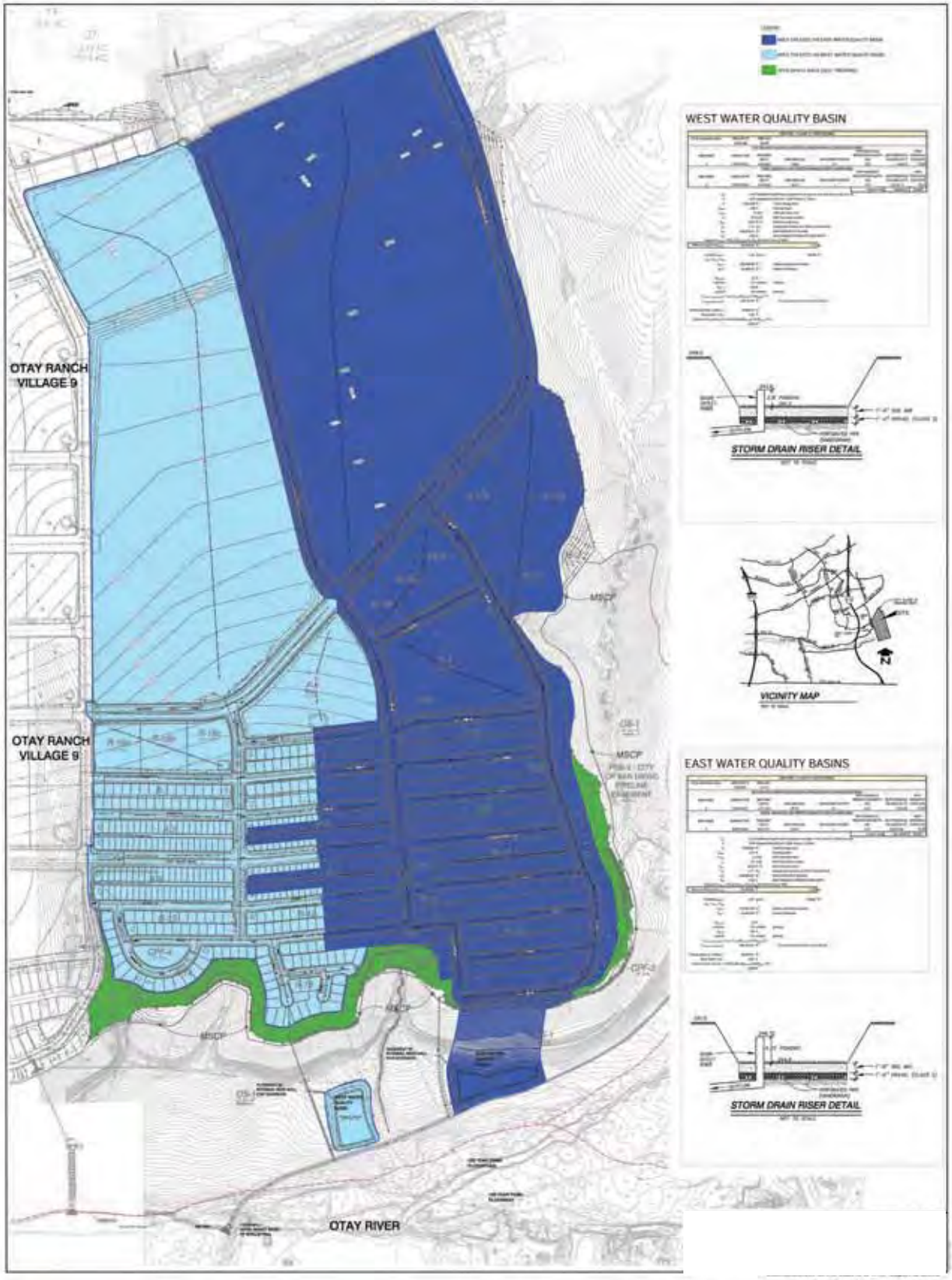

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FIGURE 0-

Village Ten MP ocation 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.

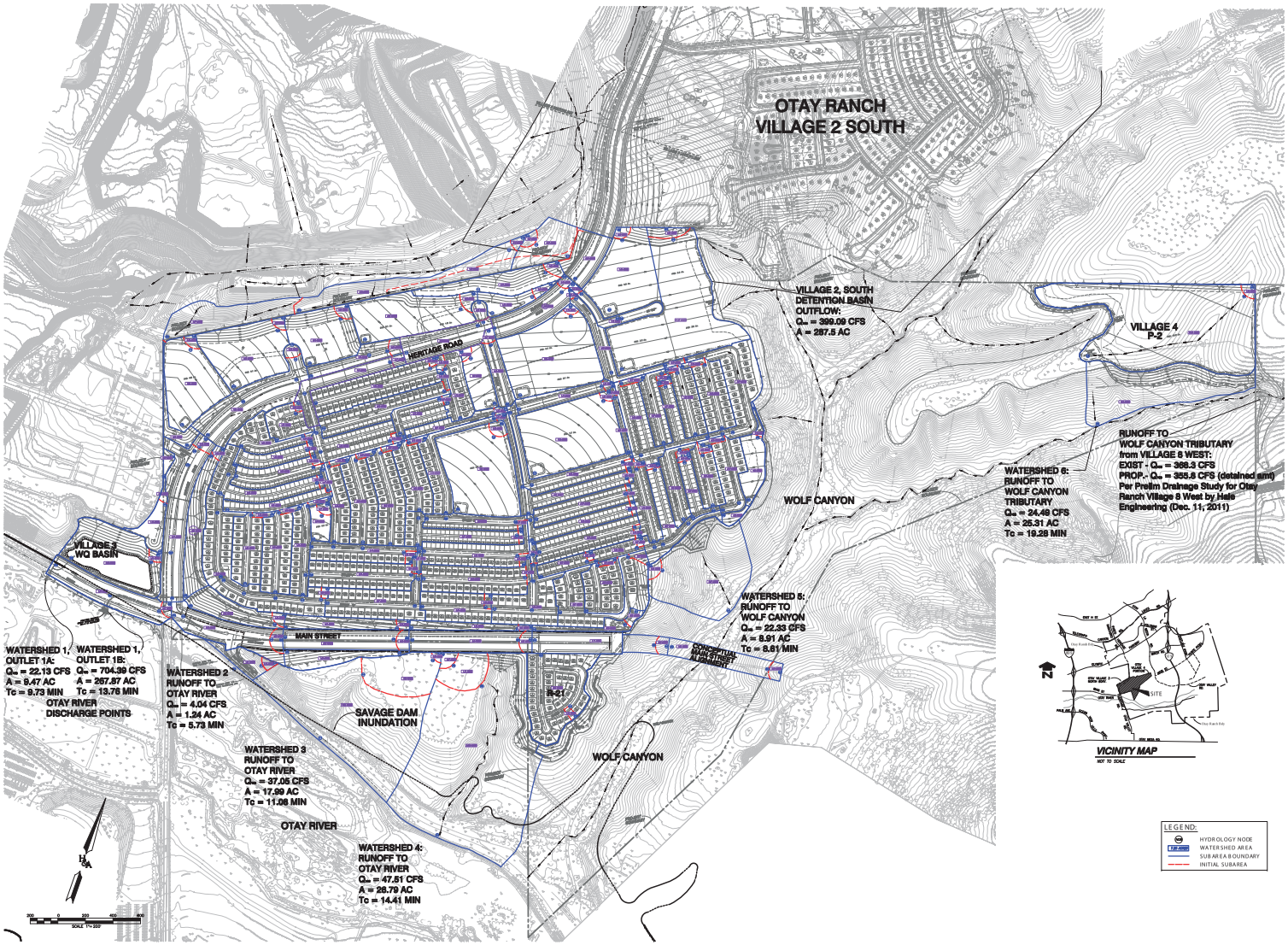

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FIGURE 0-7

Village Three North an a Portion of Village Four e elope y rology 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.

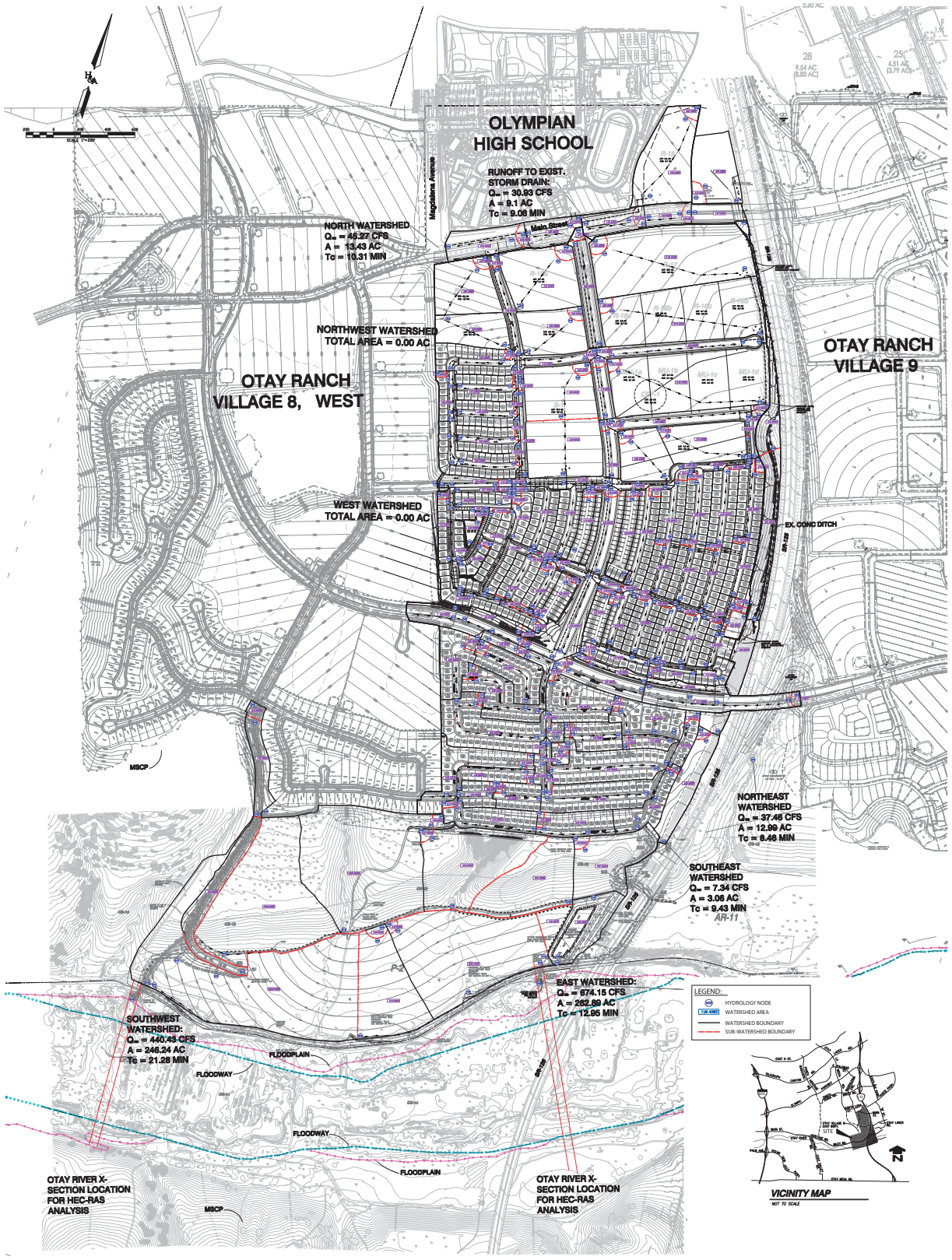

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FIGURE 0-

Village Eight East e elope y rology 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

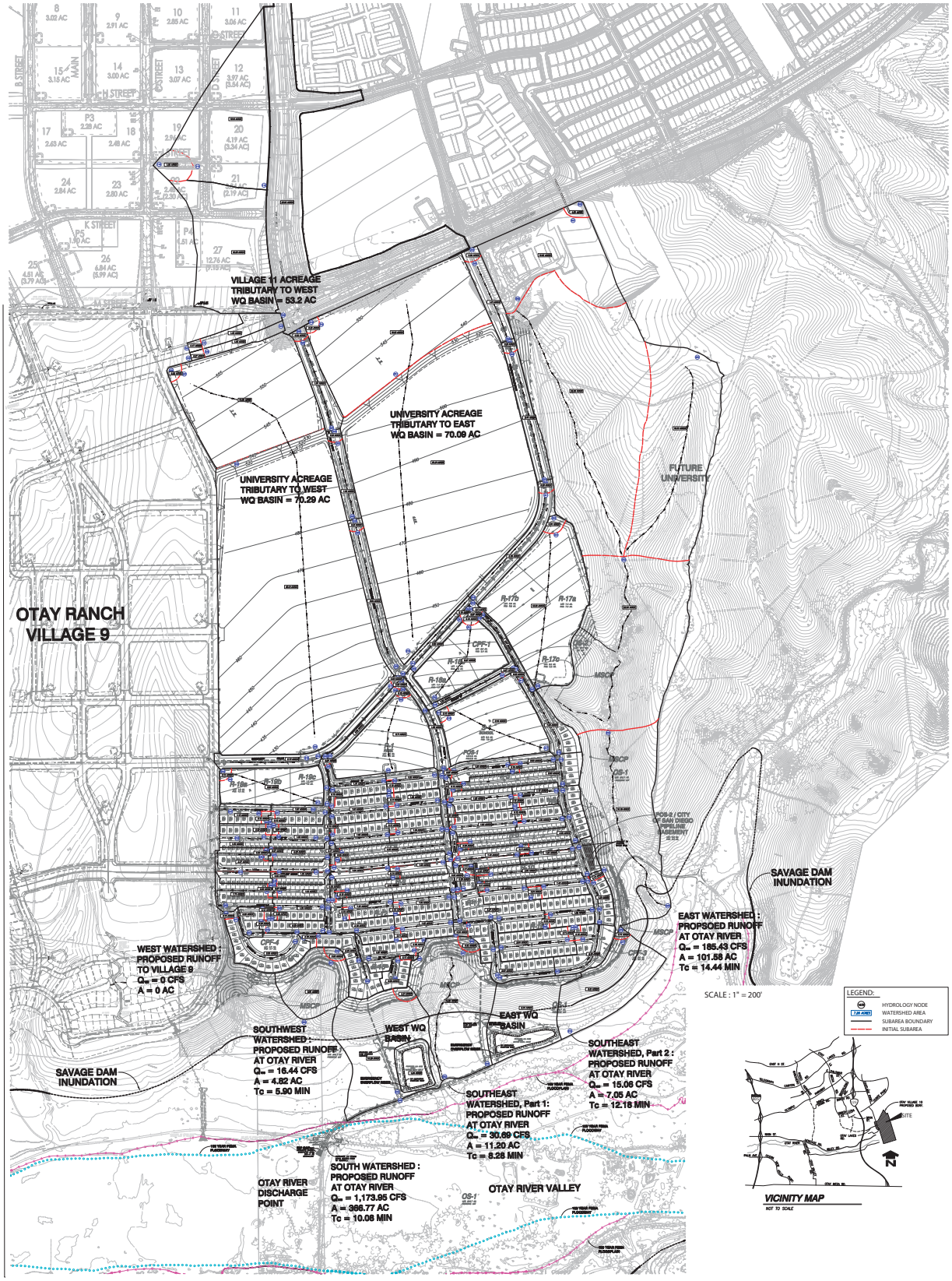

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FIGURE 0-

Village Ten e elope y rology 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.

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FIGURE 0- 0

e elope on ition tay Ri er Valley a Inun ation Map

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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 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

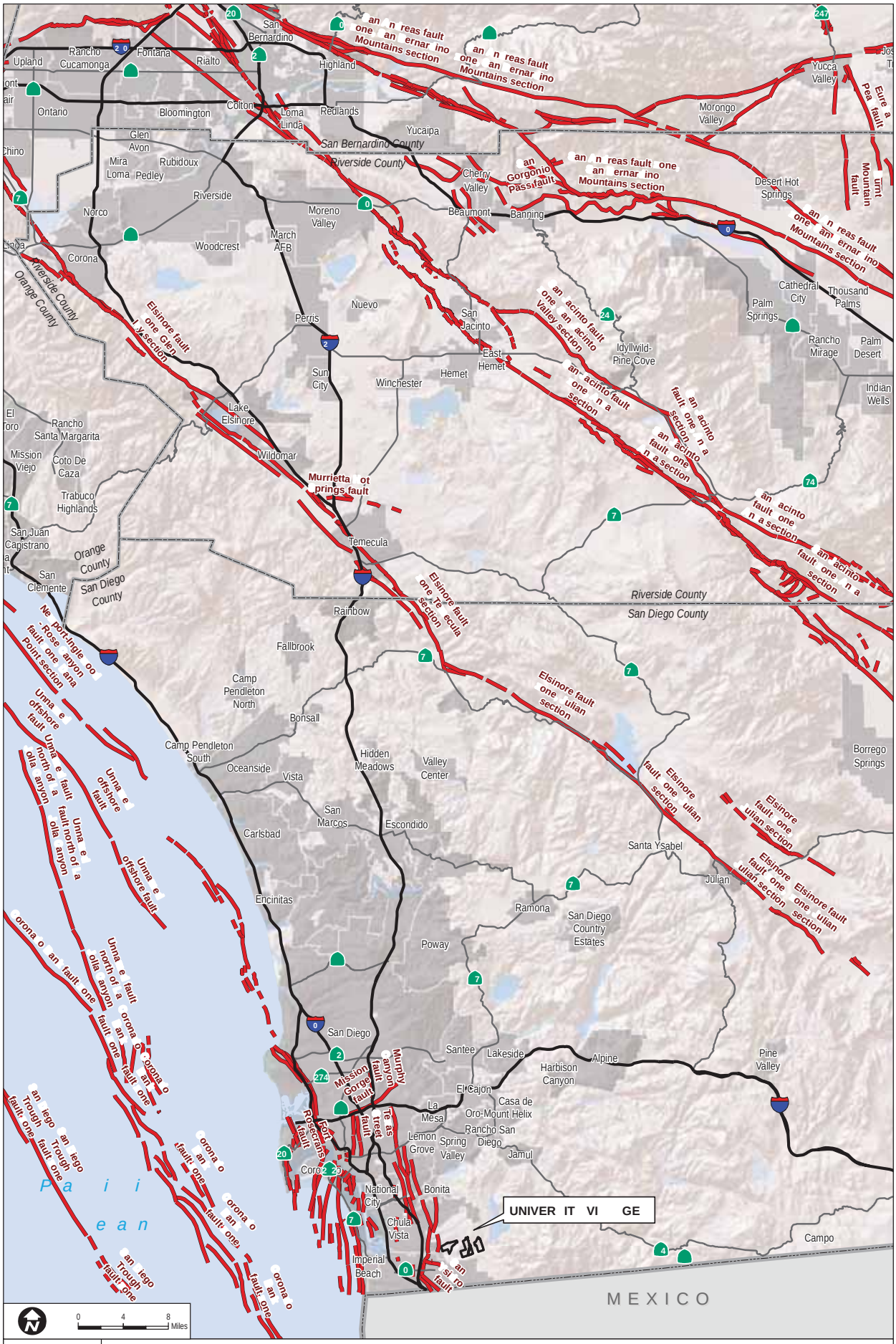
Source: Appendix H of this EIR.

