Impact Fee as mitigation and the improvements will be constructed as a City CIP project.

The Main Street extension has not yet been designed and therefore details of the planned roadway are not available. However, it is estimated that the bridge over Wolf Canyon, which is an environmentally sensitive area, will be over 1,000 feet in length, and approximately 110 feet in height at the center of Wolf Canyon.

Because (1) the Main Street extension has not yet been designed and (2) prior to construction the City will conduct project-specific environmental review, Appendix C provides a general level of analysis as required under CEQA Guidelines, Section 15126.4(a)(1)(D).

The land uses proposed in the SPA Plan are consistent with the General Plan and Otay Ranch 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 OVRP and Greenbelt Trail would provide access to open space areas that may include sensitive biological resources. However, the OVRP 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 AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

CEQA Guidelines Section 15126.2 (b) and (c) require that the significant, unavoidable impacts of the project, as well as any significant irreversible environmental changes that would result from project implementation, be addressed in the EIR.

8.1 SIGNIFICANT ENVIRONMENTAL IMPACTS WHICH CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

CEQA Guidelines Section 15126.2 (b) and (c) require that the significant, unavoidable impacts of the project, as well as any significant irreversible environmental changes that would result from project implementation, be addressed in the EIR.

In accordance with CEQA Guidelines Section 15126.2 (b), any significant unavoidable impacts of a project, including those impacts that can be mitigated but not reduced to below a level of significance despite the Applicant's willingness to implement all feasible mitigation measures, must be identified. Implementation of the proposed project SPA Plans and Tentative Maps would result in the following significant, unavoidable impacts:

- **Landform Alteration/Aesthetics**
  - Direct and cumulative impact on visual character or quality
  - Cumulative impacts on scenic vistas/resources
- **Transportation, Circulation and Access**
  - Year 2020 cumulative impact on intersections

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*
11. I-805 SB Ramps / Olympic Parkway	70.9	E	155.2	F	No Feasible Mitigation			

  - Year 2020 roadway segments cumulative scenario
    - Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – The proposed 2020 project traffic would comprise approximately 0.9% (less than 5%) of the total segment volume and would add 300 ADT (less than 800 ADT). However, one of the intersections (I-805 SB Ramps / Olympic Parkway) along this segment

would operate at substandard LOS E/F during the AM/PM peak hours. Therefore, the project traffic would result in a significant cumulative impact at this location.

- Year 2020 freeway/highway segments cumulative scenario
  - I-805, from Market Street to Imperial Avenue
  - I-805, from Imperial Avenue to E Division Street
- Year 2025 intersections cumulative scenario
  - Same as 2020
- Year 2025 roadway segments cumulative scenario
  - Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – The proposed 2020 project traffic would comprise approximately 0.9% (less than 5%) of the total segment volume and would add 300 ADT (less than 800 ADT). However, one of the intersections (I-805 SB Ramps / Olympic Parkway) along this segment would operate at substandard LOS E/F during the AM/PM peak hours. Therefore, the project traffic would result in a significant cumulative impact at this location.
- Year 2025 freeway/highways cumulative scenario
  - 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 SR-54 to Bonita Road.
- Year 2030 intersections cumulative scenario
  - Same as 2020 and 2025
- Year 2030 roadway segments cumulative scenario
  - Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – The proposed 2020 project traffic would comprise approximately 0.9% (less than 5%) of the total segment volume and would add 300 ADT (less than 800 ADT). However, one of the intersections (I-805 SB Ramps / Olympic Parkway) along this segment would operate at substandard LOS E/F during the AM/PM peak hours. Therefore, the project traffic would result in a significant cumulative impact at this location.

- Year 2030 freeway/highways cumulative scenario
  - 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
  - SR-905 from I-805 to Caliente Avenue
  - SR-905 from Caliente Avenue to Heritage Road
  - SR-905 from Heritage Road to Britannia Boulevard
  - SR-905 from Britannia Boulevard to La Media Road

- **Air Quality**
  - Direct and cumulative air quality violations
  - Direct and cumulative conflict with air quality plans
- **Cultural Resources**
  - Cumulative impact on archaeological resources
- **Agricultural Resources**
  - Direct and cumulative conversion of agricultural resources
- **Public Utilities**
  - ~~Cumulative~~ Direct demand for wastewater capacity; and
  - Direct and ~~C~~cumulative Demand for energy.
- **Global Climate Change**
  - Potential direct ~~cumulative~~ effects of global climate change.

All other significant impacts identified in Chapters 5 and 6 of this EIR are determined to be less than significant or can be reduced to below a level of significance with the mitigation measures identified.

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CHAPTER 9
SIGNIFICANT AND IRREVERSIBLE ENVIRONMENTAL IMPACTS

9.1 IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD RESULT IF THE PROJECT IS IMPLEMENTED

CEQA Guidelines Section 15126.2(c) indicates that:

> "[u]ses of non-renewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or non-use thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified."

Implementation of the project would necessarily consume limited, slowly renewable and non-renewable resources. This consumption would occur during the construction phase of the project and would continue throughout its operational lifetime. The project would require a commitment of resources that would include: 1) building materials, 2) fuel and operational materials/ resources, and 3) the transportation of goods and people to and from the project site.

Construction of the project would require the consumption of resources that are not renewable or which may renew so slowly as to be considered non-renewable. These resources would include the following construction supplies: certain types of lumber and other forest products; aggregate materials used in concrete and asphalt such as sand, gravel and stone; metals such as steel, copper, and lead; petrochemical construction materials such as plastics; water; and fossil fuels such as gasoline and oil.

The resources that would be committed during operation of the project would include water for drinking and bathing, and fossil fuels for electricity, natural gas, and transportation. Fossil fuels would represent the primary energy source associated with both construction and ongoing operation of the project, and the existing, finite supplies of these natural resources would be incrementally reduced. However, the project includes a Non-Renewable Energy Conservation Plan that identifies feasible methods to reduce the consumption of non-renewable energy resources. The three main categories identified in the plan where reductions in energy use may occur are land use and community design, building siting and construction techniques, and transit facilities and alternative transportation modes. Additionally, the SPA Plans for each village include a Water Conservation Plan that includes mandatory water reduction measures for residential and non-residential land uses, as well as an Air Quality Improvement Plan which

outlines additional energy conservation measures. As indicated in Section 5.10, Global Climate Change, the project would result in an approximately 29% reduction in total GHG emissions as compared to the business-as-usual conditions.

The project would involve an unquantifiable, but limited, use of potentially hazardous materials typical of residential, office, and commercial uses, including cleaning solvents, fertilizers and/or pesticides for landscaping. These materials would be contained, stored, and used on site in accordance with manufacturers' instructions, applicable standards and regulations. Compliance with regulations would serve to protect against a significant and irreversible environmental change that could result from the accidental release of hazardous materials.

The proposed project site has been historically used for agricultural purposes. Development within the project site would contribute to the incremental and cumulative loss of agricultural lands (Farmland of Local Importance). This would be an irreversible consequence of converting the proposed project site to urban uses. However, this site has been planned as part of the Otay Ranch GDP to serve as a series of urban villages to provide single-family and multi-family residential units, village cores containing commercial uses, parks (both neighborhood and regional), community purpose facility uses, schools, affordable housing and potential transit stops. No additional loss of agricultural land would occur beyond what was planned for in the Otay Ranch GDP.

In summary, construction and operation of the project would result in the irretrievable commitment of limited, slowly renewable, and non-renewable resources, which would limit the availability of these particular resources for future generations or for other uses during the life of the project. However, the SPA Plans include requirements for energy and water conservation so that use of such resources would be of a relatively small scale compared to similar development without such requirements. Additionally, the project would accommodate growth forecasted for the Otay Ranch area as discussed in Section 5.16, Population and Housing. The loss of such resources would not be highly accelerated when compared to existing conditions and growth projections for the city. Therefore, although irretrievable commitment of resources would result from the project, such changes would be considered less than significant.

CHAPTER 10
PROJECT ALTERNATIVES

10.1 INTRODUCTION

Pursuant to the CEQA Guidelines, 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).

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.

10.2.1 Overall Project Objectives

The SPA Plans identify the following overall and SPA-specific objectives for the proposed project:

1. Implement the goals, objectives and policies of the Chula Vista General Plan, the MSCP Subarea Plan, Otay Ranch GDP, the Otay Ranch Phase 1 and Phase 2 Resource Management Plan, the Otay Ranch Facility Implementation Plan, the Otay Ranch Village Phasing Plan and the Otay Ranch Service/Revenue Plan.
2. Provide a wide variety of housing options, including affordable housing, to City residents, future students and faculty of the planned four year university and employees of the Regional Technology Park, Village Eight West and Village Nine Town Centers and EUC.
3. Implement the City of Chula Vista Growth Management Ordinance to ensure that public facilities are provided in a timely manner and financed by the parties creating the demand for, and benefiting from, the improvements.

4. Foster development patterns which promote orderly growth and prevent urban sprawl through comprehensively planning Villages Three North and a portion of Village Four, Eight East and Ten simultaneously.
5. Add to the creation of a unique Otay Ranch image that differentiates Otay Ranch from other communities.
6. Accentuate the relationship of the land use plan with its natural setting and the physical character of the region, and promote effective management of natural resources by concentrating development into less sensitive areas while preserving large contiguous open space areas with sensitive resources.
7. Establish multi-use trail linkages to the Chula Vista Greenbelt, consistent with the Chula Vista Greenbelt Master Plan.
8. Wisely manage limited natural resources.
9. Implement the Otay Valley Regional Park (OVRP) Concept Plan within the SPA boundaries through the planning and provision of portions of connections to the City's Greenbelt trail network.
10. Establish a land use and facility plan that assures the economic viability of the SPA Plan Areas in consideration of existing and anticipated economic conditions.

10.2.2 Village Three North and Portion of Village Four

1. Develop a Business Park that provides a strong employment base for Village Three North residents and the City of Chula Vista and supports the economic development goals of the Chula Vista General Plan.
2. Develop Mixed-Use Office/Commercial uses within the Village core area that provide a strong employment base for Village Three North residents and the City of Chula Vista and meet the commercial/retail needs of the village and surrounding villages.
3. Establish a pedestrian-oriented urban village with a village core designed to reduce reliance on the automobile and promote multi-modal transportation, including walking and the use of bicycles, buses and regional transit.
4. Promote synergistic uses between Village Three North and adjacent Village Two by providing pedestrian/trail connections and complementary land uses to balance housing, activities, services and facilities.

10.2.3 Village Eight East

1. Establish a pedestrian-oriented urban village with a village core designed to reduce reliance on the automobile and promote multi-modal transportation, including walking and the use of bicycles, buses and regional transit.
2. Promote synergistic uses between Village Eight East and Village Eight West, the Eastern Urban Center and the University/Regional Technology Park to balance activities, services and facilities with employment, housing, transit and commercial opportunities.
3. Develop, maintain and enhance a sense of community identity which complements the future Village Eight West Town Center surrounding land uses.
4. Designate a portion of Active Recreation Area (AR-11) as a 51.5-acre Community Park (P-2) (a portion of the park may function as a staging area within the OVRP).
5. Establish a community park with amenities such as multi-purpose open lawn areas, lighted ball fields, lighted sports courts, lighted picnic shelters, play areas, a community center building, lighted parking areas and restroom and maintenance buildings.

10.2.4 Village Ten

1. Establish a pedestrian-oriented urban village within the University Planning Area designed to complement and support the University land uses, reduce reliance on the automobile and promote multi-modal transportation, including walking and the use of bicycles, buses and regional transit.
2. Promote synergistic uses between Village Ten and Village Nine and the University to balance employment, retail and educational activities, as well as services, housing and public facilities.
3. Develop, maintain and enhance a sense of community identity that complements the University and Village Nine Town Center.

10.3 ALTERNATIVES CONSIDERED BUT REJECTED

The following discussion presents information on an alternative to the proposed project that was considered but rejected. This alternative is not discussed in further detail.

As discussed in Section 5.4 Air Quality, criteria pollutant emissions for VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ are anticipated to be above the City of Chula Vista's significance thresholds as a result of the proposed project. The proposed project would include project design features and be required to implement mitigation measures to reduce significant impacts; however, impacts would not be reduced to a level below significance. In order to reduce potentially

significant operational air quality impacts to less than significant, there would be no single-family or multi-family residential units, no general office space, no light industrial uses, and the size of the community parks would need to be reduced. What would be left in these villages as a result of this alternative would be community purpose facilities, schools, neighborhood parks, reduced community parks, and mixed-use commercial land uses. Since this alternative would not meet the goals and objectives of the proposed project, the General Plan, or the Otay Ranch GDP, and it would remove a substantial land use component of the proposed project, this alternative was considered but rejected.

10.4 ALTERNATIVES UNDER CONSIDERATION

This section discusses four 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. The alternatives addressed in this section are listed below, followed by a more detailed discussion of each:

1. Existing GP and GDP Alternative
2. Reduced Density Alternative
3. Nuisance Easement Alternative
4. Otay SRP Alternative
5. No Project (No Build) Alternative

10.4.1 Existing GP and GDP Alternative

Under the Existing GP and GDP Alternative, development would be proposed for the villages consistent with the General Plan and Otay Ranch GDP. The adopted Otay Ranch GDP land uses village boundaries are different than those in the proposed project. Village Three North is within Village Three as shown in the Otay Ranch GDP and planned as an “Industrial” village. The Portion of Village Four is the same as the proposed project, with a portion designated as “Open Space,” and a portion designated for “Community Park.” No residential units were allocated to Village Three North or the Portion of Village Four by the Otay Ranch GDP. As discussed in Section 2.0, Introduction, and Section 3.0, Environmental Setting, the General Plan and Otay Ranch GDP designate Village Three North for Limited Industrial land uses in a business park setting that reflects the unique characteristics of the landform and surrounding development. A 1,000 foot nuisance easement area surrounds the Otay Landfill and extends into the northern portion of Village Three. General Plan Policy E 6.4 calls for not placing sensitive receptors, such as a residential land use, within 1,000 feet of a major toxic emitter. In the case of proposed Village Three North land uses, planned residential land uses are

considered sensitive receptors and the landfill to the north of Village Three is considered a toxic emitter. This alternative would not conflict with the General Plan Policy E 6.4. Further, Village Three North was a part of the previously approved Village Two, Village Three and Portion of Village Four Sectional Planning Area (SPA) Plan which identified Village Three North for Industrial and CPF development.

The General Plan designates Village Eight East for residential uses including Residential Mixed Use, Residential Medium–High, Residential Low–Medium, Public and Quasi Public, Parks and Recreation, and Open Space. The Otay Ranch GDP designates Village Eight East as an urban village with single-family and multi-family residential, and a mixed-use village core. Under the Otay Ranch GDP, a portion of what is proposed as Village Eight East is within the Village Seven SPA Plan boundary. This portion of Village Seven is designated as Open Space. The Otay Ranch GDP allocates Village Eight East a total of 928 residential units.

The General Plan designates Village Ten as part of the University Study Area. The village is designated Public and Quasi Public uses. The Otay Ranch GDP has two land uses identified for Village Ten. The primary land use designates Village Ten as Public and Quasi-Public for a university campus site; the secondary land use designates Village Ten as an urban village with single-family and multifamily residential, a mixed-use village core, and a community park. The Otay Ranch GDP allocates the secondary land use designation for Village Ten a total of 642 residential units.

This alternative includes generally the same development area as the proposed project (Figure 10-1); however, the land uses are reconfigured per the Otay Ranch GDP and no Give/Take is proposed to convert Preserve areas to development nor any development areas to Preserve. This alternative would not require an MSCP Preserve Boundary Adjustment or GDPA related to increased densities, circulation element modifications, and the allowance of residential land uses within the landfill nuisance easement area; however, as described further below in Land Use, a GPA would be required for residential land uses in Village Ten to be consistent with the Otay Ranch GDP land use.

A total of 1,570 residential units would be built under the Existing GP and GDP Alternative. Using a household coefficient of 3.24 persons per household, this alternative would increase the population by 5,087 people. Table 10-1 below shows the difference between the Existing GP and GDP Alternative (GDP buildout) and the proposed project. The Existing GP and GDP Alternative is also illustrated in Figure 4-47 and 4-51.

Table 10-1
Estimated Residential Buildout Existing GP and GDP Alternative vs. Proposed

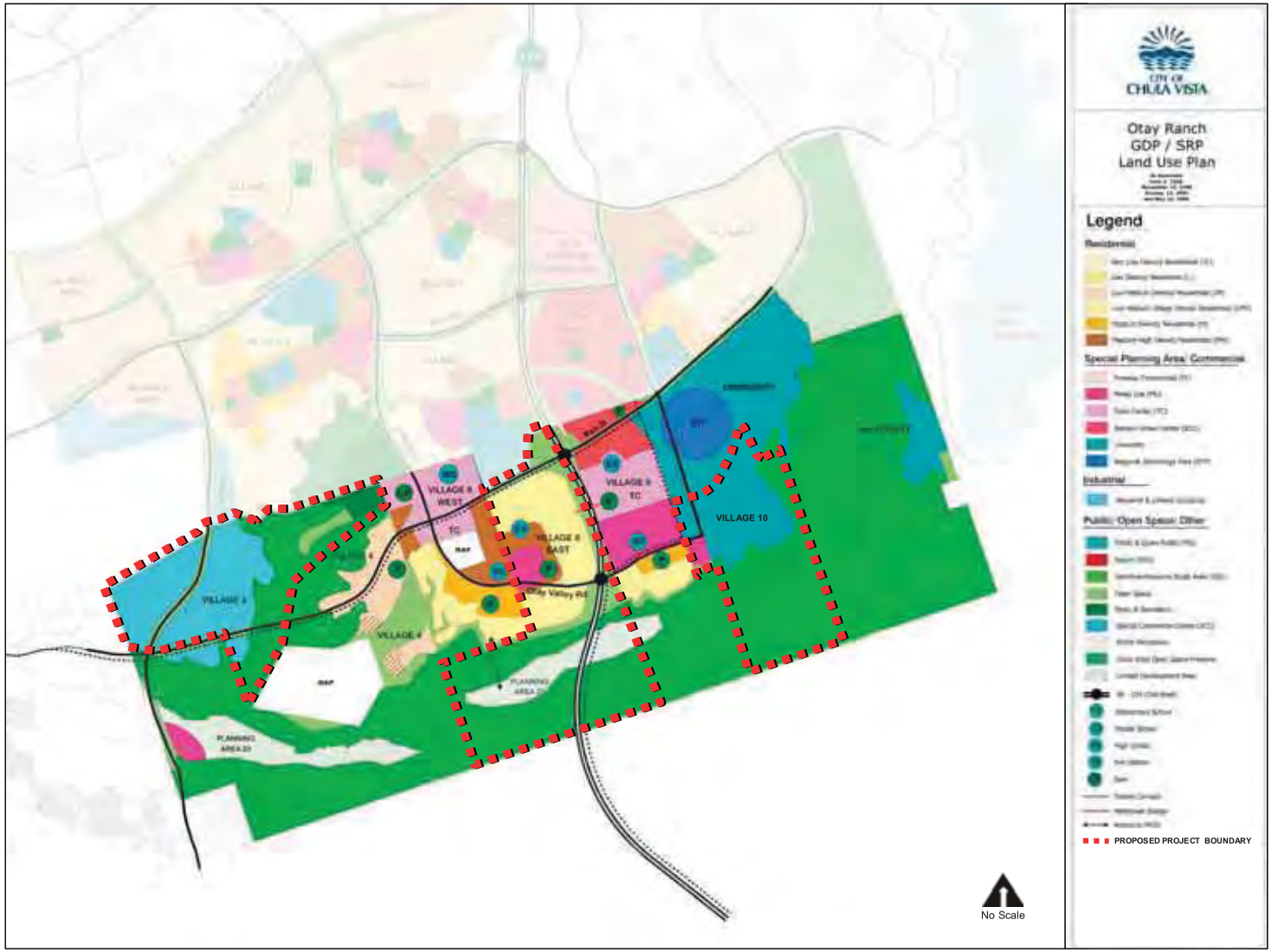
Village	Total GDP Planned Units	Approximate GDP Planned Population*	Total Proposed Units	Approximate Proposed Population	Δ Total Units	Δ Approximate Population*
Village Three North and a Portion of Village Four	0	0	1,597	5,174	1,597	5,174
Village Eight East	928	3,007	3,560	11,534	2,632	8,527
Village Ten	642**	2,080	1,740	5,638	1,098	3,558
Total	**1,570**	**5,087**	**6,897**	**22,346**	**5,327**	**17,259**

* Population estimates per City of Chula Vista household coefficient of 3.24 persons per residential unit.
** 642 units allocated to Village Ten per the existing Otay Ranch GDP Secondary Land Use for Village Ten. General Plan does not allocate any residential units to Village Ten.

Land Use

As discussed in Section 5.1 Land Use, the area surrounding the proposed project consists of recently developed or planned development. Off-site impacts are consistent with approved or pending plans such as roadway locations, and therefore, development of the proposed project would not physically divide an established off-site community. The proposed project includes SPA Plans for each village which ensure the design and layout of land uses for the project area would be compatible with one another. Compliance with MM LU-4 would ensure that the proposed project would not conflict with an adopted plan, policy, or regulation with adoption of the proposed General Plan and Otay Ranch GDP Amendments. However, a significant impact would occur if the City of San Diego waterlines, which traverse Village Eight East and Village Ten, are not removed prior to the beginning of construction in these villages. Mitigation measures (MM LU-1 through MM LU-3) would reduce potential impacts to less than significant.

Under the Existing GP and GDP Alternative, development would occur as anticipated by the General Plan and Otay Ranch GDP. The Existing GP and GDP Alternative would have the same surrounding land uses and would not physically divide an established community. However, similar to the proposed project, a significant impact would occur if the City of San Diego waterlines are not removed prior to the beginning of construction in Villages Eight East and Ten. Mitigation measures (MM LU-1 through MM LU-3) would reduce potential impacts to less than significant and would be required for his alternative.



SOURCE: City of Chula Vista 2014

FIGURE 10-1
Existing GDP Allocations

7000

UNIVERSITY VILLAGES PROJECT EIR

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Village Three North would develop with Industrial land uses, which would be compatible with the existing and planned surrounding land uses including the Otay Landfill to the north, Business Park to the northeast (Village Two), Industrial to the west and the Otay Valley Rock Quarry to the southeast. In addition, the industrial land uses would be consistent with General Plan Policy E 6.4 regarding sensitive receptors being located within 1,000 feet of a toxic emitter (the landfill). Thus, since the land uses under the Existing GP and GDP Alternative are consistent with the existing, approved uses in Village Three North, and since this Alternative would not result in locating sensitive receptors within 1,000 feet of the landfill, land use impacts related to Village Three North would be reduced compared to the proposed project. However, the alignment of Heritage Road through Village Three North as currently contemplated by the existing GP and GDP would not align with the planned Heritage Road Bridge or future Heritage Road/Main Street intersection. The alignment would be off-set from the intersection. The City has established the alignment of the Heritage Road bridge over the Otay River based on the proposed Village Three North Tentative Map and alignment of Heritage Road, and it would not connect with the existing Otay Ranch GDP alignment of Heritage Road. An amendment to the Circulation Plan may be required to implement the alignment of Heritage Road.

In Village Eight East, the existing Otay Ranch GDP densities are much lower than the planned intensity of the Village Eight West Town Center. In particular, the northwestern portion of Village Eight East would be developed as Low Medium (3.0-6.0 du/ac) immediately adjacent to the Village Eight West Town Center. This could result in incompatible land uses adjacent to each other because it would place low-density single family lots adjacent to a high intensity town center. This could result in impacts such as increased traffic through residential neighborhoods, limited parking, reduced air quality and increased noise. Because of the potential for inconsistencies between the low-dense existing GP and GDP and the planned density increases in Village Eight West, impacts to Village Eight East related to land use would be greater compared to the proposed project.

Village Ten could have a similar inconsistency with planned land uses as the Existing GP and GDP Alternative would locate low-medium single family adjacent to the planned Village Nine Town Center. In addition, the low-medium single family residential uses would be adjacent to the planned University site. Because of the potential for inconsistencies between the low-dense Existing GP and GDP Alternative and the planned density increases in Village Nine and the University, impacts to Village Ten related to land use would be greater compared to the proposed project. In addition, while the Otay Ranch GDP would allow for residential development of Village Ten under the secondary land use, the General Plan would have to be amended to allow for residential uses in Village Ten since the General Plan currently only allows for Public/Quasi Public uses. This is similar to the proposed project GPA to convert Public/Quasi Public uses to Residential land uses.

Similar to the project, the Existing GP and GDP Alternative would not conflict with the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP. This is because this alternative would propose similar development areas as the proposed project, a Preserve Edge Plan, and would not include any land uses that conflict with these resource plans. The Existing GP and GDP Alternative would not require an amendment to the MSCP Subarea Plan or the Otay Ranch RMP. However, similar to the proposed project, an amendment to the General Plan would be required in order to allow for residential uses in Village Ten since the General Plan currently only allows for Public/Quasi Public uses. With the adoption of the General Plan amendment, this alternative would be consistent with the General Plan. Therefore, the Existing GP and GDP Alternative's land use impacts would not be reduced or avoided compared to the proposed project.

Landforms and Aesthetics

As discussed in Section 5.2 Landforms and 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. While the presence of heavy equipment and machinery would be visible from surrounding off-site areas, impacts to existing visual character resulting from construction activities are deemed less than significant due to the short-term nature of construction. As discussed in the Otay Ranch GDP Program EIR, the conversion of undeveloped land to urban uses is a significant and unmitigable impact of development.

While impacts were determined to be significant and unmitigable, Section 5.2, Landform Alteration and Aesthetics, identified mitigation measures that would help minimize and protect existing visual character to the extent feasible (MM AES-1 through MM AES-4). Mitigation includes the preparation of a Landscape Master Plan that demonstrates compliance with the Otay Ranch GDP Policies pertaining to softening manufactured slopes through plant selection, placement, and density and to provide specific direction on landscape treatments specific to each manufactured slope area and each individual proposal. The SPA plans specify development standards for the village areas and establish design guidelines for specific land use zones. A landscape plan is however required to provide specific direction on landscape treatments specific to each manufactured slope area and each individual proposal. In order to reduce impacts from lighting and glare mitigation measures requiring preparation of a lighting plan and photometric analysis for all parks and new structures is required. A shadow analysis is required for any buildings proposed to be four stories and above.

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. This alternative would represent a similar change in the undeveloped, open and semi-natural character of the on-site rolling hills to one of urbanized uses. A common design theme would be carried out within the village developments and would be expressed in landscaping and other community elements. Further, SPA Plan development

guidelines would create a cohesive, unifying visual character that would be expressed in village core buildings. Village streets are designed to promote pedestrian and bicycle travel and a system of community purpose facilities (i.e., community recreation) and private open space is included to serve future residents. However, the Existing GP and GDP Alternative would not guarantee the extensive open space amenities, street landscaping and landscaped trails that provide a visual buffer between land uses.

Therefore, since both the proposed project and the Existing GP and GDP Alternative would substantially alter the aesthetics of the surrounding area, both would create significant and unmitigable impacts to landforms and aesthetics. Thus, compared to the proposed project impacts would not be reduced or avoided under the Existing GP and GDP Alternative.

Transportation and Circulation

As discussed in Section 5.3 Transportation and Circulation, impacts to transportation and circulation as a result of the proposed project would be significant and unavoidable. As shown in Table 5.3-15 by Year 2030 the proposed project would be fully developed, and would generate a total of 77,663 daily trips, including 6,819 AM peak hour trips and 7,816 PM peak hour trips. By Year 2030 Village Three North would generate 24,720 ADT, Portion of Village Four would generate 890 ADT, Village Eight East would generate 35,776 ADT, and Village Ten would generate 16,277 ADT. Buildout of Village Eight East would account for a majority of total ADT generated by the proposed project (46%). Mitigation measures including construction of access and frontage roads, payment of TDIF, installation of street signals and construction of roadways to reduce identified significant impacts would be provided; however, impacts would not be reduced to a level below significance (MM TCA-1 through MM TCA-17).

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. Due to the decrease in the number of dwelling units, the Existing GP and GDP Alternative would result in approximately 31,309 fewer ADT compared to the proposed project at buildout, which would reduce impacts to traffic and circulation. Table 10-2 shows the anticipated ADT of the existing Otay Ranch GDP by Village compared to the proposed project. As noted above under Land Use, the alignment of Heritage Road through Village Three North as currently contemplated by the existing Otay Ranch GDP would not align with the planned Heritage Road Bridge or future Heritage Road/Main Street intersection. The alignment would be off-set from the intersection. The off-set intersection on a Major Arterial has the potential to result in additional impacts at that intersection.

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.

Impacts related to General Plan and Otay Ranch GDP emergency access, road safety, and transportation policies would be less than significant under this alternative, similar to the project, because the circulation system proposed by the Otay Ranch GDP would also be implemented by the Existing GP and GDP Alternative. The Existing GP and GDP Alternative would 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 impacts as a result of the Existing GP and GDP Alternative would be reduced compared to the proposed project due to the reduction of trips by 40%.

Table 10-2
Estimated Average Daily Trips for Proposed Project v. Existing GP and GDP Alternative

Land Use	Existing Otay Ranch GDP		
	Units	*Trip Rate*	*Daily Trips*
Village Three North			
Light Industrial	165.2	90/AC	14,868
CPF	7.0	30/AC	210
		Village Three North Total	*15,078*
Village Four			
Community Park	17.8 AC	50/AC	890
		Village Four Total	890
Village Eight East			
Single Family	635	10/DU	6,350
Multi-Family	293	8/DU	2,344
Mixed-Use Commercial	8.9 Ac	1,200/Ac	10,680
CPF	2.9	30/AC	87
Elementary School	10.0	90/AC	900
Neighborhood Park	5.9	5/AC	30
		Village Eight East Total	*20,391*
Village Ten			
Single Family	307	10/DU	3,070
Multi-Family	335	8/DU	2,680
Mixed-Use Commercial	3.1	1,200/Ac	3,720

Table 10-2 (Continued)
Estimated Average Daily Trips for Proposed Project v. Existing GP and GDP Alternative

Land Use	Existing Otay Ranch GDP		
	Units	*Trip Rate*	*Daily Trips*
CPF	2.5	30/AC	75
Elementary School	4.6	90/AC	414
Neighborhood Park	7.3	5/AC	37
		Village Ten Total	*9,996*
		Total	46,354

Air Quality

As discussed in Section 5.4 Air Quality, criteria pollutant emissions for VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ are anticipated to be above the City of Chula Vista's thresholds as a result 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 (MM AQ-1 through MM-AQ-3).

