5.11 Hydrology and Water Quality

This section describes the hydrological setting of evaluates the potential for changes in drainage, runoff, and water quality due to implementation of the SPA Plan and TM.

As stated in Section 2.3, Purpose and Legal Authority, this EIR tiers from the 2013 GPA/GDPA SEIR (09-01). The SEIR did not address hydrology and water quality but relies on analysis in the 1993 Program EIR for the GDP (EIR 90-01). Section 3.9, Water Resources and Water Quality, of the Otay Ranch GDP Program EIR (EIR 90-01) analyzed the potential impacts and identified mitigation measures related to hydrology and drainage for the entire Otay Ranch GDP. The Otay Ranch GDP concluded that implementation of the GDP would result in significant and mitigable environmental impacts upon regional hydrology and drainage. The analysis and discussion of hydrology contained in the Otay Ranch GDP Program EIR are incorporated by reference. The following discussion is also based on the *Preliminary Water Quality Technical Report for Otay Ranch Village 8 West* (herein referred to as the Water Quality Report), revised December 8, 2011; the Preliminary Drainage Study for Otay Ranch Village 8 West (herein referred to as the Drainage Study), revised December 8, 2011; and the *Hydromodification Study for Otay Ranch Village 8 West* (herein referred to as the Hydromodification Study), revised August 26, 2011, all prepared by Hale Engineering. These reports are provided as Appendices K1 through K3 in this EIR and update the applicable information contained in the previously certified EIRs.

5.11.1 Existing Conditions

A. Regulatory Framework

1. Federal

a. National Pollution Discharge Elimination System Permits

In California, the SWRCB and its RWQCB administer the National Pollutant Discharge Elimination System (NPDES) permit program. The NPDES permit system was established in the CWA to regulate both point source discharges and nonpoint source discharges to surface waters of the U.S. The NPDES program characterizes receiving water quality, identifies harmful constituents, targets potential sources of pollutants, and implements a comprehensive storm water management program. Construction and industrial activities are typically regulated under statewide general permits that are issued by the SWRCB. The RWQCB also issues waste discharge requirements that serve as NPDES permits under the authority delegated to the RWQCBs, under the CWA. In November 1990, under Phase I of the urban runoff management strategy, the EPA published NPDES permit application requirements for municipal, industrial, and construction storm water discharges. These requirements are implemented through permits issued by the SWRCB or the local RWQCB in which the project is located (California RWQCB San Diego Region, herein San Diego RWQCB), and/or the governing municipality where the project is located (City of Chula Vista).

2. State

a. California General Construction Activity Permit

Storm water runoff from construction activity that results in soil disturbances of at least one acre of total land area (and projects that meet other specific criteria) is governed by the SWRCB under Water Quality Order 2010-0014-DWQ, NPDES Permit #CAS000002. These regulations prohibit discharges of polluted storm water from construction projects that disturb one or more acres of soil unless the

discharge complies with the general NPDES permit requirements. The nine individual RWQCBs enforce the general construction permits for projects within their region. The San Diego RWQCB oversees permits in the project area. It is the responsibility of the landowner to obtain coverage under the general construction permit prior to commencement of construction activities. To obtain coverage, the owner must file a NOI with a vicinity map and the appropriate fee to the SWRCB. The general permit outlines the requirements for preparation of a SWPPP.

SWPPPs are prepared and BMPs identified in the SWPPPs are implemented for construction sites greater than one acre, which reduce the likelihood of alterations in drainage to result in water quality impacts. To ensure that the preparation and implementation of the SWPPP is sufficient for effective pollution prevention, it must be created and implemented by Qualified SWPPP Developer (QSD) and Qualified SWPPP Practitioner (QSP) that have attended a State Water Resources Control Board sponsored or approved QSP and/or QSP training course. Typical BMPs include the following:

- **Minimizing disturbed areas.** Clearing of land is limited to that which will be actively under construction in the near term, new land disturbance during the rainy season is minimized, and disturbance to sensitive areas or areas that would not be affected by construction is minimized.
- **Stabilizing disturbed areas.** Temporary stabilization of disturbed soils is provided whenever active construction is not occurring on a portion of the site, and permanent stabilization is provided by finish grading and permanent landscaping.
- **Protecting slopes and channels.** Outside of the approved grading plan area, disturbance of natural channels is avoided, slopes and crossings are stabilized, and increases in runoff velocity caused by the project is managed to avoid erosion to slopes and channels.
- **Controlling the site perimeter.** Upstream runoff is diverted around or safely conveyed through the project and is kept free of excessive sediment and other constituents.
- **Controlling internal erosion.** Sediment-laden waters from disturbed, active areas within the site are detained.

3. Local

a. Development Storm Water Manual

New development and redevelopment projects in the city are subject to the requirements of the Chula Vista Development Storm Water Manual (January 2011). The development storm water manual meets the hydromodification control requirements of the NPDES Municipal Permit issued to Chula Vista by the San Diego RWQCB. New development and redevelopment projects are to minimize impacts on receiving water quality and habitat by incorporating construction and post-construction BMPs in their project design. Construction BMPs typically include erosion control, sediment control, non-storm water management, and material management practices. The applicant is required to prepare a SWPPP which identifies all applicable construction BMPs. Post-construction BMPs include low impact development site design, source control, treatment control, and hydromodification control practices. The manual provides guidance and establishes standards and criteria to meet those requirements.