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 -
outhern alifornia Ma or 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.

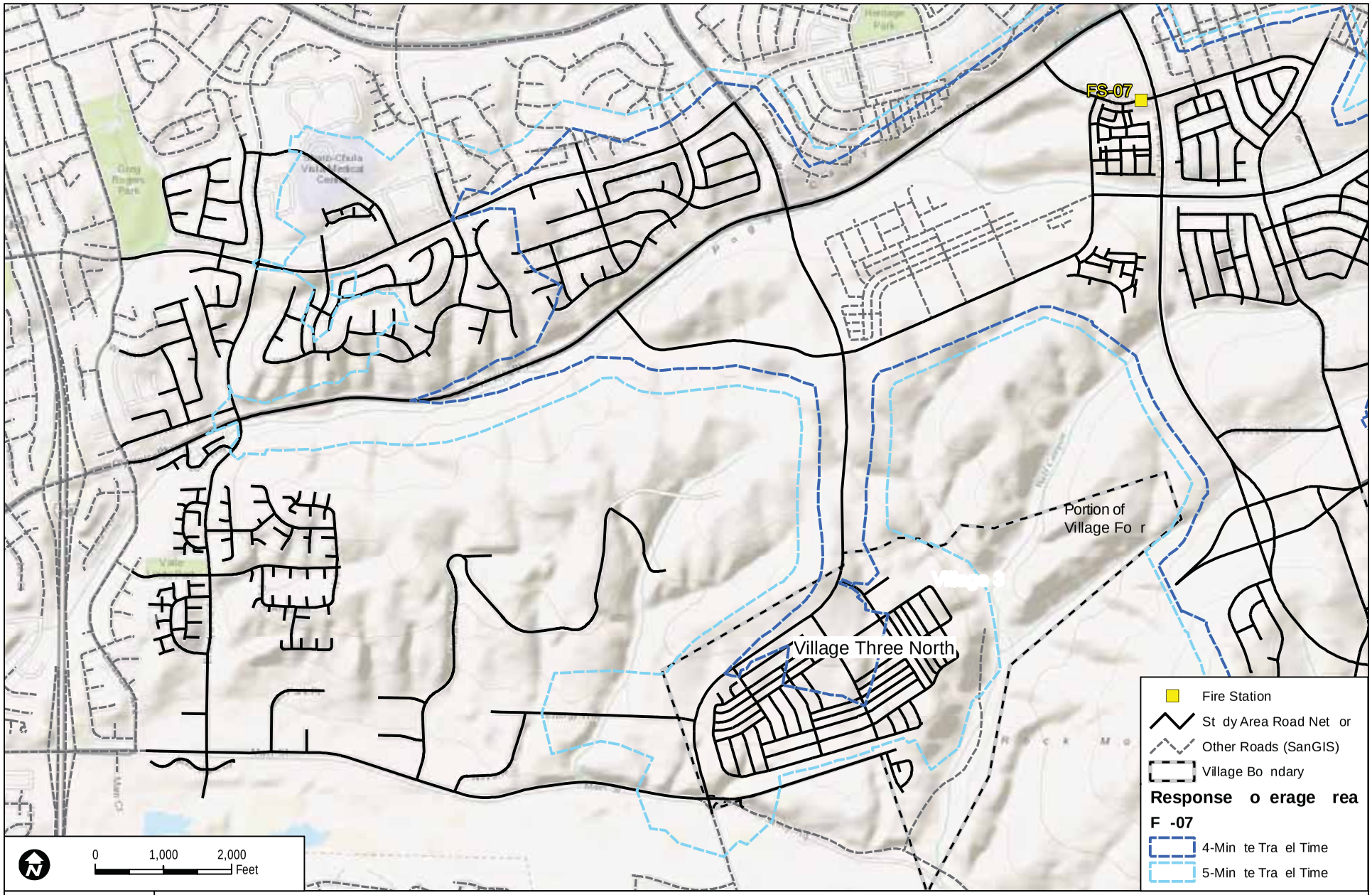

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FIGURE 2-

Village Three North an Portion of Village Four - E isting Fire tation Response Ti es for F -07

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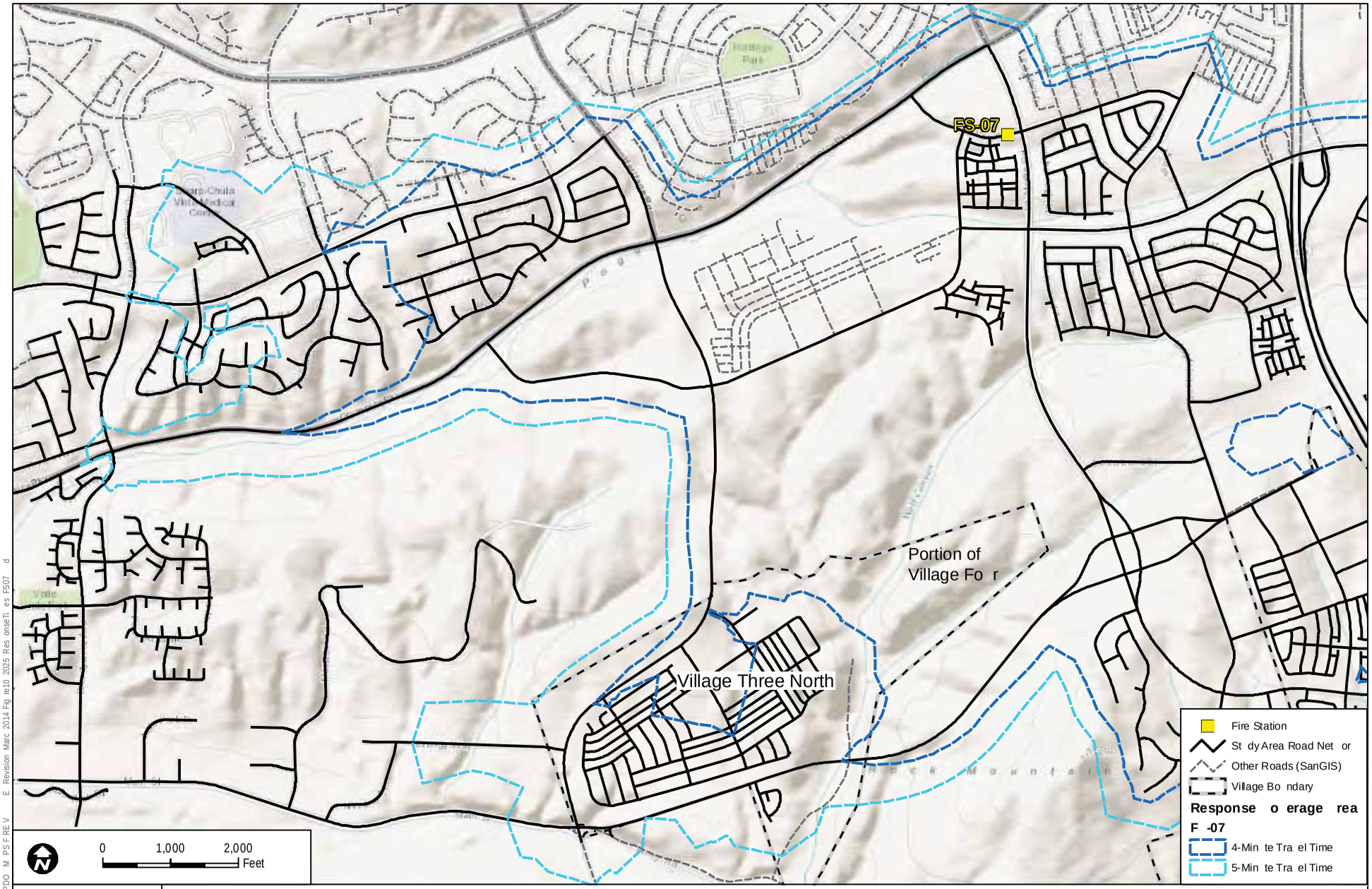

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FIGURE 2-2

Village Three North an Portion of Village Four 202 Response Ti es for Fire tation No 7

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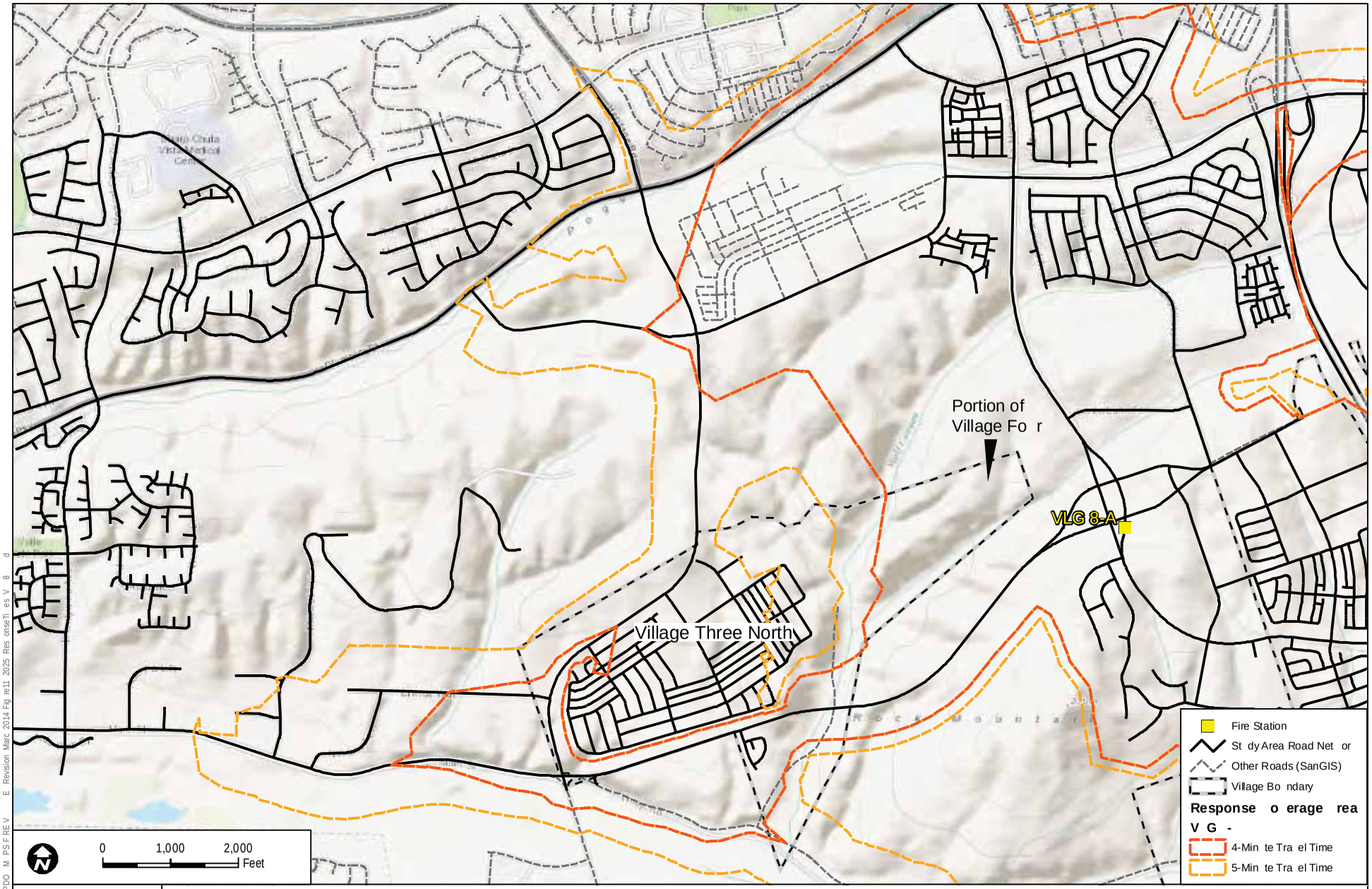

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FIGURE 2-

Village Three North an Portion of Village Four 202 Response Ti es for Village Eight est Fire tation

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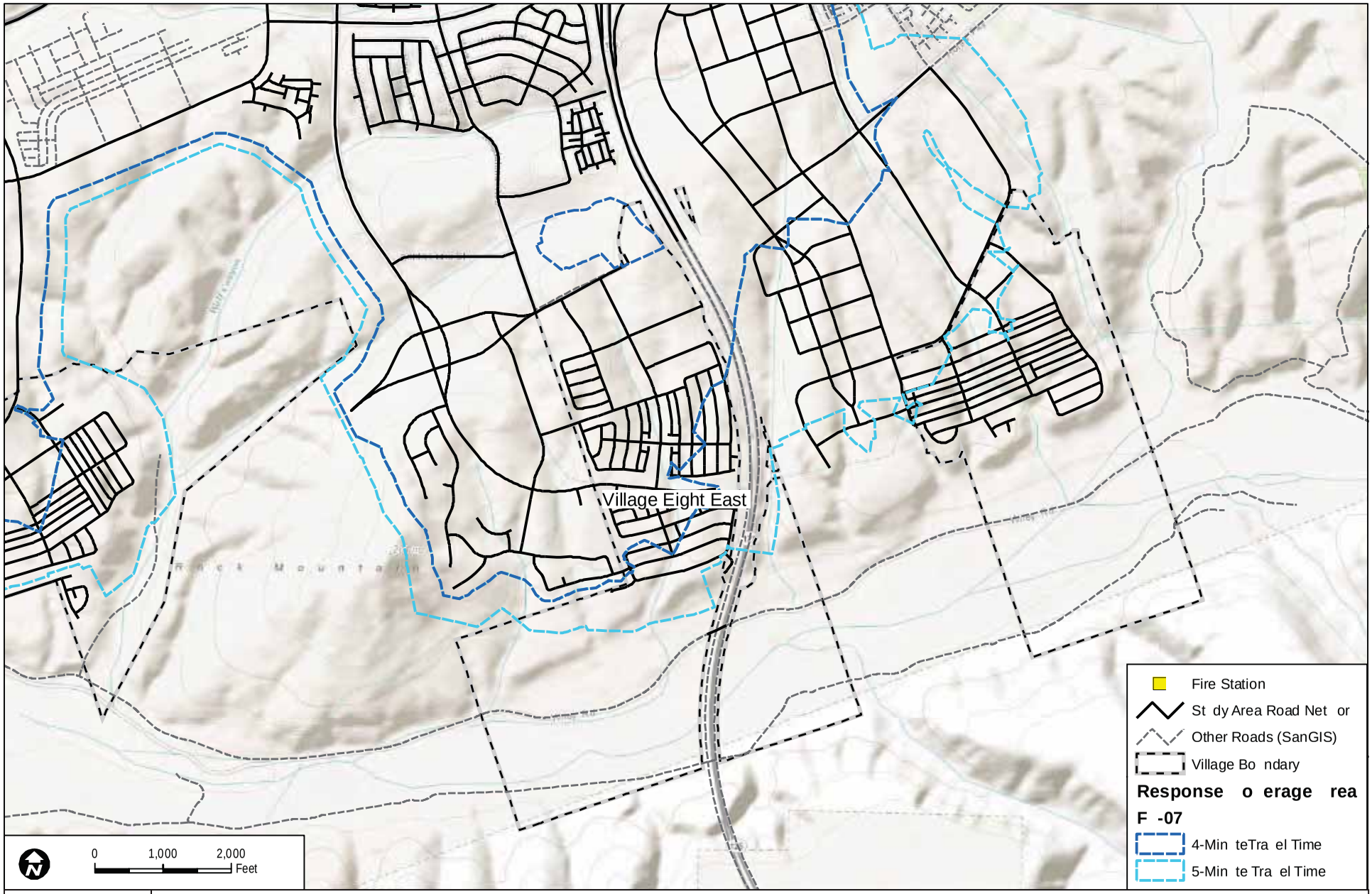