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. As shown above, the decreased amount of dwelling units allowed under this alternative would result in lower traffic volumes. Therefore, the Existing GP and GDP Alternative would result in reduced air quality impacts compared to the proposed project.

The Existing GP and GDP Alternative would also result in reduced impacts related to air quality violations compared to the project because fewer construction and operational emissions would result from this alternative. However, there is no guarantee that this alternative could mitigate all significant impacts to air quality. Similar to the project, direct and cumulative construction emissions would remain significant and unavoidable under this alternative due to the amount of grading required. The mitigation measures required for the proposed project would also be required for the Existing GP and GDP Alternative for direct and cumulative impacts.

Impacts related to odors would be the same under this alternative as the proposed project because none of the uses would be expected to generate objectionable odors. As it relates to potential odors from the Otay Landfill, the Existing GP and GDP Alternative would reduce the number of sensitive receptors within the Landfill Nuisance Easement area compared to the proposed project because the Existing GP and GDP Alternative would not include any residential units within 1,000 feet of the landfill. The Existing GP and GDP Alternative would not exceed the RAQS growth assumption for the University Villages. However, 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 Otay Ranch GDP air quality policies would be similar to the project under the Existing GP and GDP Alternative. Overall, impacts as a result of the Existing GP and GDP Alternative would be reduced compared to the proposed project.

Noise

As discussed in Section 5.5 Noise, the proposed project would result in less than significant impacts with mitigation measures incorporated. Noise from construction equipment would be considered strongly perceptible to mildly unpleasant; however, construction of the proposed project would be temporary and mitigation measures would reduce potential impacts (MM NOI-1 through MM NOI-9).

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. Although similar noise levels would be expected, due to the decrease in number of dwelling units, the length of the construction period is likely to be shorter under this alternative. Also, decreased traffic volumes associated with the decreased number of dwellings units can be expected to result in lower noise levels on surrounding roadways as compared to the proposed project. However, due to cumulative increases in traffic, including the Existing GP and GDP Alternative trips, this alternative's direct and cumulative noise impacts would still be significant.

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 Existing GP and GDP Alternative for direct and cumulative impacts.

Less than significant impacts related to groundborne vibration and potentially significant temporary increases in ambient noise would be similar to the project under the Existing GP and GDP Alternative because similar construction activities would occur and short-term traffic related noise would increase. The Existing GP and GDP Alternative would reduce impacts related to the substantial permanent increase in ambient noise levels compared to the project because fewer trips would be generated from the University Villages project site. However, the Existing GP and GDP Alternative trips, in combination with trips from cumulative growth, would still result in significant increases in traffic noise levels. Less than significant impacts related to aircraft noise and consistency with General Plan and Otay Ranch GDP noise policies would be similar to the proposed project. Overall, noise impacts would not be reduced or avoided as a result of the Existing GP and GDP Alternative.

Cultural Resources

As discussed in Section 5.6 Cultural Resources, the proposed project would have less than significant impacts to historical resources. However, impacts to unknown subsurface archaeological resources as a result of grading and excavation could be significant if encountered. Mitigation measures are included that would reduce the proposed project impacts to cultural resources to less than significant (MM CUL-1 through MM CUL-6).

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. Because the presence of undiscovered cultural resources is unknown for both the proposed project and the Existing GP and GDP Alternative, risk of significant impacts would be the same as the proposed project. It is anticipated that similar mitigation measures would be imposed as for the proposed project, which would reduce significant impacts to cultural resources to a less than significant level. Compared to the proposed project, impacts would not be reduced or avoided.

Paleontological Resources

As discussed in Section 5.7 Paleontological Resources, the proposed project would have potentially significant impacts to paleontological resources. Impacts to unknown subsurface paleontological resources as a result of grading and excavation could be significant if encountered. Mitigation measures would reduce the proposed projects impacts to paleontological resources to less than significant (MM PAL-1 through MM PAL-4).

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. Because the presence of paleontological resources is unknown for both this and the proposed project alternative, risk of significant impacts would be the same as the proposed project. It is anticipated that similar mitigation measures would be imposed as for the proposed project which would reduce significant impacts to paleontological resources to a less than significant level. Compared to the proposed project, impacts would not be reduced or avoided.

Biological Resources

Implementation of the proposed project would result in significant direct and indirect impacts to “covered” sensitive plant species, result in the direct loss of habitat for all of the special-status animals, result in indirect impacts to special-status wildlife species, result in permanent impacts to sensitive vegetation communities, and result in impacts to jurisdictional waters and wetlands. With implementation of MMs BIO-1 through BIO-18, impacts to sensitive species, riparian habitat and other sensitive natural communities, federally protected wetlands, and wildlife

corridor impacts related to the implementation of the proposed project would be reduced to a less than significant level.

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. The Existing GP and GDP Alternative would result in similar potentially significant but mitigable impacts related to special status plants and wildlife species, riparian habitat, and other sensitive natural communities, and federally protected wetlands and similar mitigation measures would be required. However, the proposed project would require an MSCP Preserve Boundary Adjustment and the Existing GP and GDP Alternative would not because this alternative would be developed within existing Development areas per the MSCP Subarea Plan. Currently designated Preserve areas would remain Preserve, which would result in the preservation of sensitive species and habitat as contemplated by the MSCP Subarea Plan. On and off-site biological habitat being conserved in the Preserve would contribute to wildlife movement function associated with the OVRP. Because this alternative would have roughly the same development footprint as the proposed project, impacts would not be substantially reduced. Impacts would not be reduced or avoided compared to the proposed project.

Agricultural Resources

As discussed in Section 5.9 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 approximately 476 acres 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. Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP, which would also result in the loss of Farmland of Local Importance. This alternative would not result in any conflict with agricultural policies. Impacts to agricultural resources as a result of the Existing GP and GDP Alternative would not be reduced or avoided compared to the proposed project.

Water Quality and Hydrology

As discussed in Section 5.10 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 5.10, and required mitigation measures would further reduce potential impacts associated with water quality and hydrology (MM HYD-1 through MM HYD-7). Mitigation measures would be required to reduce potentially significant impacts to water quality to a less than significant level. Furthermore, southern portions of Village Three and Portion of Village Four, Village Eight East,

and Village Ten are within the dam inundation zone for the Savage Dam (Hunsaker 2014). Project components within the dam inundation zone include a piece of Main Street in Village Three North, the southern corner of open space provided by a Portion of Village Four, Community Park (P-2) and Active Recreation Area (AR-11) in Village Eight East, and the east and west water quality basins in the southern portion of Village Ten. None of the areas within the Savage Dam inundation zone include residential, commercial, or industrial development and impacts were determined to be less than significant.

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. Similar to the proposed project, future development under the Existing GP and GDP Alternative would be required to be in compliance with all federal, state, and local regulations regarding water quality and hydrology. BMPs and PDFs would also be incorporated to reduce potential impacts. 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. Impacts to water quality and hydrology as a result of the Existing GP and GDP Alternative would be similar to the proposed project and similar mitigation measures would be required. Compared to the proposed project, impacts would not be reduced or avoided.

Geology and Soils

As discussed in Section 5.11 Geology and Soils, the proposed project would be exposed to strong seismic ground-shaking, erosion and loss of top soil, liquefaction, and expansive soils. Impacts would be mitigated to a less than significant level. Under the proposed project, potential impacts would be reduced to less than significant through the standard Uniform Building Code/California Building Code requirements (MM GEO-1 and MM GEO-2).

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. Future development under the Existing GP and GDP Alternative would be exposed to the same geologic and soil hazards as the proposed project. It is anticipated that similar mitigation measures would be incorporated to reduce potential impacts. Similar to the project, the Existing GP and GDP Alternative would be consistent with General Plan and GDP geotechnical policies and would not require any septic tanks or alternative wastewater disposal systems. Overall, the decrease in the amount of dwelling units allocated in the Otay Ranch GDP compared to the amount in the proposed project would decrease the number of people exposed to potential hazards. Therefore, compared to the proposed project the Existing GP and GDP Alternative would have reduced impacts.

Public Services

As described in Section 5.12 Public Services, the proposed project would result in an increased demand for public services including police, fire, schools, parks, and libraries. Impacts would be mitigated through the construction of new or expanded facilities and entitlements, and by the required payment a Public Facilities DIF (MM PUB-1 through MM PUB-15).

Fire and Emergency Medical Services, Police Services, Schools, and Libraries

The Existing GP and GDP Alternative would generate less population growth, and thereby result in a 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 Existing GP and GDP Alternative would result in a slightly lesser 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 (MM PUB-2).

Similar to the project, the Existing GP and GDP 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, which would also be required as a result of this alternative. However, since the demand for public services would be reduced under the Existing GP and GDP Alternative, impacts would be reduced compared to the proposed project.

Parks, Recreation, Open Space, and Trails

Compliance with the PLDO and Otay Ranch GDP would ensure that impacts associated with parks and recreational facilities as a result of proposed project implementation would be reduced. However, the proposed project would increase the use of existing neighborhood parks and recreational facilities and would require new facilities to be built. Mitigation measures provided in Section 5.2 Aesthetics, Section 5.4 Air Quality, Section 5.5 Noise, Section 5.8, Biological Resources and Section 5.10, and Water Quality and Hydrology would reduce potential direct and indirect impacts associated with construction of recreational facilities to a less than significant level, including off-site impacts associated with the Village Ten Connector Trail.

Based on the CVMC method for calculating parkland requirements, which is more conservative than the Otay Ranch GDP and Quimby Act method, the Existing GP and GDP Alternative would require 14.9 acres of parkland to serve the development. This alternative would provide 31.0 acres of neighborhood and community parkland. Similar to the project, the Existing GP and GDP Alternative would have potentially significant impacts related to the City's parks and recreations standard if parkland would not be provided concurrently with demand. The mitigation measures

identified for the proposed project would be required to ensure adequate park facilities would be provided. This alternative would not conflict with the parkland designations and policies of the General Plan, Otay Ranch GDP, or Greenbelt Master Plan. Compared to the proposed project, this alternative would provide less park land because it would generate less demand as a result of fewer residential units. Overall, impacts related to parks and recreation would not be reduced or avoided as a result of the Existing GP and GDP Alternative.

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 indicates that OWD would 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 concludes 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. The proposed project would promote water conservation through the use of low water use plumbing fixtures and the use of recycled water for the irrigation of parks, open space slopes, schools, parkway landscaping, and the common areas of multi-family residential and commercial/industrial/office sites. This Alternative would provide similar water conservation measures. Compliance with mitigation measures MM UTL-1 through MM UTL-4 would be required of the Alternative to further reduce water supply demand. Since the implementation of the Existing GP and GDP Alternative would result in less development there would be less demand for water. Therefore, compared to the proposed project, impacts would be reduced.

Recycled Water

No significant impacts related to new or expanded recycled water treatment facilities and no significant impacts related to consistency with applicable recycled water policies were identified with respect to implementation of the proposed project. Since the implementation of the Existing GP and GDP Alternative would result in less development there would be less demand for recycled water. Therefore, compared to the proposed project, impacts would be reduced.

Wastewater

As discussed in Section 5.13, Public Utilities, the city would need to acquire an additional capacity above current capacity rights to serve buildout of the proposed project. The proposed project's wastewater generation volume combine 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. The City of Chula Vista has capacity rights of 20.9 mgd of flow in the Metro sewer system. Existing average flows in the City are approximately 16.2 mgd. The estimated year 2030 flows based on the 2005 General Plan were 23.3 mgd. The projected year 2030 average flow for the City is 26.2 mgd. Thus, the City of Chula Vista would need to acquire capacity rights for an additional 5.4 mgd to accommodate year 2030 flows. The Salt Creek Interceptor Technical Sewer Study for South Otay Ranch addresses the City's current projections regarding the need to acquire additional treatment capacity. The Existing GP and GDP Alternative would have reduced impacts on wastewater facilities because less development would occur under this alternative compared to the proposed project; however, additional capacity in the system would still require the expansion of existing facilities or construction of new treatment facilities. Similar mitigation measures as required by the proposed project would be required for this alternative. Therefore, impacts would not be avoided.

Energy

Implementation of proposed project has the potential to result in impacts due to increased consumption of electricity and natural gas above that analyzed in the 2005 GPU EIR, which identified a significant and unavoidable impact related to energy demand. No guarantee can be made that long-term energy resources would be available as needed to support the future development of the site; therefore, impacts associated with energy consumption would be considered potentially significant. Since the implementation of the Existing GP and GDP Alternative would result in less development there would be less demand for energy. However, the guarantee for long term energy resources cannot be provided with this alternative similar to the proposed project. Therefore, compared to the proposed project, the demand would be reduced, but impacts would not be avoided.

Climate Change

As discussed in Section 5.14 Climate Change, the proposed project land use intensity and associated increase in vehicle trips has not been anticipated in local air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the RAQS. Furthermore, as discussed in Section 5.4 Air Quality, the emissions of VOCs and NO_x (precursors of O_3), as well as those of PM_{10} and $PM_{2.5}$, would exceed operational significance thresholds. Project design features would help to reduce operational emissions; however, significant reductions in ozone precursor 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.

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. Due to decreased amount of dwelling units allowed under this alternative, the existing Otay Ranch GDP scenario would result in lower traffic volumes and result in lower emissions compared to the proposed project. Total construction and operational emissions of GHGs would be reduced under this alternative. Total ADT would be reduced by approximately 39.2% compared to the proposed project; therefore, it is assumed that GHG emissions from implementation of the proposed project would also be reduced approximately 39.2%.

Additionally, the significant and unavoidable impact related to exacerbation of air quality problems as a result of climate change would be reduced under this alternative because operational emissions of ozone precursors would be reduced. Direct and cumulative impacts related to the potential effects of climate change would still be significant and unavoidable; however, compared to the proposed project, impacts would be slightly reduced.

Hazards and Risk of Upset

As discussed in Section 5.15 Hazards and Risk of Upset, the proposed project would have less than significant impacts with mitigation. A Health Risk Assessment was prepared for Village Three North and Portion of Village Four to evaluate the current 1,000-foot nuisance easement area around the Otay Landfill to determine whether significant cancer risks related to air borne toxics would occur. The assessment concluded that carcinogenic (cancerous) risks would be below the threshold for each respective receptor. A Health Risk Assessment was also prepared for Village Eight East to determine potential hazards resulting from proximity to State Route 125 (SR-125) using 9-year and 30-year exposure scenarios, which determined that residents would be exposed to a relatively low cancer risk and impacts would be less than significant. Mitigation measures were required for future development on Village Ten, the former Brownfield Bombing Range, which could potentially contain contaminated soils as well as Munitions and Explosives of Concern (MEC). Soil contamination may also exist due to historical agricultural activities in Otay Ranch, and mitigation measures are provided to reduce potentially significant hazardous impacts (MM HAZ-1 through MM HAZ-5).

Under the Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. Future development would be subject to similar risks due to potential MEC at Village Ten, and contaminated soil from prior agricultural use; similar mitigation measures would apply. However, maximum buildout in the Otay Ranch GDP is substantially reduced compared to the proposed project; therefore, fewer people would be exposed to such potential hazards associated with the sites. Impacts related to the transport, use, and disposal of hazardous materials would be similar to the project under this alternative in that similar land uses are proposed, but overall impacts would be slightly reduced because less development would occur. Additionally, the Otay Ranch GDP does not include residential

development in Village Three North; therefore, residents would not be exposed to potential hazards associated with proximity to the landfill (although more workers would be). Impacts related to emergency response and evacuation plans would be similar under this alternative because the existing GDP circulation network would be fully implemented. Less than significant impacts related to wildland fire would be similar to the proposed project because development would still occur along the edge of the project area, and a Fire Protection Plan would be implemented. Similar to the project, the Existing GP and GDP Alternative would not conflict with any General Plan and Otay Ranch GDP policies related to hazards and hazardous materials. Overall, because less development would occur with the Existing GP and GDP Alternative, impacts would be reduced compared to the proposed project.

Housing and Population

As discussed in Section 5.16 Housing and Population, the proposed project would include development of 6,897 residential units and is expected to generate a buildout population of 22,346. 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 University Villages 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), growth management oversight commission (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.

Under the Existing GP and GDP Alternative, development would still occur as planned in the General Plan and Otay Ranch GDP. The Otay Ranch GDP allocated a total of 1,570 residential units for the proposed project area, which would generate a buildout population of 5,087 (See Table 10-1).This lack of housing concurrent with needs as shown in SANDAG forecasts may result in a potentially significant impact. The Existing GP and GDP Alternative would not displace any housing or people, or conflict with any General Plan and GDP housing and population policies. However, because this alternative would not adequately accommodate for the projected growth, housing impacts would be increased as a result of this alternative.

Mineral Resources

As discussed in Section 5.17 Mineral Resources, the proposed project is within the MRZ-2 and MRZ-3 zone. The MRZ-2 classification for mineral resources represents areas where adequate

information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence. The MRZ-3 classification for mineral resources represents an area that has the potential for mineral deposits, but no resources have been identified. Therefore, 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 Existing GP and GDP Alternative, development would occur as planned in the General Plan and Otay Ranch GDP. Compared to the proposed project, impacts related to mineral resources would be the same under this alternative. Development would not result in a significant impact associated with mineral resources, because excavation of on-site resources would not be precluded. The Existing GP and GDP Alternative would be consistent with objectives and policies regarding mineral resources and impacts would be similar to the proposed project.

10.4.1.1 Relationship to Project Objectives

The proposed project was designed to be consistent with the goals and objectives of the Otay Ranch GDP. Since the Existing GP and GDP Alternative would ultimately lead to development as planned in the Otay Ranch GDP, almost all of the proposed projects objectives would be met; with the exception of the following objectives for Village Three North and Portion of Village Four:

- Develop Mixed-Use Office/Commercial uses within the Village core area that provide a strong employment base for Village Three North residents and the City of Chula Vista and meet the commercial/retail needs of the village and surrounding villages.

This goal aims to provide a strong employment base for the residents of Village Three North. Future development under the Existing GP and GDP Alternative, as planned in the Otay Ranch GDP, would not include residential units for Village Three North; therefore, the Existing GP and GDP Alternative fails to meet these goals.

Additionally, the Existing GP and GDP Alternative does not include enough residential development to accommodate SANDAGs 2050 Regional Growth Forecast. Development of this alternative could result in an inadequate amount of dwelling units in the future and inconsistent with the following objective.

- Provide a wide variety of housing options, including affordable housing, to City residents, future students, and faculty of the planned 4-year university and employees of the Regional Technology Park, Village Eight West and Village Nine Town Centers and the EUC.

10.4.2 Reduced Density Alternative

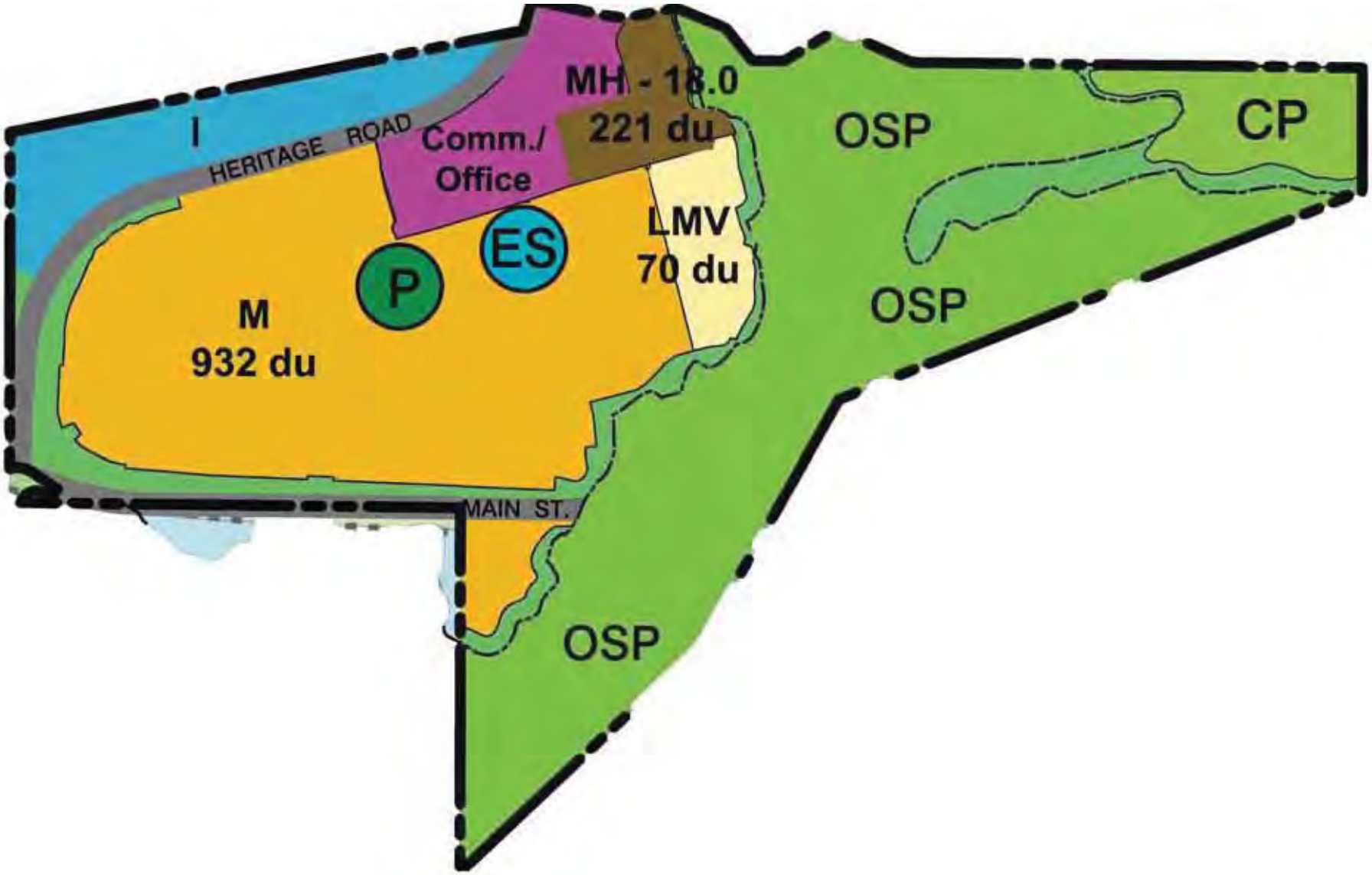
The Reduced Density Alternative would follow the same land use pattern as the proposed project, with the exception of having reduced maximum dwelling units for multi-family and mixed-use land uses. Instead of the proposed 45.0+ du/ac for multi-family land uses, the Reduced Density Alternative would assume the Otay Ranch GDP's maximum density of 18.0 du/ac for multi-family land uses; and instead of the proposed 44.4 du/ac for mixed-use land uses, the Reduced Density Alternative would assume the Otay Ranch GDP's maximum density of 27.0 du/ac for mixed-use land uses. Similar to the proposed project, the Reduced Density Alternative would also require a General Plan amendment, an Otay Ranch GDP amendment, and a MSCP Subarea Plan Boundary Adjustment as detailed below.

This alternative would include the same development area as the proposed project. Table 10-3 shows the difference between the Reduced Density Alternative and the proposed project. The proposed project would result in 2,640 single-family dwelling units, 3,737 multi-family dwelling units, and 520 mixed-use dwelling units, for a total of 6,897 dwelling units. The Reduced Density Alternative would retain the 2,640 single-family dwelling units, but reduce the number of multi-family units to 1,413 multi-family dwelling units and would not provide any mixed-use dwelling units. Therefore, the Reduced Density Alternative would have a decrease of 2,324 multi-family dwelling units, and a decrease of 520 mixed-use dwelling units, for a total reduction in dwelling units of 2,844 compared to the proposed project. Overall, the Reduced Density Alternative would have a 41% decrease in dwelling units and a 41% decrease in population compared to the proposed project. The Reduced Density Alternative is illustrated in Figures 10-2 (a–c). Further, because of the decrease in dwelling units and population, the Reduced Density Alternative would reduce the amount of park demand such that the Village Eight East Community Park (P-2) would not be developed, thus, this alternative would not be compliant with project objectives.

Table 10-3
Estimated Residential Buildout Reduced Density Alternative vs. Proposed

Land Use Designation	Reduced Density Alternative Total Units	Approximate Reduced Density Alternative Population*	Proposed Project Total Units	Approximate Proposed Project Population	Δ Total Units	Δ Approximate Population*
Single Family	2,640	8,554	2,640	8,554	0	0
Multi-Family	1,413	4,578	3,737	12,108	-2,324	-7,530
Mixed-Use	0	0	520	1,685	-520	-1,685
Total	**4,053**	**13,132**	**6,897**	**22,346**	**-2,844**	**-9,214**

* Population estimates per City of Chula Vista household coefficient of 3.24 persons per residential unit.



SOURCE: OTAY RANCH NEW HOMES 2013 :

FIGURE 10-2a

Reduced Density Alternative–Village Three North and Portion of Village Four

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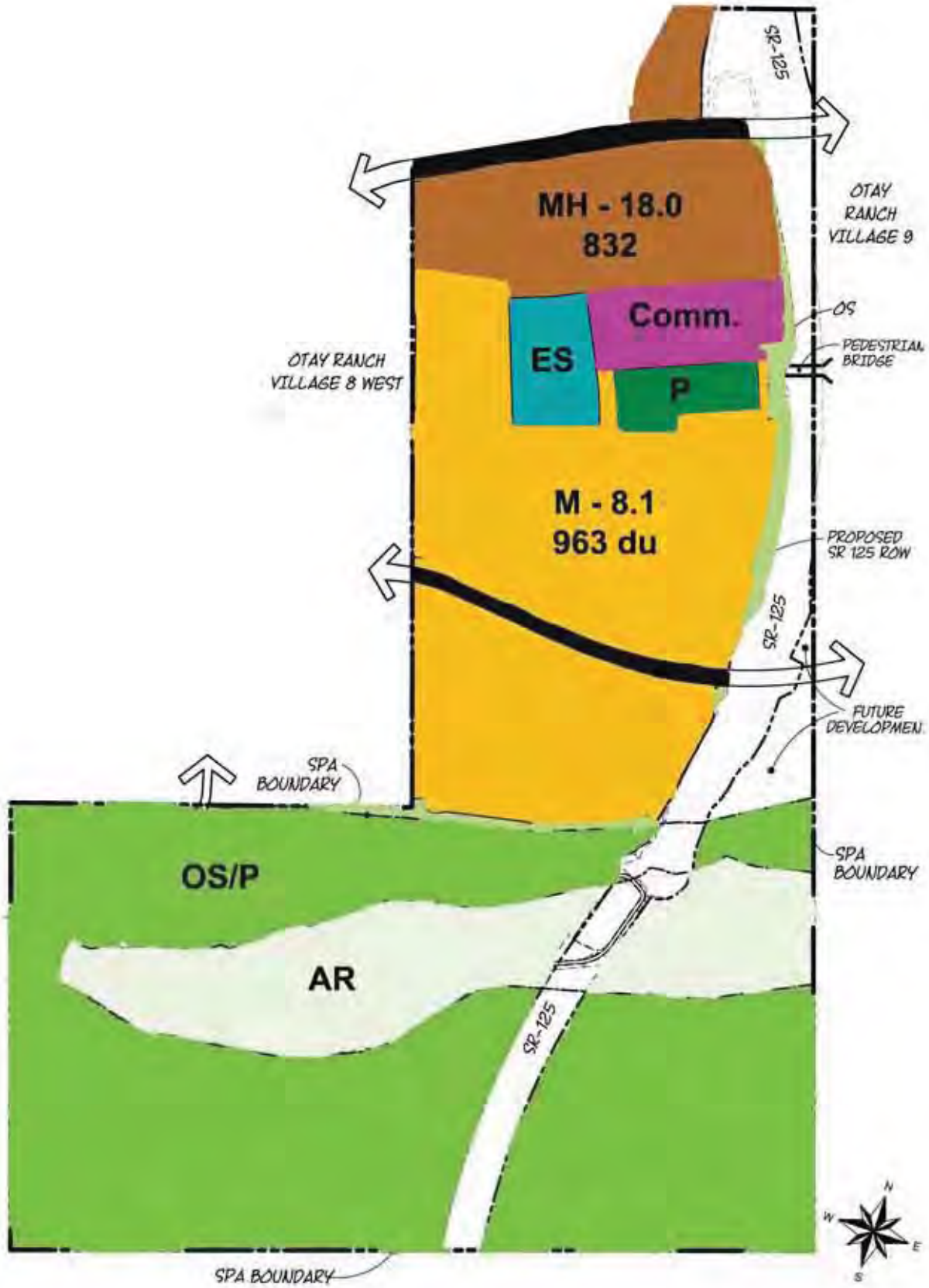

SOURCE: OTAY RANCH NEW HOMES 2013

FIGURE 10-2b

Reduced Density Alternative–Village Eight East

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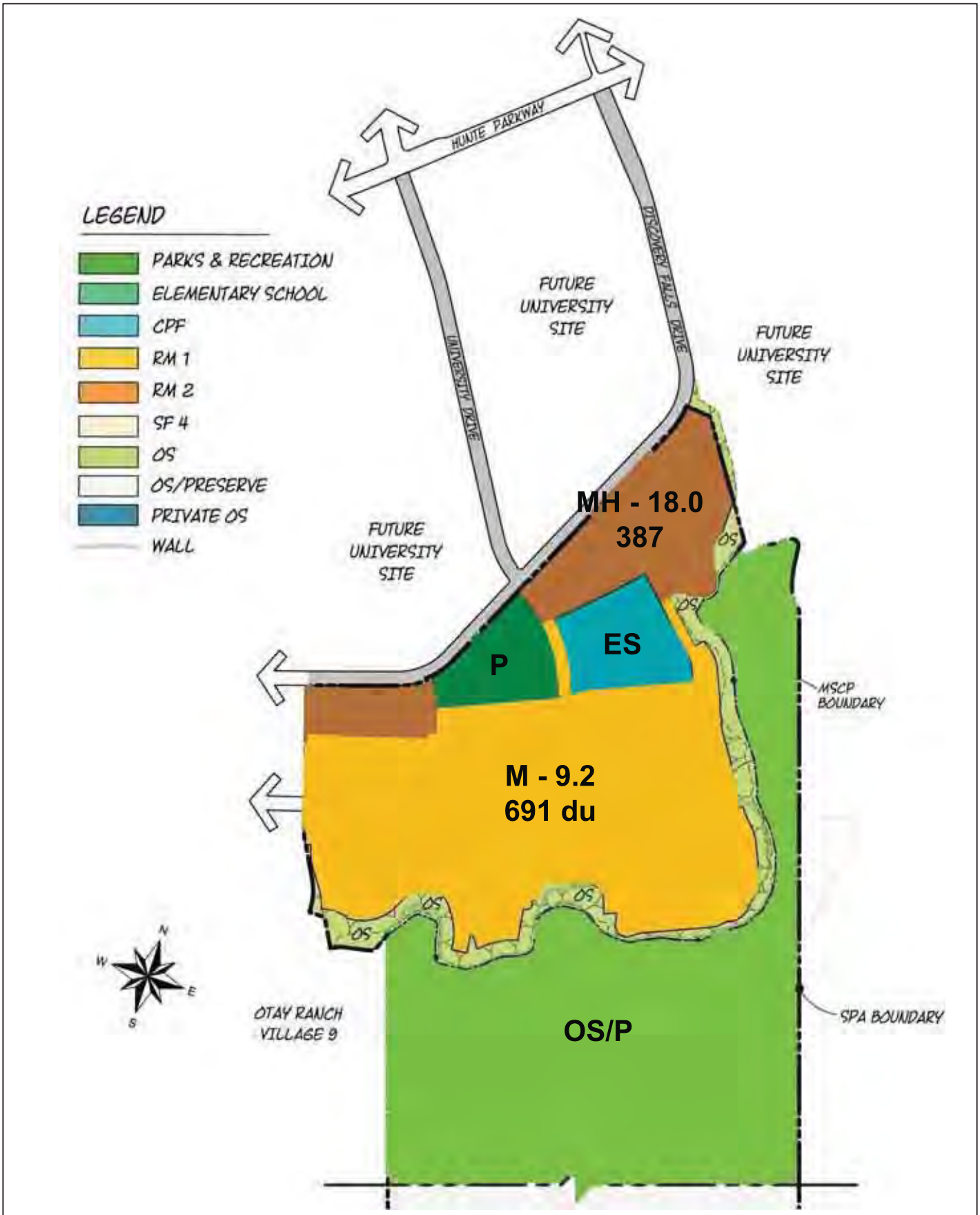

SOURCE: OTAY RANCH NEW HOMES 2013

FIGURE 10-2c
Reduced Density Alternative–Village Ten

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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 conflict with the adopted General Plan Policy E 6.4, which restricts the location of sensitive receptors within 1,000 feet of a toxic emitter. However, compliance with MM LU-4 would ensure that the proposed project is consistent with General Plan Policy E 6.4. However, a significant impact would occur if the City of San Diego waterlines which traverse Village Eight East and Village Ten are not removed prior to the beginning of construction in these villages. Mitigation measures (MM LU-1 through MM LU-3) would reduce potential impacts to less than significant.

Each SPA Plan is designed to facilitate a high level of compatibility between adjoining land uses within the project area. The SPA Plan establishes the plan for development implementation that would ensure that the project site is developed with compatible land uses. The SPA Plans also include Planned Community District Regulations that specify development standards, establishes neighborhoods, and includes allowable land uses. Additionally, the Village Design Plans establish design guidelines for development of each village. Development standards that ensure compatibility between different land uses include requirements for building configuration, open space, parking, design considerations, frontage types, performance standards, and sign regulations. Impacts to land use compatibility as a result of the proposed project would be less than significant.

This Reduced Density Alternative would result in the same land uses as the proposed project, only with reduced densities for the multi-family zoned areas. The Reduced Density Alternative would have the same surrounding land uses and would not physically divide an established community. Similar to the project, the Reduced Density Alternative would not conflict with the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP. This is because this alternative would propose similar development areas as the proposed project, include Preserve Edge Plans, and would not include any land uses that conflict with these resource plans. The Reduced Density Alternative would not displace any housing or people, or conflict with any General Plan and Otay Ranch GDP housing and population policies. Additionally, similar to the proposed project, if the City of San Diego waterlines which traverse Village Eight East and Village Ten are not removed prior to the beginning of construction in these villages, a significant impact would occur. Therefore, mitigation measures (MM LU-1 through MM LU-3) would still apply to this alternative. Furthermore, this alternative would still conflict with General Plan Policy E 6.4 and implementation of MM LU-4 would still be required. Therefore, overall impacts to land use would not be reduced or avoided compared to the proposed project.

Landforms and Aesthetics

As discussed in Section 5.2 Landforms and 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. While the presence of heavy equipment and machinery would be visible from surrounding off-site areas, impacts to existing visual character resulting from construction activities are deemed less than significant due to the short-term nature of construction. As discussed in the Otay Ranch GDP Program EIR, the conversion of undeveloped land to urban uses is a significant and unmitigable impact of development. While impacts were determined to be significant and unmitigable, the proposed project identified mitigation measures that would help minimize and protect existing visual character to the extent feasible (MM AES-1 through MM AES-4). Mitigation includes the preparation of a Landscape Master Plan that demonstrates compliance with the Otay Ranch GDP Policies pertaining to softening manufactured slopes through plant selection, placement, and density and to provide specific direction on landscape treatments specific to each manufactured slope area and each individual proposal. The SPA plans specify development standards for the village areas and establish design guidelines for specific land use zones. In order to reduce impacts from lighting and glare, mitigation measures requiring preparation of a lighting plan and photometric analysis for all parks and new structures is required. A shadow analysis is required for any buildings proposed to be four stories and above.

This alternative includes the same development area as the proposed project. Compared to the project, the Reduced Project 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. Although densities would be reduced, similar land uses would be developed across the University Villages SPA Plan Areas. Similar to the proposed project, implementation of the design guidelines in the SPA Plan would reduce direct impacts to a less than significant level. However, significant direct and cumulatively considerable impacts related to scenic resources and visual character would be significant and unavoidable under this alternative, similar to the proposed project, because the loss of open rolling hills would still occur.

Similar to the proposed project, this alternative would result in a less than significant impact related to consistency with General Plan and Otay Ranch GDP policies for aesthetics and landform alteration. Overall, the Reduced Density Alternative would not reduce or avoid impacts to landforms and aesthetics compared to the proposed project.

Transportation and Circulation

As discussed in Section 5.3 Transportation and Circulation, impacts to transportation and circulation as a result of the proposed project would be significant and unavoidable. As shown in

Table 5.3-15 by Year 2030 the proposed project would be fully developed, and would generate a total of 77,663 daily trips, including 6,819 AM peak hour trips and 7,816 PM peak hour trips. By Year 2030 Village Three North would generate 24,720 ADT, Portion of Village Four would generate 890 ADT, Village Eight East would generate 35,776 ADT, and Village Ten would generate 16,277 ADT. Buildout of Village Eight East would account for a majority of total ADT generated by the proposed project (46%). Mitigation measures to reduce identified significant impacts would be provided; however, impacts would not be reduced to a level below significance (MM TCA-1 through MM TCA-17).

The Reduced Density Alternative would result in 24,650 fewer trips compared to the proposed project at buildout, which would decrease impacts on traffic and circulation. Table 10-4 shows the difference in ADTs between the proposed project and the Reduced Density Alternative. 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.

Impacts related to General Plan and Otay Ranch 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 Otay Ranch 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, impacts as a result of the Reduced Density Alternative would be reduced compared to the proposed project due to the reduction of trips by 31.7%.

Table 10-4
Estimated Average Daily Trips for Proposed Project vs. Reduced Density Alternative

Land Use	Reduced Density Alt.		
	Units	*Trip Rate*	*Daily Trips*
Village Three North			
Single Family	1,002 DU	10/DU	10,020
Multi-Family	194 DU	8/DU	1,552
Mixed-Use Commercial	20 KSF	110/KSF	2,200

Table 10-4 (Continued)
Estimated Average Daily Trips for Proposed Project vs. Reduced Density Alternative

Land Use	Reduced Density Alt.		
	Units	*Trip Rate*	*Daily Trips*
Office	16.1 AC	300/AC	4,830
Light Industrial	23.1 AC	90/AC	2,079
CPF	1.5 AC	30/AC	45
Elementary School	8.3 AC	90/AC	747
Neighborhood Park	8.4 AC	5/AC	42
		Village Three North Total	*21,515*
Village Four			
Community Park	17.8 AC	50/AC	890
		Village Four Total	890
Village Eight East			
Single Family	963 DU	10/DU	9,630
Multi-Family	832 DU	8/DU	6,656
Mixed-Use Commercial	20 KSF	110/KSF	2,200
CPF	4.2 AC	30/AC	126
Elementary School	10.8 AC	90/AC	972
Neighborhood Park	7.9 AC	5/AC	40
		Village Eight East Total	*19,624*
Village Ten			
Single Family	691 DU	10/DU	6,910
Multi-Family	387 DU	8/DU	3,096
CPF	4.6 AC	30/AC	138
Elementary School	8.9 AC	90/AC	801
Neighborhood Park	7.7 AC	5/AC	39
		Village Ten Total	*10,984*
		Total	**53,013**

Air Quality

As discussed in Section 5.4 Air Quality, criteria pollutant emissions for VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ are anticipated to be above the City of Chula Vista's thresholds as a result 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 (MM AQ-1 through MM AQ-3). 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. Similar to the project, direct and cumulative construction emissions would remain significant and unavoidable under this alternative due to the amount of grading required. Mitigation measures MM AQ-1 through MM AQ-3 would still be required for this alternative.

Impacts related to odors would be the same under this alternative as the proposed project because none of the uses would be expected to generate objectionable odors. As it relates to potential odors from the Otay Landfill, the Reduced Density Alternative would reduce the number of sensitive receptors within the Landfill Nuisance Easement area compared to the proposed project because the density in the MU-1 and R-19 neighborhoods would be reduced. The Reduced Density Alternative would not exceed the RAQS growth assumption for the University Villages. However, 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 Otay Ranch 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 5.5 Noise, the proposed project would result in less than significant impacts with mitigation measures incorporated. Noise from construction equipment would be considered strongly perceptible to mildly unpleasant; however, construction of the proposed project would be temporary and mitigation measures would reduce potential impacts (MM NOI-1 through MM NOI-9).

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 direct and cumulative 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 increases in short-term traffic-related noise and similar construction activities would occur. Less than significant impacts related to aircraft noise and consistency with General Plan and Otay Ranch 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 ambient 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. Therefore, overall impacts associated with noise would not be reduced or avoided compared the proposed project.

Cultural Resources

As discussed in Section 5.6 Cultural Resources, the proposed project would have less than significant impacts to historical resources. However, impacts to unknown subsurface archaeological resources as a result of grading and excavation could be significant if encountered. Mitigation measures would reduce the proposed project's impacts to cultural resources to less than significant (MM CUL-1 through MM CUL-6).

Under the Reduced Density Alternative similar amounts of grading and ground disturbance would occur as the proposed project. The Reduced Density Alternative would have similar site plans as the proposed project; the only difference between the two projects would be the change in density. Therefore, impacts to cultural resources would be similar to the proposed project and similar mitigation measures would be required. Therefore, impacts would not be reduced or avoided as a result of the Reduced Density Alternative.

Paleontological Resources

As discussed in Section 5.7 Paleontological Resources, the proposed project would have potentially significant impacts to paleontological resources. Impacts to unknown subsurface paleontological resources as a result of grading and excavation could be significant if encountered. Mitigation measures would reduce the proposed project's impacts to paleontological resources to less than significant (MM PAL-1 through MM PAL-4).

Under the Reduced Density Alternative similar amounts of grading and ground disturbance would occur as with the proposed project. The Reduced Density Alternative would have similar site plans as the proposed project; the only difference would be the change in density. Therefore, impacts to paleontological resources would be similar to the proposed project and similar mitigation measures would be required. Therefore, impacts would not be substantially reduced or avoided as a result of the Reduced Density Alternative.

Biological Resources

Implementation of the proposed project would result in significant direct and indirect impacts to "covered" sensitive plant species, result in the direct loss of habitat for all of the special-status

animals, result in indirect impacts to special-status wildlife species, result in permanent impacts to sensitive vegetation communities, and result in impacts to jurisdictional waters and wetlands. With implementation of MMs BIO-1 through BIO-18 impacts to sensitive species, riparian habitat and other sensitive natural communities, federally protected wetlands, and wildlife corridor impacts related to the implementation of the proposed project would be reduced to a less than significant level.

The Reduced Density Alternative would have the same development footprint as the proposed project; therefore, it would result in the same potentially significant but mitigable impacts related to special status plants and wildlife species, riparian habitat and other sensitive natural communities, federally protected wetlands, and consistency with the MSCP and RMP as the proposed project. Similar mitigation measures as required by the proposed project would be required for this alternative. Overall, impacts to biological resources would not be reduced or avoided compared to the proposed project.

Agricultural Resources

As discussed in Section 5.9 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 approximately 476 acres 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 476 acres of designated Farmland of Local Importance. This alternative would also not result in any conflict with agricultural policies. Therefore, impacts would not be reduced or avoided compared to the proposed project.

Water Quality and Hydrology

As discussed in Section 5.10 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 5.10, and required as mitigation measures would further reduce potential impacts associated with water quality and hydrology (MM HYD-1 through MM HYD-7). Southern portions of Village Three and Portion of Village Four, Village Eight East, and Village Ten are within the dam inundation zone for the Savage Dam (Hunsaker 2014). Project components within the dam inundation zone include a piece of Main Street in Village Three North, the southern corner of open space provided by a Portion of Village Four, Village Eight East Community Park (P-2) and Active Recreation Area (AR-11) in Village Eight East, and the east and west water quality basins

in the southern portion of Village Ten. None of the areas within the Savage Dam inundation zone include residential, commercial, or industrial development and impacts were determined to be less than significant.

The Reduced Density Alternative would involve similar development as the proposed project and would have similar impacts related to water quality and hydrology, which would be reduced through implementation of a SWPPP and BMPs. Similar mitigation measures would also be required. 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 Otay Ranch 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. Under the Reduced Density Alternative the Village Eight East Community Park (P-2) would not be developed because it would not be required. However, the Reduced Density Alternative would not reduce or avoid impacts compared to the proposed project.

Geology and Soils

As discussed in Section 5.11 Geology and Soils, the proposed project would be exposed to strong seismic ground-shaking, erosion and loss of top soil, liquefaction, and expansive soils. Under the proposed project, potential impacts would be mitigated and reduced to a less than significant level through the standard Uniform Building Code/California Building Code requirements (MM GEO-1 and MM GEO-2).

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 Otay Ranch 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

As described in Section 5.12 Public Services, the proposed project would result in an increased demand for public services including police, fire, schools, parks, and libraries. Impacts would be mitigated through the construction of new or expanded facilities and entitlements, and by the required payment a Public Facilities DIF (MM PUB-1 through MM PUB-15).

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 (MM PUB-2 would still be required).

Similar to the project, the Reduced Density Alternative would be consistent with all General Plan and Otay Ranch GDP policies related to fire and emergency medical, police, school, and library services with implementation of the mitigation measures identified for the project. However, since the Reduced Density Alternative would result in a decreased demand for public services, impacts would be reduced compared to the proposed project.

Parks, Recreation, Open Space, and Trails

Compliance with the PLDO and Otay Ranch GDP would ensure that impacts associated with parks and recreational facilities as a result of proposed project implementation would be reduced. However, the proposed project would increase the use of existing neighborhood parks and recreational facilities and would require new facilities to be built. Mitigation would reduce potential direct and indirect impacts associated with construction of recreational facilities to a less than significant level, including off-site impacts associated with the Village Ten Connector Trail.

Based on the CVMC method for calculating parkland requirements, which is more conservative than the Otay Ranch GDP and Quimby Act method, the Reduced Density Alternative would require 41.8 acres of parkland to serve the development. This alternative would provide 41.8 acres of neighborhood and community parkland to meet the anticipated demand. However, this total would not include development of the Community Park (P-2). 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. Similar mitigation measures would also be required for this alternative.

The Reduced Density Alternative would have a 41% decrease in dwelling units and a 41% decrease in population compared to the proposed project. The mitigation measures identified for the proposed project would be required to ensure adequate park facilities would be provided. Further, because of the decrease in dwelling units and population, the Reduced Density

Alternative would reduce the amount of park demand, compared to the proposed project. Thus, this alternative would not be compliant with project objectives.

Impacts related to construction of new facilities would decrease compared to the project because less construction would occur. This alternative would not conflict with the parkland designations and policies of the General Plan, Otay Ranch GDP, or Greenbelt Master Plan. Impacts related to parks and recreation would not be reduced or avoided compared to the proposed project.

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 indicates that OWD would 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 concludes 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. Since implementation of the Reduced Density Alternative would result in less development and less population, there would be less water demand; however, mitigation measures MM UTL-1 through MM UTL-4 would still be required. This impact would be reduced compared to the proposed project.

Recycled Water

No significant impacts related to new or expanded recycled water treatment facilities and no significant impacts related to consistency with applicable recycled water policies were identified with respect to implementation of the proposed project. Since the implementation of the Reduced Density Alternative would result in less development there would be less demand for recycled water. Therefore, compared to the proposed project, impacts would be reduced.

Wastewater

As discussed in Section 5.13, Public Utilities, the city would need to acquire an additional capacity above current capacity rights to serve buildout of the proposed project. 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. The City of Chula Vista has capacity rights of 20.9 mgd of flow in the Metro sewer system. Existing average flows in the City are approximately 16.2 mgd. The estimated year 2030 flows based on the 2005 General Plan were 23.3 mgd. The projected year

2030 average flow for the City is 26.2 mgd. Thus, the City of Chula Vista would need to acquire capacity rights for an additional 5.4 mgd to accommodate year 2030 flows. The Salt Creek Interceptor Technical Sewer Study for South Otay Ranch addresses the City's current projections regarding the need to acquire additional treatment capacity. The Reduced Density Alternative would have reduced impacts on wastewater facilities, because less development would occur under this alternative compared to the proposed project; however, the Reduced Density Alternative combined with other planned projects would also 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. Similar mitigation measures as required by the proposed project would be required for this alternative.

Energy

Implementation of proposed project has the potential to result in impacts due to increased consumption of electricity and natural gas above that analyzed in the 2005 GPU EIR, which identified a significant and unavoidable impact related to energy demand. No guarantee can be made that long-term energy resources would be available as needed to support the future development of the site; therefore, impacts associated with energy consumption would be considered potentially significant. Since the implementation of the Reduced Density Alternative would result in less development there would be less demand for energy. However, the guarantee for long term energy resources cannot be provided with this alternative similar to the proposed project. Therefore, compared to the proposed project, impacts would be reduced, but not avoided.

Climate Change

As discussed in Section 5.14 Climate Change, the proposed project land use intensity and associated increase in vehicle trips has not been anticipated in local air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the RAQS. Furthermore, as discussed in Section 5.4 Air Quality, the emissions VOCs and NO_x (precursors of O_3), as well as those of PM_{10} and $PM_{2.5}$, would exceed operational significance thresholds. Project design features would help to reduce operational emissions; however, significant reductions in ozone precursor 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.

Similar to the proposed project, the Reduced Density Alternative would result in land use intensity and an increase in vehicle trips that has not been anticipated in local air quality plans. Although there would be a slight reduction in vehicle trips and operational emissions, impacts

would not be reduced below a level of significance in comparison to the proposed project. Total construction and operational emissions of GHGs would be reduced under this alternative. Total ADT would be reduced by approximately 29.7% compared to the proposed project; therefore, it is assumed that GHG emissions from operation of the proposed project would also be reduced approximately 29.7%.

Additionally, the significant and unavoidable impact related to exacerbation of air quality problems as a result of climate change would be reduced under this alternative because operational emissions of ozone precursors would be reduced. Direct and cumulative impacts related to the potential effects of climate change would still be significant and unavoidable, similar to the project. 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 5.15 Hazards and Risk of Upset, the proposed project would have less than significant impacts with mitigation. A Health Risk Assessment was prepared for Village Three North and Portion of Village Four to determine potential hazards resulting from proximity to the landfill. The results of the assessment found carcinogenic (cancerous) risks to be below the threshold for each respective receptor. A Health Risk Assessment was also prepared for Village Eight East to determine potential hazards resulting from proximity to SR-125 using a 9-year and 30-year exposure scenario, which determined that residents would be exposed to a relatively low cancer risk and impacts would be less than significant. Mitigation measures were required for future development on Village Ten, the former Brownfield Bombing Range, which could potentially contain contaminated soils as well as MEC. Soil contamination may also exist due to historic agricultural activities in Otay Ranch, and mitigation measures are provided to reduce potentially significant hazardous impacts (MM HAZ-1 through MM HAZ-5).

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 Otay Ranch GDP policies related to hazards and hazardous materials. The same mitigation measures would still be required under this alternative due to the potential for FUDS south of Village Ten, and the airport influence area over Villages Eight East and Three North. 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 5.16 Housing and Population, the proposed project would include development of 6,897 residential units and is expected to generate a buildout population of 22,346. The proposed project would result in a population increase currently unaccounted for in the General Plan and Otay Ranch GDP; however, with adoption of the proposed General Plan and Otay Ranch GDP amendments, implementation of the University Villages 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. 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.

Under the Reduced Density Alternative the amount of single family dwelling units would remain the same (2,640 single family dwelling units); although, the amount of multi-family dwelling units would decrease by 2,324, and the amount of mixed-use dwelling units would decrease by 520 (See Table 10-4). Development under the Reduced Density Alternative would reduce the amount of housing available by approximately 41% relative to the proposed project. The population would also decrease by 41% (9,214 people) compared 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 to the Chula Vista General Plan and Otay Ranch GDP; it would not displace any housing or people, or conflict with any General Plan and Otay Ranch GDP housing and population policies. Overall, the Reduced Density Alternative would have reduced impacts on housing and population compared to the proposed project.

Mineral Resources

As discussed in Section 5.17 Mineral Resources, the proposed project is within the MRZ-2 and MRZ-3 zone. The MRZ-2 classification for mineral resources represents areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence. The MRZ-3 classification for mineral resources represents an area that has the potential for mineral deposits, but no resources have been identified. Therefore, 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. Development would not result in a significant impact associated with mineral resources, because excavation of on-site resources would not be precluded. The Reduced Density Alternative would be consistent with objectives and policies regarding mineral resources and impacts would be similar to the proposed project. Impacts to mineral resources would be the same as the proposed project.

10.4.2.1 Relationship to Project Objectives

The Reduced Density Alternative would result in similar land use and development patterns as the proposed project, and would generally meet all project objectives listed above in Section 10.2. The primary difference between the proposed project and this alternative would be the decrease in multi-family and mixed-use dwelling units, resulting in a lack of housing concurrent with needs as shown in SANDAG forecasts and in the Growth Management Plan. Therefore, this alternative does not meet ~~the proposed project better meets~~ the following project objectives:

- Provide a wide variety of housing options, including affordable housing, to City residents, future students and faculty of the planned four year university and employees of the Regional Technology Park, Village Eight West and Village Nine Town Centers and EUC.
- Establish a land use and facility plan that assures the economic viability of the SPA Plan areas in consideration of existing and anticipated economic conditions.

Additionally, the reduction of all mixed-use land uses within Village Three North and Village Eight East would not result in a pedestrian-oriented development. With respect to Village Three North and Village Eight East, this alternative does not meet ~~the proposed project better meets~~ the following project objectives:

- Promote synergistic uses between Village Eight East and Village Eight West, the Eastern Urban Center and the University/Regional Technology Park to balance activities, services and facilities with employment, housing, transit and commercial opportunities.
- Develop Mixed-Use Office/Commercial uses within the Village core area that provide a strong employment base for Village Three North residents and the City of Chula Vista and meet the commercial/retail needs of the village and surrounding villages.

Furthermore, the Reduced Density Alternative would not yield enough units to trigger demand for the Village Eight East Community Park (P-2) and therefore would not include the

development of the western portion of AR-11 as Community Park (P-2) in Village Eight East. Therefore, this alternative does not meet ~~the proposed project also better meets~~ the following project objectives~~s~~:

- Designate a portion of Active Recreation Area (AR-11) as a 51.5-acre Community Park (P-2) (a portion of the park may function as a staging area within the OVRP).
- ~~Establish a community park with amenities such as multi-purpose open lawn areas, lighted ball fields, lighted sports courts, lighted picnic shelters, play areas, a community center building, lighted parking areas and restroom and maintenance buildings.~~

10.4.3 Nuisance Easement Alternative

General Plan Policy E 6.4 calls for not placing sensitive receptors within 1,000 feet of a major toxic emitter. In the case of proposed Village Three North land uses, planned residential land uses are considered sensitive receptors and the landfill to the north of Village Three is considered a toxic emitter. The landfill property's southern boundary is within approximately 450 feet of planned residential land uses within Village Three North and the active landfill is approximately 700 feet away from planned residential land uses. In order to ascertain potential impacts to sensitive receptors within 1,000 feet of the southern property boundary of the landfill a HRA was performed for Village Three North. The HRA found potential impacts to be less than significant (see Appendix D to this EIR). Based on the fact that all calculated carcinogenic (cancerous) and non-carcinogenic (non-cancerous) risks are below the identified SDAPCD CEQA thresholds for each respective receptor within the development, impacts are not considered significant.

The Nuisance Easement Alternative would result in fewer~~remove~~ residential land uses within ~~1,000 feet from the active portion~~ the nuisance easement area of the Otay Landfill. This Nuisance Easement Alternative has been developed to comply with the City of Chula Vista General Plan Policy E 6.4, which does not allow the placement of sensitive receptors within 1,000 feet of a "toxic emitter." ~~Per direction from City staff, this alternative has been evaluated at the project level to provide an actionable item for the decision making body, should this become the preferred plan.~~

The Nuisance Easement Alternative would only affect Village Three North and there would be no changes to the Portion of Village Four, Village Eight East, or Village Ten. Therefore, all discretionary actions, impacts, conclusions, and mitigation measures related to these villages as discussed in Section 4.0 and Section 5.0 are identical to the proposed project. In Village Three North this alternative plan includes the same number of overall units as the proposed Village Three North project and the development area is identical to the proposed project (i.e. – no additional grading areas).

The following differences exist between the proposed project and this alternative land plan for Village Three North:

1. The single-family neighborhoods north of Tributary Street and between Santa Maya and Santa Picacho (proposed project neighborhoods R-1, R-4 and R-5) would be replaced by MF-18, Mixed Use Residential/Commercial neighborhood MU-1 and Neighborhood Park P-1. As shown in Figure 10-3, the 1,000-foot setback from the active portion of the landfill bisects the mixed use pad (MU-1). The Nuisance Easement Alternative would designate non-residential commercial and park uses on the north side of this line, and multi-family residential uses on the south side of this line.
2. The single family neighborhoods Tributary Street "C" and west of Santa Maya (proposed project neighborhoods R-2, R-3 and R-6) would be converted to Multi-Family neighborhood R-17 and Open Space (OS-4).
3. The former MU-2a – 2f (Mixed Use Commercial/Office) and CPF-1 site north of Tributary Street between Santa Picacho and Santa Macheto would be revised to MU-2/CPF-1 and MU-3, which would allow for Mixed Use with non-residential uses north of the 1,000' setback and multi-family residential uses on the south side of the setback.
4. The School site would move to the proposed project's P-1 Neighborhood Park site. The proposed project's S-1 Elementary School site would be converted to neighborhood R-10 and lotted as single family homes.
5. The proposed project's O-1 Office site would be slightly increased to coincide with the 1,000-foot setback. As a result of this increase the proposed project's R-21a – c multi-family site would be reduced and become neighborhood R-16 under the Nuisance Easement Alternative.

A comparison of the proposed project and the Nuisance Easement Alternative is provided in Table 10-5. The Nuisance Easement Alternative includes the same development area and would still require a MSCP Preserve Boundary Adjustment and GPA/GDPAs related to increased densities and circulation element modifications as detailed below.

Table 10-5
Estimated Residential Buildout of Nuisance Easement Alternative vs. Proposed Project

	Proposed Plan				Nuisance Easement Alternative			
Land Use	*Neighborhood*	*Acres (gross)*	*Acres (Net)*	*Units*	*Neighborhood*	*Acres (gross)*	*Acres (Net)*	*Units*
Single-Family Residential	R-1 – R-20	115.2	-	1,002	R-1 – R-15	109.8	-	950
Multi-Family Residential	R-21a - c	10.8	10.3	515	R-16 – 21	18.5	-	647
Mixed Use Res./Comm.	MU-1a – 1d[1]	2.1	2.0	80	-	-	-	-
Mixed Use Office/Comm.	MU-2a – 2e	6.1	5.3	-	MU-1a-1c[2]	6.4	-	-
Commercial	-	-	-	-				-

Table 10-5 (Continued)
Estimated Residential Buildout of Nuisance Easement Alternative vs. Proposed Project

	Proposed Plan				Nuisance Easement Alternative			
Land Use	*Neighborhood*	*Acres (gross)*	*Acres (Net)*	*Units*	*Neighborhood*	*Acres (gross)*	*Acres (Net)*	*Units*
Neighborhood Park	P-1	7.9	6.7	-	P-1	7.0	5.9	-
Community Park	P-2	17.8	15.6	-	P-2	17.8	15.6	-
Private OS	POS-1 – 8	2.4	-	-	POS-1 – 8	2.4		-
School	S-1	8.3	7.7	-	S-1	8.6	7.3	-
CPF	CPF-1 – 3	4.2	4.0	-	CPF-1 – 3	4.1	3.9	-
Industrial	I-1a – 3b	28.6	15.9	-	I-1a – 3b	28.6	15.9	-
Office	O-1	5.2	4.9	-	O-1	7.0	6.5	-
Open Space	OS-1 – 11	35.4	-	-	OS-1 – 11	35.7	-	-
Preserve	OS-12	155.2	-	-	OS-12	155.2	-	-
Circulation	-	36.8	-	-	-	34.9	-	-
Total		**436.0**	**-**	**1,597**		**436.0**		**1,597**

1 Includes up to 20,000 Sq. Ft. of Neighborhood Commercial uses (Village-wide) for traffic generation purposes.
2 Included within the same 40,000 Sq. Ft. of Neighborhood Commercial Uses as MU-1 through MU-3 for traffic generation purposes.

Land Use

Land uses under this alternative would be almost identical to the proposed project with the exception of Village Three North and Portion of Village Four. Instead of placing residential land uses within ~~the~~ 1,000 ~~-foot~~ feet ~~nuisance easement area~~of the active portion of the Otay Landfill, which the proposed project also doesn't do through compliance with MM LU-4, this alternative would only designate industrial land uses, mixed-use and commercial land uses (non-residential), and open space, within ~~the~~ 1,000~~-foot~~ feet ~~landfill nuisance easement area~~of the active portion of the landfill. The Nuisance Easement Alternative would have the same surrounding land uses and would not physically divide an established community.