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FIGURE 2-4

Village Eight East E isting Response Ti es for Fire tation No 7

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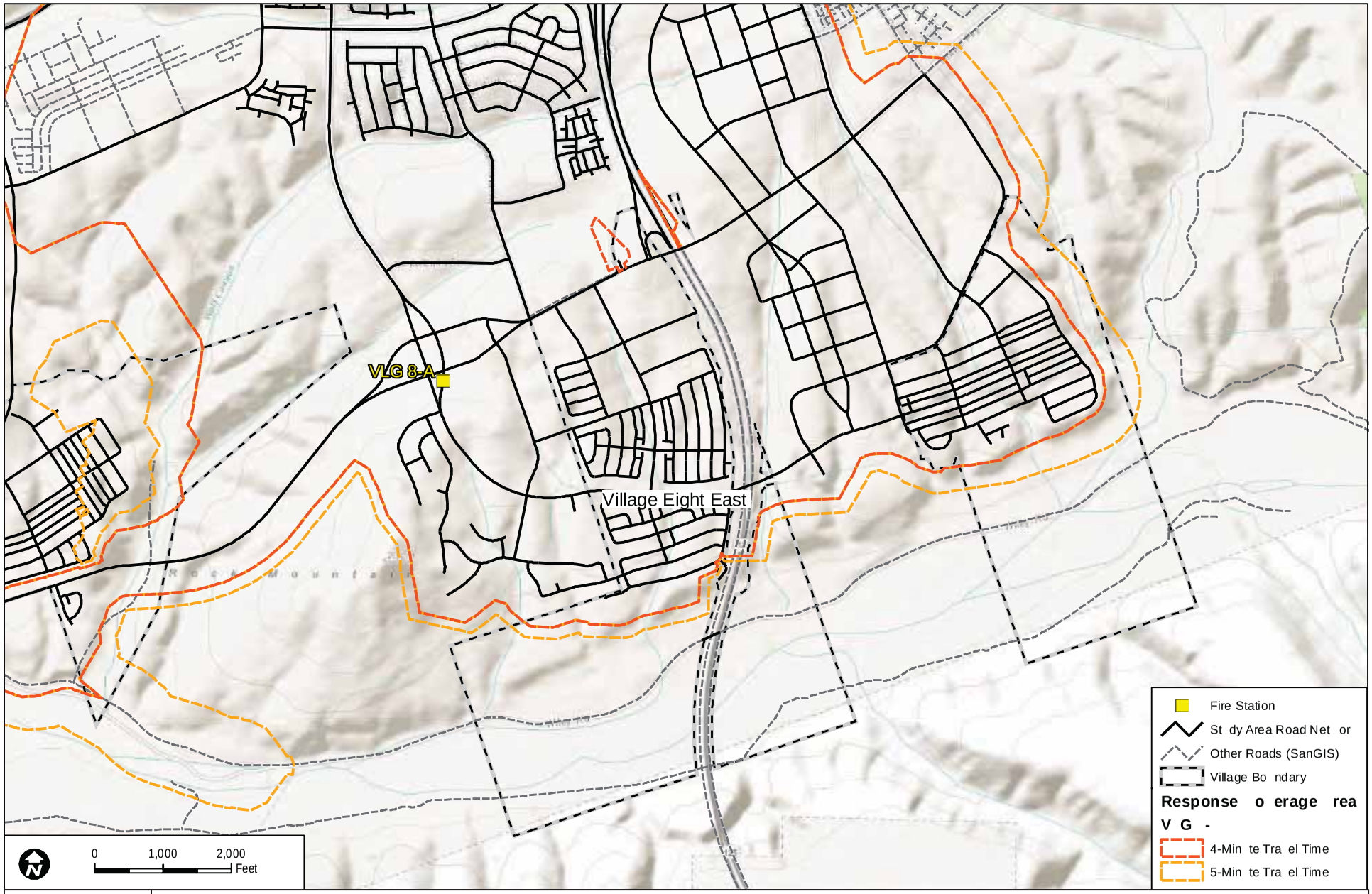

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FIGURE 2-

Village Eight East 20 0 Response Ti es for Village Eight est Fire tation

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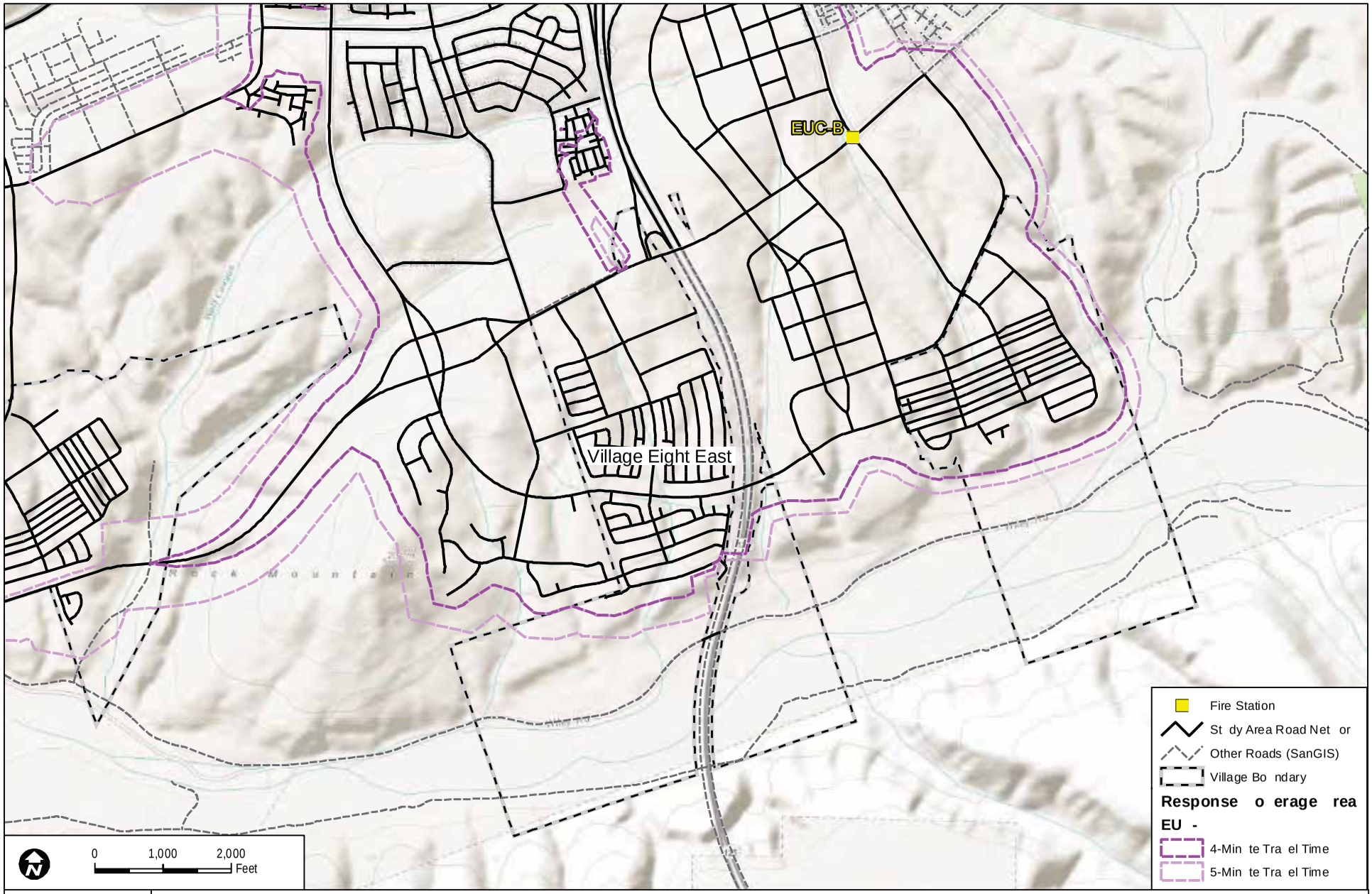

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FIGURE 2-

Village Eight East 20 0 Response Ti es for Fire tation EU -

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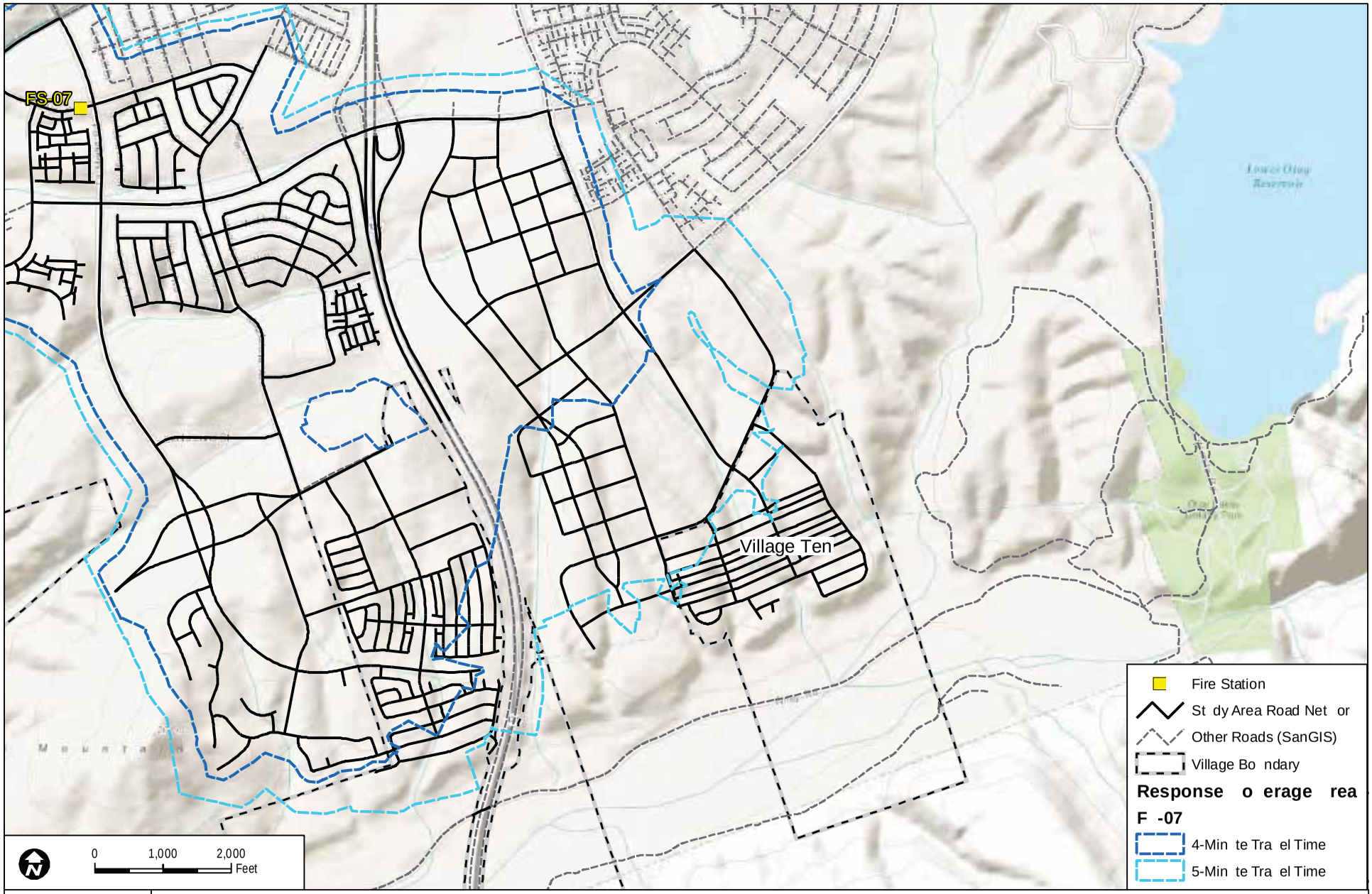

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FIGURE 2-7

Village Ten E isting Response Ti es for Fire tation No 7

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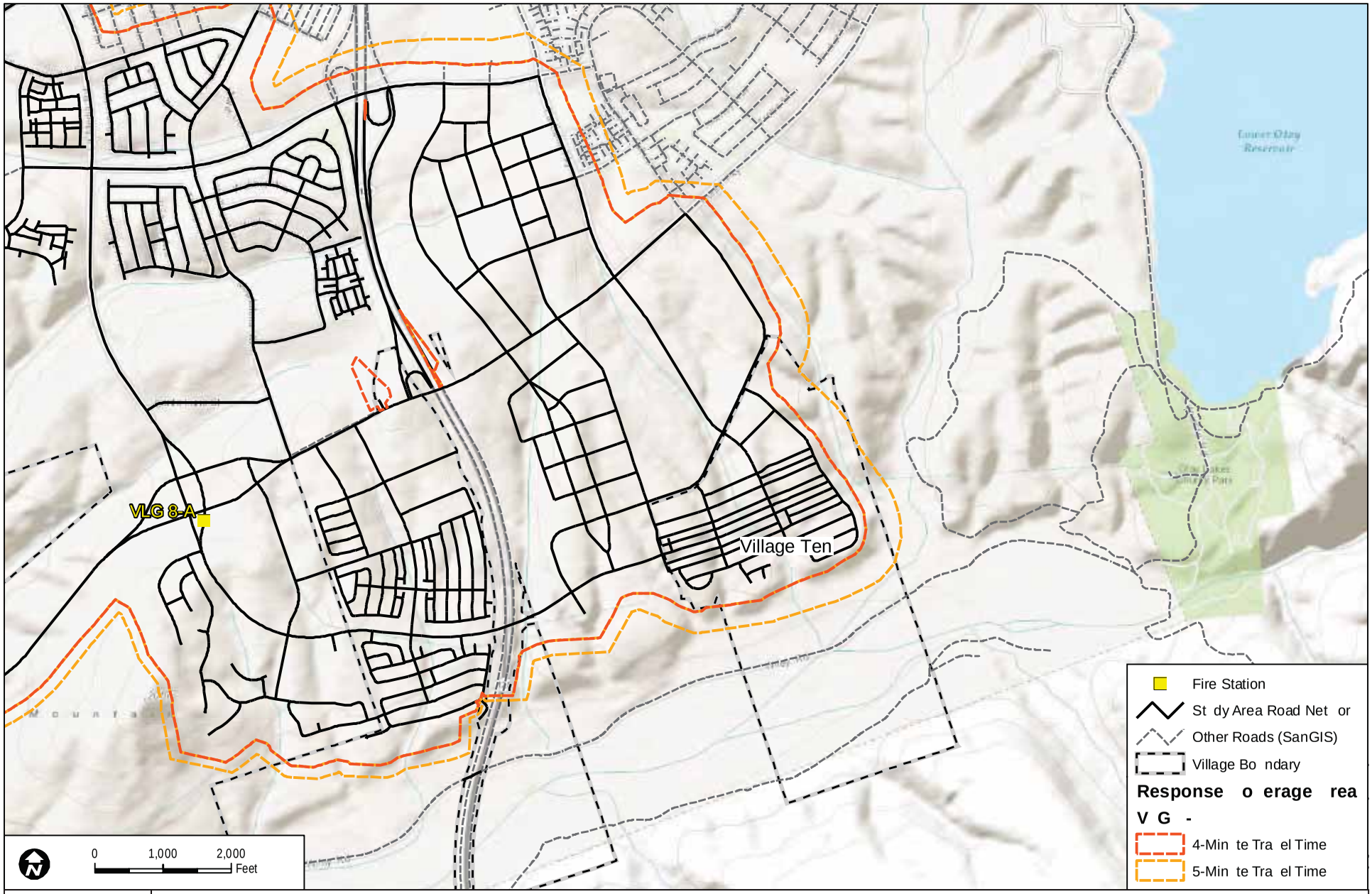

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FIGURE 2-

Village Ten 20 0 Response Ti es for Village Eight est Fire tation

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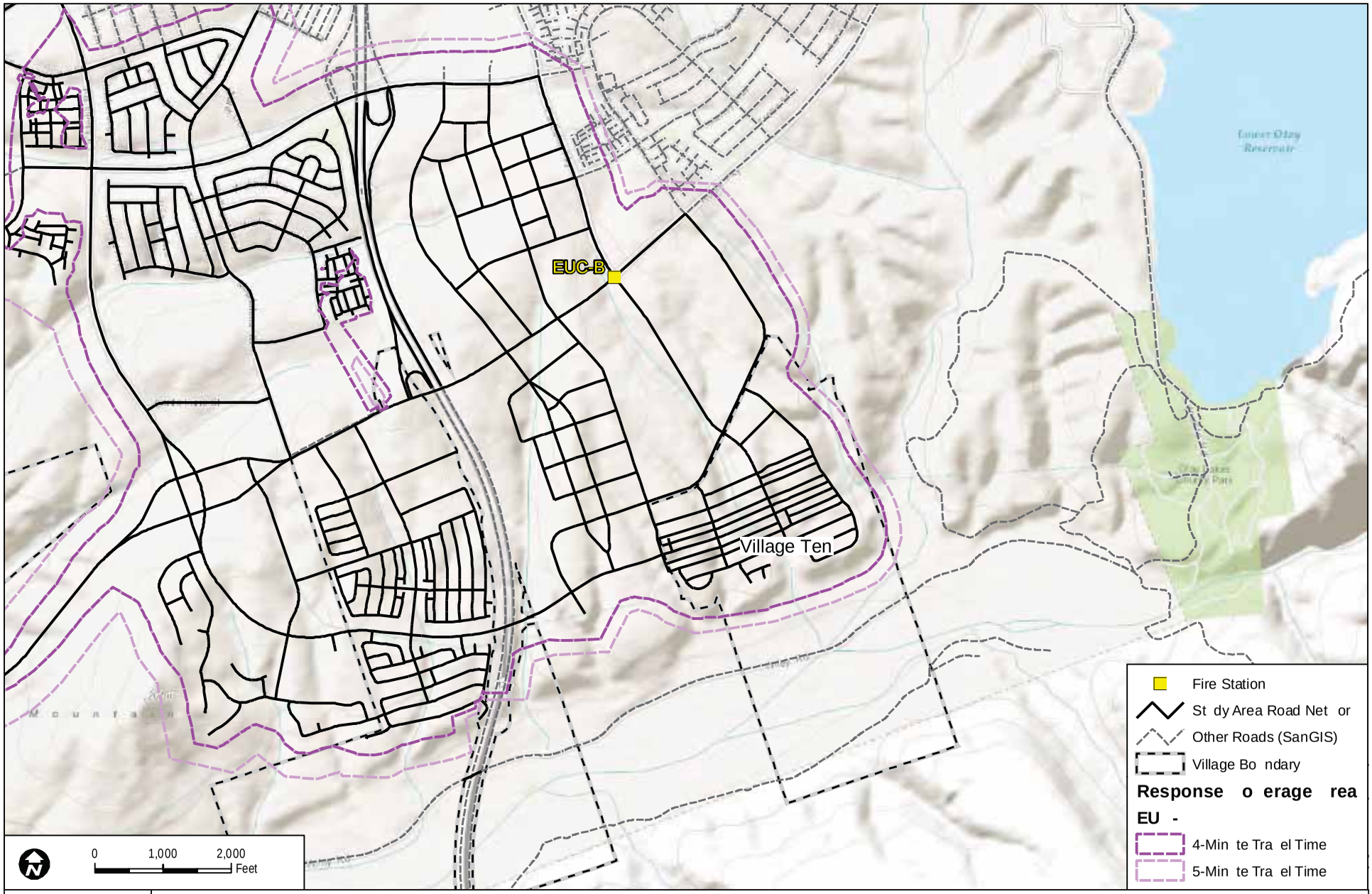

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FIGURE 2-

Village Ten 20 0 Response Ti es for Fire tation EU -

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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

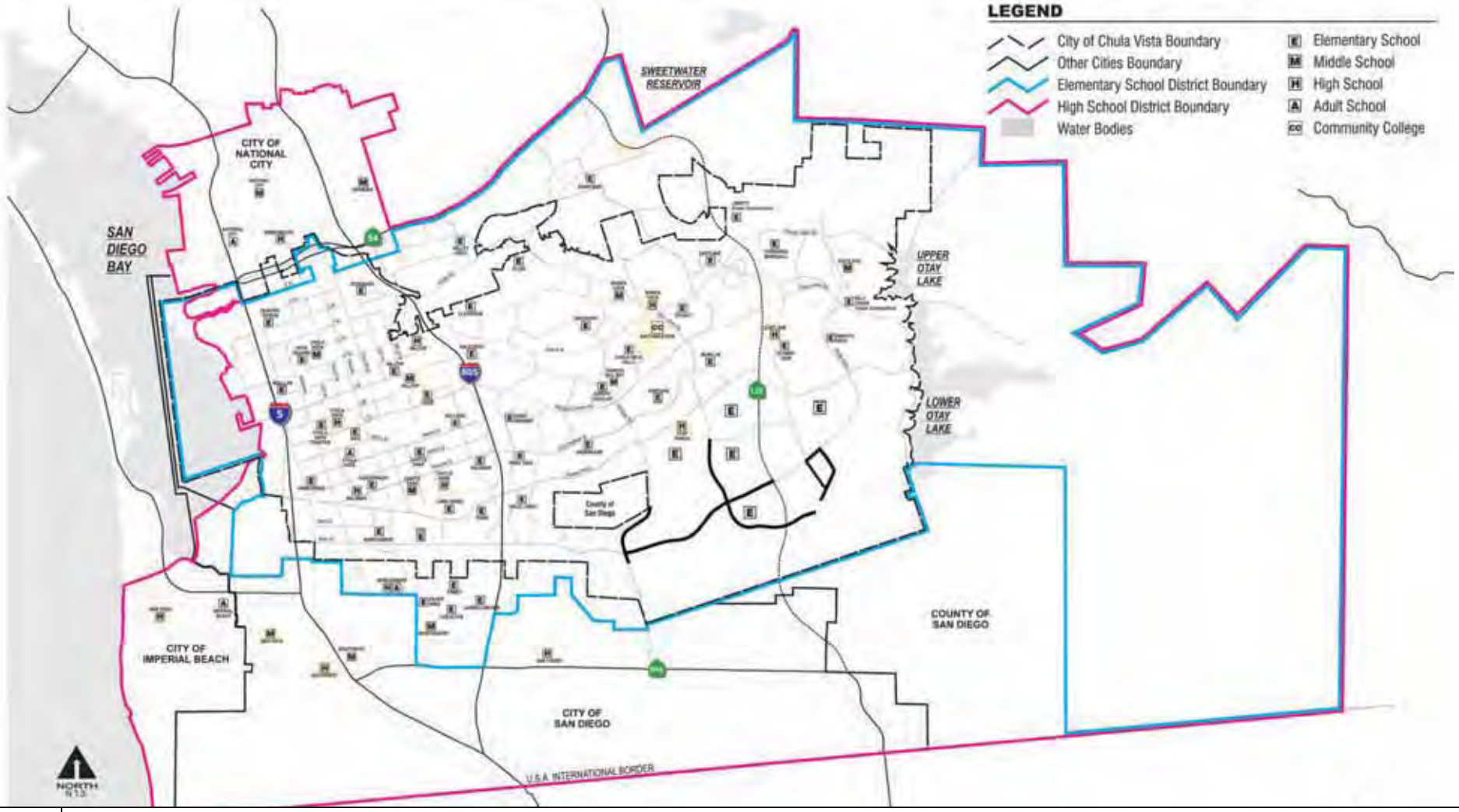

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Table 5.12-6
Project Area Schools

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

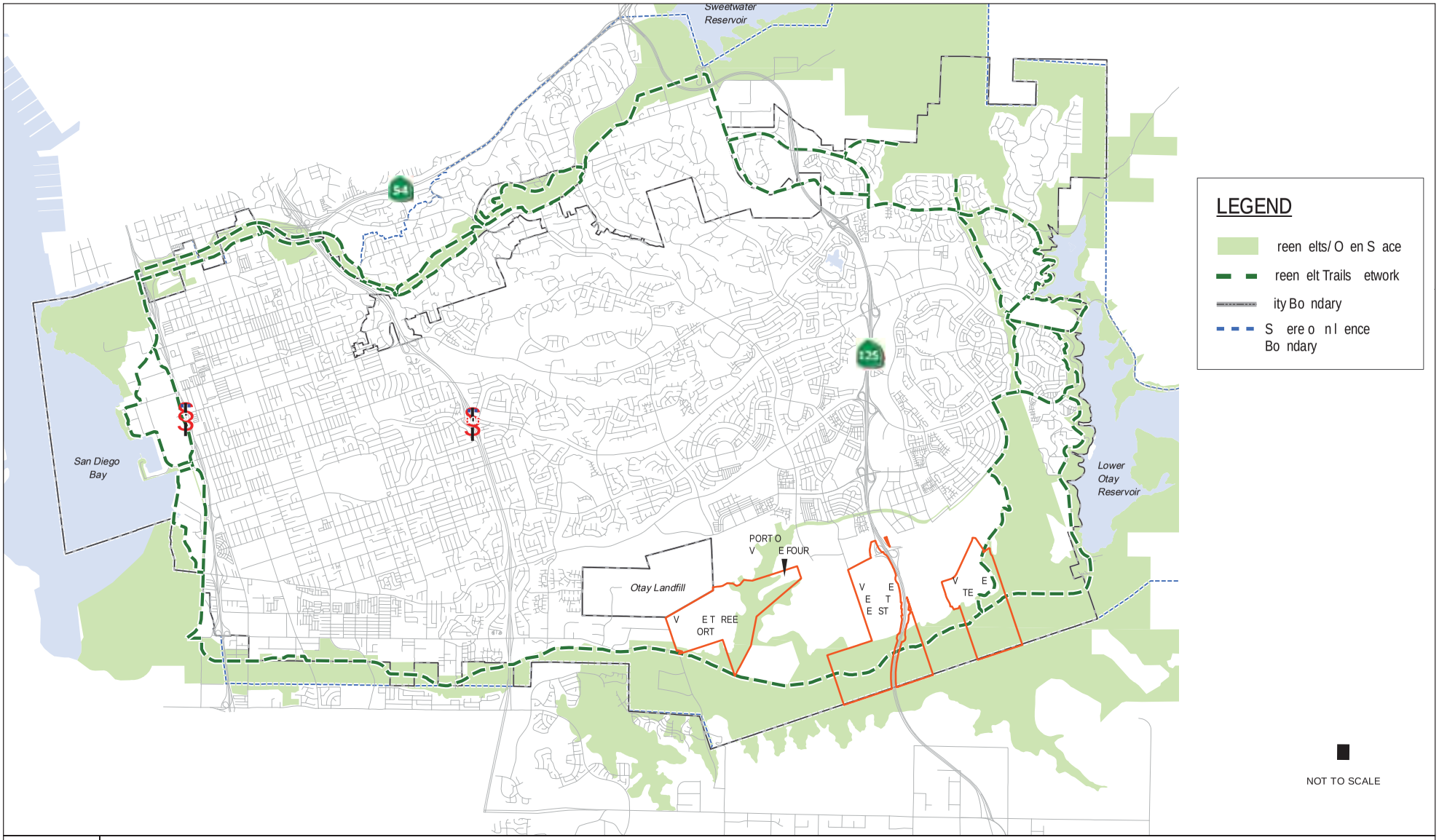

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FIGURE 5.12-11

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.

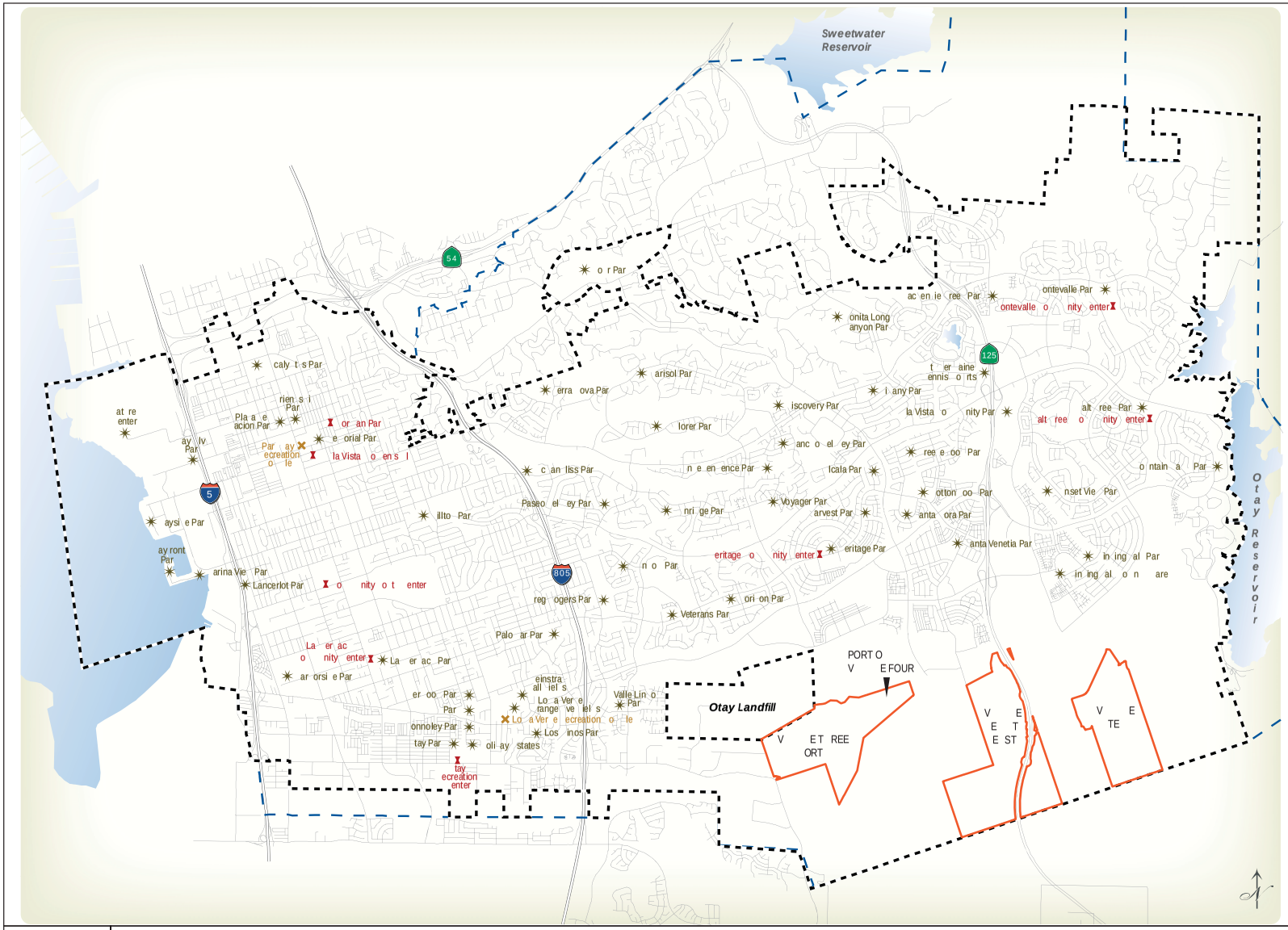

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FIGURE 2- 2

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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) 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
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.

340 Zone

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.

624 Zone

The 624 Zone has three existing storage reservoirs. The 624-2 Reservoir is located adjacent to the SDCWA aqueduct between Otay Lakes Road and East H Street, has a capacity of 8.0 million gallons, and is supplied by Connection No. 10 to the SDCWA aqueduct. The 624-1 and 624-3 Reservoirs are supplied by Connection No. 12, and have a capacity of 12.4 million gallons and 30 million gallons, respectively. The 624-1 Reservoir is located adjacent to the eastern boundary of Otay Ranch Village Five and is located along EastLake Parkway, just north of Olympic Parkway. 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 acres[1]	1,607 gpd/acre	34,068 ~~25,712~~	38 ~~40~~
Industrial	20.8 acres[2]	848 gpd/acre	13,229 ~~17,638~~	15 ~~19~~
CPF	7.8 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)	6.1 ac	10	1.1 ~~0.6~~	2,155	2,371 ~~1,293~~	3 ~~1~~
Industrial	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

Table 5.13-6 (Continued)
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)
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
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). 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. 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.

[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).

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 acres	2,500 gpd/acre	57,250 ~~44,250~~
Industrial	33.8 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
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

Table 5.13-11 (Continued)
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)*
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).

2005 GPU Program EIR Mitigation Measure 5.8-1: 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.

[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.

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.

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.

Village Three North and a Portion of Village Four

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.

Village Eight East

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.

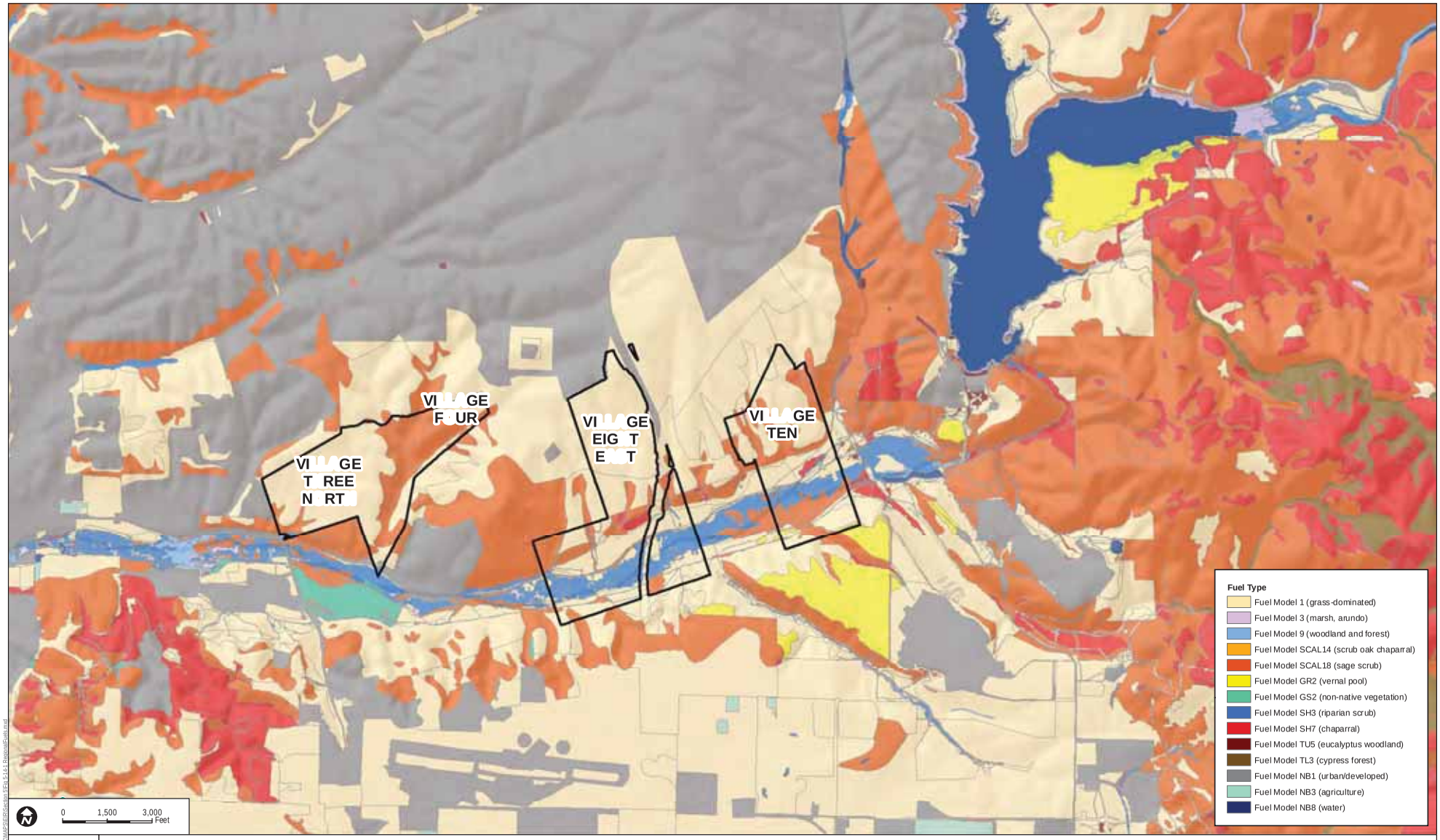

FIGURE -

Regional Fuels istri ution

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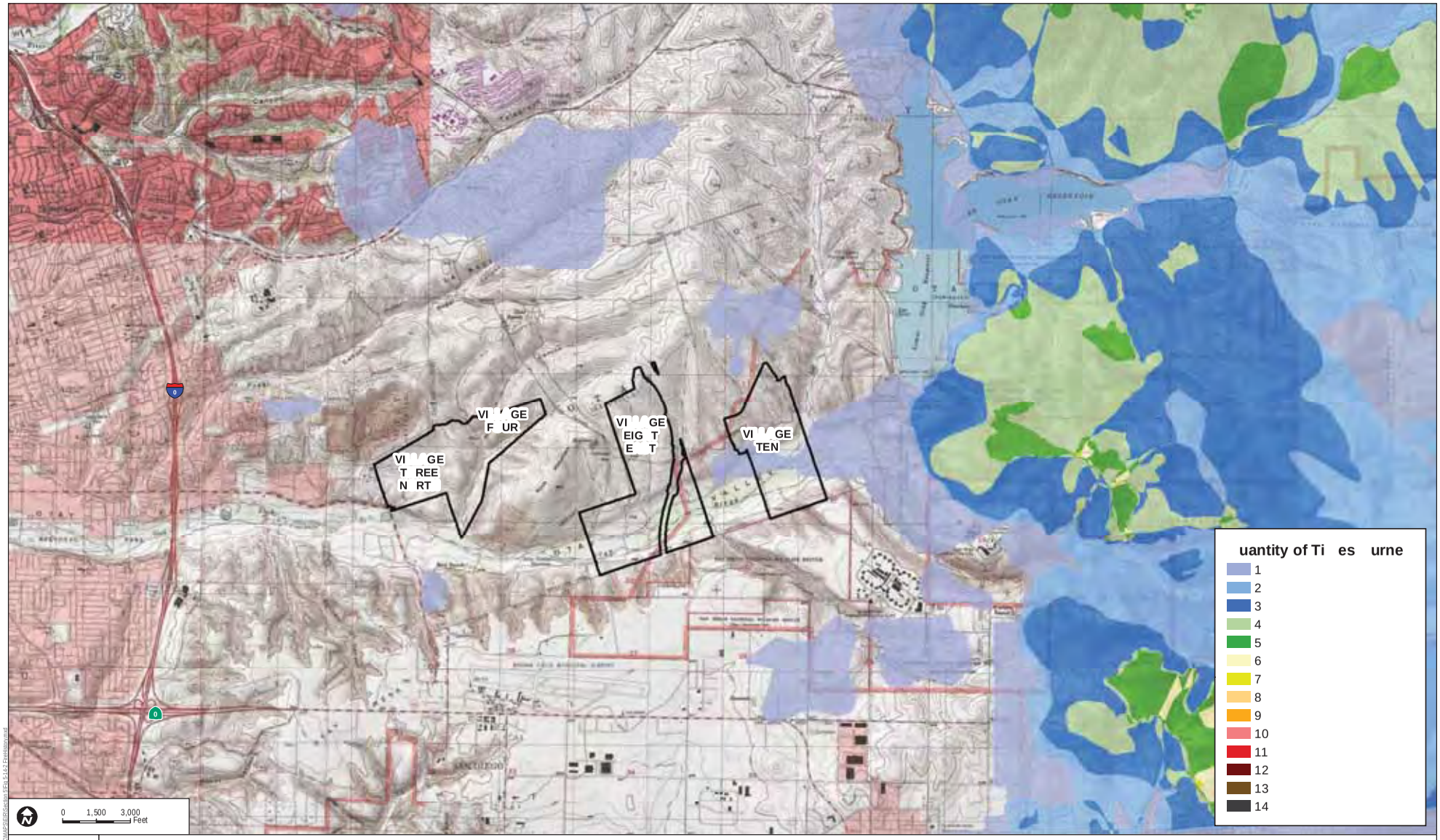