Similar to the proposed project, the Nuisance Easement Alternative would not conflict with the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP. This is because this alternative would develop the same area as the proposed project, would include a Preserve Edge Plan, and would not include any land uses that conflict with these resource plans. The Nuisance Easement Alternative would also not conflict with an adopted plan, policy, or regulation, but would require an amendment to the Chula Vista General Plan and Otay Ranch GDP, similar to the proposed project. Additionally, similar to the proposed project, if the City of San Diego waterlines which traverse Village Eight East and Village Ten are not removed prior to the beginning of construction in these villages, a significant impact would occur. Therefore, mitigation measures (MM LU-1 through MM LU-3) would still apply to this alternative. An amendment to the Otay Ranch GDP would be required because Village Three would include residential units and the current Otay Ranch GDP does not designate any residential uses in Village Three. ~~However,~~

~~because t~~Overall, The Nuisance Easement Alternative would remove all residential land uses within ~~the nuisance easement area~~1,000 feet of the active portion of the landfill; however, the proposed project would also not place residential land uses within 1,000 feet of the active portion of the landfill per MM LU-4. Therefore, impacts to land use compatibility would be ~~reduced~~ the same as compared to the proposed project.

Landforms and Aesthetics

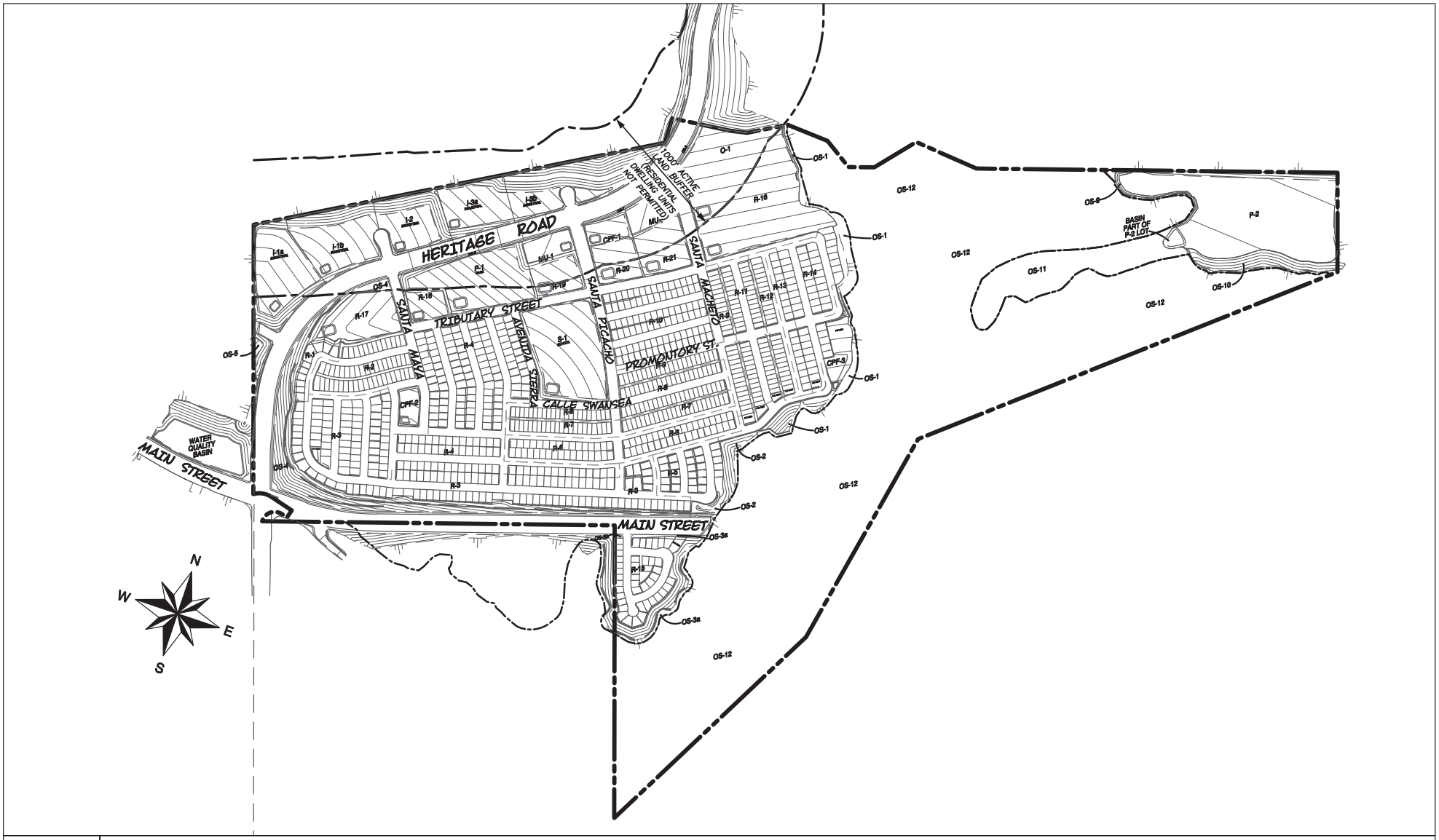
As discussed in Section 5.2 Landforms and Aesthetics, the proposed project would change existing broad open space to a high-density urban environment. The change in land uses would have a significant impact on the visual character of the site even after implementation of mitigation measures (MM AES-1 through MM AES-4). As discussed in the Otay Ranch GDP Program EIR, the conversion of undeveloped land to urban uses is a significant and unmitigable impact of development.

The Nuisance Easement Alternative would only change the land use designations in Village Three North compared to the proposed project. The Nuisance Easement Alternative would have the same impacts to landforms and aesthetics as the proposed project and the same mitigation measures would apply. Therefore, impacts as a result of the Nuisance Easement Alternative would not be reduced or avoided compared to the proposed project.

Transportation and Circulation

As discussed in Section 5.3 Transportation and Circulation, impacts to transportation and circulation as a result of the proposed project would be significant and unavoidable. As shown in Table 5.3-15 by Year 2030 the proposed project would be fully developed, and would generate a total of 77,663 daily trips, including 6,819 AM peak hour trips and 7,816 PM peak hour trips. By Year 2030 Village Three North would generate 24,720 ADT, Portion of Village Four would generate 890 ADT, Village Eight East would generate 35,776 ADT, and Village Ten would generate 16,277 ADT. Buildout of Village Eight East would account for a majority of total ADT generated by the proposed project (46%). Mitigation measures to reduce identified significant impacts would be provided, however, impacts would not be reduced to a level below significance (MM TCA-1 through MM TCA-17).

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. 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.



SOURCE: OTAY RANCH NEW HOMES 2014

FIGURE 10-3
Village Three North Nuisance Easement Alternative

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As shown in Table 10-6, the Nuisance Easement Alternative would result in a decrease of 38 ADTs in Village Three North compared to the proposed project at buildout (see Table 10-6). This would not be a substantial reduction compared to the proposed project; therefore potential impacts related to traffic and circulation would not be reduced and the same mitigation measures would apply to this alternative.

Overall impacts in Village Three North as a result of the Nuisance Easement Alternative would be slightly reduced compared to the proposed project due to the reduction of trips by 0.2%. However, this reduction in trips would not be substantial enough to lessen the impacts compared to the proposed project.

Table 10-6
Nuisance Easement Alternative Average Daily Trip Calculations

Land Use	Nuisance Easement Alternative		
	Units	*Trip Rate*	*Daily Trips*
Village Three North			
Single Family	950 DU	10/DU	9,500
Multi-Family	647 DU	8/DU	5,176
Mixed-Use Commercial	40 KSF	110/KSF	4,400
Office	7.0 AC	300/AC	2,100
Light Industrial	28.6 AC	90/AC	2,574
CPF	4.1 AC	30/AC	123
Elementary School	8.6 AC	90/AC	774
Neighborhood Park	7.0 AC	5/AC	35
		Village Three North Total	24,682

Source: SANDAG 2002, Not So Brief Guide of Vehicular Traffic Generation Rate; Chen Ryan Associates 2014

Similar to the proposed project, the Nuisance Easement Alternative would be consistent with traffic and transportation goals and policies outlined in the General Plan and Otay Ranch GDP. The same circulation improvements and construction phasing proposed as part of the proposed project would also be implemented under the Nuisance Easement Alternative. Therefore, the same mitigation measures would also apply to this alternative. The Nuisance Easement 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. Therefore, impacts associated with transportation and traffic as a result of the Nuisance Easement Alternative would not be ~~reduced or~~ avoided compared to the proposed project. However, impacts would be slightly reduced due to a 0.2% reduction in vehicle trips.

Air Quality

As discussed in Section 5.4 Air Quality, criteria pollutant emissions for VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ are anticipated to be above the City of Chula Vista's thresholds as a result 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 (MM AQ-1 through MM AQ-3). The Nuisance Easement Alternative would result in the same amount of development as the proposed project. Air quality emissions from construction and trip generation would be the same as the proposed project. However, the Nuisance Easement Alternative would reduce the number of sensitive receptors that could potentially be exposed to odor from the landfill. This alternative would still exceed the RAQS growth assumption. Additionally, the Nuisance Easement Alternative would still result in significant and unavoidable criteria pollutant emissions (including during construction), and would thus be inconsistent with the RAQS and SIP.

According to the Air Quality and GHG Technical Memorandum (Dudek 2014; refer to Appendix P), due to the fact that the Nuisance Easement Alternative land uses in Village Three are nearly identical to the land uses proposed as part of the proposed project, no additional analysis is required to address consistency with air quality plans, CO hotspots, or operational emissions (criteria pollutants and GHGs).

Construction of Village Three North under the Nuisance Easement Alternative scenario would occur over the same time period as analyzed in the AQ/GHG Technical Reports prepared for the proposed project, and would utilize the same construction equipment in the same vicinity. Therefore, the analysis of construction-related air quality impacts is sufficient and no additional analysis is required.

Odor impacts identified in the AQ/GHG Technical Report prepared for the proposed project were determined to be less than significant. As documented in the Village Three North Nuisance Study (SCS 2014), placing all residential uses outside of the 1,000-foot active portion of the landfill ~~nuisance easement area~~ would not necessarily reduce the potential number of odor complaints compared to the proposed project because it is not until 1,500-feet from the landfill that odors are expected to be reduced. However, fewer sensitive receptors would be exposed to stronger odor levels than the proposed project. Nonetheless, with implementation of MM LU-4, impacts as a result of this alternative would be the same compared to the proposed project.

Direct and cumulative impacts would remain significant and unavoidable, similar to the project. Less than significant impacts related to consistency with General Plan and Otay Ranch GDP air quality policies would be similar to the project under the Nuisance Easement

Alternative. The Nuisance Easement Alternative would not reduce impacts related to air quality compared to the proposed project. Overall, air quality impacts would be the same as the proposed project; however, as stated above under the discussion for traffic, this alternative would reduce the amount of vehicle trips by 0.2% compared to the proposed project, therefore, air quality impacts would be slightly reduced. ~~by removing residential land uses within the nuisance easement area, fewer sensitive receptors would be exposed to odors under the Nuisance Easement Alternative compared to the proposed project.~~

Noise

As discussed in Section 5.5 Noise, the proposed project would result in less than significant impacts with mitigation measures incorporated (see MM NOI-1 through MM NOI-9). Noise from construction equipment would be considered strongly perceptible to mildly unpleasant; however, construction of the proposed project would be temporary and mitigation measures would reduce potential impacts. As indicated in the Noise Assessment Technical Memorandum (Dudek 2014; refer to Appendix P), the Nuisance Easement Alternative would result in 10 fewer trips in Village Three North than the proposed project, therefore, since the land uses in the proposed project represent a worst case scenario it can be assumed that the Nuisance Easement Alternative would not be associated with any additional impacts.

Commercial-, industrial-, park-, and school-related land uses proposed under this alternative would result in similar noise levels to those land uses analyzed in the Noise Assessment Technical Report prepared for the proposed project; therefore, the corresponding analysis and recommended mitigation measures (MM NOI-4 through MM NOI-7) outlined in Section 5.5 of this EIR would apply to the Nuisance Easement Alternative. Impacts associated with the MSCP Preserve would remain unchanged, as the portion of Village Three North adjacent to the Preserve is not altered under this alternative scenario. Furthermore, impacts associated with offsite improvements would remain unchanged. Sensitive receptors would still be in the same proximity to existing noise-generating land uses (Otay Valley Quarry and Brown Field). Lastly, construction of Village Three North under the alternative scenario would occur over the same time period as analyzed in the Noise Assessment Technical report prepared for the proposed project, and would utilize the same construction equipment in the same vicinity. Therefore, the analysis of construction-related noise impacts would be the same under this alternative compared to the proposed project.

Outdoor usable areas would still potentially be exposed to excessive noise. The mitigation measures required for the proposed project would also be required for the Nuisance Easement Alternative for direct and cumulative impacts. Less than significant impacts related to aircraft noise and consistency with General Plan and Otay Ranch GDP noise policies would be similar to the proposed project. Less than significant impacts related to groundborne vibration and

potentially significant temporary increases in ambient noise would be similar to the proposed project under the Nuisance Easement Alternative. Therefore, impacts associated with operational noise would not be reduced or avoided compared to the proposed project.

Cultural Resources

As discussed in Section 5.6 Cultural Resources, the proposed project would have less than significant impacts to historical resources. However, impacts to unknown subsurface archaeological resources as a result of grading and excavation could be significant if encountered. Mitigation measures would reduce the proposed projects impacts to cultural resources to less than significant (MM CUL-1 through MM CUL-6). The same amount of grading and excavation would occur under the Nuisance Easement Alternative. Impacts to cultural resources would not be reduced or avoided compared to the proposed project. Similar mitigation measures as required by the proposed project would be required for this alternative.

Paleontological Resources

As discussed in Section 5.7 Paleontological Resources, the proposed project would have potentially significant impacts to paleontological resources. Impacts to unknown subsurface paleontological resources as a result of grading and excavation could be significant if encountered. Mitigation measures would reduce the proposed projects impacts to paleontological resources to a less than significant level (MM PAL-1 through MM PAL-4). The same amount of grading and excavation would occur under the Nuisance Easement Alternative; therefore, impacts to paleontological resources would not be reduced or avoided compared to the proposed project. Similar mitigation measures as required by the proposed project would be required for this alternative.

Biological Resources

As discussed in Section 5.8, Biological Resources, implementation of the proposed project would result in significant direct and indirect impacts to “covered” sensitive plant species, result in the direct loss of habitat for all of the special-status animals, result in indirect impacts to special-status wildlife species, result in permanent impacts to sensitive vegetation communities, and result in impacts to jurisdictional waters and wetlands. With implementation of MMs BIO-1 through BIO-18 impacts to sensitive species, riparian habitat and other sensitive natural communities, federally protected wetlands, and wildlife corridors would be reduced to a less than significant level.

The Nuisance Easement Alternative would have the same development footprint as the proposed project; therefore, it would result in the same potentially significant but mitigable impacts related to special status plants and wildlife species, riparian habitat and other sensitive natural

communities, federally protected wetlands, and would consistency with the MSCP and RMP similar to the proposed project. Similar mitigation measures would also be required as a result of this alternative. Based on the findings outlined in the Biological Resources Technical Memorandum (Dudek 2014; refer to Appendix P), impacts as a result of the Nuisance Easement Alternative would not reduce or avoid impacts found in the Biological Resources Technical Report prepared for the proposed project.

Agricultural Resources

As discussed in Section 5.9 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 approximately 476 acres 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. Under the Nuisance Easement Alternative, the same amount of Farmland of Local Importance would be converted. This alternative would also not result in any conflict with agricultural policies. Impacts to agricultural resources would not be reduced or avoided as a result of the Nuisance Easement Alternative.

Water Quality and Hydrology

As discussed in Section 5.10 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 5.10 would further reduce potential impacts associated with water quality and hydrology. Mitigation measures would be required to reduce potentially significant impacts to water quality to a less than significant level (MM HYD-1 through MM HYD-7). The southern portions of Village Three and Portion of Village Four are within the dam inundation zone for the Savage Dam (Hunsaker 2014). Project components within the dam inundation zone include a piece of Main Street in Village Three North and the southern corner of open space provided by a Portion of Village Four. None of the areas within the Savage Dam inundation zone include residential, commercial, or industrial development and impacts were determined to be less than significant.

According to the Hydrology and Water Quality Technical Memorandums (Hunsaker 2014; refer to Appendix P), the following items would be the same for the Nuisance Easement Alternative as the proposed project:

- Drainage facilities within Village Three will be designed in accordance with the requirements of the Chula Vista Subdivision Manual, the San Diego County Hydrology Manual and the requirements of the San Diego Regional Water Quality Control Board.

- Peak discharge flows from the project will occur approximately 11.5 minutes after the storm event begins. The peak discharge flow from the Otay River Basin, at the Village Three Outlet, will occur more than 20 hours after the storm event begins. Due to this difference in time, the projects direct, indirect and cumulative impacts are not significant.
- Development of the project site will not further degrade potential beneficial uses of downstream water bodies as designated by the Regional Water Quality Control Board, including water bodies listed on the Clean Water Section 303d list.
- On-site and off-site drainage easements shall be provided to the satisfaction of the Director of Public Works.

The Nuisance Easement Alternative would result in the same amount of development area as the proposed project. The Nuisance Easement Alternative would result in similar impacts related to water quality standards, erosion and siltation, surface runoff, drainage capacity, and water quality degradation compared to the proposed project and similar mitigation measures would be required. According to the Hydrology and Water Quality Technical Memorandums (Hunsaker 2014; refer to Appendix P), runoff generated by any interim mass graded pad (such as the industrial sites) will drain to a desilt basin to be sized and located for each respective pad. For mass graded pads, the only potential pollutant of concern generated by these pads is sediment. Desilt basins will target this sole pollutant prior to discharging flows to the receiving storm drain system. Applicable erosion control measures for permanent stabilization will comply with CASQA Handbook measures and as indicated by each area's Storm Water Pollution Prevention Plan.

Table 10-7 compares the effects of pre- and post-developed conditions at the receiving Otay River for the proposed project and the Nuisance Easement Alternative. Development of Village Three North and a Portion of Village Four under the proposed project would result in the net increase of runoff discharged to the adjacent Otay River by approximately 234 cfs. Development of Village Three North and a Portion of Village Four under the Nuisance Easement Alternative would result in the net increase of runoff discharged to the adjacent Otay River by approximately 244 cfs. An increase in 10cfs compared to the proposed project is not a substantial increase and would not reduce impacts associated with increased runoff and potential water quality impacts. Therefore, the same mitigation measures also apply to this alternative.

Table 10-7
Village Three North Nuisance Easement Alternative vs. Proposed Project
Summary of Pre vs. Post-Developed Condition Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
Proposed Project		
Pre-Developed	323.5	627.8
Post-Developed	357.5	861.9

Table 10-7 (Continued)
Village Three North Nuisance Easement Alternative vs. Proposed Project
Summary of Pre vs. Post-Developed Condition Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
Difference	**+34.1**	**+234.1**
Nuisance Easement Alternative		
Pre-Developed	323.5	627.8
Post-Developed	357.6	871.7
Difference	**34.1***	**243.9**

cfs = cubic feet per second
*= Area diverted along eastern project boundary and at bioretention basin.

Similar to the proposed project, runoff from the developed site will drain towards the southwest corner of the development. Storm drain pipes and flows from Heritage Road, Main Street, and the remaining developed areas within Village Three North (excluding the Community Park in Village Four) will all confluence their peak flows at the intersection of Heritage Road and Main Street. The storm drain system and layout will 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. Similar to the proposed project the combination of proposed construction and permanent BMP's will reduce, to the maximum extent practicable, the expected project pollutants and will not adversely impact the beneficial uses of the receiving waters. Therefore, impacts to hydrology and water quality would not be reduced or avoided compared to the proposed project.

Geology and Soils

As discussed in Section 5.11 Geology and Soils, the proposed project would be exposed to strong seismic ground-shaking, erosion and loss of top soil, liquefaction, and expansive soils. Under the proposed project, potential impacts would be reduced to less than significant through the geotechnical recommendations and compliance with applicable regulations and mitigation measures (MM GEO-1 and MM GEO-2). Due to the fact that land uses would be nearly identical in Village Three under the Nuisance Easement Alternative as the proposed project and the development area is identical to the proposed project, the Geotechnical Investigation prepared for the proposed project would be adequate analysis for the Nuisance Easement Alternative and no additional analysis would be required.

Similar to the proposed project, the Nuisance Easement Alternative would be consistent with General Plan and Otay Ranch GDP geotechnical policies and would not require any septic tanks or alternative wastewater disposal systems. Development under the Nuisance Easement Alternative would have similar impacts and mitigation measures related to geology and soils;

therefore, the Nuisance Easement Alternative's geotechnical impacts would not be reduced or avoided compared to the proposed project.

Public Services and Utilities

As described in Section 5.12 Public Services, the proposed project would result in an increased demand for public services including police, fire, schools, parks, and libraries. Impacts would be mitigated through the construction of new or expanded facilities and entitlements, and by the required payment a Public Facilities DIF (MM PUB-1 through MM PUB-15).

Fire and Emergency Medical Services, Police Services, Schools, and Libraries.

The proposed project would result in an increase in demand for fire and emergency medical services resulting from development of the land with the proposed urban uses, which would require fire protection and emergency medical services. Village Three North and Portion of Village Four would be serviced by existing Fire Station 7, located 2.9 miles from the furthest point in the project site along with existing Fire Station 3, located 3.6 miles from the project site. If constructed as anticipated in the approved Chula Vista FFMP, the proposed Village Eight West Fire Station located 3.5 miles (to the most remote portion of the village) from the project area would also respond to emergency calls for service. Existing Fire Station 4 (3.7 miles from the project) and the approved EUC Fire Station (4.9 miles from the project) would possibly also respond. Payment of PFDIF fees, implementation of the CPTED strategies and design objectives, and compliance with existing city policies and mechanisms would ensure that the growth management ordinance threshold standard is achieved.

Although additional law enforcement staff and facilities are recommended to adequately support the proposed project at buildout, the existing police facilities have the capacity to accommodate the anticipated demand for additional law enforcement services generated by the proposed project. Increased demand for police protection resulting from development of the proposed project would be minor and is not expected to substantially diminish existing service levels of police response times or necessitate the construction of any new police facilities. Impacts as a result of the Nuisance Easement Alternative would not be reduced or avoided compared to the proposed project.

In recognition of the impact on school facilities created by new development, the District and the development community previously have entered into various mitigation agreements in order to ensure the timely construction of school facilities to house students from new residential development ("Mitigated Development"). The primary financing mechanism authorized in these mitigation agreements is the formation of a community facilities district ("CFD") pursuant to the Mello-Roos Community Facilities District Act of 1982 (CVESD). The Nuisance Easement

Alternative would have the same impact on school facilities as the proposed project and the same mitigation measures would be required.

Implementation of the proposed project would require payment of the City's PFDIF for fire and emergency medical services, police services, libraries, and recreation (MM PUB-1, MM PUB-4, MM PUB-9 and MM PUB-15). The proposed project's PFFPs analyze the demand for library space in the City and demonstrate how the proposed project complies with the growth management ordinance's threshold standard for library facilities. This would also apply for the Nuisance Easement Alternative. Similar to the project, the Nuisance Easement Alternative would be consistent with all General Plan and Otay Ranch GDP policies related to fire and emergency medical, police, school, and library services with implementation of the mitigation measures identified for the project. Impacts on public services would not be reduced or avoided compared to the proposed project.

Parks, Recreation, Open Space, and Trails

Based on the CVMC method for calculating parkland requirements, which is more conservative than the Otay Ranch GDP and Quimby Act method, the Nuisance Easement Alternative would require slightly less parkland to serve the development than the proposed project. Similar to the project, the Nuisance Easement Alternative would have potentially significant impacts related to the City's parks and recreations standard if parkland would not be provided concurrently with demand. The mitigation measures identified for the proposed project would be required to ensure adequate park facilities would be provided (MM PUB-8 through MM PUB-13). This alternative would not conflict with the parkland designations and policies of the General Plan, Otay Ranch GDP, or Greenbelt Master Plan. ~~Since this alternative would result in slightly less demand for parkland~~However, impacts related to parks, park policies, recreation, open space, and trails would be ~~slightly reduced~~the same compared to the proposed project.

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 indicates that OWD would 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 concludes 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. Since the Nuisance Easement Alternative would have nearly identical land uses, the WSAV prepared for the proposed project would be adequate for the Nuisance Easement Alternative and no further analysis is required.

According to the Water Resources Technical Memorandum (Dexter Wilson Engineering 2014; refer to Appendix P), implementation of the Nuisance Easement Alternative would result in a slight increase in potable water use, which is offset by an increase in potential recycled water use. The Nuisance Easement Alternative would result in an estimated water demand increase of 186 gpd, or 0.03%, compared to the projections for Village Three North under the proposed project. The increase in potable water demand is due to the increase in neighborhood park acreage, commercial land uses, and multi-family residential acreage. A 0.03% increase in potable water demand is offset by an increase in potential recycled water use. Thus, net potable water use would be approximately the same as the proposed project under this alternative.

Recycled Water

Projected recycled water demand as a result of the Nuisance Easement Alternative is estimated to increase by 1,477 gpd, or 0.9%. The increase in recycled water demand is due to the increase in park acreage commercial land uses, and multi-family residential acreage. A 0.8% increase in recycled water demand is offset by an increase in potential potable water demand. Thus, net recycled water use would be approximately the same as the proposed project under this alternative.

Wastewater

As discussed in Section 5.13, Public Utilities, the city would need to acquire an additional capacity above current capacity rights to serve buildout of the proposed project. The proposed project's wastewater generation volume combine 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. The City of Chula Vista has capacity rights of 20.9 mgd of flow in the Metro sewer system. Existing average flows in the City are approximately 16.2 mgd. The estimated year 2030 flows based on the 2005 General Plan were 23.3 mgd. The projected year 2030 average flow for the City is 26.2 mgd. Thus, the City of Chula Vista would need to acquire capacity rights for an additional 5.4 mgd to accommodate year 2030 flows. The Salt Creek Interceptor Technical Sewer Study for South Otay Ranch addresses the City's current projections regarding the need to acquire additional treatment capacity. According to the Water Resources Technical Memorandum (Dexter Wilson Engineering 2014; refer to Appendix P), implementation of the Nuisance Easement Alternative would result in an increase of 4,145 gpd, or 0.8%, compared to the projections for Village Three North under the proposed project. The increase in wastewater generation is due to the increase in multi-family units and increase in commercial land uses. Therefore, compared to the proposed project impacts associated with the generation of wastewater would be slightly increased compared to the proposed project.

Energy

Implementation of proposed project has the potential to result in impacts due to increased consumption of electricity and natural gas above that analyzed in the 2005 GPU EIR, which identified a significant and unavoidable impact related to energy demand. No guarantee can be made that long-term energy resources would be available as needed to support the future development of the site; therefore, impacts associated with energy consumption would be considered potentially significant. Since the implementation of the Nuisance Easement Alternative would result in fewer single family units, and a corresponding increase in multi-family units, and more commercial development, there would be an increased demand for energy. Therefore, compared to the proposed project, impacts would be increased.

Climate Change

As discussed in Section 5.14 Climate Change, the proposed project land use intensity and associated increase in vehicle trips has not been anticipated in local air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the RAQS. Furthermore, as discussed in Section 5.4 Air Quality, the emissions of VOCs and NOx (precursors of O3), as well as those of PM10 and PM2.5, would exceed operational significance thresholds. Total construction and operational emissions of GHGs would be the same under this alternative.

According to the Air Quality and GHG Technical Memorandum (Dudek 2014; refer to Appendix P), due to the fact that the Nuisance Easement Alternative land uses in Village Three are nearly identical to the land uses proposed as part of the proposed project, no additional analysis is required to address consistency with air quality plans, CO hotspots, or operational emissions (criteria pollutants and GHGs). Construction of Village Three North under the Nuisance Easement Alternative would occur over the same time period as analyzed in the AQ/GHG Technical Reports prepared for the proposed project, and would utilize the same construction equipment in the same vicinity. Therefore, the analysis of construction-related air quality impacts is adequate and no additional analysis is required.

The significant and unavoidable impact related to exacerbation of air quality problems as a result of climate change would be the same under this alternative because operational emissions of ozone precursors would not be reduced. Direct and cumulative impacts related to the potential effects of climate change would still be significant and unavoidable, similar to the project. Feasible mitigation is not available to make reductions in ozone precursor emissions sufficient to render the impact less than significant. Overall, the Nuisance Easement Alternative's impacts related to climate change would not be reduced or avoided compared to the proposed project.

Hazards and Risk of Upset

As discussed in Section 5.15 Hazards and Risk of Upset, the proposed project would have less than significant impacts with mitigation (MM HAZ-1 through MM-HAZ-5). A Health Risk Assessment was prepared for Village Three North to determine potential hazards resulting from proximity to the landfill, which found carcinogenic (cancerous) risks to be below the threshold for each respective receptor (SCS 2014).

The Nuisance Easement Alternative would have similar impacts related to transport, use, and disposal of hazardous materials, as well as impacts related to accidental release of hazardous materials, and potential hazards near school sites. The major difference between the proposed project and the Nuisance Easement Alternative is that the proposed project would designate more residential land uses within the nuisance easement area and the Alternative would ~~not~~designate less residential land uses within the nuisance easement. Due to the fact that ~~no~~ fewer residential units would be built within the nuisance easement area under the Nuisance Easement Alternative, potential impacts would be reduced under this alternative. Although potential risks were found to be below the threshold for each respective receptor in the HRA prepared for the proposed project, this alternative would reduce the amount of sensitive receptors in proximity to the landfill. Therefore, the Nuisance Easement Alternative would have reduced impacts compared to the proposed project.

Housing and Population

As discussed in Section 5.16 Housing and Population, the proposed project would include development of 6,897 residential units and is expected to generate a buildout population of 22,346. 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 University Villages project would not exceed anticipated population growth. The General Plan and Otay Ranch GDP amendments will ensure the consistency of the proposed project with existing plans. 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. 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 Nuisance Easement Alternative would result in the same amount of residential units and population at buildout; however, there would be a conversion of 52 single family units to multifamily units Therefore, the Nuisance Easement Alternative would still exceed the maximum residential buildout anticipated in the Otay Ranch GDP, requiring approval of amendments to the Chula Vista General Plan and GDP. The Nuisance Easement Alternative would not displace any

housing or people, or conflict with any General Plan and Otay Ranch GDP housing or population policies. Therefore, impacts would not be reduced or avoided for the Nuisance Easement Alternative compared to the proposed project.