SOURCE: FRAP 2011

FIGURE -2
Fire istory

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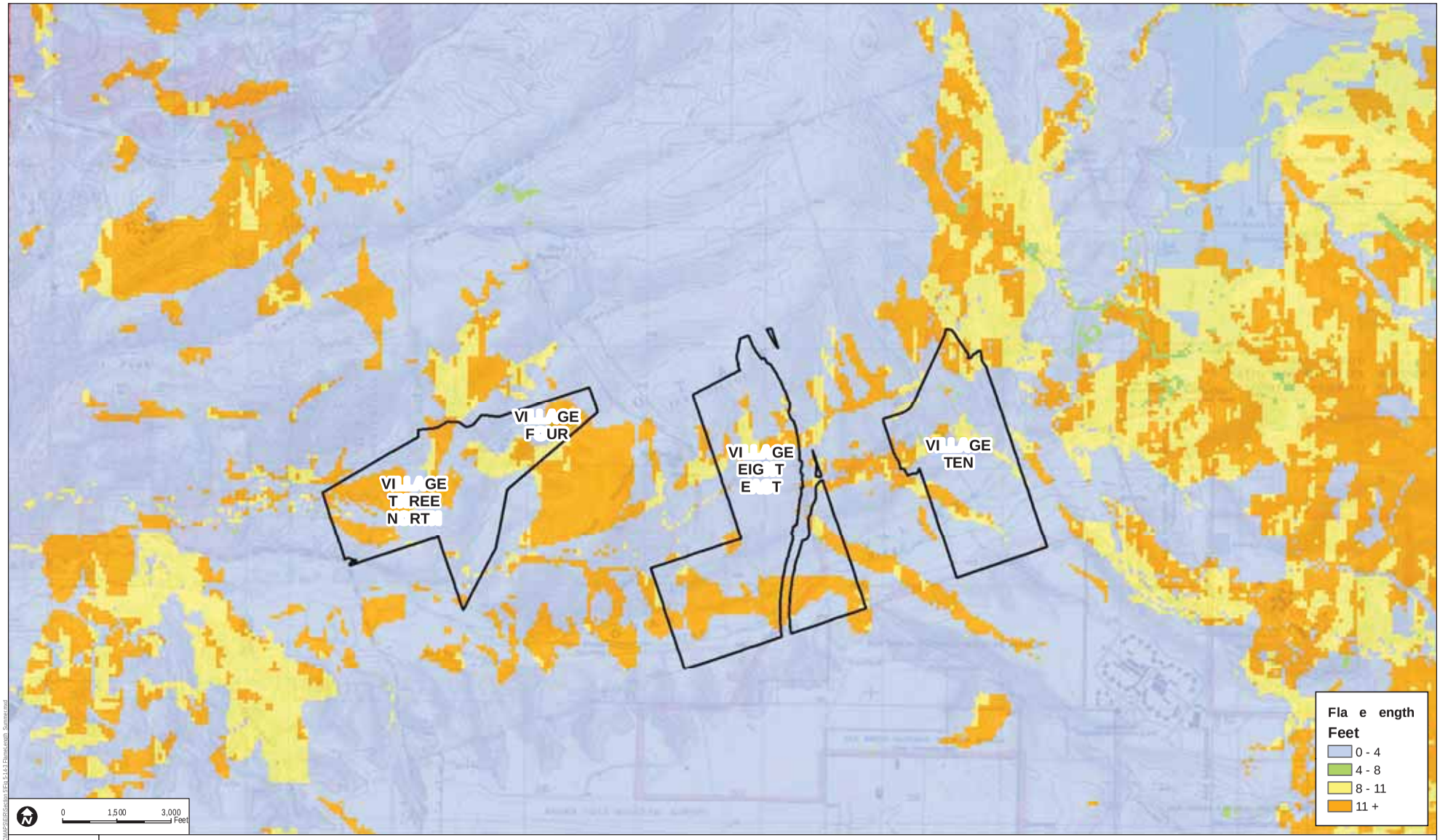

FIGURE -

Fla Map Fla e ength nalysis - u er Fire

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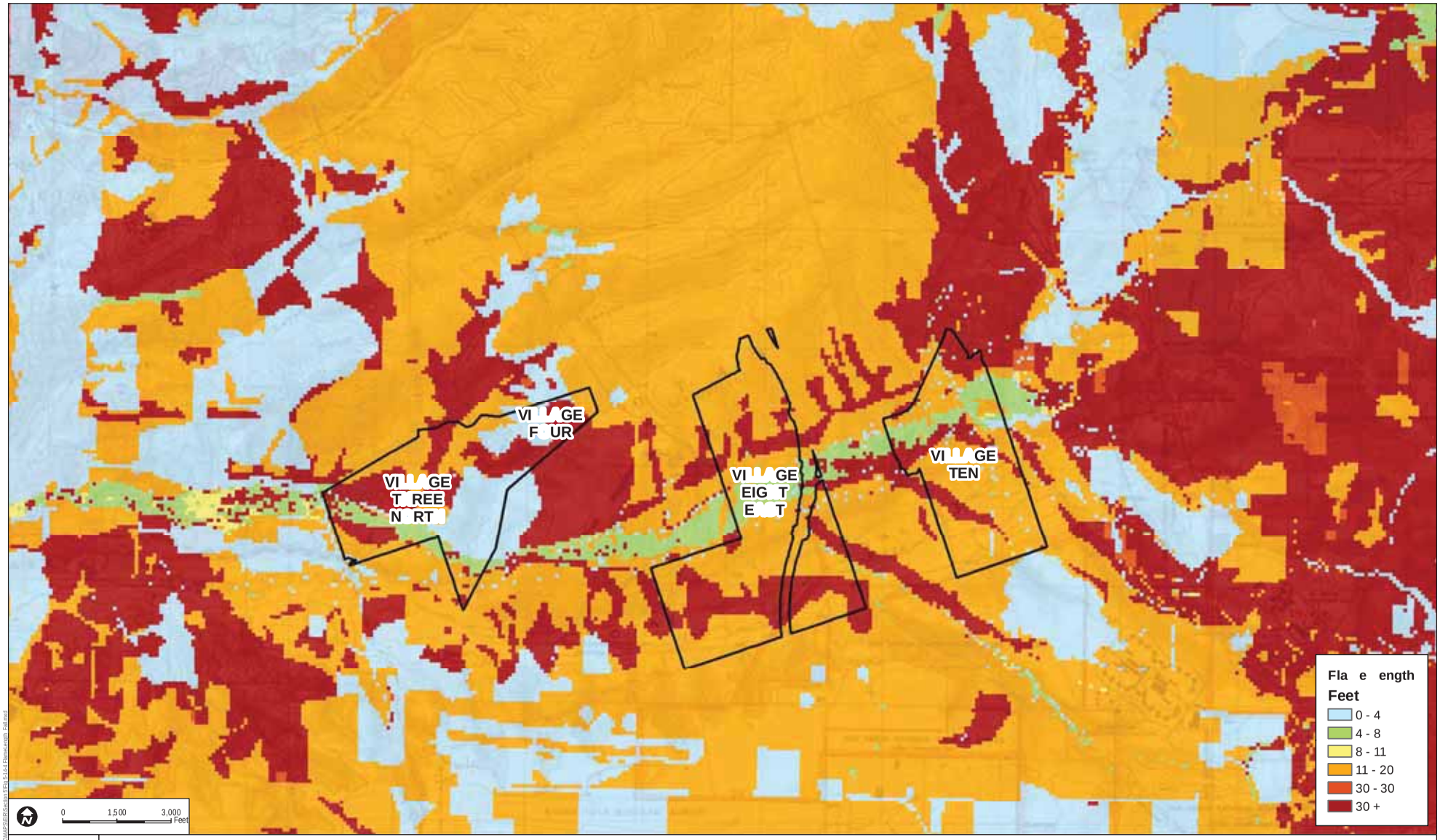

FIGURE -4

Fla Map Fla e engths nalysis - 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.

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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.

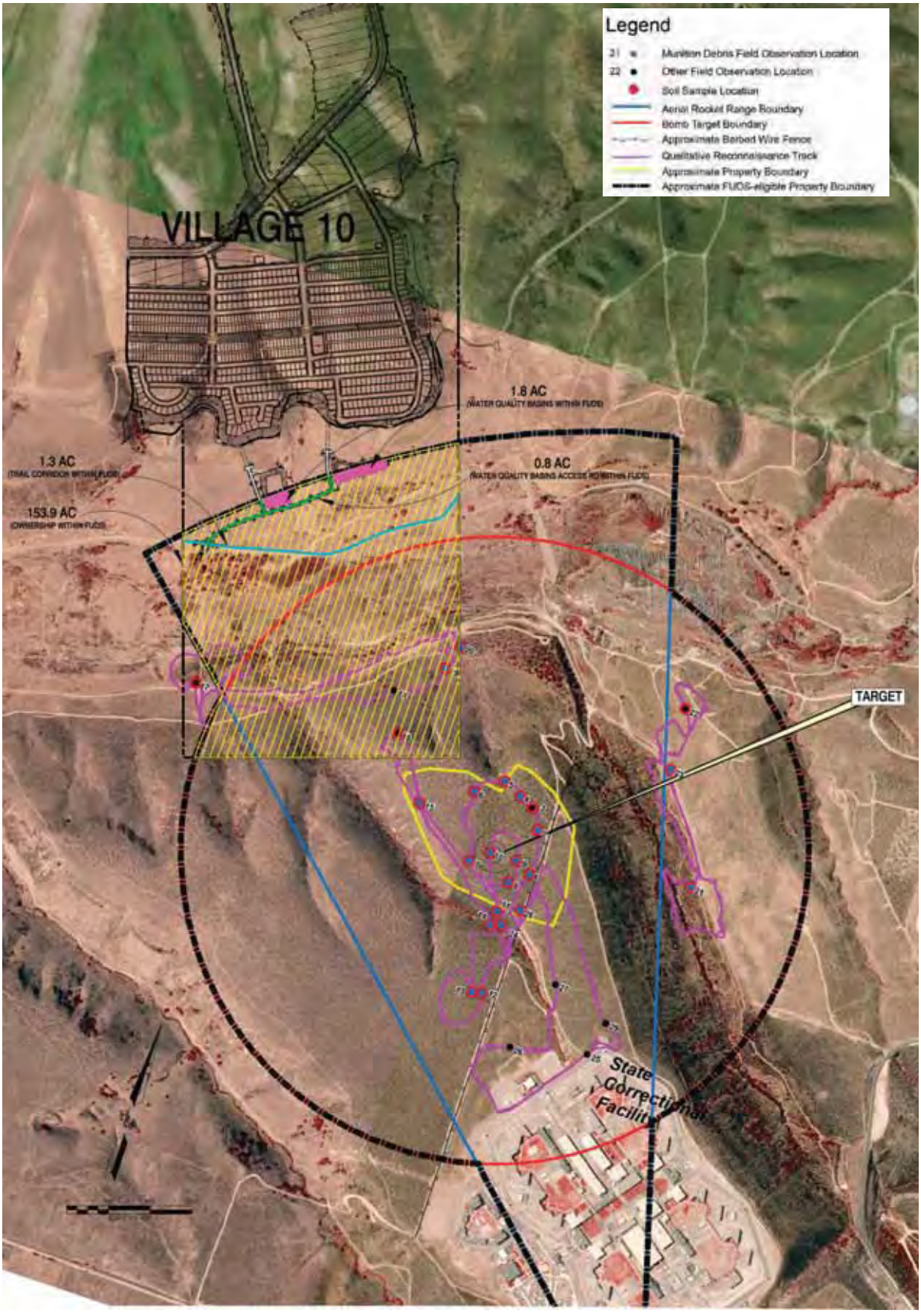
As part of Parsons 2007 site investigation, soil samples were collected and screened against several criteria to evaluate whether or not MC contamination is present. The site inspection consisted of a qualitative reconnaissance of the site area and munitions constituent sampling

(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.



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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.

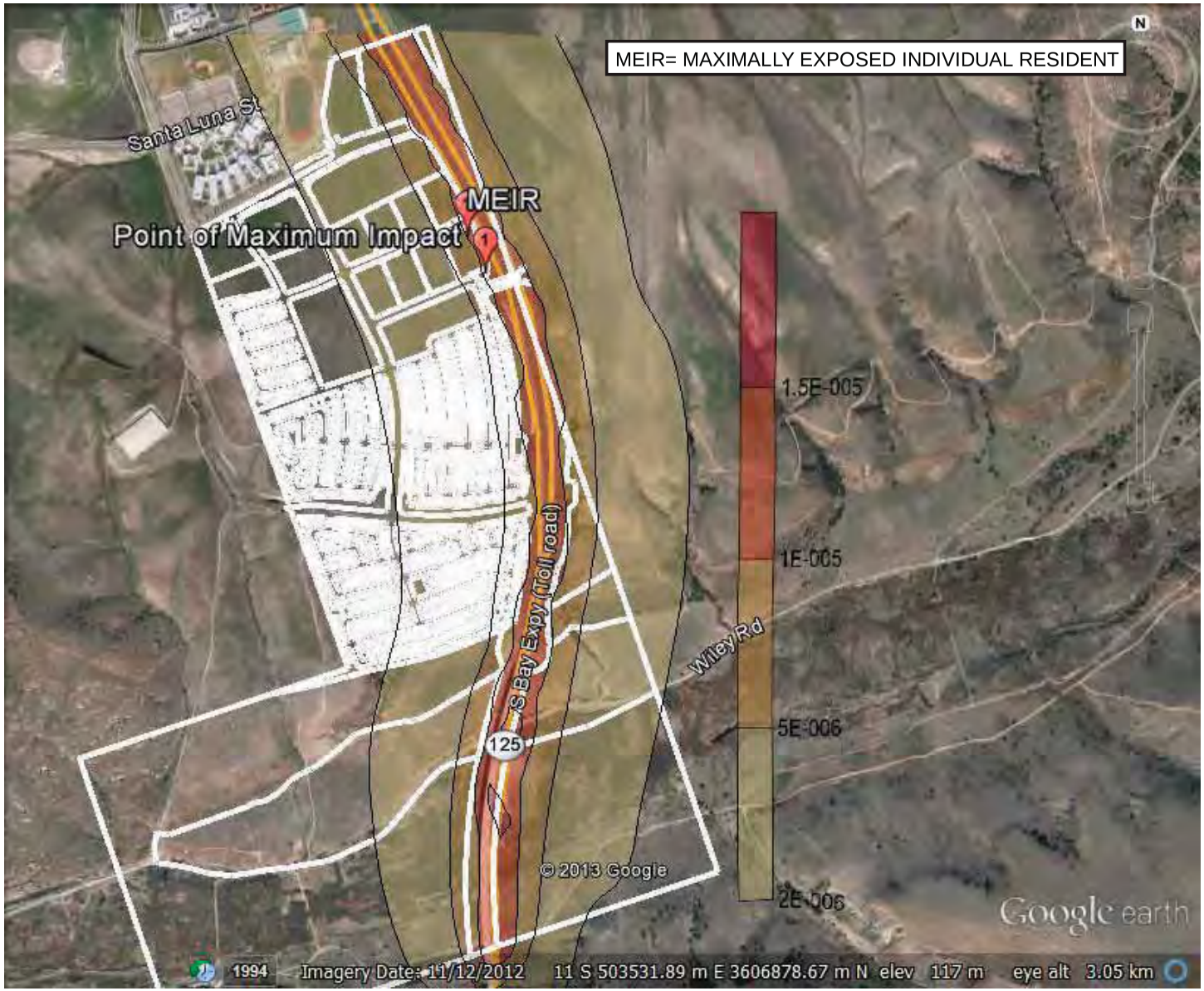

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FIGURE -7

70-year Resi ential E posure cenario Village Eight East

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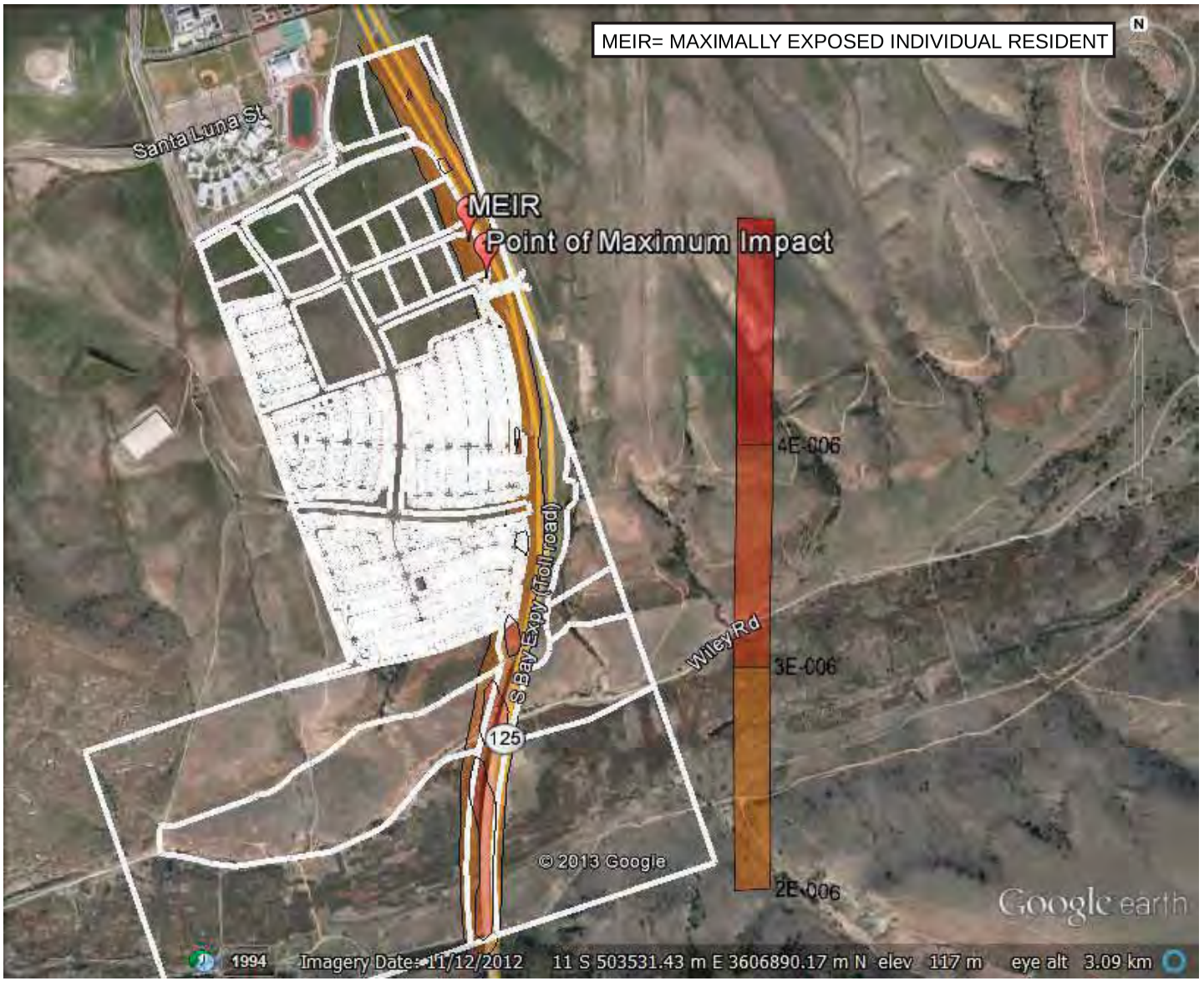

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General Plan Policy LUT 6.8 – Hazardous Materials

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

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.

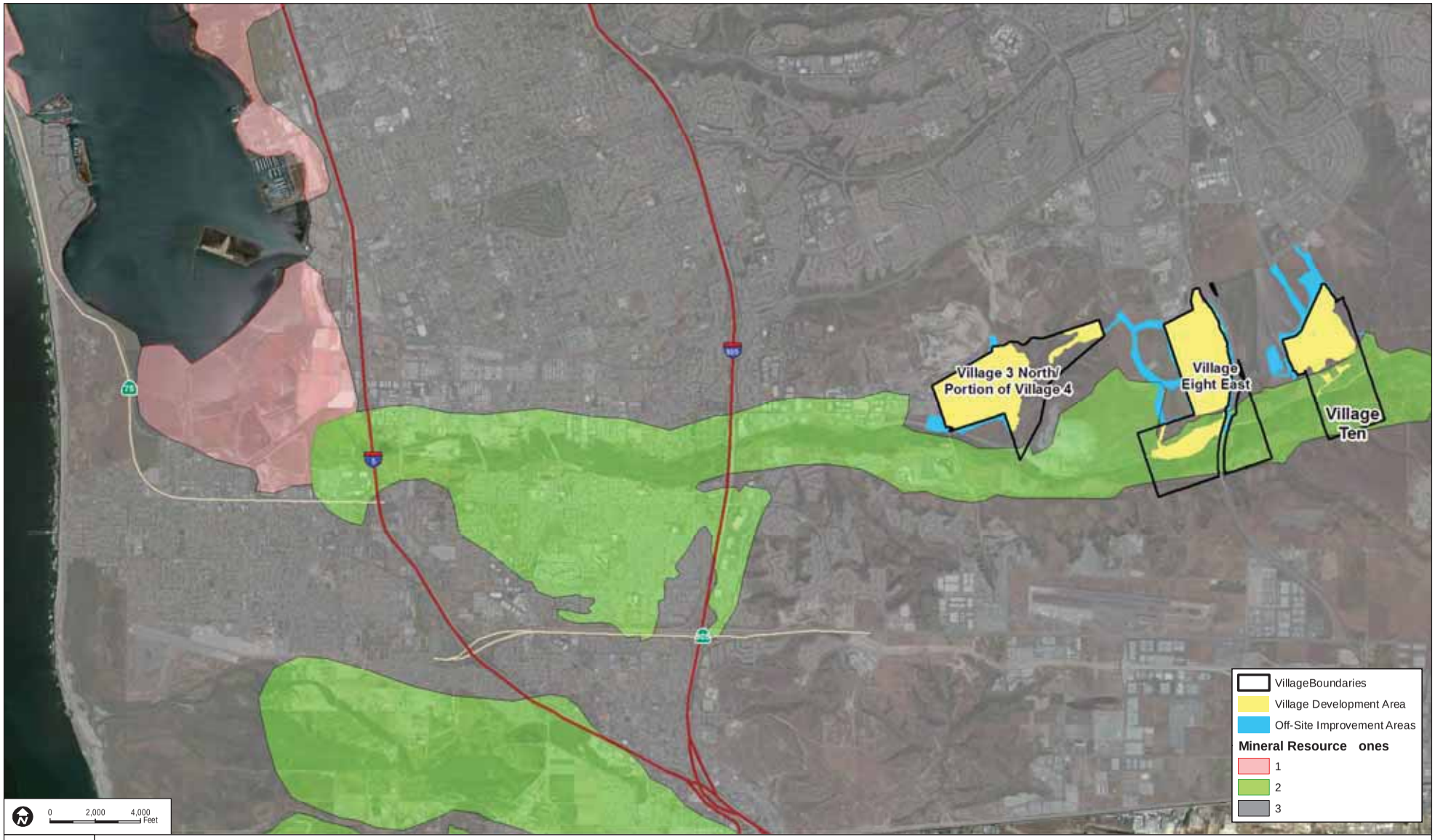
B. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

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 7-

Mineral Resource ones

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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 -

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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 conflict with air quality plans

- **Cultural Resources**
  - Cumulative impact on archaeological resources

- **Agricultural Resources**
  - Direct and cumulative conversion of agricultural resources

- **Public Utilities**
  - Cumulative demand for wastewater capacity; and
  - Cumulative Demand for energy.

- **Global Climate Change**
  - Potential direct and 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

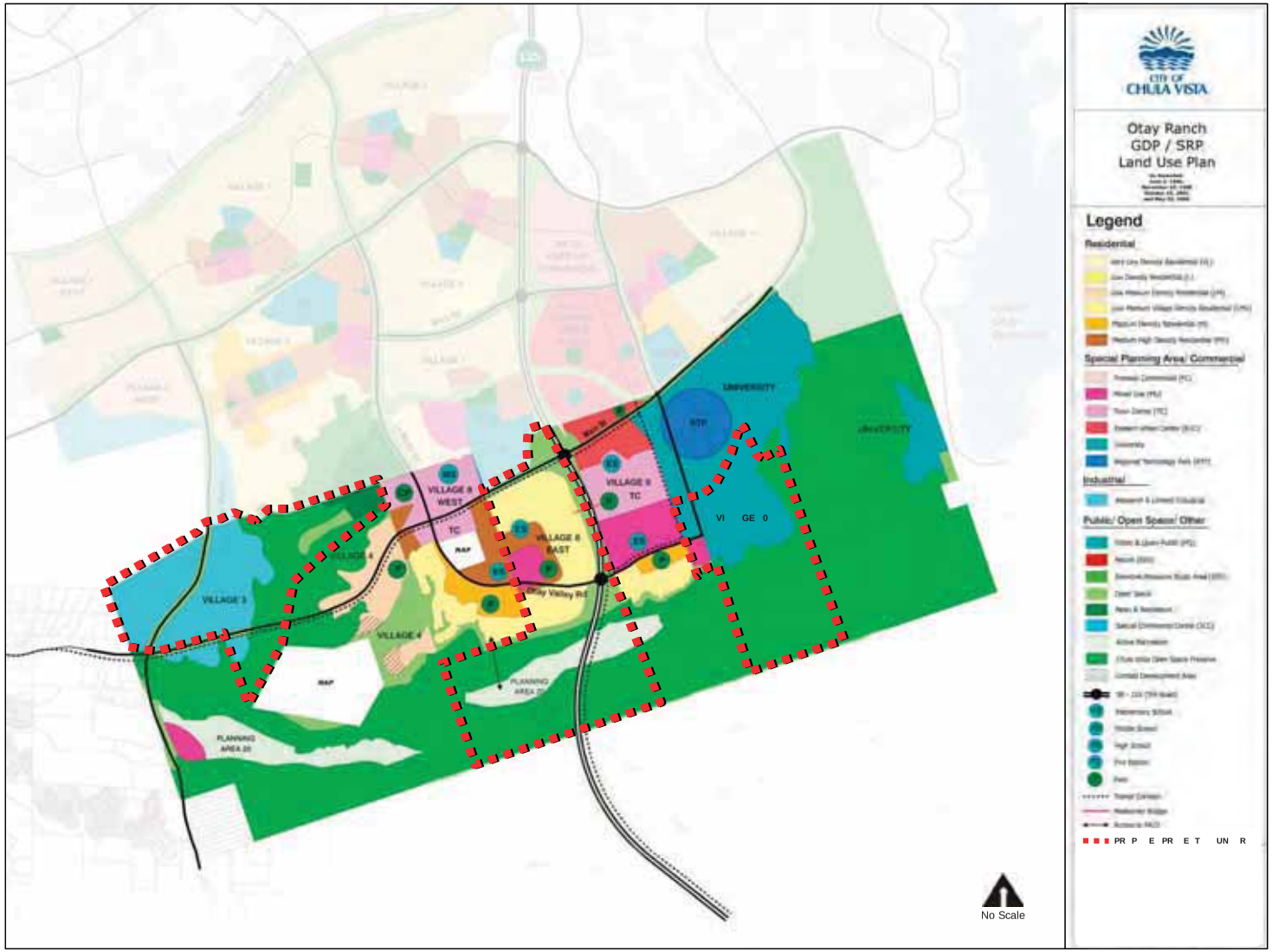
Village	Total GDP Planned Units	Approximate GDP Planned Population*	Total Proposed Units	Approximate Proposed Population	Δ Total Units	Δ Approximate Population*
Village Three North and a Portion of Village Four	0	0	1,597	5,174	1,597	5,174
Village Eight East	928	3,007	3,560	11,534	2,632	8,527
Village 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.



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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

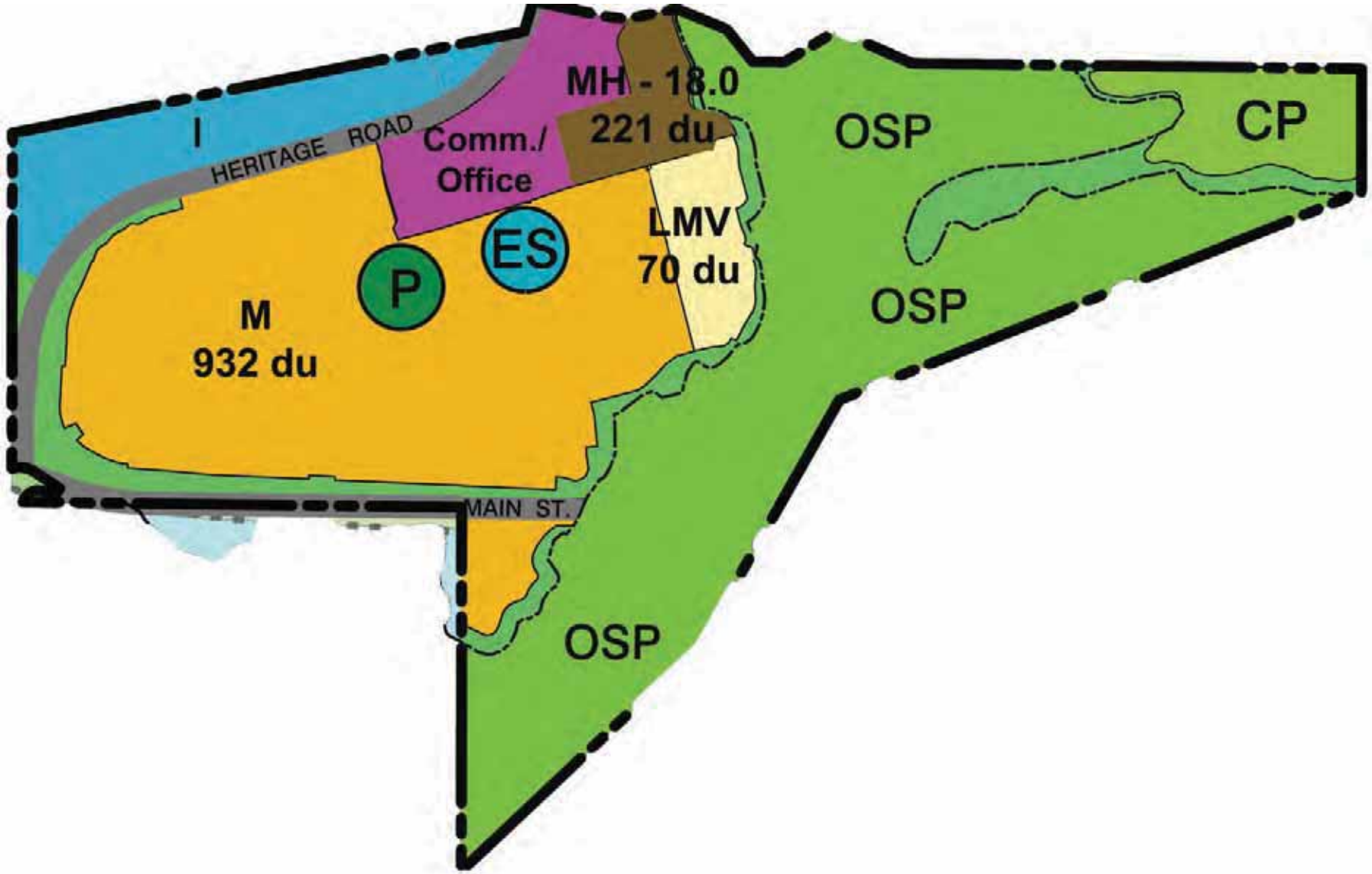
The Reduced Density Alternative would follow the same land use pattern as the proposed project, with the exception of having reduced maximum dwelling units for multi-family and mixed-use land uses. Instead of the proposed 45.0+ du/ac for multi-family land uses, the Reduced Density Alternative would assume 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.



SOUR E OT R E OMES 201

FIGURE 0-2a

Re uce ensity lternati e Village Three North an Portion of Village Four

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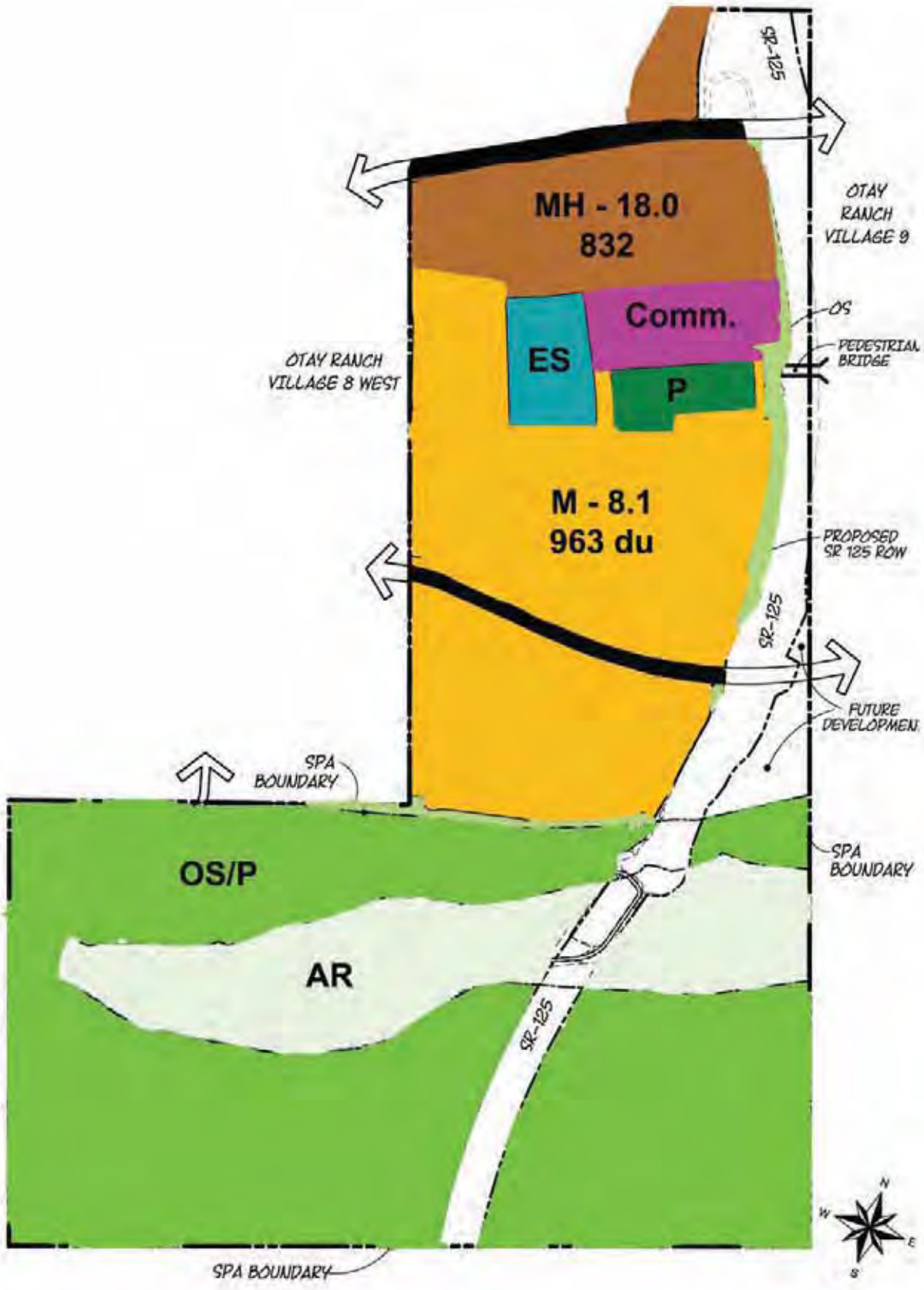