Mineral Resources

As discussed in Section 5.17 Mineral Resources, the proposed project is within the MRZ-2 and MRZ-3 zone. The MRZ-2 classification for mineral resources represents areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence. The MRZ-3 classification for mineral resources represents an area that has the potential for mineral deposits, but no resources have been identified. Therefore, 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 Nuisance Easement Alternative, similar development as the proposed project would occur. The Nuisance Easement Alternative would be consistent with objectives and policies regarding mineral resources and impacts would be similar to the proposed project. Impacts to mineral resources would be the same as the proposed project.

10.4.3.1 Relationship to Project Objective

The Nuisance Easement Alternative would meet all the project objectives. Due to the Amended and Restated Landfill Expansion Agreement (Agreement) and the inclusion of MM LU-4, when the Draft EIR was released for public review both the proposed project (with implementation of mitigation measure MM LU-4 and compliance with the Agreement), and the Nuisance Easement Alternative, restricted development within 1,000 feet of the active portion of the Otay Landfill. The proposed project accomplished this through inclusion of MM LU-4; and the Nuisance Easement Alternative through a land use plan that did not include residential uses within the 1,000-foot setback. The result was two very similar development plans and land uses and, therefore, similar associated impacts.

Various technical memoranda were prepared at the project level (traffic, air quality, noise, biology, drainage and water quality, water and sewer) to compare impacts. These memoranda found that impacts are virtually the same. The slight reduction in trips and associated reduced operational air quality emissions, and reduction of units within the nuisance easement, this alternative does not avoid or substantially minimize any impacts of the proposed project identified as significant and unavoidable; nor does the slight increase in potable and recycled water usage, or increase in sewer generation, result in new or greater impacts compared to the proposed project.

Based on the City’s assessment of the potential significant impacts of both the proposed project and the Nuisance Easement Alternative, the City finds that the Nuisance Easement Alternative

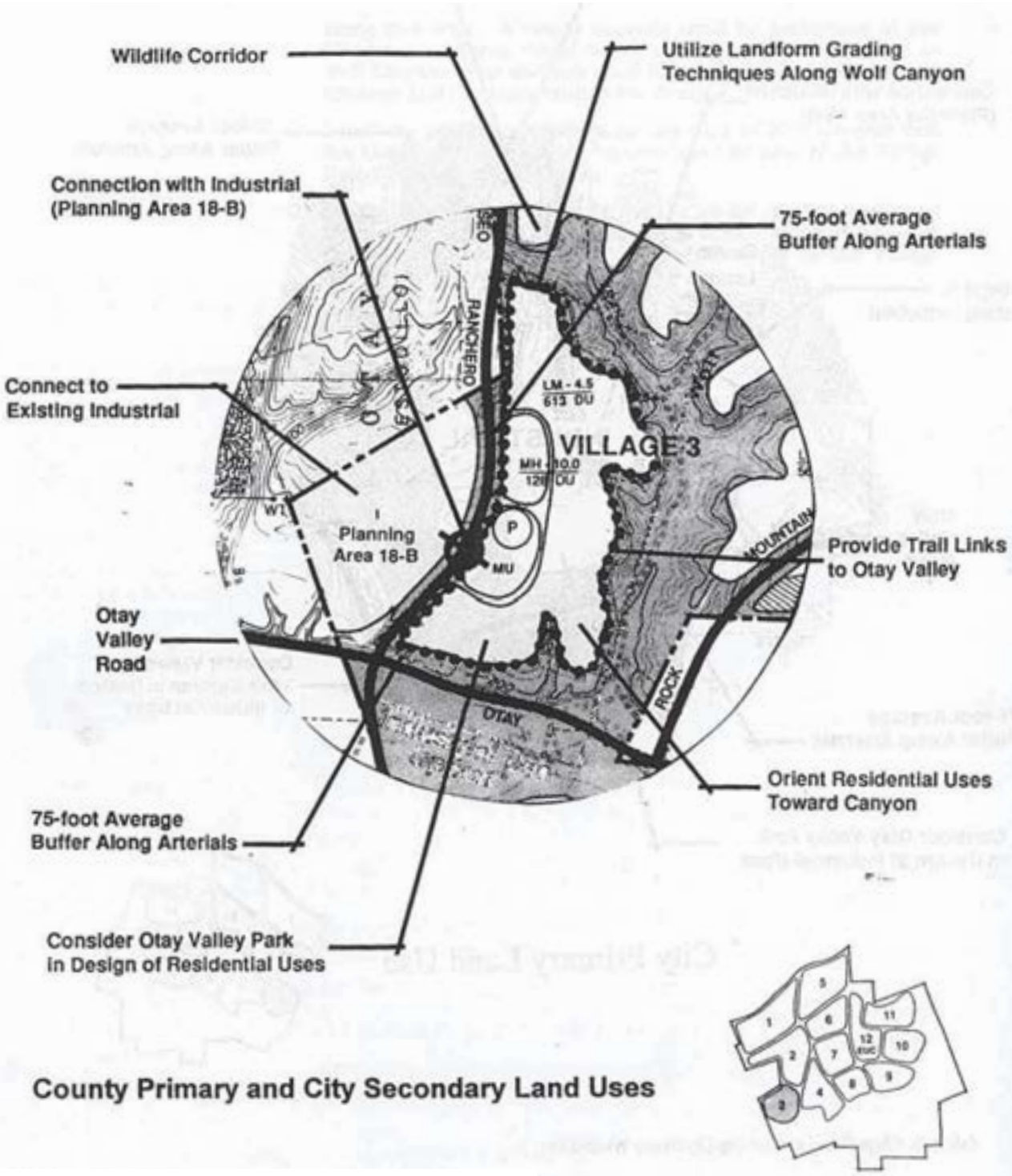
remains the environmentally superior alternative among the other alternatives identified in the Draft EIR.

~~The Nuisance Easement Alternative would meet all the project objectives listed above in Section 10.2 Project Objectives. The Nuisance Easement Alternative would result in similar land use and development patterns as the proposed project. . However, with the adoption and incorporation of all project mitigation measures identified and discussed in Table 1-3 above and throughout this Draft EIR, this alternative is environmentally superior to the proposed project because it would not result in the development of residential units within the nuisance easement area of the Otay Landfill. Therefore, fewer sensitive receptors would be exposed to landfill odors.~~

10.4.4 Otay SRP Alternative

The Otay Subregional Plan (SRP) Alternative depicts the County of San Diego's primary land uses for Villages Three North, the Portion of Four, Eight East and Ten (Figure 10-4a through 10-4c). The Otay SRP Alternative is consistent with the land uses and village boundaries that currently exist in the Otay Ranch GDP with the exception of Village Three. The Otay Ranch GDP designates industrial land uses in Village Three and does not designate any residential land uses. Conversely, the Otay SRP designates industrial land uses in Village Three North (as part of Planning Area 18-B) and also includes residential land uses (Figure 10-4a). The land uses designated, as well as the number of dwelling units allocated, in a Portion of Village Four, Village Eight East, and Village Ten are the same under the Otay SRP as they are in the Otay Ranch GDP (refer to Tables 10-1 and 10-8 and Figure 4-51).

The General Plan designates industrial land uses within Village Three and does not designate any residential land uses, similar to the Otay Ranch GDP. Under the County Otay SRP, Village Three is allocated 613 single-family dwelling units and 128 multi-family dwelling units, for a total of 741 dwelling units. Using a household coefficient of 3.24 persons per household, this alternative would result in approximately 2,401 people in Village Three. In comparison to the proposed project, the Otay SRP Alternative would result in a decrease of 4,586 dwelling units, which would result in the reduction of the population by 14,858 people. The Otay SRP Alternative would also implement Planning Area 18-B (which was incorporated as part of Village Three in the Otay Ranch GDP) which calls for 69.7 acres of Industrial uses west of Heritage Road.



SOURCE: OTAY RANCH NEW HOMES 2013

FIGURE 10-4a

Otay Ranch SRP Alternative – Village Three North

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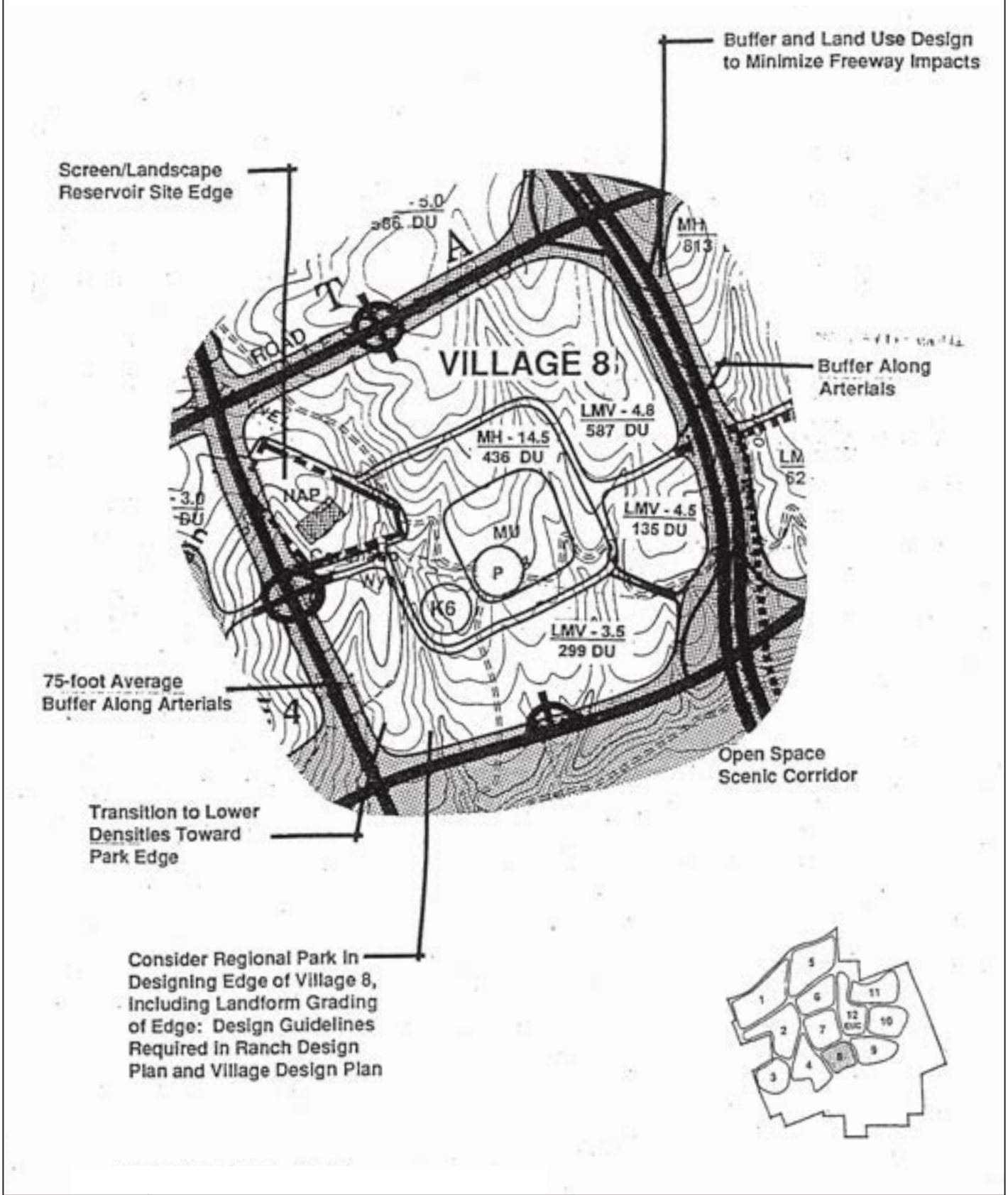

SOURCE: OTAY RANCH NEW HOMES 2013

FIGURE 10-4b

Otay Ranch SRP Alternative – Village East East

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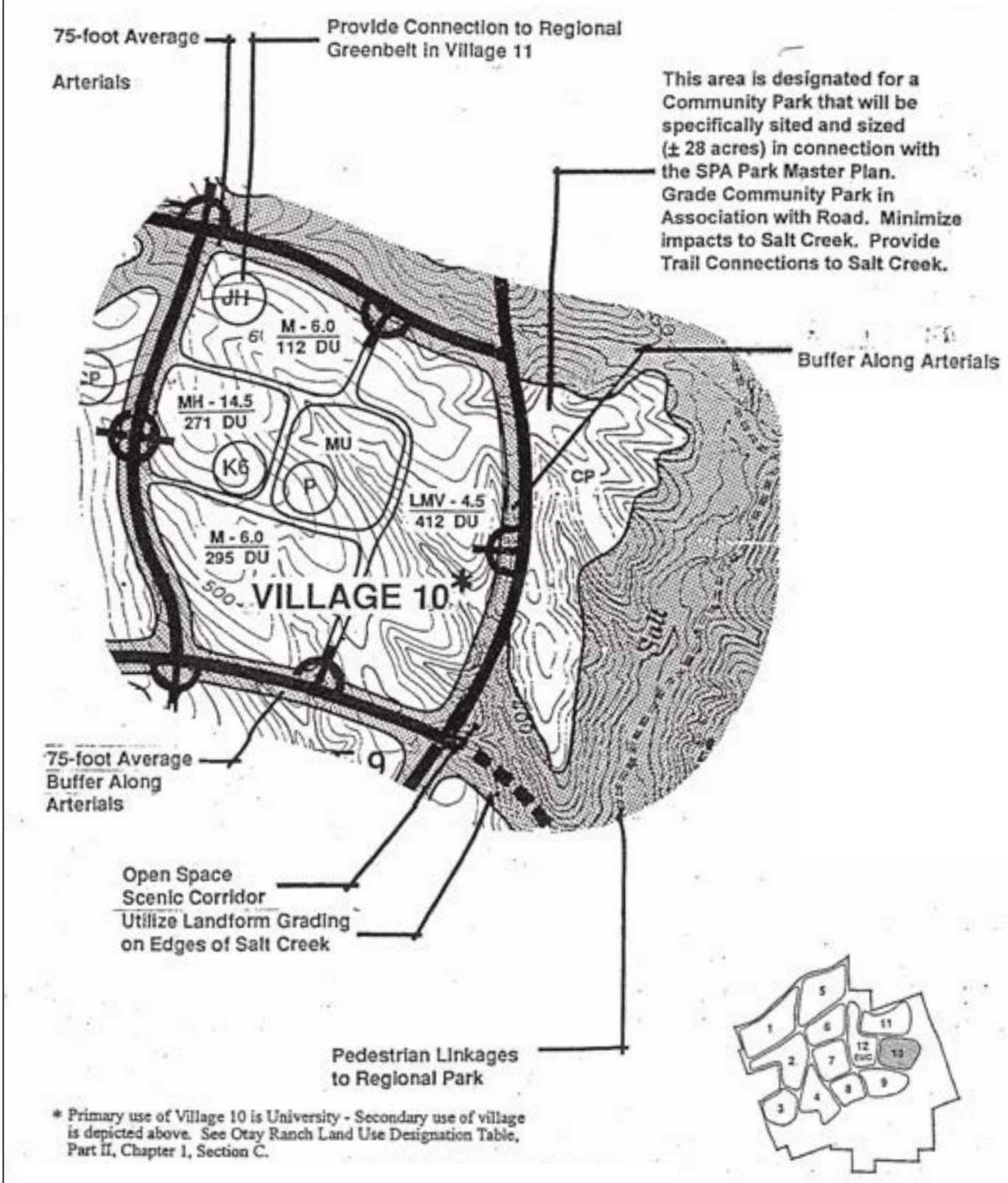

SOURCE: OTAY RANCH NEW HOMES 2013

FIGURE 10-4c

Otay Ranch SRP Alternative – Village Ten

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Table 10-8 shows the difference between the Otay SRP Alternative and the proposed project. The table provides residential buildout and population estimates for Village Three North, Village Eight East, and Village Ten.

Table 10-8
Estimated Residential Buildout Otay SRP Alternative vs. Proposed

Village	SRP Alternative Planned Units	Approximate SRP Alternative Population	Total Proposed Units	Approximate Proposed Population	Δ Total Units	Δ Approximate Population
Village Three	741	2,401	1,597	5,174	-856	-2,773
Village Eight East	928	3,007	3,560	11,534	-2,632	-8,527
Village Ten	642**	2,080	1,740	5,638	-1,098	-3,558
Total	**2,311**	**7,488**	**6,897**	**22,346**	**-4,586**	**-14,858**

* Population estimates per City of Chula Vista household coefficient of 3.24 persons per residential unit.
** 642 units allocated to Village Ten per the Otay SRP Secondary Land Use.

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. Compliance with MM LU-4 would ensure that there would be no conflict with an adopted plan, policy, or regulation. However, a significant impact would occur if the City of San Diego waterlines which traverse Village Eight East and Village Ten are not removed prior to the beginning of construction in these villages. Mitigation measures (MM LU-1 through MM LU-3) would reduce potential impacts to less than significant.

The Otay SRP Alternative would have the same surrounding land uses and would not physically divide an established community. Village Three North would develop as a residential village east of Heritage Road and an industrial/business park west of Heritage Road (Planning Area 18-B in the Otay SRP), which would be compatible with the existing and planned surrounding land uses including the Otay Landfill to the north, Business Park to the northeast, Industrial to the West and the Otay Valley Rock Quarry to the Southeast. The Otay SRP Alternative would result in less intensive and less dense land uses in Village Three North compared to the proposed project. As such, land use impacts related to Village Three North would be reduced compared to the proposed project. However, the reduction in planned dwelling units would not adequately accommodate for planned growth in East Chula Vista or SANDAGs growth forecast for the City. Furthermore, the alignment of Heritage Road through Village Three North as currently contemplated by the Otay SRP Alternative would not align with the planned Heritage Road Bridge or future Heritage Road/Main Street intersection. The alignment would be off-set from the intersection. The City has established the position of a

bridge over Otay River based on the existing Otay Ranch GDP, and it would not meet up with the proposed alignment of Heritage Road.

In Village Eight East, the existing Otay Ranch GDP densities are much lower than the planned intensity of the Village Eight West Town Center. In particular, the northwestern portion of Village Eight East would be developed as Low Medium (3.0-6.0 du/ac) immediately adjacent to the Village Eight West Town Center. This could result in incompatible land uses adjacent to each other because it would place low-density single family lots adjacent to a high intensity town center. This could result in impacts such as increased traffic through residential neighborhoods, limited parking, reduced air quality and increased noise. Because of the potential for inconsistencies between the low-dense existing GP and GDP and the planned density increases in Village Eight West, impacts to Village Eight East related to land use would be greater compared to the proposed project.

Village Ten could have a similar inconsistency with planned land uses as the Existing GP and GDP Alternative would locate low-medium single family adjacent to the planned Village Nine Town Center. In addition, the low-medium single family residential uses would be adjacent to the planned University site. Because of the potential for inconsistencies between the low-dense Existing GP and GDP Alternative and the planned density increases in Village Nine and the University, impacts to Village Ten related to land use would be greater compared to the proposed project. In addition, while the Otay Ranch GDP would allow for residential development of Village Ten under the secondary land use, the General Plan would have to be amended to allow for residential uses in Village Ten since the General Plan currently only allows for Public/Quasi Public uses. This is similar to the proposed project GPA to convert Public/Quasi Public uses to Residential land uses.

Similar to the project, the Otay SRP Alternative would not conflict with the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP. This is because the Otay SRP Alternative would propose similar development areas as the proposed project, would include a Preserve Edge Plan, and would not include any land uses that conflict with these resource plans.

The Otay SRP Alternative also would conflict with City's General Plan and Otay Ranch GDP. Amendments to the General Plan would be required in order to implement the land uses proposed in the Otay SRP, which are considered secondary land uses in the Otay Ranch GDP. The 1,000-foot nuisance easement area in Village Three North that was analyzed in Section 5 would still apply to this alternative. Similar to the proposed project, the Otay SRP Alternative would designate residential land uses within the nuisance easement area. Therefore, MM LU-4 would be required in order for this alternative to be compliant with policies identified in the General Plan. Impacts as a result of the Otay SRP Alternative would not be reduced or avoided compared to the proposed project because this Alternative would require Otay Ranch GDP and

General Plan amendments and would allow residential development within the Nuisance Easement Area.

Landforms and Aesthetics

As discussed in Section 5.2 Landform and 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. While the presence of heavy equipment and machinery would be visible from surrounding off-site areas, impacts to existing visual character resulting from construction activities are deemed less than significant due to the short-term nature of construction. As discussed in the Otay Ranch GDP Program EIR, the conversion of undeveloped land to urban uses is a significant and unmitigable impact of development.

While impacts were determined to be significant and unmitigable, the proposed project identified mitigation measures that would help minimize and protect existing visual character to the extent feasible (MM AES-1 through MM AES-4). Mitigation includes the preparation of a Landscape Master Plan that demonstrates compliance with the Otay Ranch GDP Policies pertaining to softening manufactured slopes through plant selection, placement, and density. The SPA plans specify development standards for the village areas and establish design guidelines for specific land use zones. A landscape plan is however required to provide specific direction on landscape treatments specific to each manufactured slope area and each individual proposal. In order to reduce impacts from lighting and glare mitigation measures requiring preparation of a lighting plan and photometric analysis for all parks and new structures is required.

The Otay SRP Alternative would represent a similar change in the undeveloped, open and semi-natural character of the on-site rolling hills to one of urbanized uses. The development area would be the same as the proposed project; however, the reduction in units in all of the villages may alter the views from certain locations looking to the villages, because there would be much less housing developed in the project area, and would specifically reduce the intensity and number of multiple-story multifamily buildings. There may also be an increase in the amount of open space with the reduced intensities which may improve certain views of the villages. A common design theme would be carried out within the village developments and would be expressed in landscaping and other community elements. Further, SPA Plan development guidelines would create a cohesive, unifying visual character that would be expressed in village core buildings. Village streets would be designed to promote pedestrian and bicycle travel and a system of community purpose facilities (i.e., community recreation) and private open space is included to serve future residents. Therefore, this alternative is viewed as similar to the proposed project and similar mitigation measures would be required. Both the proposed project and the Otay SRP Alternative would have significant and unmitigable impacts to landforms and

aesthetics. Due to the reduced number of multifamily buildings, impacts would be reduced, but not avoided compared to the proposed project.

Transportation and Circulation

As discussed in Section 5.3 Transportation and Circulation, impacts to transportation and circulation as a result of the proposed project would be significant and unavoidable. As shown in Table 5.3-15 by Year 2030 the proposed project would be fully developed, and would generate a total of 77,663 daily trips, including 6,819 AM peak hour trips and 7,816 PM peak hour trips. By Year 2030 Village Three North would generate 24,720 ADT, Portion of Village Four would generate 890 ADT, Village Eight East would generate 35,776 ADT, and Village Ten would generate 16,277 ADT. Buildout of Village Eight East would account for a majority of total ADT generated by the proposed project (46%). Mitigation measures to reduce identified significant impacts would be provided; however, impacts would not be reduced to a level below significance (MM TCA-1 through MM-TCA-17).

The Otay SRP Alternative would result in fewer trips, which would decrease impacts on traffic and circulation. The reduction of dwelling units corresponds to a reduction of ADT. Construction of new roadways or expansion of existing roadways would still occur as a result of the Otay SRP Alternative, and overall traffic impacts would be slightly reduced but not avoided.

Due to the decrease in the number of dwelling units, the Otay SRP Alternative would result in approximately 26,479 fewer ADT compared to the proposed project. Table 10-9 shows the anticipated ADT of the existing Otay SRP by Village compared to the proposed project. The alignment of Heritage Road through Village Three North as currently contemplated by the existing Otay Ranch GDP would not align with the planned Heritage Road Bridge or future Heritage Road/Main Street intersection. The alignment would be off-set from the intersection. The off-set intersection on a Major Arterial has the potential to result in additional impacts at that intersection.

Table 10-9
Estimated Average Daily Trips for Proposed Project v. Otay SRP Alternative

Land Use	Otay SRP Alternative		
	Units	*Trip Rate*	*Daily Trips*
Village Three North			
Single Family	613	10/DU	6,130
Multi-Family	128	8/DU	1,024
Mixed-Use Commercial	5.3	1,200/AC	6,360
Light Industrial	69.7	90/AC	6,273
CPF	3.2	30/AC	96
Neighborhood Park	4.7	5/AC	23.5
		Village Three North Total	*19,907*

Table 10-9 (Continued)
Estimated Average Daily Trips for Proposed Project v. Otay SRP Alternative

Land Use	Otay SRP Alternative		
	Units	*Trip Rate*	*Daily Trips*
Village Four			
Community Park	17.8 AC	50/AC	890
		Village Four Total	890
Village Eight East			
Single Family	635	10/DU	6,350
Multi-Family	293	8/DU	2,344
Mixed-Use Commercial	8.9 AC	1,200/AC	10,680
CPF	2.9	30/AC	87
Elementary School	10.0	90/AC	900
Neighborhood Park	5.9	5/AC	30
		Village Eight East Total	*20,391*
Village Ten			
Single Family	307	10/DU	3,070
Multi-Family	335	8/DU	2,680
Mixed-Use Commercial	3.1	1,200/AC	3,720
CPF	2.5	30/AC	75
Elementary School	4.6	90/AC	414
Neighborhood Park	7.3	5/AC	37
		Village Ten Total	*9,996*
		Total	**51,184**

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 to reduce impacts to the proposed project would also reduce temporary construction impacts under this alternative to a less than significant level.

Impacts related to compliance with General Plan and Otay Ranch GDP policies associated with emergency access, road safety, and transportation policies would be less than significant under this alternative, similar to the proposed project. Traffic and circulation impacts and mitigation measures identified in Section 5 would still apply to this alternative.

Overall, impacts to Traffic and Circulation for the Otay SRP Alternative would be reduced compared to the proposed project due to the reduction of trips by 34%.

Air Quality

As discussed in Section 5.4 Air Quality, criteria pollutant emissions for VOC, NO_x, CO, SO_x, PM10, and PM2.5 are anticipated to be above the City of Chula Vista's thresholds as a result 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 (MM AQ-1 through MM AQ-3). The Otay SRP Alternative would have generally the same development footprint as the proposed project; however, it would not include an MSCP Boundary Adjustment. Both the proposed project and the Otay SRP Alternative would have emissions associated with daily vehicle trips; however, the Otay SRP Alternative would generate fewer daily vehicle trips than the proposed project due to the reduction in population. The Otay SRP 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. Similar to the project, direct and cumulative construction emissions would remain significant and unavoidable under this alternative due to the amount of grading required and the same mitigation measures (MM AQ-1 through MM AQ-3) would still apply.

As previously discussed, the 1,000-foot nuisance easement area in Village Three that was analyzed in Section 5 would still apply to this alternative. Similar to the proposed project the Otay SRP Alternative would designate residential land uses within the nuisance easement area. However, impacts would be reduced under this alternative because fewer sensitive receptors would be located in the nuisance easement area.

The Otay SRP Alternative would not exceed the RAQS growth assumption for the University Villages. However, 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 Otay Ranch GDP air quality policies would be similar to the project under the Otay SRP Alternative. Overall, since the Otay SRP Alternative would result in fewer sensitive receptors located in the nuisance easement area, impacts would to air quality would be reduced compared to the proposed project.

Noise

As discussed in Section 5.5 Noise, the proposed project would result in less than significant impacts with mitigation measures incorporated (MM NOI-1 through MM NOI-9). Noise from construction equipment would be considered strongly perceptible to mildly unpleasant; however, construction of the proposed project would be temporary and mitigation measures would reduce potential impacts.

The Otay SRP Alternative would have similar 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 Otay SRP Alternative for direct and cumulative impacts.

The Otay SRP 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 increases in short-term traffic-related noise and similar construction activities would occur. Less than significant impacts related to aircraft noise and consistency with General Plan and Otay Ranch 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 and MM NOI-1 through MM NOI-9 would still be required. ADTs under the Otay SRP Alternative, in combination with trips from cumulative growth, would result in significant increases in traffic noise levels, similar to the proposed project. The Otay SRP Alternative would reduce impacts related to the permanent increase in ambient noise levels as compared to the proposed project because fewer trips would be generated. However, overall impacts associated with noise would not be reduced or avoided compared to the proposed project.

Cultural Resources

As discussed in Section 5.6 Cultural Resources, the proposed project would have less than significant impacts to historical resources. However, impacts to unknown subsurface archaeological resources as a result of grading and excavation could be significant if encountered. Mitigation measures would reduce the proposed project's impacts to cultural resources to less than significant (MM CUL-1 through MM CUL-6).

Under the Otay SRP Alternative a similar amount of grading and ground disturbance would occur as compared to the proposed project. Because the presence of undiscovered cultural resources is unknown for both the proposed project and the Otay SRP Alternative, risk of significant impacts would be the same as the proposed project. It is anticipated that similar mitigation measures would be imposed as for the proposed project, which would reduce significant impacts to cultural resources to a less than significant level. Therefore, impacts as a result of the Otay SRP Alternative would not be reduced or avoided compared to the proposed project.

Paleontological Resources

As discussed in Section 5.7 Paleontological Resources, the proposed project would have potentially significant impacts to paleontological resources. Impacts to unknown subsurface paleontological resources as a result of grading and excavation could be significant if

encountered. Mitigation measures would reduce the proposed project's impacts to paleontological resources to less than significant (MM PAL-1 through MM PAL-4).

Under the Otay SRP Alternative a similar amount of grading and ground disturbance would occur as the proposed project. Due to the fact that subsurface paleontological resources are unknown regardless of the size of the project, potential impacts as a result of the Otay SRP Alternative would be similar to the proposed project. Both the proposed project and the Otay SRP Alternative would be required to implement mitigation measures to reduce potential impacts. Therefore, impacts would not be reduced or avoided.

Biological Resources

As discussed in Section 5.8, Biological Resources, implementation of the proposed project would result in significant direct and indirect impacts to "covered" sensitive plant species, result in the direct loss of habitat for all of the special-status animals, result in indirect impacts to special-status wildlife species, result in permanent impacts to sensitive vegetation communities, and result in impacts to jurisdictional waters and wetlands. With implementation of MMs BIO-1 through BIO-18 impacts to sensitive species, riparian habitat and other sensitive natural communities, federally protected wetlands, and wildlife corridors related to the implementation of the proposed project would be reduced to a less than significant level. MM BIO-1 through MM BIO-18 would still be required under the Otay SRP Alternative.