SOUR E OT R E OMES 201

FIGURE 0-2

Re uce ensity lternati e Village Eight East

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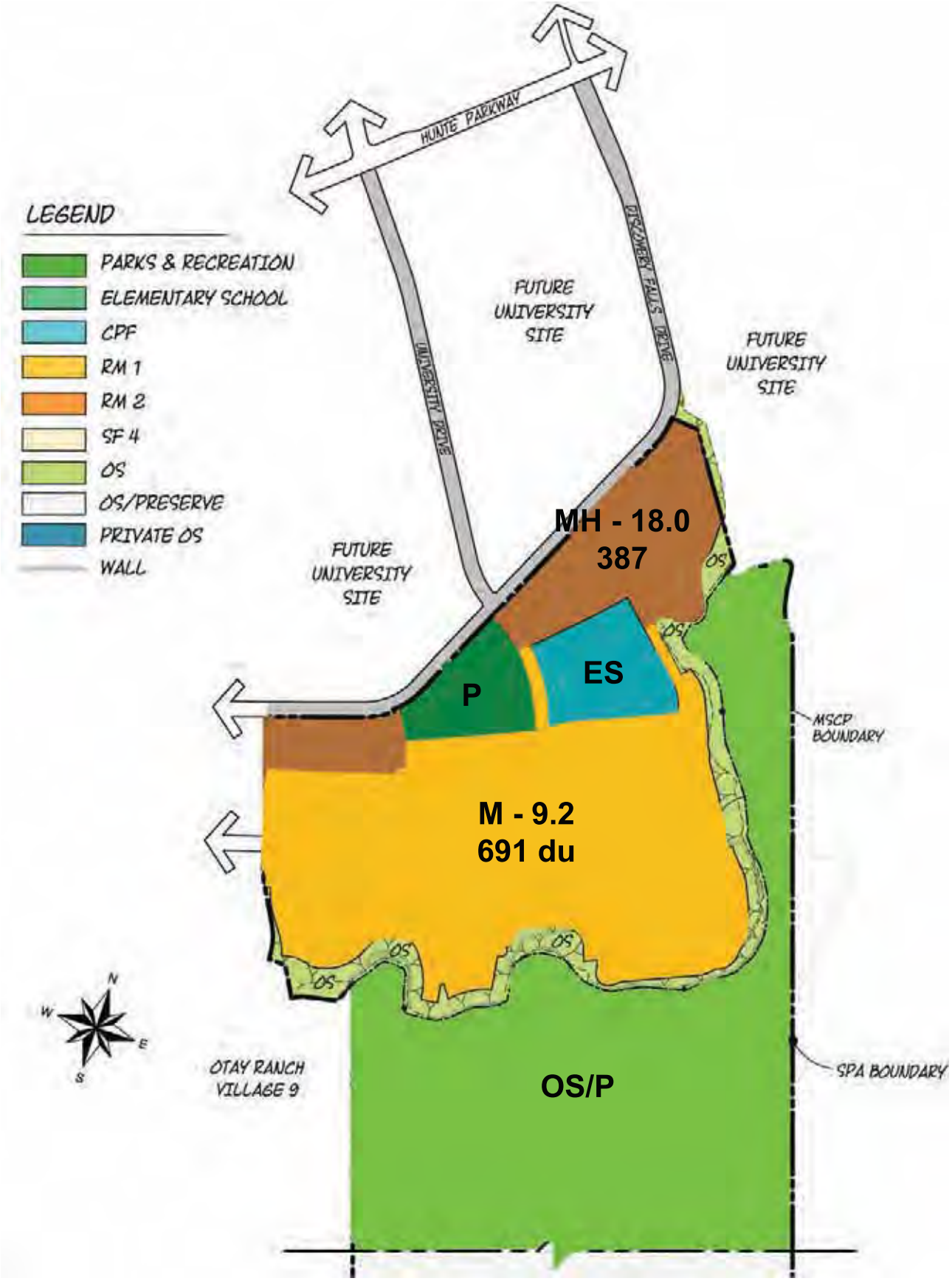

SOUR E OT R E OMES 201

FIGURE 0-2c

Re uce ensity lternati e 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, 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, 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, the proposed project also better meets the following project objectives:

- 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 landfill1 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 remove residential land uses within 1,000 feet from the active portion 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 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

[1] 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.

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, this alternative would only designate industrial land uses, mixed-use and commercial land uses (non-residential), and open space, within ~~the~~ 1000 ~~-foot~~ feet landfill nuisance easement area. 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 the Nuisance Easement Alternative would remove all residential land uses within the

nuisance easement area, impacts to land use compatibility would be reduced as compared to the proposed project.

Landforms and Aesthetics

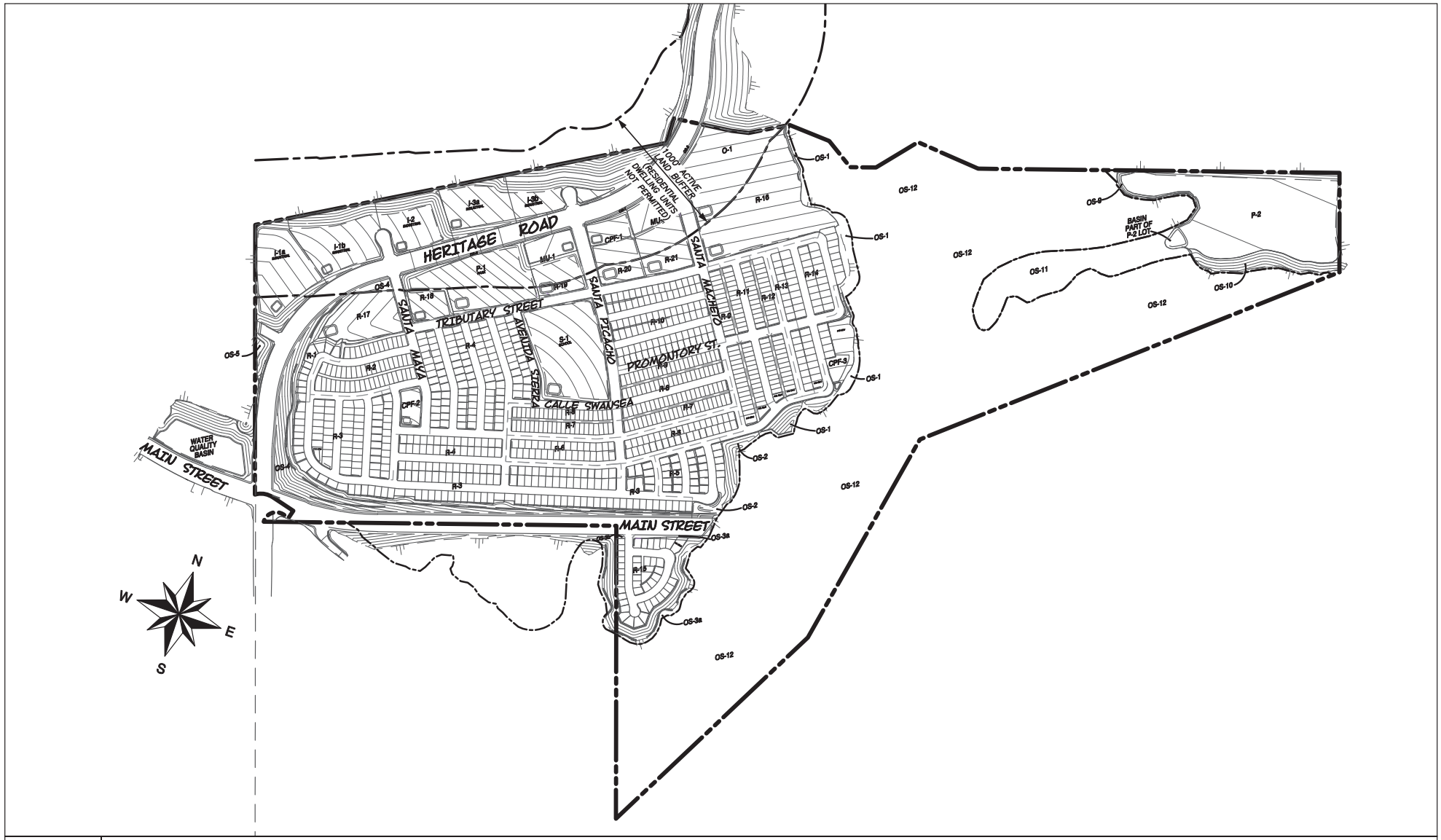
As discussed in Section 5.2 Landforms and Aesthetics, the proposed project would change existing broad open space to a high-density urban environment. The change in land uses would have a significant impact on the visual character of the site even after implementation of mitigation measures (MM AES-1 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.



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UNIVERSITY VILLAGES PROJECT EIR

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.

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.

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, 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
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 require slightly less parkland, impacts related to parks, park policies, recreation, open space, and trails would be slightly reduced 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 residential land uses within the nuisance easement area and the Alternative would not. Due to the fact that no 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 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.

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

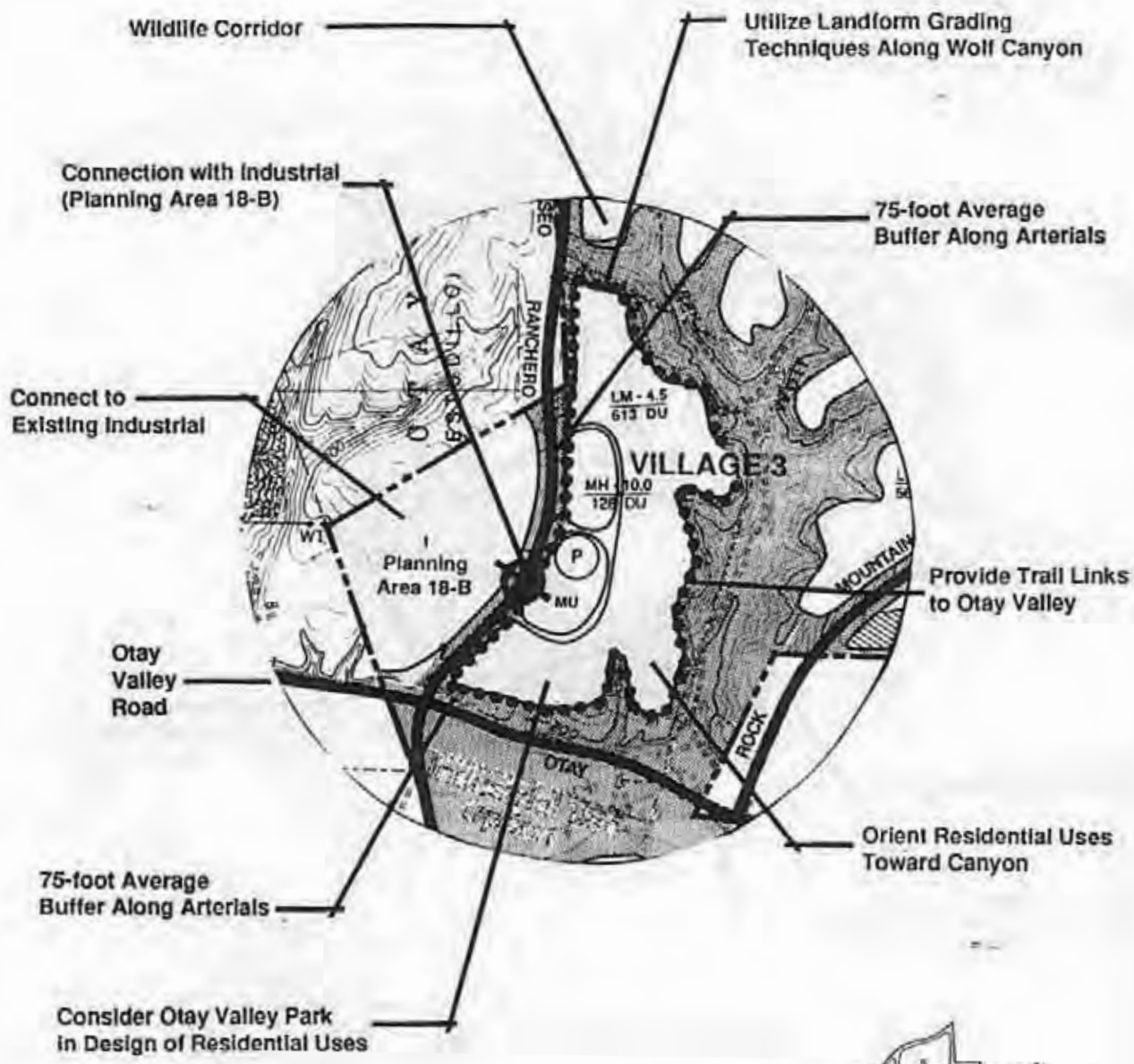
Village	SRP Alternative Planned Units	Approximate SRP Alternative Population	Total Proposed Units	Approximate Proposed Population	Δ Total Units	Δ Approximate Population
Village Three	741	2,401	1,597	5,174	-856	-2,773
Village Eight East	928	3,007	3,560	11,534	-2,632	-8,527
Village Ten	642**	2,080	1,740	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.



County Primary and City Secondary Land Uses

SOUR E OT R E OMES 201

FIGURE 0-4a

tay Ranch RP lternati e Village Three North

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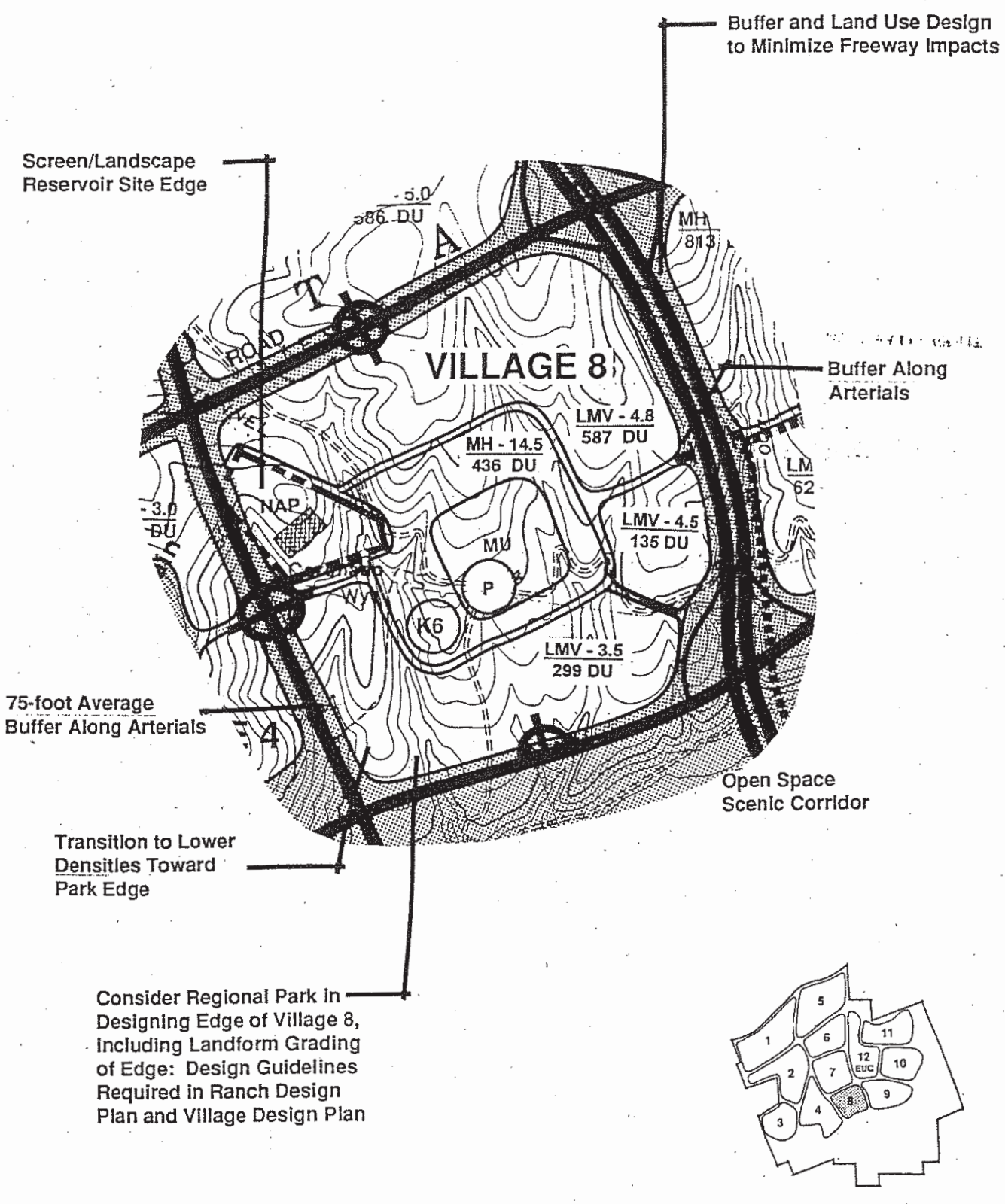

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FIGURE 0-4

tay Ranch RP lternati e Village East East

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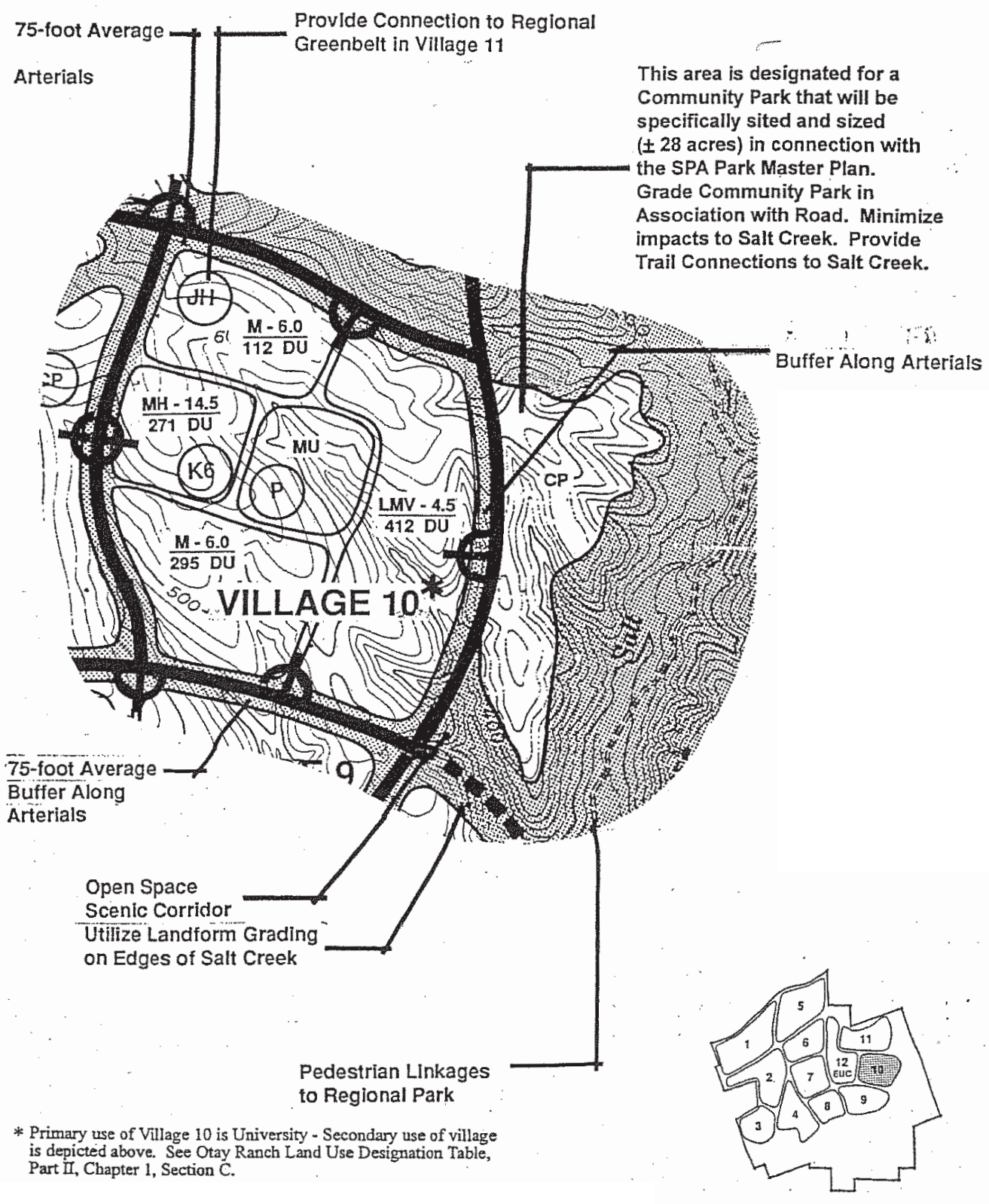

* Primary use of Village 10 is University - Secondary use of village is depicted above. See Otay Ranch Land Use Designation Table, Part II, Chapter 1, Section C.

SOUR E OT R E OMES 201

FIGURE 0-4c

tay Ranch RP lternati e Village Ten

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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*
Village Four			
Community Park	17.8 AC	50/AC	890
		Village Four Total	890

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 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	S	LTS	—	—	—	—	▼
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	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

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
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2 INTRODUCTION

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CHAPTER 12
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OTAY RANCH UNIVERSITY VILLAGES PROJECT
FINAL ENVIRONMENTAL IMPACT REPORT

MITIGATION MONITORING AND REPORTING PROGRAM
SCH No. 2013071077

Lead Agency:

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

NOVEMBER 2014

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MITIGATION MONITORING AND REPORTING PROGRAM

INTRODUCTION

This mitigation monitoring and reporting program (MMRP) was prepared by the City of Chula Vista for the University Villages Project to comply with Public Resources Code Section 21081.6(a)(1), which requires public agencies to adopt such programs to ensure effective implementation of mitigation measures. This monitoring program is dynamic in that it will undergo changes as additional mitigation measures are identified and additional conditions of approval are placed on the project throughout the project approval process. Pursuant to Public Resources Code Section 21081.6(a)(2), the City of Chula Vista designates the Director of Development Services and the City Clerk as the custodians of the documents or their material which constitute the record of proceedings upon which its decision is based.

This monitoring program will serve a dual purpose of verifying completion of the mitigation identified in the Environmental Impact Report (EIR) and generating information on the effectiveness of the mitigation measures to guide future decisions. The program includes the following:

- Monitor qualifications
- Specific monitoring activities
- Reporting system
- Criteria for evaluating the success of the mitigation measures

The project encompasses Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. Implementation of the project requires Chula Vista General Plan Amendments (GPAs), Chula Vista Multiple Species Conservation Plan Boundary Adjustments (MSCPBAs), Otay Ranch General Development Plan Amendments (GDPAs), and Resource Management Plan Boundary Adjustments (RMPBAs). The project also proposes amendments to three approved SPA Plans; Otay Ranch Villages Two, Three, and a Portion of Village Four SPA Plan; Otay Ranch Village Seven SPA Plan; and the Otay Ranch Village Nine SPA Plan.

Three SPA plans are proposed: (a) Otay Ranch Village Three North and a Portion of Village Four SPA Plan, (b) Otay Ranch Villages Eight East SPA Plan, and (c) Otay Ranch Village Ten SPA Plan. Three Tentative Maps (TMs) are also proposed: (a) Village Three North and a Portion of Village Four, (b) Village Eight East, and (c) Village Ten.

The proposed project is described in the EIR text in Chapter 3, Project Description. The EIR, incorporated herein as referenced, addressed all environmental issues listed in Appendix G of the CEQA Guidelines.

Public Resources Code section 21081.6 requires monitoring of only those impacts identified as significant or potentially significant. The monitoring program does not address impacts for issues where no mitigation is available and therefore remain unmitigable. Additionally, Section 5.3, Transportation, Circulation, and Access, of the EIR identify potential mitigation measures that are considered infeasible for reasons identified in Section 5.3; these mitigation measures are not included in the MMRP.

MITIGATION MONITORING TEAM

The monitoring activities would be accomplished by individuals identified in the attached MMRP table. While specific qualifications should be determined by the City, the monitoring team should possess the following capabilities:

- Interpersonal, decision-making, and management skills with demonstrated experience in working under trying field circumstances;
- Knowledge of and appreciation for the general environmental attributes and special features found in the project area;
- Knowledge of the types of environmental impacts associated with construction of cost-effective mitigation options; and
- Excellent communication skills.

PROGRAM PROCEDURAL GUIDELINES

Prior to any construction activities, meetings should take place between all the parties involved to initiate the monitoring program and establish the responsibility and authority of the participants. Mitigation measures that need to be defined in greater detail will be addressed prior to any project plan approvals in follow-up meetings designed to discuss specific monitoring effects.

An effective reporting system must be established prior to any monitoring efforts. All parties involved must have a clear understanding of the mitigation measures as adopted and these mitigations must be distributed to the participants of the monitoring effort. Those that would have a complete list of all the mitigation measures adopted by the City of Chula Vista would include the City of Chula Vista and its Mitigation Monitor. The Mitigation Monitor would distribute to each Environmental Specialist and Environmental Monitor a specific list of mitigation measures that pertain to his or her monitoring tasks and the appropriate time frame that these mitigations are anticipated to be implemented.

In addition to the list of mitigation measures, the monitors will have mitigation monitoring report (MMR) forms, with each mitigation measure written out on the top of the form. Below the stated mitigation measure, the form will have a series of questions addressing the effectiveness of the

mitigation measure. The monitors shall complete the MMR and file it with the Mitigation Monitor following the monitoring activity. The Mitigation Monitor will then include the conclusions of the MMR into an interim and final comprehensive construction report to be submitted to the City. This report will describe the major accomplishments of the monitoring program, summarize problems encountered in achieving the goals of the program, evaluate solutions developed to overcome problems, and provide a list of recommendations for future monitoring programs. In addition, and if appropriate, each Environmental Monitor or Environmental Specialist will be required to fill out and submit a daily log report to the Mitigation Monitor. The daily log report will be used to record and account for the monitoring activities of the monitor. Weekly and/or monthly status reports, as determined appropriate, will be generated from the daily logs and compliance reports and will include supplemental material (i.e., memoranda, telephone logs, and letters). This type of feedback is essential for the City to confirm the implementation and effectiveness of the mitigation measures imposed on the project.

ACTIONS IN CASE OF NONCOMPLIANCE

There are generally three separate categories of noncompliance associated with the adopted conditions of approval:

- Noncompliance requiring an immediate halt to a specific task or piece of equipment;
- Infraction that warrants an immediate corrective action, but does not result in work or task delay; and
- Infraction that does not warrant immediate corrective action and results in no work or task delay.

There are a number of options the City may use to enforce this program should noncompliance continue. Some methods that could be used include “stop work” orders, fines and penalties (civil), restitution, permit revocations, citations, and injunctions. It is essential that all parties involved in the program understand the authority and responsibility of the on-site monitors. Decisions regarding actions in case of noncompliance are the responsibility of the City.

SUMMARY OF MITIGATION MEASURES

Table 1 summarizes the mitigation measures identified in the EIR. The table lists the monitoring efforts necessary to ensure that the measures are properly implemented. All the mitigation measures identified in the EIR are recommended as conditions of project approval and are stated herein in language appropriate for such conditions. In addition, during various stages of implementation the City will further refine the mitigation measures.

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Table 1
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
	Planning[1]	*Pre-Const.*[2]	*During Const.*[3]	*Post Const.*[4]		*Monitor*	*Report*		
University Villages EIR Mitigation Measures									
Section 5.1 Land Use and Planning									
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.		X			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 Villages 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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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 corrected) and by Section 2.5 of the Amended and Restated Otay Landfill Expansion Agreement. Notwithstanding the typically ministerial nature of building permit approvals, 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.	X	X			City of Chula Vista				
Section 5.2 Landform and Aesthetics									
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.	X	X			City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
	Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
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 the proposed height, location, and intensity of all exterior lighting for compliance with the City's performance standards for light, and glare (Chula Vista Municipal Code19.66.100).	X	X			City of Chula Vista				
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 the proposed height, location, and intensity of all exterior lighting for compliance with the City's performance standards for light, and glare (Chula Vista Municipal Code19 19.66.100).	X	X			City of Chula Vista				
MM AES-4 Prior to design review approval for any structure three 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.	X	X			City of Chula Vista				
Section 5.3 Transportation, Circulation, and Access									
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. b) Demonstrate that other improvements are constructed which provide the additional necessary capacity to comply with the GMO (Chapter 19.09 of the Chula Vista Municipal Code)traffic threshold to the satisfaction of the City Engineer. c) Agree to the City Engineer's selection of an alternative method of maintaining GMO traffic threshold compliance. 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, 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.	X	X			City of Chula Vista				
MM TCA-2 Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 (Attachment A) to the satisfaction of the Development Services Director and the City Engineer.	X	X			City of Chula Vista				
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 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 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, additional traffic analysis of the roadway network and levels of service assessment may be necessary at that time to determine: (i) if	X	X			City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
	Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
such improvements are in fact necessary; and (ii) the scope and timing of additional circulation improvements, if any; 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 in accordance with the City of Chula Vista Growth Management Ordinance (GMO) (Chapter 19.09 of the Chula Vista Municipal Code).									
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 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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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	X	X			City of Chula Vista				
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 first Final Map containing the 4,070th EDU is submitted for approval 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, 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 necessary; and (ii) the scope and timing of additional circulation improvements, if any; 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 in accordance with the City of Chula Vista Growth Management Ordinance (GMO) (Chapter 19.09 of the Chula Vista Municipal Code).	X	X			City of Chula Vista				
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,	X	X			City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

	Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
	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 North, 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, 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 necessary; and (ii) the scope and timing of additional circulation improvements, if any; 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 in accordance with the City of Chula Vista Growth Management Ordinance. v. All to the satisfaction of the City Engineer.									
MM TCA-13	**Intersection**: Discovery Falls Drive / Hunte Parkway (CV) – Prior to issuance of 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.	X	X			City of Chula Vista				
MM TCA-14	I-805 Northbound On-Ramp at Main Street - Prior to project buildout, the Project Applicant shall work with Caltrans to, and Caltrans can and should, 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.	X	X	X	X	City of Chula Vista				
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).	X	X	X	X	City of Chula Vista				
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-lanes Gateway Street (6,432nd EDU)	X	X	X		City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
	Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
• SR-125 / Main Street interchange constructed (6,432 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). If the project equivalent dwelling unit limit of EDUs identified above is submitted for approval 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 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, 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 necessary; and (ii) the scope and timing of additional circulation improvements, if any; or iii. Applicant shall construct the missing roadway links an receive a transportation development impact fee credit for those improvements as applicable; or iv. An alternative measure is selected by the City in accordance with the City of Chula Vista Growth Management Ordinance (GMO) (Chapter 19.09 of the Chula Vista Municipal Code).									
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.	X	X	X		City of Chula Vista				
Section 5.4 Air Quality									
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 NOx 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.	X	X	X		City of Chula Vista				
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 PM10 and PM2.5 emissions, including: • Water, or utilize another acceptable SDAPCD dust control agent on, the grading areas at least twice daily to minimize	X	X	X		City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
	Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
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.	X	X			City of Chula Vista				
Section 5.5 Noise									
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.	X	X			City of Chula Vista				
MM NOI-2 Site-Specific Acoustical Analysis – Single-Family Residences - Interior. Concurrent with design review and prior to the approval of	X	X	X		City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

	Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
	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	X	X			City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

	Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
	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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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.	X			X	City of Chula Vista				
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	X	X	X		City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

	Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
	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.		X	X		City of Chula Vista				
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.	X	X			City of Chula Vista				
	Section 5.7 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.	X	X	X		City of Chula Vista				
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.			X		City of Chula Vista				
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: 1. site avoidance by preservation of archaeological site in a natural state in open space, or in specific open space easements, 2. site avoidance by preservation through capping the site and placing landscaping on top of the fill, 3. data recovery through implementation of an excavation and analysis program, 4. 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.			X		City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure		Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
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: 1. a statement of why data recovery is appropriate as a mitigation measure, 2. a research plan that explicitly provides the research questions that can reasonably be expected to be addressed by excavation and analysis of the site, 3. 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, 4. a step-by-step discussion of field and laboratory methods to be employed, 5. 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.			X		City of Chula Vista				
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 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.			X		City of Chula Vista				
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.			X		City of Chula Vista				
Section 5.7 Paleontological Resources										
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.	X	X			City of Chula Vista				
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			X		City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure		Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
	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.			X		City of Chula Vista				
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.			X	X	City of Chula Vista				
Section 5.8 Biological Resources										
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.	X	X			City of Chula Vista				
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).	X	X			City of Chula Vista				
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	X	X			City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

	Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
	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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

	Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
	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 Table5-3 of the City's MSCP Subarea Plan and subject to Wildlife Agency concurrence. 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.									
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.	X	X	X		City of Chula Vista				
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	X	X	X		City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

	Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
	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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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).	X	X	X		City of Chula Vista				
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		X			City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
	Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
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 within10 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.	X	X	X		City of Chula Vista				
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.	X	X	X		City of Chula Vista				
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: 1. 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). 2. Install canyon subdrains to prevent erosion of drainage and wetlands within the Preserve. 3. 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. 4. Implement all necessary requirements for water quality as specified by the State and local agencies 5. Phase out agricultural uses adjacent to the Preserve to remove pollutants from the project site. 6. 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.	X	X			City of Chula Vista				
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:		X	X		City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

	Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
	1. *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). 2. *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. 3. *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. 4. 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. 5. Toxic Substances. See MMS BIO-4, BIO-6, BIO-8, BIO-16 6. 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		X	X		City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
	Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
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.									
Section 4.10 Water Quality and Hydrology									
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.		X	X		City of Chula Vista				
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.	X	X	X	X	City of Chula Vista				
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 on-site 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.	X	X			City of Chula Vista				
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.				X	City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure		Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
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.			X		City of Chula Vista				
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 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.		X	X		City of Chula Vista				
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.	X	X			City of Chula Vista				
	Section 5.11 Geology and Soils									
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.	X	X			City of Chula Vista				
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.			X		City of Chula Vista				
	Section 5.12 Public Services									
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.	X	X			City of Chula Vista				
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).	X	X			City of Chula Vista and Chula Vista Fire Department				
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.	X	X			City of Chula Vista				
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.				X	City of Chula Vista				
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.	X	X			City of Chula Vista and the Chula Vista Police Department				
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.	X	X			City of Chula Vista and Chula Vista Elementary School District				
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.	X	X			City of Chula Vista and Chula Vista Elementary School District				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure		Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
MM 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.	X	X			City of Chula Vista				
MM 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.	X				City of Chula Vista				
MM 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 for 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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
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.				X	City of Chula Vista				
Section 5.13 Utilities										
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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista and Otay Water District				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure		Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
		Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
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.	X	X			City of Chula Vista and Otay Water District				
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.	X	X			City of Chula Vista				
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.			X		City of Chula Vista				
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.	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista				
Section 5.15 Hazards and Risk of Upset										
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.	X	X			City of Chula Vista				
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	X	X			City of Chula Vista				

Table 1 (Continued)
Mitigation Monitoring and Reporting Program (Proposed Project)

Mitigation Measure	Time Frame of Mitigation and Responsible Party				Monitoring Reporting Agency	Time Frame for Verification Frequency to		Date of Completion	Date of Verification
	Planning	*Pre-Const.*	*During Const.*	*Post Const.*		*Monitor*	*Report*		
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: o 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 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 10 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).	X	X			City of Chula Vista				
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.	X	X			City of Chula Vista and Federal Aviation Administration				
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).	X	X			City of Chula Vista and Federal Aviation Administration				
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).	X	X			City of Chula Vista				

[1] Planning: The mitigation measures under this category are triggered during the planning stages of the project; [2] Pre-Construction: The mitigation measures under this category are triggered prior to the final map and after the planning phase; [3] During Construction: The mitigation measures under this category are triggered during the construction phase and prior to buildout; [4] Post-Construction: The mitigation measures under this category are triggered after construction is complete and the project has been fully builtout.

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ATTACHMENT A

Table 5.3-56: University Villages Frontage and Access Threshold

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Table 5.3-56: University Villages Frontage and Access 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
University Drive	University Driveway #1 to Discovery Falls Drive	2-Ln w/RM	prior to the first Final Map of Village Ten	2025

Table 5.3-56 (Continued)
University Villages Frontage and Access Threshold

Street	Segment	Classification	EDU threshold	Year assumed build in TIA
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 Piacho / 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
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

Table 5.3-56 (Continued)
University Villages Frontage and Access Threshold

Street	Segment	Classification	EDU threshold	Year assumed build in TIA
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.

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