The Otay SRP Alternative would result in similar potentially significant but mitigable impacts related to special status plants and wildlife species, riparian habitat, and other sensitive natural communities, federally protected wetlands, and consistency with the MSCP and RMP compared to the proposed project. However, the proposed project would require a MSCP Preserve Boundary Adjustment in order to be consistent and the Otay SRP Alternative would not. In places where the project proposes development in areas previously identified as Preserve, this land would be replaced with biologically equivalent Preserve land which would result in a superior Preserve design, increased wildlife connectivity/improved wildlife corridors, and preservation of sensitive species and habitat. Land within the MSCP Preserve boundary would be maintained and preserved in accordance with the Otay Ranch RMP. Because this alternative would have roughly the same development footprint as the proposed project, impacts would not be reduced or avoided and would be similar to the proposed project.

Agricultural Resources

As discussed in Section 5.9 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 approximately 476 acres 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 Otay SRP Alternative would result in the same loss of designated Farmland of Local Importance. This alternative would also not result in any conflict with agricultural policies. Therefore, impacts would not be reduced or avoided compared to the proposed project.

Water Quality and Hydrology

As discussed in Section 5.10 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 5.10 would further reduce potential impacts associated with water quality and hydrology. Mitigation measures would be required to reduce potentially significant impacts to water quality to a less than significant level (MM HYD-1 through MM HYD-7). Furthermore, southern portions of Village Three and Portion of Village Four, Village Eight East, and Village Ten are within the dam inundation zone for the Savage Dam (Hunsaker 2014). Project components within the dam inundation zone include a piece of Main Street in Village Three North, the southern corner of open space provided by a Portion of Village Four, the Village Eight East Community Park (P-2) and Active Recreation Area (AR-11) in Village Eight East, and the east and west water quality basins in the southern portion of Village Ten. None of the areas within the Savage Dam inundation zone include residential, commercial, or industrial development and impacts were determined to be less than significant.

The Otay SRP Alternative would have similar impacts related to water quality and hydrology, 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, or conflict with General Plan or Otay Ranch GDP policies related to hydrology and water quality. The Otay SRP Alternative would have a similar footprint as the proposed project and impacts associated with potential water quality degradation and increased runoff would be the same. Mitigation measures required to reduce impacts under the proposed project would also be required under the Otay SRP Alternative. Therefore, the Otay SRP Alternative would not reduce or avoid impacts compared to the proposed project.

Geology and Soils

As discussed in Section 5.11 Geology and Soils, the proposed project would be exposed to strong seismic ground-shaking, erosion and loss of top soil, liquefaction, and expansive soils. Under the proposed project, potential impacts would be mitigated and reduced to a less than significant level through the standard Uniform Building Code/California Building Code requirements and mitigation measures (MM GEO-1 and MM GEO-2).

According to the geotechnical investigation, Village Three and a Portion of Village Four project site has landslide debris on the northern and middle portion of the project site. Remedial grading consisting of the removal of landslide debris would be sufficient to mitigate a future hazard related to landslides. Evidence of the landslides on the Village Three and a Portion of Village Four project site is not considered to be a significant geologic hazard. Village Eight East and Village Ten do not have any evidence of past landslides or potential for future landslides. Development under the Otay SRP Alternative would have similar impacts and mitigation measures related to geology and soils as the proposed project. Development under the Otay SRP Alternative would have similar impacts and mitigation measures related to geology and soils as the proposed project. Similar to the project, the Otay SRP Alternative would be consistent with General Plan and Otay Ranch GDP geotechnical policies and would not require any septic tanks or alternative wastewater disposal systems.

The Otay SRP Alternative would reduce the amount of dwelling units by 4,586 units, which would reduce the number of people exposed to geologic hazards compared to the proposed project. Therefore, compared to the proposed project the Otay SRP Alternative would have reduced impacts compared to the proposed project.

Public Services

As described in Section 5.12 Public Services, the proposed project would result in an increased demand for public services including police, fire, schools, parks, and libraries. Impacts would be mitigated through the construction of new or expanded facilities and entitlements, and by the required payment a Public Facilities DIF (MM PUB-1 through MM PUB-15).

Fire and Emergency Medical Services, Police Services, Schools, and Libraries.

The proposed project would result in an increase in demand for fire and emergency medical services resulting from development of the land with the proposed urban uses, which would require fire protection and emergency medical services. In the event that the Village Eight West or EUC stations proposed in the draft FMP are not built before the first building permit is issued in Village Ten, construction of a temporary station would be required. The temporary station would adequately accommodate anticipated fire and emergency services generated by Village Ten from a call volume perspective, as well as provide adequate response time coverage. This impact would be potentially significant if this mitigation is not enforced (MM PUB-2).

Although additional law enforcement staff and facilities are recommended to adequately support the proposed project at buildout, the existing police facilities have the capacity to accommodate the anticipated demand for additional law enforcement services generated by the proposed project. Increased demand for police protection resulting from development of the proposed

project would be minor and is not expected to substantially diminish existing service levels of police response times or necessitate the construction of any new police facilities.

In recognition of the impact on school facilities created by new development, the District and the development community previously have entered into various mitigation agreements in order to ensure the timely construction of school facilities to house students from new residential development ("Mitigated Development"). The primary financing mechanism authorized in these mitigation agreements is the formation of a community facilities district ("CFD") pursuant to the Mello-Roos Community Facilities District Act of 1982 (CVESD).

Implementation of the proposed project would require payment of the City's PFDIF, in order to ensure that public facilities are constructed concurrent with demand. The proposed project's PFFPs analyze the demand for library space in the City and demonstrate how the proposed project complies with the growth management ordinance's threshold standard for library facilities.

The Otay SRP Alternative would generate less population growth, and thereby result in a reduced demand for fire and emergency medical services, police services, schools, and libraries, because fewer residential units would be constructed. However, 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 Otay SRP Alternative would be consistent with all General Plan and Otay Ranch GDP policies related to fire and emergency medical, police, school, and library services with implementation of the mitigation measures identified for the project. However, due to the decrease in population as a result of the Otay SRP Alternative, impacts to public services would be reduced compared to the proposed project.

Parks, Recreation, Open Space, and Trails

Compliance with the PLDO and Otay Ranch GDP would ensure that impacts associated with parks and recreational facilities as a result of proposed project implementation would be reduced. However, the proposed project would increase the use of existing neighborhood parks and recreational facilities and would require new facilities to be built. Mitigation measures would reduce potential direct and indirect impacts associated with construction of recreational facilities to a less than significant level, including off-site impacts associated with the Village Ten Connector Trail.

Based on the CVMC method for calculating parkland requirements, which is more conservative than the Otay Ranch GDP and Quimby Act method, the Otay SRP Alternative would require approximately 22.4 acres of parkland to serve the development (2,311 units x 3.24 pph x 3 acres/1,000 persons). This alternative would provide approximately 31.0 acres of neighborhood and community parkland. Similar to the project, the Otay SRP Alternative would have

potentially significant impacts related to the City's parks and recreations standard if parkland would not be provided concurrently with demand. The mitigation measures identified for the proposed project would be required to ensure adequate park facilities would be provided.

This alternative would not conflict with the parkland designations and policies of the General Plan, Otay Ranch GDP, or Greenbelt Master Plan. Impacts related to park policies would be the same compared to the proposed project. Compared to the proposed project, this alternative would provide less park land, although only because it would require less park land. Therefore, impacts related to parks and recreation would not be reduced as a result of the Otay SRP Alternative.

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 indicates that OWD would 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 concludes 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. The proposed project would promote water conservation through the use of low water use plumbing fixtures and the use of recycled water for the irrigation of parks, open space slopes, schools, parkway landscaping, and the common areas of multi-family residential and commercial/industrial/office sites.

The Otay SRP Alternative would reduce the amount of dwelling units by 4,586 units. Since the land uses in the proposed project represent a worst case scenario it can be assumed that the Otay SRP Alternative would not be associated with any additional impacts. A reduction in 4,586 units would substantially reduce water demands compared to the proposed project. Therefore, compared to the proposed project, impacts would be reduced but not avoided.

Recycled Water

No significant impacts related to new or expanded recycled water treatment facilities and no significant impacts related to consistency with applicable recycled water policies were identified with respect to implementation of the proposed project. Since the implementation of the Otay SRP Alternative would result in less development there would be less demand for recycled water. Therefore, compared to the proposed project, impacts would be reduced.

Wastewater

As discussed in Section 5.13, Public Utilities, the city would need to acquire an additional capacity above current capacity rights to serve buildout of the proposed project. The proposed project's wastewater generation volume combine 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. The City of Chula Vista has capacity rights of 20.9 mgd of flow in the Metro sewer system. Existing average flows in the City are approximately 16.2 mgd. The estimated year 2030 flows based on the 2005 General Plan were 23.3 mgd. The projected year 2030 average flow for the City is 26.2 mgd. Thus, the City of Chula Vista would need to acquire capacity rights for an additional 5.4 mgd to accommodate year 2030 flows. The Salt Creek Interceptor Technical Sewer Study for South Otay Ranch addresses the City's current projections regarding the need to acquire additional treatment capacity. The Otay SRP Alternative would reduce impacts on wastewater facilities compared to the proposed project because it proposes 4,586 fewer units; however, this alternative combined with other planned projects would also 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. Similar mitigation measures as required by the proposed project would be required for this alternative. Therefore, impacts would not be avoided.

Energy

Implementation of proposed project has the potential to result in impacts due to increased consumption of electricity and natural gas above that analyzed in the 2005 GPU EIR, which identified a significant and unavoidable impact related to energy demand. No guarantee can be made that long-term energy resources would be available as needed to support the future development of the site; therefore, impacts associated with energy consumption would be considered potentially significant. Since the implementation of the Otay SRP Alternative would result in less development there would be less demand for energy. Therefore, compared to the proposed project, impacts would be reduced but not avoided.

Climate Change

As discussed in Section 5.14 Climate Change, the proposed project land use intensity and associated increase in vehicle trips has not been anticipated in local air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the RAQS. Furthermore, as discussed in Section 5.4 Air Quality, the emissions VOCs and NO_x (precursors of O_3), as well as those of PM_{10} and $PM_{2.5}$, would exceed operational significance thresholds. Project design features would help to reduce operational emissions;

however, significant reductions in ozone precursor 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.

The Otay SRP Alternative would result in lower traffic volumes and result in lower emissions compared to the proposed project. Total ADT would be reduced by approximately 31.5% compared to the proposed project; therefore, it is assumed that GHG emissions from implementation of the proposed project would also be reduced approximately 31.5%. However, total construction and operational emissions of GHGs would not be substantially reduced under this alternative. Additionally, the significant and unavoidable impact related to exacerbation of air quality problems as a result of climate change would be reduced under this alternative because operational emissions of ozone precursors would be reduced. Direct and cumulative impacts related to the potential effects of climate change would still be significant and unavoidable; however, compared to the proposed project, impacts would be slightly reduced.

Hazards and Risk of Upset

As discussed in Section 5.15 Hazards and Risk of Upset, the proposed project would have less than significant impacts with mitigation. A Health Risk Assessment was prepared for Village Three North and Portion of Village Four to determine potential hazards resulting from proximity to the landfill. Results of the study found carcinogenic (cancerous) risks to be below the threshold for each respective receptor. A Health Risk Assessment was also prepared for Village Eight East to determine potential hazards resulting from proximity to State Route 125 (SR-125) using 9-year and 30-year exposure scenarios, which determined that residents would be exposed to a relatively low cancer risk and impacts would be less than significant. Mitigation measures were required for future development on Village Ten, the former Brownfield Bombing Range, which could potentially contain contaminated soils as well as MEC. Soil contamination may also exist due to historical agricultural activities in Otay Ranch, and mitigation measures are provided to reduce potentially significant hazardous impacts (MM HAZ-1 through MM HAZ-5).

Under the Otay SRP Alternative the same potential hazards would exist. Impacts related to the transport, use, and disposal of hazardous materials would be similar to the project under this alternative because similar land uses are proposed. 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 Otay SRP Alternative would not conflict with any General Plan and Otay Ranch GDP policies related to hazards and hazardous materials. However, although the HRAs performed for Village Three and Village Eight East determined risks to be less than significant, the Otay SRP Alternative would

expose fewer sensitive receptors to potentially hazardous conditions. Therefore impacts would be slightly reduced compared to the proposed project.

Housing and Population

As discussed in Section 5.16 Housing and Population, the proposed project would include development of 6,897 residential units and is expected to generate a buildout population of 22,364. 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 University Villages 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. 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 Otay SRP Alternative would result in 4,586 fewer residential units than the proposed project, which would generate a 14,858 fewer people. The SRP Alternative would not displace any housing or people, or conflict with any General Plan or Otay Ranch GDP housing or population policies. However, the reduction in dwelling units would conflict with the SANDAG forecast, because housing would not be provided concurrent with need. This alternative would not adequately accommodate for the projected growth in the Otay Ranch area; therefore, impacts would not be reduced as a result of this alternative compared to the proposed project.

Mineral Resources

As discussed in Section 5.17 Mineral Resources, the proposed project is within the MRZ-2 and MRZ-3 zone. The MRZ-2 classification for mineral resources represents areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence. The MRZ-3 classification for mineral resources represents an area that has the potential for mineral deposits, but no resources have been identified. Therefore, 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. Compared to the proposed project, impacts related to mineral resources would be the same under this alternative. Development would not result in a significant impact associated with mineral resources, because excavation of on-site resources would not be precluded. The Otay SRP Alternative would be consistent with objectives and policies regarding mineral resources and impacts would not be reduced or avoided compared to the proposed project.

10.4.4.1 Relationship to Project Objectives

The proposed project was designed to be consistent with the goals and objectives of the Otay Ranch GDP. Since the Otay SRP Alternative essentially tiers off the development as planned in the Otay Ranch GDP, almost all of the proposed projects objectives would be met; with the exception of the following objectives for Village Three North and Portion of Village Four:

- Develop Mixed-Use Office/Commercial uses within the Village Three North core area that provide a strong employment base for Village Three North residents and the City of Chula Vista and meet the commercial/retail needs of the village and surrounding villages.

This goal aims to provide a strong employment base for the residents of Village Three North. Future development under the Otay SRP Alternative would not include office/commercial or industrial land uses in Village Three North; therefore, the Otay SRP Alternative fails to meet these goals.

Additionally, the Otay SRP Alternative does not include enough residential development to accommodate SANDAGs 2050 Regional Growth Forecast. Development of this alternative could result in an inadequate amount of dwelling units in the future and inconsistent with the following objective.

- Provide a wide variety of housing options, including affordable housing, to City residents, future students and faculty of the planned four year university and employees of the Regional Technology Park.

10.4.5 No Project (No Build) Alternative

CEQA Guidelines Section 15126.6 requires the inclusion of a No Project (No Build) Alternative to be analyzed. Under the No Build Alternative, no development would occur on Village Three North and a Portion of Village Four, Village Eight East, or Village Ten. Accordingly, the site characteristics of this alternate would be equivalent to the existing conditions for each category analyzed in Section 5 of this EIR. Although no development would occur, surrounding land uses and villages would continue to be built-out.

Land Use

As described in Section 5.1 Land Use, the area surrounding the project area consists of recently developed or planned development, and therefore, implementation 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, and there would be no conflict with an

adopted plan, policy, or regulation after compliance with MM LU-4. Impacts as a result of the proposed project would be less than significant.

Under the No Build Alternative, the project site would remain in its current condition and no development would occur. The No Build Alternative would conflict with surrounding land uses because the development of other villages in the area would continue and no connectivity between them would be provided. The No Build Alternative would also conflict with the General Plan and the Otay Ranch GDP because it would not implement the development envisioned for Village Three North and Portion of Village Four, Village Eight East, or Village Ten. While impacts to the City of San Diego waterlines would be avoided, increased impacts would occur as a result of the No Project Alternative.

Landforms and Aesthetics

As discussed in Section 5.2 Landforms and Aesthetics, the proposed project would change existing broad open space to a high-density urban environment. The change in land uses from vacant and undisturbed to an urbanized area would have a significant impact on the visual character of the site. As discussed in the Otay Ranch GDP Program EIR, the conversion of undeveloped land to urban uses is a significant and unmitigable impact of development even with implementation of mitigation measures (MM AES-1 through MM AES-4).

The No Build Alternative would not result in any changes to the existing visual character, views, or lighting and glare. The site would remain as rural open space. Therefore, the proposed project's cumulatively considerable contribution to a significant cumulative aesthetic impact would be avoided under the No Build Alternative.

Transportation and Circulation

As discussed in Section 5.3 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 (MM TCA-1 through MM-TCA-17).

The No Build Alternative would have no direct impacts on transportation and traffic since site conditions would remain unchanged. However, without the proposed project's circulation plan there would be a lack of regional connectivity, which could create long-term cumulative traffic impacts under the No Build Alternative. Without the regional connections that would be provided by the proposed project, future growth in the surrounding villages would be concentrated on fewer roadways. Therefore, impacts would be increased compared to the proposed project.

Air Quality

As discussed in Section 5.4 Air Quality, criteria pollutant emissions for VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ are anticipated to be above the City of Chula Vista's thresholds as a result of the proposed project. The proposed project would also be inconsistent with the RAQS. 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 (MM AQ-1 through MM AQ-3).

There would be no direct construction or operational air quality impacts associated with the No Build Alternative since the site would remain in its current state and no construction would occur. Impacts related to sensitive receptors would be reduced because no new potential toxic air contaminant sources or sensitive receptors would be developed. Overall, the No Build Alternative would result in no physical impacts to air quality, but would have an increased impact related to consistency with RAQS. The RAQS was updated with the 2005 General Plan Update, which included development in Otay Ranch, including the proposed project site. Therefore, if the proposed project was not built, the project site would be inconsistent with the RAQS. Thus, this alternative would also be inconsistent with the RAQS. The No Project Alternative would not result in new significant or unavoidable criteria pollutant emissions, thus, impacts would be reduced compared to the proposed project.

Noise

As discussed in Section 5.5 Noise, the proposed project would result in less than significant noise impacts with mitigation measures incorporated (MM NOI-1 through MM NOI-9). Noise from construction equipment would be considered strongly perceptible to mildly unpleasant; however, construction of the proposed project would be temporary and mitigation measures would reduce potential impacts.

The No Build Alternative would not result in any construction-related noise since no construction would occur. The No Build Alternative would not contribute to an increase in ambient noise levels. The No Build Alternative would avoid impacts related to excessive noise levels compared to the proposed project because no new noise sources or sensitive receptors would be developed, and no traffic would be generated on the project sites. However, because regional connections through the project site would not be constructed under the No Build Alternative, off-site noise impacts could increase as traffic conditions are worse on other roadways. Overall, the No Build Alternative would result in reduced impacts related to noise.

Cultural Resources

As discussed in Section 5.6 Cultural Resources, the proposed project would have less than significant impacts to historical resources. However, impacts to unknown subsurface archaeological resources as a result of grading and excavation could be significant if encountered. Mitigation measures would reduce the proposed projects impacts to cultural resources to a less than significant level (MM CUL-1 through MM CUL-6). The No Build Alternative would not involve disturbing any subsurface material that could potentially support cultural resources; therefore, the No Build Alternative would have reduced impacts compared to the proposed project.

Paleontological Resources

As discussed in Section 5.7, Paleontological Resources, the proposed project would have potentially significant impacts to paleontological resources. Impacts to unknown subsurface paleontological resources as a result of grading and excavation could be significant if encountered. Mitigation measures would reduce the proposed projects impacts to paleontological resources to a less than significant level (MM PAL-1 through MM PAL-4). The No Build Alternative would not involve disturbing any subsurface material that could potentially support paleontological resources; therefore, the No Build Alternative would have reduced impacts compared to the proposed project.

Biological Resources

As discussed in Section 5.8, Biological Resources, implementation of the proposed project would result in significant direct and indirect impacts to “covered” sensitive plant species, result in the direct loss of habitat for all of the special-status animals, result in indirect impacts to special-status wildlife species, result in permanent impacts to sensitive vegetation communities, and result in impacts to jurisdictional waters and wetlands. With implementation of MMs BIO-1 through BIO-18 impacts to sensitive species, riparian habitat and other sensitive natural communities, federally protected wetlands, and wildlife corridors would be reduced to a less than significant level.

The No Build Alternative would not result in the conveyance of open space to the Otay Ranch and MSCP Preserve, nor would it allow for development that would contribute to the ongoing management and maintenance of the Preserve system. While the MSCP Subarea Plan does not require development, it would be inconsistent with the goals of the Plan which allow for development in exchange for fulfillment of the Preserve. The No Build Alternative would not result in any impacts to special status plant or wildlife species, riparian habitat, or other sensitive natural communities. The No Build Alternative would not result in any direct impacts to

biological resources since there would be no construction involved. Overall, impacts would be avoided compared to the proposed project.

Agricultural Resources

As discussed in Section 5.9 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 approximately 476 acres 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 below a level of significance, impacts are significant and unavoidable. Under the No Build Alternative significant, impacts to agricultural resources would be avoided.

Water Quality and Hydrology

As discussed in Section 5.10 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 5.10 would further reduce potential impacts associated with water quality and hydrology. Mitigation measures would be required to reduce potentially significant impacts to water quality to a less than significant level (MM HYD-1 through MM HYD-7). Furthermore, southern portions of Village Three and Portion of Village Four, Village Eight East, and Village Ten are within the dam inundation zone for the Savage Dam (Hunsaker 2014). Project components within the dam inundation zone include a piece of Main Street in Village Three North, the southern corner of open space provided by a Portion of Village Four, Village Eight East Community Park (P-2), and the east and west water quality basins in the southern portion of Village Ten. None of the areas within the Savage Dam inundation zone include residential, commercial, or industrial development and impacts were determined to be less than significant.

The No Build Alternative would not result in any direct impacts related to hydrology and water quality since no construction would occur and there would be no increase in runoff from the site. No construction or development activities would take place that could generate potential pollutants; therefore, the No Build Alternative would have reduced impacts related to water quality and hydrology.

Geology and Soils

As discussed in Section 5.11 Geology and Soils, the proposed project site would be exposed to a potential for strong seismic ground-shaking, erosion and loss of top soil, liquefaction, and expansive soils. Under the proposed project, potential impacts would be reduced to less than significant through the standard Uniform Building Code/California Building Code requirements

and mitigation measures (MM GEO-1 and MM GEO-2). Under the No Build Alternative, no additional people or structures would be exposed to ground rupture or strong seismic shaking since the site would remain in its current state. The No Build Alternative would also avoid potentially significant impacts related to exposure to erosion, liquefaction, and expansive soils.

Public Services

As described in Section 5.12 Public Services, the proposed project would result in an increased demand for public services including police, fire, schools, parks, and libraries. Impacts would be mitigated through the construction of new or expanded facilities and entitlements, and by the required payment a Public Facilities DIF (MM PUB-1 through MM PUB-15). Under the No Build Alternative there would be no increase in demand for public services. The No Build Alternative would avoid impacts to public services compared to the proposed project.

Utilities

As described in Section 5.13 Utilities, the proposed project would result in an increased demand for potable and recycled water, and would also generate an increase in wastewater. Water and wastewater facility demands would be met, and facilities would be constructed concurrent with need. The No Project Alternative would not result in an increase in population which would increase demand for public utilities. Therefore, the No Project Alternative would avoid impacts to public utilities compared to the proposed project.

Climate Change

As discussed in Section 5.14 Climate Change, the proposed project land use intensity and associated increase in vehicle trips has not been anticipated in local air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the RAQS. Furthermore, as discussed in Section 5.4 Air Quality, the emissions VOCs and NOx (precursors of O3), as well as those of PM10 and PM2.5, would exceed operational significance thresholds. Project design features would help to reduce operational emissions; however, significant reductions in ozone precursor 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.

There would be no direct construction or operational GHG emission impacts associated with the No Build Alternative since the site would remain in its current state and no construction would occur. The significant and unavoidable direct and cumulative impact related to exacerbation of fair quality problems as a result of climate change would be avoided under the No Build Alternative.

Hazards and Risk of Upset

As discussed in Section 5.15 Hazards and Risk of Upset, the proposed project would have less than significant impacts with mitigation. A Health Risk Assessment was prepared for Village Three North and Portion of Village Four to determine potential hazards resulting from proximity to the landfill. Results of the study found carcinogenic (cancerous) risks to be below the threshold for each respective receptor. A Health Risk Assessment was also prepared for Village Eight East to determine potential hazards resulting from proximity to State Route 125 (SR-125) using 9-year and 30-year exposure scenarios, which determined that residents would be exposed to a relatively low cancer risk and impacts would be less than significant. Mitigation measures were required for future development on Village Ten, the former Brownfield Bombing Range, which could potentially contain contaminated soils as well as MEC. Soil contamination may also exist due to historical agricultural activities in Otay Ranch, and mitigation measures are provided to reduce potentially significant hazardous impacts (MM HAZ-1 through MM HAZ-5).

The No Build Alternative would not result in any potential increase in hazards and hazardous materials used during construction since no construction would occur. Similarly, the No Build Alternative would not introduce future residents to potential hazards or hazardous materials during operation since nothing would be built as a result of this alternative. Additionally, no potential impacts related to the Brownfield Bombing Range would occur under the No Build Alternative. Potential impacts related to contaminated soils would also be avoided as a result of the No Build Alternative.

Housing and Population

As discussed in Section 5.16 Housing and Population, the proposed project would include development of 6,897 residential units and is expected to generate a buildout population of 22,346 people. The proposed project would exceed the maximum residential buildout anticipated in the Otay Ranch GDP and the General Plan's East Planning Area, which is based on the Otay Ranch GDP. However, the project proposes an amendment to the Chula Vista General Plan and the adopted Otay Ranch GDP Land Use Plan for the land uses identified on the Otay Ranch GDP Land Use Map in Villages Three North, a Portion of Village Four, Village Eight East, and Village Ten. 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 and Otay Ranch GDP amendments, the proposed project would comply with the GMOC and related thresholds, prepare a PFFP, pay DIFs and TDIFs, as well as be accounted for in the updated 2050 SANDAG Regional Growth Forecast, which would ensure that the proposed project would have a less than significant impact associated with population growth.

No impacts related to population growth would occur under this alternative because no residential or economic growth would occur and no infrastructure would be developed; however, the lack of housing concurrent with needs as shown in SANDAG forecasts and in the Growth Management Plan would result in a potentially significant impact. As a result, the No Build Alternative would conflict with the General Plan and Otay Ranch GDP housing and population policies that encourage growth of residential, commercial, and industrial land uses. Therefore, increased impacts a result of this alternative would occur compared to the proposed project.

Mineral Resources

As discussed in Section 5.17 Mineral Resources, the proposed project is within the MRZ-2 and MRZ-3 zone. The MRZ-2 classification for mineral resources represents areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence. The MRZ-3 classification for mineral resources represents an area that has the potential for mineral deposits, but no resources have been identified. Therefore, 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. Similar to the proposed project the No Build Alternative would not result in any impacts to mineral resources.

10.4.5.1 Relationship to Project Objectives

The No Build Alternative would entirely avoid the proposed project's significant and unavoidable impacts. However, the No Build Alternative would not be consistent with the vision, goals, or policies set forth in the General Plan or Otay Ranch GDP. The No Build Alternative would not meet any of the project objectives, including the establishment of urban pedestrian-oriented villages designed to complement and support surrounding land uses, or reducing reliance on the automobile by promoting multi-modal transportation such as walking or use of bicycles, buses or regional transit. Furthermore, the No Build Alternative would not promote synergistic uses between villages or create employment, commercial or recreational land uses.

10.5 SUMMARY MATRIX

A matrix displaying the major characteristics and significant environmental effects of each alternative is provided in Table 10-10 to summarize the comparison with the proposed project. The matrix also indicates whether the alternative meets the project objectives.

Table 10-10
Alternatives Impact Summary

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

Δ 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.
SU= Significant and Unavoidable

10.6 FULFILLMENT OF PROJECT OBJECTIVES

The following table provides a determination of whether or not each alternative would meet the project objectives. The summary comparison of the alternatives considered to the project objective is shown in Table 10-11.

Table 10-11
Comparison of Consistency with Project Objectives

Environmental Issue	Existing GP and GDP Alternative	Reduced Density Alternative	Nuisance Easement Alternative	Otay SRP Alternative	No Build Alternative
Overall Project Objectives					
Implement the goals, objectives and policies of the Chula Vista General Plan, the MSCP Subarea Plan, Otay Ranch GDP, the Otay Ranch Phase 1 and Phase 2 Resource Management Plan, the Otay Ranch Facility Implementation Plan, the Otay Ranch Village Phasing Plan and the Otay Ranch Service/Revenue Plan.	Yes	Partial	Yes	Yes	No
Provide a wide variety of housing options, including affordable housing, to City residents, future students and faculty of the planned four year university and employees of the Regional Technology Park, Village Eight West and Village Nine Town Centers and EUC.	No	No	Yes	No	No
Implement the City of Chula Vista Growth Management Ordinance to ensure that public facilities are provided in a timely manner and financed by the parties creating the demand for, and benefiting from, the improvements.	Yes	Yes	Yes	Yes	No
Foster development patterns which promote orderly growth and prevent urban sprawl through comprehensively planning Villages Three North and a Portion of Village Four, Eight East and Ten simultaneously.	Yes	Yes	Yes	Yes	No
Add to the creation of a unique Otay Ranch image that differentiates Otay Ranch from other communities.	Yes	Yes	Yes	Yes	No
Accentuate the relationship of the land use plan with its natural setting and the physical character of the region, and promote effective management of natural resources by concentrating development into less sensitive areas while preserving large contiguous open space areas with sensitive resources.	Yes	Yes	Yes	Yes	Yes
Establish multi-use trail linkages to the Chula Vista Greenbelt, consistent with the Chula Vista Greenbelt Master Plan.	Yes	Yes	Yes	Yes	No

Table 10-11 (Continued)
Comparison of Consistency with Project Objectives

Environmental Issue	Existing GP and GDP Alternative	Reduced Density Alternative	Nuisance Easement Alternative	Otay SRP Alternative	No Build Alternative
Wisely manage limited natural resources.	Yes	Yes	Yes	Yes	Yes
Implement the OVRP Concept Plan within the SPA boundaries through the planning and provision of portions of connections to the City's Greenbelt trail network.	Yes	Yes	Yes	Yes	No
Establish a land use and facility plan that assures the economic viability of the SPA Plan Areas in consideration of existing and anticipated economic conditions.	Yes	No	Yes	Yes	No
Village Three North and Portion of Village Four					
Develop a Business Park that provides a strong employment base for Village Three North residents and the City of Chula Vista and supports the economic development goals of the Chula Vista General Plan.	No	No	Yes	No	No
Develop Mixed-Use Office/Commercial uses within the Village Three North core area that provide a strong employment base for Village Three North residents and the City of Chula Vista and meet the commercial/retail needs of the village and surrounding villages.	No	No	Yes	No	No
Establish an urban pedestrian-oriented village with a village core designed to reduce reliance on the automobile and promote multi-modal transportation, including walking and the use of bicycles, buses and regional transit.	Yes	Partial	Yes	Yes	No
Promote synergistic uses between Village Three North and adjacent Village Two by providing pedestrian/trail connections and complementary land uses to balance housing, activities, services and facilities.	Yes	Yes	Yes	Yes	No
Village Eight East					
Establish an urban pedestrian-oriented village with a village core designed to reduce reliance on the automobile and promote multi-modal transportation, including walking and the use of bicycles, buses and regional transit.	Yes	Partial	Yes	Yes	No
Promote synergistic uses between Village Eight East and Village Eight West, the Eastern Urban Center and the University/Regional Technology Park to balance activities, services and facilities with employment, housing, transit and commercial opportunities.	Yes	No	Yes	Yes	No

Table 10-11 (Continued)
Comparison of Consistency with Project Objectives

Environmental Issue	Existing GP and GDP Alternative	Reduced Density Alternative	Nuisance Easement Alternative	Otay SRP Alternative	No Build Alternative
Develop, maintain and enhance a sense of community identity which complements the future Village Eight West Town Center and surrounding land uses.	Yes	Partial	Yes	Yes	No
Designate a portion of Active Recreation Area (AR-11) as a 51.5-acre Community Park (P-2) (a portion of the park may function as a staging area within the OVRP).	Yes	No	Yes	No	No
Establish a community park with amenities such as multi-purpose open lawn areas, lighted ball fields, lighted sports courts, lighted picnic shelters, play areas, a community center building, lighted parking areas and restroom and maintenance buildings.	Yes	~~No~~Partial	Yes	No	No
Village Ten					
Establish an urban pedestrian-oriented urban village within the University Planning Area designed to complement and support the University land uses, reduce reliance on the automobile and promote multi-modal transportation, including walking and the use of bicycles, buses and regional transit.	Yes	Partial	Yes	Yes	No
Promote synergistic uses between Village Ten and Village Nine and the University to balance employment, retail and educational activities, as well as services, housing and public facilities.	Yes	Yes	Yes	Yes	No
Develop, maintain and enhance a sense of community identity that complements the University and Village Nine Town Center.	Yes	Partial	Yes	Yes	No

10.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

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. The Nuisance Easement Alternative was developed during preparation of the Draft EIR and was found to be the environmentally superior alternative. The proposed project's design placed residential land uses within 1,000 feet of the property boundary of the Otay Landfill (i.e., the 1,000-foot nuisance easement area), which was consistent with the General Plan Policy E 6.4, as then written. However, as noted in Section 5.1, Land Use, General Plan Policy E 6.4 was amended during the writing of this EIR such that residential land uses were prohibited within 1,000 feet of a "major toxic emitter that,

according to City staff, includes the existing Otay Landfill. Therefore, the EIR's Nuisance Easement Alternative was developed to avoid placing residential land uses within 1,000 feet of the active portion of the Landfill, resulting in reduced impacts due to potential incompatible land uses compared to the proposed project, which located such residential uses within 1,000 feet of the Landfill.

Prior to the release of the DEIR, City staff notified the project applicant that the City had been negotiating with the Landfill operator on an Amended and Restated Landfill Expansion Agreement (Agreement). The Agreement, among other things, clarified the location of the "residential setback" with respect to the active area of the Otay Landfill. Specifically, Section 2.5 of the Agreement states, in part, that the "City shall not allow the construction of residential units on properties within 1,000 feet of the active area of the Otay Landfill, as illustrated on the attached drawing" shown in Exhibit B of the Agreement. Section 2.5 further provides that the Landfill operator "shall keep the active area of the landfill at least 1,000 feet away from any constructed residential units." Moreover, Section 2.5 requires the parties to the Agreement to meet and confer from time to time as appropriate to coordinate regarding implementation of the obligations set forth in that section of the Agreement. Based on this Agreement, which is a valid expression and implementation of the City's police power and zoning authority to avoid the proximity of incompatible land uses, residential units in the proposed project would not be allowed to be constructed within 1,000 feet of the then active area of the Otay Landfill, as shown on revised Exhibit B of the Agreement. At a duly noticed public meeting held on August 12, 2014 (i.e., during the public review period for the Draft EIR), the City Council adopted a resolution approving the Agreement and authorizing the Mayor to execute it on behalf of the City.

Based on the language in the public notice for the Agreement, mitigation measure MM LU-4 was added to the Draft EIR, which requires that the proposed project include a residential setback that precludes the construction of residential units on properties within 1,000 feet from the "then active" area of the Otay Landfill. This setback requirement is similar to the Nuisance Easement Alternative contained in the Draft EIR.

To be consistent with the setback set forth in the Agreement, the applicant revised the proposed project's tentative map for Village Three and a Portion of Village Four (October 2014) to show the limits of the active portion of the landfill.

As a result of these various developments, when the Draft EIR was released for public review, both the proposed project (with implementation of mitigation measure MM LU-4 and compliance with the Agreement) and the Nuisance Easement Alternative restricted residential development within 1,000 feet of the active portion of the Otay Landfill. The proposed project accomplished this through inclusion of MM LU-4; and the Nuisance

Easement Alternative through a land use plan that did not include residential uses within the 1,000-foot setback. The result was two very similar development plans and land uses and, therefore, similar associated impacts.

The overall unit count remained the same for both plans (1,597 units), although in order to achieve this total in the Nuisance Easement Alternative, the ratio of multi-family homes to single family homes was greater for the Alternative than the proposed project. In addition, the Nuisance Easement Alternative provided for more acreage of non-residential uses, including more commercial/retail uses than the proposed project. More specifically, the Nuisance Easement Alternative differs from the proposed project as follows:

- The single-family neighborhoods north of Tributary Street and between Santa Maya and Santa Picacho (proposed project neighborhoods R-1, R-4 and R-5) would be replaced by MF-18, Mixed Use Residential/Commercial neighborhood MU-1 and Neighborhood Park P-1. As shown in Figure 10-3, the 1,000-foot setback from the active portion of the landfill bisects the mixed use pad (MU-1). The Nuisance Easement Alternative would designate non-residential commercial and park uses on the north side of this line, and multi-family residential uses on the south side of this line.
- The single family neighborhoods Tributary Street "C" and west of Santa Maya (proposed project neighborhoods R-2, R-3 and R-6) would be converted to Multi-Family neighborhood R-17 and Open Space (OS-4).
- The former MU-2a – 2f (Mixed Use Commercial/Office) and CPF-1 site north of Tributary Street between Santa Picacho and Santa Macheto would be revised to MU-2/CPF-1 and MU-3, which would allow for Mixed Use with non-residential uses north of the 1,000' setback and multi-family residential uses on the south side of the setback.
- The School site would move to the proposed project's P-1 Neighborhood Park site. The proposed project's S-1 Elementary School site would be converted to neighborhood R-10 and lotted as single family homes.
- The proposed project's O-1 Office site would be slightly increased to coincide with the 1,000-foot setback. As a result of this increase the proposed project's R-21a – c multi-family site would be reduced and become neighborhood R-16 under the Nuisance Easement Alternative.

Although very similar, the impacts of the Nuisance Easement Alternative differ in that the mix of land uses would

- generate 38 fewer average daily trips (0.2%) than the proposed project;
- use approximately 186 gpd (0.03%) more potable water, which is offset by the use approximately 1,477 gpd (0.9%) more recycled water;

- increase sewage flows by approximately 4,145 gpd (0.8%); and;
- reduce the amount of residential units within the nuisance easement area (1,000 feet from property line).

Various technical memoranda were prepared at the project level (traffic, air quality, noise, biology, drainage and water quality, water and sewer) to compare impacts. As summarized above, these memoranda found that impacts are virtually the same. This alternative would result in a slight reduction in trips and associated reduced operational air quality emissions, and reduction of units within the nuisance easement area. Therefore, this alternative does not avoid or substantially minimize any impacts of the proposed project identified as significant and unavoidable; nor does the slight increase in potable and recycled water usage, or increase in sewer generation, result in new or greater impacts compared to the proposed project.

Based on the City's assessment of the potential significant impacts of both the proposed project and the Nuisance Easement Alternative, the City finds that the Nuisance Easement Alternative remains the environmentally superior alternative among the other alternatives identified in the Draft EIR.

~~As indicated in Table 10-10 and Table 10-11, 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 Nuisance Easement Alternative. The Nuisance Easement Alternative meets all of the projects goals and objectives and eliminates indirect land use conflicts (odor and TACs) associated with the Otay Landfill by not developing any residential units within 1,000 ft. of the active portion of the Landfill.~~

CHAPTER 11
REFERENCES

2 INTRODUCTION

City of Chula Vista. 2003. *City of Chula Vista MSCP Subarea Plan*. February 2003.

City of Chula Vista. 2005. *Chula Vista Vision 2020 General Plan.* December 13, 2005.

City of Chula Vista and County of San Diego. 1993. *Otay Ranch Resource Management Plan, Phase I*. October 1993. Accessed October 2013. http://www.sdcounty.ca.gov/pds/docs/OtayRMP.pdf.

City of Chula Vista and County of San Diego. 2002. *Otay Ranch Resource Management Plan, Phase 2*. Adopted June 1996; revised August 2002. Accessed October 2013. http://www.sdcounty.ca.gov/pds/docs/OtayRanchRMP2.pdf.

3 ENVIRONMENTAL SETTING

City of Chula Vista. 2012a. Chula Vista Municipal Code.

City of Chula Vista. 2012b. *General Development Plan Amendment (GDPA) Otay Ranch, Village Eight West and Village Nine.* March 9, 2012. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/Planning/documents/GDP_Amendment_Otay_Ranch_V8W_V9_2012.pdf.

WRCC (Western Regional Climate Center). 2013a. "Lower Otay Reservoir, California (045162): Period of Record Monthly Climate Summary." Accessed September 2013. http:///www.wrcc.dri.edu.

WRCC. 2013b. "Bonita, California (040968): Period of Record Monthly Climate Summary." Accessed September 2013. http:///www.wrcc.dri.edu.

4 PROJECT DESCRIPTION

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

City of Chula Vista. 2003. *City of Chula Vista MSCP Subarea Plan*. February 2003. Accessed December 15, 2011. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/Planning/Environmental/subAreaPlan.asp.

City of Chula Vista. 2005. *Chula Vista General Plan: Vision 2020*. Adopted December 13, 2005.

City of Chula Vista and County of San Diego. 1993. *Otay Ranch Resource Management Plan Phase 1*. Adopted October 28, 1993.

City of Chula Vista and County of San Diego. 2002. *Otay Ranch Phase 2 Resource Management Plan*. Adopted June 4, 1996, revised August 7, 2002.

ORJPP (Otay Ranch Joint Planning Project). 2004. *Otay Ranch General Development Plan/Otay Subregional Plan, Vol. 2*. Adopted October 28, 1993 and amended June 4, 1996; November 10, 1998; October 23, 2001; and December 31, 2004. Accessed December 19, 2011. http://www.chulavistaca.gov/city_services/development_services/Planning_Building/General_Plan/Draft_ORGDP_2004.asp.

Otay Valley Regional Park (OVRP) Concept Plan (OVRP). 1997. OVRP Concept Plan. Adopted July 18, 1997.

5.1 LAND USE

City of Chula Vista. 1994. *Greenbelt Master Plan*.

City of Chula Vista. 2003a. *City of Chula Vista MSCP Subarea Plan*. February 2003. Accessed December 15, 2011. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/Planning/Enviromental/subAreaPlan.asp.

City of Chula Vista. 2003b. *City of Chula Vista Greenbelt Master Plan*. September 16, 2003. Accessed December 20, 2011. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/Planning/greenbelt.asp.

City of Chula Vista. 2005. *Draft Otay Ranch General Development Plan Amendment Revisions*. September, 2005. Accessed December 20, 2011. http://www.chulavistaca.gov/city_services/development_services/Planning_Building/General_Plan/documents/ORGDP_Revisions_September2005.pdf.

City of Chula Vista. 2006. *Final EIR for the Otay Ranch Village Two, Three, and a Portion of Four SPA Plan*.

City of Chula Vista. 2010. *Draft Parks & Recreation Master Plan Update*. December, 2010. Accessed December 20, 2011. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/PDF/DraftParkandRecreationMasterPlanUpdate_001.pdf.

City of Chula Vista. 2011. *City of Chula Vista Design Manual*. Updated January 18, 2011. http://www.chulavistaca.gov/city_services/development_services/Planning_Building/PDF/2011_Design_Manual.pdf.

City of Chula Vista. 2012. *Chula Vista Municipal Code*. http://www.codepublishing.com/CA/chulavista_html.html.

City of Chula Vista.2013. *A Supplemental Environmental Impact Report for Amendments to the City of Chula Vista General Plan (GPA-09-01) and Otay Ranch General Development Plan (PCM-09-11)*. Chula Vista, California: City of Chula Vista and RECON.

City of Chula Vista and County of San Diego. 1993. *Otay Ranch Resource Management Plan Phase 1*. Adopted October 28, 1993.

City of Chula Vista and County of San Diego. 2002. *Otay Ranch Phase 2 Resource Management Plan*. Adopted June 4, 1996, revised August 7, 2002.

County of San Diego, City of San Diego, and City of Chula Vista. 1997. *Otay Valley Regional Park Concept Plan*.

Otay Landfill Operating Permit. 2012. Solid Waste Facility Permit. Permit Number 37-AA-0010. Issued August 24, 2012.

Parsons. 2007. *Final Site Inspection Report Former Brown Field Bombing Range*. Prepared for U.S. Army Corps of Engineers, Los Angeles District. December 14, 2007.

SANDAG (San Diego Association of Governments). 2004. *Regional Comprehensive Plan for the San Diego Region*. San Diego, California: SANDAG. Adopted July 23, 2004. Accessed on December 19, 2011. http://www.sandag.org/programs/land_use_and_regional_growth/comprehensive_land_use_and_regional_growth_projects/RCP/rcp_final_complete.pdf.

SANDAG. 2011. *2050 Regional Transportation Plan*. October 2011. http://www.sandag.org/uploads/2050RTP/F2050rtp_all.pdf.

SANDAG. 2012. *Smart Growth Concept Map South County Subregion*. San Diego, California: SANDAG. Adopted January 27, 2012. Accessed April 25, 2013. http://www.sandag.org/uploads/projectid/projectid_296_13998.pdf.

SCS Engineers. 2014. *Otay Ranch Village 3 North Nuisance Study*. Prepared for SSBT LCRE V LLC. Sacramento, California: SCS Engineers. May 2014.

SDCRAA (San Diego County Regional Airport Authority). 2010. *Brown Field Municipal Airport Land Use Compatibility Plan*. December 20, 2010.

SDCRAA. 2012. *Consistency Determination Brown Field Municipal Airport, Airport Land Use Compatibility Plan (ALUCP).* June 7, 2012.

5.2 LANDFORM ALTERATION/AESTHETICS

Caltrans (California Department of Transportation). 2011. "Scenic Highway Program Frequently Asked Questions." California Department of Transportation Website. 2011. Accessed December 22, 2011. http://www.dot.ca.gov/hq/LandArch/scenic/faq.htm.

City of Chula Vista. 2003. Greenbelt Master Plan. Adopted by City Council on September 16, 2003. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/PDF/GreenbeltMP.pdf. Accessed January 2, 2014.

City of Chula Vista. 2005. *Chula Vista General Plan: Vision 2020*. Adopted December 13, 2005.

City of Chula Vista. 2011. Design Manual. Updated by the City Council on January 18, 2011.

City of Chula Vista. 2013. Otay Ranch Village 8 West EIR. C.V. EIR 10-30. SCH No. 2010062093. June 2013.

City of Chula Vista and County of San Diego. 1993. *Otay Ranch Resource Management Plan Phase 1*. Adopted October 28, 1993.

County of San Diego Department of Parks and Recreation. 2005. Otay Valley Regional Park Design Standards & Guidelines. http://ovrp.org/uploads/documents/Otay%20Valley%20Regional%20Park%20Color%20Design%20Guidelines.pdf. Accessed January 2, 2014.

5.3 TRANSPORTATION, CIRCULATION, AND ACCESS

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

Caltrans (California Department of Transportation). 2012a. Highway Design Manual. May 7, 2012. http://www.dot.ca.gov/hq/oppd/hdm/hdmtoc.htm.

Caltrans. 2012b. *California Manual on Uniform Traffic Control Devices*. http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/ca_mutcd2012.htm.

Chen Ryan Associates. 2014. *Traffic Impact Analysis, University Villages TIA, Otay Ranch Village Three North, 8 East and 10.* Revised Report. Prepared for SSBT LCRE V, LLC.

City of Chula Vista and County of San Diego. 1993. *Otay Ranch Resource Management Plan, Phase I*. October 1993. Accessed October 2013. http://www.sdcounty.ca.gov/pds/docs/OtayRMP.pdf.

City of Chula Vista and County of San Diego. 2002. *Otay Ranch Resource Management Plan, Phase 2*. Adopted June 1996; revised August 2002. Accessed October 2013. http://www.sdcounty.ca.gov/pds/docs/OtayRanchRMP2.pdf.

City of Chula Vista. 2003. *City of Chula Vista MSCP Subarea Plan*. February 2003.

City of Chula Vista. 2005a. *Draft Otay Ranch General Development Plan Amendment Revisions*. September, 2005. Accessed December 20, 2011. http://www.chulavistaca.gov/city_services/development_services/Planning_Building/General_Plan/documents/ORGDP_Revisions_September2005.pdf.

City of Chula Vista. 2005b. *Chula Vista Vision 2020 General Plan Update Final Environmental Impact Report.*

City of Chula Vista. 2007. Public Facilities Financing Plan and Facilities Benefit Assessment Fiscal Year 2007. City Planning and Community Investment Department. October 18, 2006.

City of Chula Vista. 2011. *City of Chula Vista Bikeway Master Plan*. http://www.chulavistaca.gov/city_Services/Development_Services/engineering/BikewayMasterPlan.asp.

City of San Diego. 2007. *CEQA Significance Determination Thresholds*. City of San Diego Development Services Department. January 2007.

County of San Diego. 2012. *County of San Diego Public Roads Standards.* Department of Public Works. March 2012. http://www.sdcounty.ca.gov/dpw/docs/pbrdstds.pdf.

LLG (Linscott, Law and Greenspan). 2011. *Olympic Parkway Capacity Enhancement Analysis*.

SANDAG (San Diego Association of Governments). 2008. *2008 Congestion Management Program Update*. http://www.sandag.org/uploads/publicationid/publicationid_1403_14037.pdf.

SANTEC/ITE (San Diego Traffic Engineers' Council and Institute of Transportation Engineers). 2000. *SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region*.

TRB (Transportation Research Board). 2010. *Highway Capacity Manual 2010*.

5.4 AIR QUALITY

Caltrans (California Department of Transportation). 1997. *Transportation Project-Level Carbon Monoxide Protocol*. Accessed October 2013. http://www.dot.ca.gov/hq/env/air/documents/COProtocol_searchable.pdf.

Caltrans. 1998. *User's Guide for CL4: A User-Friendly Interface for the Caline 4 Model for Transportation Project Impact Assessments*. User's Guide STI-997480-1814-UG. Prepared for Caltrans - U.C. Davis Air Quality Project. June 20, 1998. Accessed January 27, 2010. http://aqp.engr.ucdavis.edu/Modeling/Modeling.html.

CARB (California Air Resources Board). 2000. "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles." October 2000. http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf.

CARB. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April 2005. http://www.arb.ca.gov/ch/handbook.pdf.

CARB. 2013a. "Glossary of Air Pollutant Terms." CARB website. http://www.arb.ca.gov/html/gloss.htm.

CARB. 2013b. "Ambient Air Quality Standards." June 4, 2013. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

CARB. 2013c. "Area Designations Maps/State and National." http://www.arb.ca.gov/desig/adm/adm.htm.

CARB. 2013d. "Air Quality Data Statistics." http://arb.ca.gov/adam.

CARB. 2014. Proposed First Update to the Climate Change Scoping Plan: Building the Framework. Pursuant to AB 32 The California Global Warming Solutions Act of 2006. February 2014.

Chen Ryan Associates. 2014. *Traffic Impact Analysis, University Villages TIA, Otay Ranch Village Three North, 8 East and 10.* Revised Report. Prepared for SSBT LCRE V, LLC.

City of Chula Vista. 2006. *Otay Ranch Villages Two, Three, and a Portion of Village Four Section Planning Area (SPA) Plan, Final Second Tier Environmental Impact Report*. SCH No. 2003091012. May 2006.

City of Chula Vista. 2010. City of Chula Vista Municipal Code. Revised February 2010.

Dudek. 2014. *Biological Technical Report for the Otay Ranch University Villages Project*. City of Chula Vista, California. March 2014.

Dudek. 2014. *Air Quality and Global Climate Change Technical Report for the Otay Ranch University Villages Project.* City of Chula Vista, California. May 2014.

EPA (U.S. Environmental Protection Agency). 2010. "Six Common Air Pollutants." Last updated July 2010. http://www.epa.gov/air/urbanair/.

EPA. 2013a. "Region 9: Air Programs, Air Quality Maps." Last updated on April 8, 2013. http://www.epa.gov/region9/air/maps/maps_top.html.

EPA. 2013b. "Monitor Values Report." http://www.epa.gov/airdata/ad_rep_mon.html.

Jones and Stokes. 2007. *Software User's Guide: URBEMIS2007 for Windows; Emissions Estimation for Land Use Development Projects*. Version 9.2.4. Prepared for the South Coast Air Quality Management District. November 2007. http://www.urbemis.com/support/manual.html.

SCAQMD (South Coast Air Quality Management District). 2011. "SCAQMD Air Quality Significance Thresholds." March 2011. Accessed February 2012. http://www.aqmd.gov/CEQA/handbook/signthres.pdf.

SCS Engineers. 2014a. *Air Toxics Health Risk Assessment for Otay Ranch Village Three North*. Prepared for SSBT LCRE V LLC. Sacramento, California: SCS Engineers. May 2014.

SCS Engineers. 2014b. *Otay Ranch Village 3 North Nuisance Study*. Prepared for SSBT LCRE V LLC. Sacramento, California: SCS Engineers. May 2014.

SDAPCD (San Diego Air Pollution Control District). 1969. Rules and Regulations. Regulation IV. Prohibitions. Rule 51. Nuisance. Effective January 1, 1969.

SDAPCD. 2001. Rules and Regulations. Regulation IV. Prohibitions. Rule 67. Architectural Coatings. Revised December 12, 2001.

SDAPCD. 2005. *Measures to Reduce Particulate Matter in San Diego County*. December 2005. http://www.sdapcd.org/planning/plan.html.

SDAPCD. 2007. *Eight-Hour Ozone Attainment Plan for San Diego County*. May 2007. http://www.sdapcd.org/planning/plan.html.

SDAPCD. 2009. SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust. December 24, 2009. http://www.sdapcd.org/rules/Reg4pdf/R67-0.pdf.

SDAPCD. 2012a. *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County*. December 15, 2012. http://www.sdapcd.org/planning/8_Hour_O3_Maint-Plan.pdf

SDAPCD. 2012b. Email correspondence between Jennifer Longabaugh (Dudek) and Cynthia Gould (SDAPCD). November 27.

SRA (Scientific Resources Associated). 2013. *Air Toxics Health Risk Assessment for the Otay Ranch Village 8 East Project*. Prepared for SSBT LCRE V LLC. San Diego, California: SRA. September 2013.

5.5 NOISE

California Building Standards Commission. 2013. *2013 California Green Building Standards Code, California Code of Regulations, Title 24, Part 1*. July 2013.

California Department of Transportation. 2009. *Technical Noise Supplement*. Division of Environmental Analysis.

Chen Ryan Associates. 2014. *Traffic Impact Analysis, University Villages TIA, Otay Ranch Village Three North, 8 East and 10.* Revised Report. Prepared for SSBT LCRE V, LLC.

City of Chula Vista. 2005. Final Environmental Impact Report, Chula Vista Vision 2020, General Plan Update. December 2005.

City of Chula Vista. 2006. Otay Ranch Villages Two, Three, and a Portion of Village Four Section Planning Area (SPA) Plan, Final Second Tier Environmental Impact Report. SCH No. 2003091012. May 2006.

City of Chula Vista. 2010. City of Chula Vista Municipal Code. Revised February 2010.

City of Chula Vista. 2013. Chula Vista Municipal Code. Current through Ordinance 3277, passed September 17, 2013.

City of Riverside. 2009. Alessandro Business Center Final Environmental Impact Report.

City of San Diego. 2007. Program Environmental Impact Report, City of San Diego General Plan.

City of Santa Ana. 2010. City of Santa Ana Transit Zoning Code (SD 84A and SD 84B) Final Environmental Impact Report (SCH No. 2006071100).

County of San Diego. 2005. Airport Land Use Compatibility Plan for Brown Field.

Dudek. 2014. *Noise Assessment Technical Report for the Otay Ranch University Villages Project*. March 2014.

EPA (U.S. Environmental Protection Agency). 1971. *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances*. Prepared under contract by Bolt, Beranek & Newman. Boston, Massachusetts.

FHWA (Federal Highway Administration). 1997. Transportation Noise Model, version 2.5 (TNM 2.5).

FTA (U.S. Department of Transportation, Federal Transit Administration, Office of Planning and Environment). 2006. FTA-VA-90-1003-06. Transit Noise and Vibration Impact Assessment. (Prepared under contract by Harris, Miller, Miller and Hanson). Burlington, Massachusetts.

Gordon Bricken & Associates. 1996. Acoustical Analysis Addendum to the Adopted Environmental Impact Report Disneyland Resort, City of Anaheim. February 1996.

Harris, Cyril M., ed. 1979. *Handbook of Noise Control*. Second Edition. New York, New York: McGraw-Hill Inc.

RECON (RECON Environmental Inc.). 2005. *Revised Noise Technical Report for Otay Ranch Village Two and Three, Planning Area 18B, and a Portion of Village Four*. December 19, 2005.

SUHSD (Sweetwater Unified High School District). 2011. Facility Capacities. November 14.

Siskind, David E., et al. 1980. *Report of Investigations 8485, Structure Response and Damage Produced by Airblast from Surface Mining*. United States Department of the Interior, Bureau of Mines. Accessed July 1, 2013. http://www.arblast.osmre.gov/downloads/USBM/RI%208485%20Structure%20Response%20and%20Damage%20Produced%20by%20Airblast%201980.pdf.

5.6 CULTURAL RESOURCES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

16 U.S.C. 470 et seq. National Historic Preservation Act.

36 FR 8921. Executive Order 11593, "Protection and Enhancement of the Cultural Environment."

Brian F. Smith and Associates Inc. 2014. *Cultural Resources Study for the University Villages Project at Otay Ranch*. March 2014.

California Health and Safety Code, Section 7050.5. General Provisions.

California Public Resources Code, Sections 5097–5097.6. Archaeological, Paleontological, and Historical Sites.

City of Chula Vista and County of San Diego. 1993. *Otay Ranch Resource Management Plan Phase 1*. Adopted October 28, 1993.

City of Chula Vista and County of San Diego. 2002. *Otay Ranch Phase 2 Resource Management Plan*. Adopted June 4, 1996, revised August 7, 2002.

City of Chula Vista. 2011. *City of Chula Vista Historic Preservation Program.* Adopted July 19, 2011.

City of Chula Vista. 2013. *Historic Preservation Commission.* Accessed on December 31, 2013. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/Boards_Commissions/HPC.asp.

5.7 PALEONTOLOGICAL RESOURCES

Brian F. Smith and Associates Inc. 2011. *University Villages – Village Three North and a Portion of Village Four Paleontological Resource and Monitoring Assessment, Chula Vista, San Diego County, California*. Prepared for Otay Ranch New Homes LLC. Poway, California: Brian F. Smith and Associates Inc. May 16, 2011.

Brian F. Smith and Associates Inc. 2011. *University Villages – Village Eight Paleontological Resource and Monitoring Assessment, Chula Vista, San Diego County, California*. Prepared for Otay Ranch New Homes LLC. Poway, California: Brian F. Smith and Associates Inc. LLC, May 17, 2011.

Brian F. Smith and Associates Inc. 2011. *University Villages – Village 10 Paleontological Resource and Monitoring Assessment, Chula Vista, San Diego County, California*. Prepared for Otay Ranch New Homes LLC. Poway, California: Brian F. Smith and Associates Inc. May 18, 2011.

Brian F. Smith and Associates Inc. 2013. *Paleontological Resource and Monitoring Assessment for Village 3 North and a Portion of Village 4, Village 8 East, and Village 10*. Prepared for Otay Ranch New Homes LLC. Poway, California: Brian F. Smith and Associates Inc. May 1, 2013.

5.8 BIOLOGICAL RESOURCES

16 U.S.C. 703–712. Migratory Bird Treaty Act, as amended.

ACOE (U.S. Army Corps of Engineers). 1997. Indicator Species for Vernal Pools. In: Special Public Notice, Regional General Conditions to Nationwide Permits, November 25, 1997. Prepared by the Los Angeles District, Regulatory Branch. November 1997.

Aspen Environmental Group. 2006. Otay River Watershed Management Plan.

City of Chula Vista. 2003. *City of Chula Vista MSCP Subarea Plan.* February 2003. Accessed December 15, 2011. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/Planning/Enviromental/subAreaPlan.asp.

City of Chula Vista and County of San Diego. 1993. *Otay Ranch Resource Management Plan Phase 1*. Adopted October 28, 1993.

City of Chula Vista and County of San Diego. 2002. *Otay Ranch Phase 2 Resource Management Plan.* Adopted June 4, 1996. Last revised August 7, 2002.

City of San Diego. 1996. *Multiple Species Conservation Program Plan*.

CNPS (California Native Plant Society). 2011. *Inventory of Rare and Endangered Plants.* Version 8-01a. Sacramento, California: CNPS. Accessed October 2011. http://www.rareplants.cnps.org/ detail/1599.html.

Dudek. 2006. *Biological Resources Report and Impact Assessment for Otay Ranch Villages Two & Three, City of Chula Vista, San Diego County*.

Dudek. 2008. *Otay Ranch Villages Two & Three Conceptual Vernal Pool Mitigation Plan (Off-Site Mitigation at Otay Ranch Village Thirteen), City of Chula Vista, San Diego County, California*. Prepared for the Otay Ranch Company. February 2008.

Dudek. 2009. 2009 Focused Quino Checkerspot Butterfly Survey, Otay Ranch Preserve, San Diego County, California. Prepared for San Diego County Department of Parks and Recreation.

Dudek. 2013b. Air quality and Global Climate Change Technical Report for the Otay Ranch University Villages Project. Prepared for SSBT LCRE V, LLC.

Dudek. 2013. *Biological Technical Report for the Otay Ranch University Villages Project City Of Chula Vista, San Diego County, California*. Prepared for SSBT LCRE V LLC. Encinitas, California: Dudek. October 2013.

Dudek. 2014. *Air Quality and Global Climate Change Technical Report for the Otay Ranch University Villages Project*. March 2014.

Holland, R.F. 1986. *Preliminary descriptions of the terrestrial natural communities of California*. Nongame-Heritage Program, California Department of Fish and Game.

Hunsaker & Associates. 2014a. Tentative Map Drainage Study for Otay Ranch Village 3 North and a Portion of Village 4. City of Chula Vista. Prepared for SSBT LCRE, LLC c/o Meadow Lane, LLC. W.O. 2825-03. March 7, 2014.

Hunsaker & Associates. 2014b. TM Drainage Study for Otay Ranch Village 10. City of Chula Vista. Prepared for Otay Ranch New Homes. W.O. 2825-03. March 7, 2014.

Ogden Environmental and Energy Services. 1992. *Baldwin Otay Ranch wildlife corridor study*. Prepared for Otay Ranch Project Team.

Otay Ranch Company. 2013a. University Villages Otay Ranch Village 3 North and a Portion of Village 4 Preserve Edge Plan. May 10, 2013.

Otay Ranch Company. 2013b. University Villages Otay Ranch Village 8 East Preserve Edge Plan. April 12, 2013.

Otay Ranch Company. 2013c. University Villages Otay Ranch Village 10 Preserve Edge Plan. May 31, 2013.

RECON. 2013. Otay Ranch Preserve – Formerly Used Defense Site of the Salt Creek Parcels: 2013 Quino Checkerspot butterfly Survey Report. Prepared for city of Chula Vista.

URS. 2012a. *Otay Land Company Village 9 Biological Resources Report*. Prepared for Otay Land Company. URS Project No. 27659026.00200. January 2012.

URS. 2012b. *Otay Land Company Village 8 West Biological Resources Report*. Prepared for Otay Land Company. URS Project No. 27659026.00100. October 2012.

USFWS (U.S. Fish and Wildlife Service). 1997. *Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol*. July 28.

USFWS. 2002. *Quino Checkerspot Butterfly (Euphydryas editha quino) Survey Protocol Information*. Carlsbad, California. February 2002.

5.9 AGRICULTURAL RESOURCES

California Government Code, Sections 51200–51297.4. The California Land Conservation Act of 1965 (Williamson Act), as amended.

California Public Resources Code, Section 12200–12292. California Forest Legacy Program Act of 2007.

California Public Resources Code, Section 4511–4628. The Z'berg-Nejedly Forest Practice Act of 1973.

California Government Code, Section 51100–51104. California Timberland Productivity Act of 1982.

DOC (California Department of Conservation). 2010. "San Diego County Important Farmland 2008, Sheet 1 of 2" [map]. Sacramento, California: Farmland Mapping and Monitoring Program. City of Chula Vista. 2005a. *Chula Vista General Plan: Vision 2020*. Adopted December 13, 2005.

City of Chula Vista. 2005b. Chula Vista Municipal Code. Chapter 17.30: Otay Ranch Grazing. 2005. Accessed November 16, 2011. http://www.codepublishing.com/ca/ChulaVista/html/ChulaVista17/ChulaVista1730.html.

City of Chula Vista. 2012. *Chula Vista Municipal Code*. http://www.codepublishing.com/CA/chulavista_html.html.

5.10 WATER QUALITY AND HYDROLOGY

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

22 CCR, Division 4, Chapter 15. Domestic Water Quality and Monitoring Regulations.

40 CFR 131.12. Antidegradation Policy.

40 CFR 131.38. California Toxics Rule.

40 CFR 141. National Primary Drinking Water Regulations.

40 CFR 143. National Secondary Drinking Water Regulations.

Aspen Environmental Group. 2006. *Otay River Watershed Management Plan*. Prepared for Otay River Watershed Management Plan Joint Exercise of Powers Agreement Public Agencies (City of Chula Vista, City of Imperial Beach, City of San Diego, County of San Diego, San Diego Unified Port District). May 2006.

California Department of Water Resources. 2014. *Division of Safety of Dams and Water Resources.* Accessed on March 11, 2014.

CGS (California Geological Survey). 2009. State of California Tsunami Inundation Map for Emergency Planning.

City of Chula Vista. 2005. *Chula Vista General Plan: Vision 2020*. Adopted December 13, 2005.

City of Chula Vista. 2011. *Development Storm Water Manual*. January 2011.

County of San Diego. 2011. *Final Hydromodification Management Plan*. March 2011.

County of San Diego. 2012. *County of San Diego SUSMP*. Approved January 8, 2011, revised August 1, 2012.

FEMA (Federal Emergency Management Agency). 2013a. FEMA Flood Insurance Rate Map (FIRM) Panel 06059C0264J.

FEMA. 2013b. Definition of FEMA Flood Zone Designations. Accessed July 10, 2013. https://msc.fema.gov/webapp/wcs/stores/servlet/info?storeId=10001&catalogId=10001&langId=-1&content=floodZones&title=FEMA%2520Flood%2520Zone%2520Designations.

Hunsaker and Associates. 2014. Tentative Map Drainage Study for Otay Ranch Village 3 North and a Portion of Village 4; Village 8 East; and Village 10. City of Chula Vista. Prepared for SSBT LCRE, LLC c/o Meadow Lane, LLC. W.O. 2825-03. March 7, 2014.

Project Clean Water. 2013. “Otay Watershed.” Accessed August 18, 2013. www.projectcleanwater.org/html/ws_otay.html.

RWQCB (Regional Water Quality Control Board). 2011. “2010 Santa Ana Regional 303(d) List of Water Quality Limited Segments.” California Regional Water Quality Control Board, Santa Ana Region. http://www.swrcb.ca.gov/rwqcb8/water_issues/programs/tmdl/303d.shtml#2008_2010. Accessed July 16, 2013.

SWRCB (State Water Resources Control Board). 2009. *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (CGP)*. Order No. 2009-0009-DWQ; NPDES No. CAS000002. Adopted September 2, 2009; effective July 1, 2010.

5.11 GEOLOGY AND SOILS

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

29 CFR 1926.650. Occupational Safety and Health Administration (OSHA) Excavation and Trenching Standard.

CGS (California Geologic Survey). 1997. *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. Special Publication 117.

City of Chula Vista. 1993. *Final Otay Ranch General Development Plan Program EIR*. EIR 90-01.

City of Chula Vista. 2005. *Draft Otay Ranch General Development Plan Amendment Revisions*. September, 2005. Accessed December 20, 2011. http://www.chulavistaca.gov/city_services/development_services/Planning_Building/General_Plan/documents/ORGDP_Revisions_September2005.pdf.

Geocon Inc. 2012a. Geotechnical Investigation for Otay Ranch Village 8 East. Chula Vista, California. November 21, 2012.

Geocon Inc. 2012b. Geotechnical Investigation for Otay Ranch Village Ten. Chula Vista, California. November 20, 2012.

Geocon Inc. 2013. Geotechnical Investigation for Otay Ranch Village 3 North. Chula Vista, California. May 23, 2013.

PRC. Sections 2621–2630. Alquist-Priolo Earthquake Fault Zoning Act.

PRC. Sections 2690–2699.6. Seismic Hazards Mapping Act.

PRC. Section 2710 et seq. Surface Mining and Reclamation Act of 1975.

SWRCB (State Water Resources Control Board). 1999. Order No. 99-08-DWQ NPDES General Permit No. CAS00002 (Construction General Permit).

SWRCB. 2001. Construction General Permit Order No. 2001-046.

5.12 PUBLIC SERVICES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

California Department of Education (CDE). 2013a. *Enrollment by Grade for 2012-2013 - District and School Enrollment by Grade: Chula Vista Elementary School District*. May 30, 2013. Date Accessed February 4, 2014.

CDE. 2013b. *Enrollment by Grade for 2012-2013 - District and School Enrollment by Grade: Sweetwater Union High School District*. May 30, 2013. Date Accessed February 4, 2014.

CVESD (Chula Vista Elementary School District). 2011. *School Facilities Needs Analysis.* June 2011. CVESD. 2012. Chula Vista Elementary School District website, About Us. Accessed August 13, 2010, available at www.cvesd.org/DISTRICT/Pages/welcome.aspx.

City of Chula Vista. 2003a. City of Chula Vista MSCP Subarea Plan. February 2003. Accessed December 15, 2011. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/Planning/Environmental/subAreaPlan.asp.

City of Chula Vista. 2003b. *Greenbelt Master Plan*. Chula Vista, California: City of Chula Vista.

City of Chula Vista. 2005a. City of Chula Vista General Plan – Chula Vista Vision 2020. Adopted December 13, 2005.

City of Chula Vista. 2005b. *Draft Otay Ranch General Development Plan Amendment Revisions*. September, 2005. Accessed October 2013. http://www.chulavistaca.gov/city_services/development_services/Planning_Building/General_Plan/documents/ORGDP_Revisions_September2005.pdf.

City of Chula Vista. 2008. *Eastern Urban Center Sectional Planning Area EIR.* January 2008. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/Planning/Community/EUC/PDF/ChulaVistaEUCDraftEIR1.pdf#page=576.

City of Chula Vista. 2010. *Draft Parks & Recreation Master Plan Update*. December, 2010. Accessed December 20, 2011. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/PDF/DraftParkandRecreationMasterPlanUpdate_001.pdf.

City of Chula Vista. 2011. *Chula Vista Public Library: Strategic Facilities Plan*. Chula Vista, California: City of Chula Vista. April 2011. http://www.chulavistaca.gov/City_Services/Community_Services/Library/PDFs/0-1CVPLreportFINAL41911_000.pdf.

City of Chula Vista. 2013a. Chula Vista Municipal Code. Current through Ordinance 3277, passed September 17, 2013.

City of Chula Vista. 2013b. Fire Department website, Station Locations and Apparatus. Accessed October 30, 2013. www.chulavistaca.gov/City_Services/Public_Safety/Fire_Department/Stations/Default.asp.

City of Chula Vista. 2013c. City of Chula Vista Public Library website. Accessed August 13, 201. www.chulavistaca.gov/City_Services/Community_Services/Library/About/about.asp.

City of Chula Vista. 2013d. *Growth Management Oversight Commission: 2013 Annual Report.* Chula Vista, California: City of Chula Vista Development Services. April 25, 2013.

City of Chula Vista.2013e. *A Supplemental Environmental Impact Report for Amendments to the City of Chula Vista General Plan (GPA-09-01) and Otay Ranch General Development Plan (PCM-09-11)*. Chula Vista, California: City of Chula Vista and RECON.

City of Chula Vista and County of San Diego. 2002. *Otay Ranch Phase 2 Resource Management Plan*. Adopted June 4, 1996, revised August 7, 2002.

CVFD (Chula Vista Fire Department). 2013. Personal communication regarding Fire Station No. 7. March 12, 2013.

CVPD (Chula Vista Police Department). 2013. Personal communication regarding the new community storefront facility at Otay Ranch Town Center. March 19, 2013.

SCS Engineers. 2014. *Otay Ranch Village 3 North Nuisance Study*. Prepared for SSBT LCRE V LLC. Sacramento, California: SCS Engineers. May 2014.

5.13 UTILITIES

CalEEMod (California Emissions Estimator Model). 2013. Appendices A and D. July 2013.

CalRecycle. 2014. Facility/Site Summary Details: Sycamore Landfill (37-AA-0023). Accessed July 22, 2014. http://www.calrecycle.ca.gov/SWFacilities/Directory/37-AA-0023/Detail/

CARB. 2008. *Climate Change Proposed Scoping Plan: A Framework for Change*. October, approved December 12, 2008. http://www.arb.ca.gov/cc/scopingplan/document/psp.pdf.

CEC (California Energy Commission). 2011. *2011 Integrated Energy Policy Report.* Final Commission Report. CEC-100-2011-001-CMF. California Energy Commission. Accessed October 31, 2012. http://www.energy.ca.gov/2011publications/CEC-100-2011-001/CEC-100-2011-001-CMF.pdf.

City of Chula Vista. 2005a. *City of Chula Vista General Plan – Chula Vista Vision 2020*. Adopted December 13, 2005.

City of Chula Vista. 2005b. *Chula Vista Wastewater Master Plan*. May 2005.

City of Chula Vista. 2005c. *Final Environmental Impact Report, Chula Vista Vision 2020, General Plan Update*. December 2005.

City of Chula Vista. 2013a. City of Chula Vista Landscape Water Conservation Ordinance: Conservation. Accessed August 29, 2013. http://www.chulavistaca.gov/clean/conservation/Watershed/LandscapeOrdinance.asp.

City of Chula Vista. 2013b. *City of Chula Vista Growth Management Oversight Commission 2013 Annual Report*. Threshold Review Period 7/1/11 to 6/30/12. April 25, 2013.

City of Chula Vista. 2013c. "City of Chula Vista Growth Management Program." Accessed August 29, 2013. http://www.chulavistaca.gov/city_services/development_services/planning_building/Planning/Growth/Management.asp.

City of Chula Vista. 2013d. Chula Vista Municipal Code. Current through Ordinance 3277, passed September 17, 2013.

California Public Utilities Commission (CPUC). 2011. *California Energy Efficiency Strategic Plan.* Adopted in 2008. Updated in 2011. http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf.

Dexter Wilson (Dexter Wilson Engineering Inc.) 2014a. *Overview of Water Service for Otay Ranch University Villages*. Carlsbad, California: Dexter Wilson Engineering, Inc. March 2014.

Dexter Wilson. 2014b. *Otay Ranch University Villages II.8 Water Conservation Plan*. Carlsbad, California: Dexter Wilson Engineering, Inc. March 2014.

Dexter Wilson. 2014c. *Overview of Sewer Service for Otay Ranch University Villages*. Carlsbad, California: Dexter Wilson Engineering, Inc. March 2014.

Dudek. 2014. *Air Quality and Global Climate Change Technical Report for the Otay Ranch University Villages Project.* City of Chula Vista, California. May 2014.

Energy Upgrade California. 2014. *Energy Upgrade California: Your Energy*. https://energyupgradeca.org/statewide_rebates.

MWD (Metropolitan Water District). 2010a. 2010 Regional Urban Water Management Plan. Adopted November 2010.

MWD. 2010b. Integrated Water Resources Plan. 2010 Update. Prepared by Metropolitan Water District of Southern California. October.

ORJPP (Otay Ranch Joint Planning Project). 2005. Otay Ranch General Development Plan, Otay Subregional Plan. Amended 2005.

OWD (Otay Water District). 2013a. *Water Supply Assessment and Verification Report*.

OWD. 2013b. Otay Water District Water Resources Master Plan. Adopted October 2008, Approved February 3, 2010. Last revised April 2013.

SDCWA (San Diego County Water Authority). 2011. 2010 Urban Water Management Plan. Prepared by the San Diego County Water Authority Water Resources Department. June.

SDG&E (San Diego Gas and Electric). 2013a. San Diego Gas & Electric – Electric Generation Fact Sheet. October 21, 2013.

SDG&E. 2013b. San Diego Gas & Electric Company Salt Creek Substation Project. Proponent's Environmental Assessment. September 2013.

State of California. 2004a. State Executive Order S-12-04. July 2004.

State of California. 2004b. State Executive Order S-20-04. July 2004.

State of California. 2005. State Executive Order S-3-05. June 2005.

U.S. Department of Energy. 2012. "U.S. States – California." U.S. Energy Information Administration, Independent Statistics & Analysis. Accessed October 31, 2012 at: http://www.eia.gov/beta/state/data.cfm?sid=CA.

5.14 GLOBAL CLIMATE CHANGE

BAAQMD (Bay Area Air Quality Management District). 2010. Greenhouse Gas Model (BGM). Version 1.1.9 Beta.

CARB (California Air Resources Board). 2006. Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions. Sacramento, California. December 1, 2006.

CARB. 2008. *Climate Change Scoping Plan: A Framework for Change*. December 2008. http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf.

CARB. 2013a. *Climate Change Scoping Plan: First Update – Discussion Draft for Public Review and Comment.* October 2013.

CARB. 2013b. *California Greenhouse Gas Inventory for 2000-2011 – by Category as Defined in the 2008 Scoping Plan*. August 1, 2013. http://www.arb.ca.gov/cc/inventory/data/data.htm.

CAT (California Climate Action Team). 2006. *Final 2006 Climate Action Team Report to the Governor and Legislature.* California Environmental Protection Agency, California Climate Action Team. March 2006.

CAT. 2010. *Climate Action Team Biennial Report*. California Environmental Protection Agency, California Climate Action Team. April 2010.

CAT. 2013. "Climate Action Team Reports." http://www.climatechange.ca.gov/climate_action_team/reports/index.html.

CEC (California Energy Commission). 2006. *Refining Estimates of Water Related Energy Use in California*. PEIR Final Project Report. CEC-500-2006-118. Prepared by Navigant Consulting Inc. December 2006. http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF.

CEC. 2012. "Building Energy Efficiency Standards: Frequently Asked Questions." May 2012. http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2013_Building_Energy_Efficiency_Standards_FAQ.pdf.

City of Chula Vista. 2005. *2005 Greenhouse Gas Emissions Inventory*. http://www.chulavistaca.gov/clean/conservation/climate/documents/GHG_InventoryReport_Final.pdf.

City of Chula Vista. 2008. *2008 Greenhouse Gas Emissions Inventory*. http://www.chulavistaca.gov/clean/PDFs/GHG_2008InventoryReport_FINAL.pdf.

City of Chula Vista. 2009. *2009 Greenhouse Gas Emissions Inventory*. http://www.chulavistaca.gov/clean/conservation/climate/documents/GHG_2009InventoryReport_FINAL.pdfCity of Chula Vista. 2010a. City of Chula Vista Municipal Code. Revised February 2010.

City of Chula Vista. 2010b. *2010 Greenhouse Gas Emissions Inventory*. http://www.chulavistaca.gov/clean/conservation/climate/documents/2010GHGInventoryReport_FINAL.pdf.

City of Chula Vista. 2012. *2012 Greenhouse Gas Emissions Inventory*. http://www.chulavistaca.gov/clean/conservation/climate/documents/2012GHGInventoryReport_FINAL.pdf.

County of San Diego. 2012. *Climate Action Plan*. Adopted June 2012. Accessed November 19, 2012. http://www.sdcounty.ca.gov/pds/advance/climateactionplan.html.

CNRA (California Natural Resources Agency). 2009. *Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97*. December 2009. http://www.ceres.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf.

CNRA. 2013. "Safeguarding California: Preparing for Climate Risks: An Update to the 2009 California Climate Adaptation Strategy, Request for Input." http://resources.ca.gov/climate_adaptation/regional_public_workshops/Request_for_Input.pdf.

Dexter Wilson Engineering. 2014a. *Overview of Water Service for Otay Ranch University Villages*. March 2014.

Dexter Wilson Engineering. 2014b. *Otay Ranch Villages 3 North, A Portion of 4, 8 East, and 10 – Water Conservation Plan.* March 2014.

Dudek. 2014. *Air Quality and Global Climate Change Technical Report for the Otay Ranch University Villages Project.* City of Chula Vista, California. May 2014.

EPA (U.S. Environmental Protection Agency). 2010. *EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks*. Regulatory Announcement. Office of Transportation and Air Quality. EPA-420-F-10-014. April. Accessed at: http://www.epa.gov/oms/climate/regulations/420f10014.pdf.

EPA. 2011. *Final Rulemaking: Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standard*s. Regulations and Standards –Vehicles and Engines. Last updated February 2011. Accessed at: http://www.epa.gov/otaq/climate/regulations.htm.

EPA. 2013. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2011*.April 12, 2013. http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html.

EPA. 2014. "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2012." April 14, 2014. http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2014-Main-Text.pdf.

ICLEI Local Governments for Sustainability USA and the San Diego Foundation. 2012. *Sea Level Rise Adaptation Strategy for the San Diego Bay*. January 2012.

IPCC (Intergovernmental Panel on Climate Change). 2007. "Summary for Policymakers." In *Climate Change 2007: The Physical Science Basis*, edited by S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller, 1–18. A report of Working Group I of the IPCC. New York, New York: Cambridge University Press. Accessed December 29, 2009. http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf.

Jones and Stokes. 2007. *Software User's Guide: URBEMIS2007 for Windows; Emissions Estimation for Land Use Development Projects*. Version 9.2.4. Prepared for the South Coast Air Quality Management District. November 2007. http://www.urbemis.com/support/manual.html.

National Climatic Data Center. 2009. "Global Warming Frequently Asked Questions." http://lwf.ncdc.noaa.gov/oa/climate/globalwarming.html.

OPR (California Governor's Office of Planning and Research). 2008. *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*. Technical Advisory. Sacramento, California: OPR. June 19, 2008. Accessed February 3, 2009. http://opr.ca.gov/download.php?dl=ceqa/pdfs/june08-ceqa.pdf.

OWD (Otay Water District). 2011. *Otay Water District 2010 Urban Water Management Plan*. Adopted June 1, 2011.

State of California (Sea Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT)). 2010. *Sea Level Rise Interim Guidance Document.* October 2010.

University of San Diego. 2008. *San Diego County Greenhouse Gas Inventory*. September 2008.

5.15 HAZARDS AND RISK OF UPSET

CARB (California Air Resources Board). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*.

Coast 2 Coast Environmental Inc. 2011. *Phase I Environmental Site Assessment: Otay Ranch Villages 3, 8 and 10, Chula Vista, CA 91913 and 91915*. Prepared for Meadow Lane, LLC. Del Mar, California: Coast 2 Coast Environmental Inc. November 11, 2011.

Dudek. 2014. *Fire Protection Plans for the University Villages (Villages 3 North/4, 8 East, and 10).*

FEMA (Federal Emergency Management Agency). 1999. Federal Response Plan of 1999.

ICC (International Code Council). 2012. International Fire Code.

OEHHA (Office of Environmental Health Hazard Assessment). 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.

Parsons. 2007. *Site Inspection Report: Former Brown Field Bombing Range San Diego County, California.* Prepared for U.S. Army Corps of Engineers, Southwest IMA Region. December 2007.

San Diego County Regional Airport Authority. 2004. *Airport Land Use Compatibility Plan: Brown Field, San Diego, California*. San Diego, California: San Diego County Regional Airport Authority. Adopted September 21, 1981; amended October 4, 2004.

Scientific Resources Associated. 2014. *Air Toxics Health Risk Assessment*. January.

SCS Engineers. 2013. *Air Toxics Health Risk Assessment*. September 2013.

5.16 HOUSING AND POPULATION

California Department of Finance (CDF). 2013. *E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011 – 2013, with 2010 Benchmark.* Accessed January 9, 2014. http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php.

City of Chula Vista. 2005a. *Chula Vista General Plan: Vision 2020*. Adopted December 13, 2005.

City of Chula Vista. 2005b. *Draft Otay Ranch General Development Plan Amendment Revisions.* September, 2005. Accessed December 20, 2011. http://www.chulavistaca.gov/city_services/development_services/Planning_Building/General_Plan/documents/ORGDP_Revisions_September2005.pdf.

City of Chula Vista. 2006. *Housing Element of the City of Chula Vista General Plan*. Adopted October 24, 2006.

City of Chula Vista. 2013. *General Plan Amendment / General Development Plan Amendment Program Environmental Impact Report*.

SANDAG (San Diego Association of Governments). 2004. *Regional Comprehensive Plan for the San Diego Region*. San Diego, California: SANDAG. Adopted July 23, 2004. Accessed on December 19, 2011. http://www.sandag.org/programs/land_use_and_regional_growth/comprehensive_land_use_and_regional_growth_projects/RCP/rcp_final_complete.pdf.

SANDAG. 2010. *SANDAG Board of Directors Agenda Item N. 10-02-16: 2050 Regional Growth Forecast*. February 26, 2010. Accessed December 15, 2011. http://sandag.org/uploads/projectid/projectid_355_10794.pdf.

SANDAG. 2011a. *2050 Regional Growth Forecast: San Diego Region*. Adopted October 2011. Accessed December 15, 2011. http://profilewarehouse.sandag.org/profiles/fcst/reg999fcst.pdf.

SANDAG. 2011b. *2050 Regional Growth Forecast: City of Chula Vista*. Adopted October 2011. Accessed December 15, 2011. http://profilewarehouse.sandag.org/profiles/fcst/city2fcst.pdf.

SANDAG. 2011c. *Regional Housing Needs Assessment Plan 2010–2020*. October 8, 2011.

5.17 MINERAL RESOURCES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

City of Chula Vista. 2005. *Chula Vista General Plan: Vision 2020*. Adopted December 13, 2005.

County of San Diego. 2011. *San Diego County General Plan*. Figure C-4, Mineral Resource Zones. Adopted August 3, 2011. http://www.sdcounty.ca.gov/dplu/generalplan.html.

PRC, Section 2710 et seq. Surface Mining and Reclamation Act of 1975.

6 CUMULATIVE IMPACTS

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

CARB. 2008. *Climate Change Proposed Scoping Plan: A Framework for Change*. October, approved December 12, 2008. http://www.arb.ca.gov/cc/scopingplan/document/psp.pdf.

Chen Ryan Associates. 2014. *Traffic Impact Analysis, University Villages TIA, Otay Ranch Village Three North, 8 East and 10.* Revised Report. Prepared for SSBT LCRE V, LLC.

City of Chula Vista. 2005. Final Environmental Impact Report – Chula Vista Vision 2020. General Plan Update. December 2005.

City of Chula Vista and County of San Diego. 1993. *Otay Ranch Resource Management Plan Phase 1*. Adopted October 28, 1993.

City of Chula Vista and County of San Diego. 2002. *Otay Ranch Phase 2 Resource Management Plan*. Adopted June 4, 1996, revised August 7, 2002.

City of Chula Vista. 2005a. *City of Chula Vista General Plan – Chula Vista Vision 2020*. Adopted December 13, 2005.

City of Chula Vista. 2005b. *Draft Otay Ranch General Development Plan Amendment Revisions*. September, 2005. Accessed December 20, 2011. http://www.chulavistaca.gov/city_services/development_services/Planning_Building/General_Plan/documents/ORGDP_Revisions_September2005.pdf.

City of Chula Vista. 2013. *General Plan Amendment / General Development Plan Amendment Program Environmental Impact Report*.

Dexter Wilson (Dexter Wilson Engineering Inc.) 2014a. *Overview of Water Service for Otay Ranch University Villages*. Carlsbad, California: Dexter Wilson Engineering, Inc. March 2014.

Dexter Wilson. 2014b. *Otay Ranch University Villages II.8 Water Conservation Plan*. Carlsbad, California: Dexter Wilson Engineering, Inc. March 2014.

Dexter Wilson. 2014c. *Overview of Sewer Service for Otay Ranch University Villages*. Carlsbad, California: Dexter Wilson Engineering, Inc. March 2014.

Geocon Inc. 2013. Geotechnical Investigation for Otay Ranch Village 3 North. Chula Vista, California. May 23, 2013.

Hunsaker and Associates. 2014. Tentative Map Drainage Study for Otay Ranch Village 3 North and a Portion of Village 4; Village 8 East; and Village 10. City of Chula Vista. Prepared for SSBT LCRE, LLC c/o Meadow Lane, LLC. W.O. 2825-03. March 7, 2014.

SCS Engineers. 2014. *Otay Ranch Village 3 North Nuisance Study*. Prepared for SSBT LCRE V LLC. Sacramento, California: SCS Engineers. May 2014.

SDG&E (San Diego Gas and Electric). 2013. San Diego Gas & Electric Company Salt Creek Substation Project. Proponent's Environmental Assessment. September 2013.

CHAPTER 12
LIST OF PREPARERS

City of Chula Vista

Tom Adler, Senior Civil Engineer
Ed Batchelder, Advance Planning Manager
Marni Borg, Contract Environmental Project Manager
Scott Donaghe, Principal Planner and Project Manager
Stan Donn, Senior Planner
Angela Gaines, Police Community Relations Officer
Joe Gamble, Landscape Architect
Justin Gipson, Fire Marshal
Leilani Hines, Housing Manager
Dave Kaplan, Transportation Engineer
Glen Laube, Senior Planner
Marisa Lundstedt, Principal Planner
Ann Moore, Contract City Attorney
Harold Phelps, Associate Planner
Marilyn Ponseggi, Principal Planner
Lynnette Tessitore-Lopez, Associate Planner
Brendan Reed, Environmental Resource Manager
Kim Vander Bie, Associate Planner
Betty Waznis, Library Director
Dai Hoang, Planning Technician

Dudek

Joe Monaco, AICP, Principal in Charge
Brian Grover, AICP, Senior Project Manager
Heather Martinelli, AICP, Environmental Planner
Jennifer Longabaugh, LEED AP ND, Environmental Planner
Alexandra Coniglio, Environmental Analyst
Josh Saunders, Environmental Analyst
Mike Huff, Practice Manager – Urban Forestry
Mike Greene, Acoustician
Lesley Terry, GIS Analyst/CAD Technician
Andrew Greis, GIS Analyst
Anita Hayworth, Senior Biologist
Steve Taffolla, Technical Editor

Devin Brookhart, Publications Specialist Lead
Lindsey Messner, Publications Specialist
Ellie Choa, Publications Specialist

Brian F. Smith and Associates, Inc.

Brian F. Smith
Tracy A. Stropes
George L. Kennedy, Ph.D.
Todd A. Wirths, California Professional Geologist No. 7588

GEOCON, Inc.

John Hoobs, Certified Engineering Geologist No. 1524
Shawn Foy Weedon, Geotechnical Engineer No. 2414

Dexter Wilson Engineering, Inc.

Stephen M. Nielsen, Registered Professional Engineer No. 51070

Coast 2 Coast Environmental, Inc.

Marybeth Norgen, Registered Environmental Assessor No. 05548

Hunsaker and Associates, Inc.

Yolanda Calvo, PE
Chuck Cater
Raymond Escobar, PE
Dave Hammar
Ryan Martin
Alisa Vialpando, PE

Scientific Resources Associated

Valorie L. Thompson, Ph.D.

SCS Engineers

Pat Sullivan, R.E.P.A, C.P.P.
John Henkelman, Project Professional

Chen Ryan Associates

Monique Chen, PE
Phuong Nguyen

Gatzke, Dillon and Balance, LLP

Mark Dillon, JD
Michael Haberkorn, JD
Danielle Morone, JD
Rachelle Cook, JD

Otay Water District – Water Supply Assessment and Verification

Robert Kennedy, P.E., Associate Civil Engineer

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