According to Section 3.6.1.b of the manual, pollutants generated by a project that exhibit one or more of the following characteristics are considered pollutants of concern:

- Current loadings or historical deposits of the pollutant are impairing the beneficial uses of a receiving water;

- Elevated levels of the pollutant are found in water or sediments of a receiving water and/or have the potential to be toxic to or bioaccumulate in organisms therein; and
- Inputs of the pollutants are at a level high enough to be considered potentially toxic.

This section of the manual also states that any anticipated pollutants to be generated by the project, which also are on the 2006 CWA Section 303(d) List of Water Quality Limited Segments (303(d) list) of impairments for the receiving waters of the project site, shall be considered as pollutants of concern.

b. City of Chula Vista Municipal Code Section 14.20, Storm Water Management and Discharge Control

The purpose of this ordinance is to promote the health, safety, and general welfare of the citizens of Chula Vista by prohibiting non-storm water discharges to the storm water conveyance system, preventing discharges to the storm water conveyance system from disposal of materials other than storm water, reducing pollutants in storm water discharges to the maximum extent practicable, and reducing pollutants in storm water discharges in order to achieve applicable water quality objectives for surface waters in San Diego County. This ordinance states that it is unlawful for any person to cause, either individually or jointly, any discharge into or from the storm water conveyance system that results in or contributes to a violation of any NPDES permit. Any person engaged in activities that may result in pollutants entering the storm water conveyance system shall, to the maximum extent practical, undertake all measures to reduce the risk of illegal discharges. The following requirements apply:

- **Best Management Practices Implementation**. It is unlawful for any person not to comply with BMPs and pollution control requirements established by the city or other responsible agency to eliminate or reduce pollutants entering the city storm water conveyance system. BMPs shall be complied with throughout the life of the activity.
- **Storm Water Pollution Prevention Plan**. When the enforcement official determines that a business or business-related activity causes or may cause an illegal discharge to the storm water conveyance system then the enforcement official may require the business to develop and implement a SWPPP. Businesses which may be required to prepare and implement a SWPPP include, but are not limited to, those which perform maintenance, storage, manufacturing, assembly, equipment operations, vehicle loading, and/or cleanup activities partially or wholly out of doors.
- **Coordination with Hazardous Materials Response Plans and Inventory**. Any activity subject to the hazardous materials inventory and response program, pursuant to Chapter 6.95 of the California Health and Safety Code, shall include provisions for compliance with this chapter in its hazardous materials response plan, including prohibitions of unlawful non-storm water discharges and illegal discharges, and provisions requiring the use of BMPs to reduce the discharge of pollutants in storm water.
- **Impervious Surfaces**. Persons owning or operating a parking lot or an impervious surface (including, but not limited to, service station pavements or paved private streets and roads) used for automobile-related or similar purposes shall clean those surfaces as frequently and as thoroughly as is necessary, in accordance with BMPs, to prevent the discharge of pollutants to the city storm water conveyance system. Sweepings or cleaning residue from parking lots or impervious surfaces shall not be swept or otherwise made or allowed to go into any storm water conveyance, gutter, or roadway, but must be disposed of in accordance with regional solid waste procedures and practices.

- **Compliance with NPDES Permit for Storm Water Discharges**. Each discharger subject to any NPDES permit for storm water discharges shall comply with all requirements of such permit.

The Chula Vista Development Storm Water Manual is incorporated into this ordinance by reference. The ordinance states that no land owner or development project proponent in Chula Vista shall receive any city permit or approval for land development activity or significant redevelopment activity unless the project meets or will meet the requirements of the manual.

c. City of Chula Vista General Plan

The Chula Vista General Plan Public Facilities and Services and Environmental Elements address reliable drainage facilities and the protection of water quality. The Public Facilities and Services Element includes objectives to increase efficiencies in handling storm water runoff through use of alternative technologies (Objective PFS 2). Additionally, Objective E 2 in the Environmental Element is to protect and improve water quality within surface water bodies and groundwater resources within and downstream of Chula Vista.

d. Zoning Code and Growth Management Ordinance

Zoning Code Section 19.80.030 is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for storm water collection and other public services. The preparation of the PFFP is required in conjunction with the preparation of the SPA Plan for the project to ensure that the development of the project is consistent with the overall goals and policies of the General Plan. Similarly, Section 19.09 (Growth Management) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09 H specifically requires that: 1) storm water flows and volumes shall not exceed city engineering standards as set forth in the subdivision manual and 2) the GMOC shall annually review the performance of the city storm drain system to determine its ability to meet the goals and objectives of the subdivision manual. Section 19.09 also requires a PFFP and the demonstration that public services meet the GMOC quality of life threshold standards. The analysis of storm drain systems provided in this section, along with the PFFP to ensure funding for any needed expansion of services, confirm that storm drain systems will be provided commensurate with development and demand.

B. Hydrological Setting

The project is located within the Otay Hydrologic Unit, which encompasses the Otay River watershed. The Otay River watershed encompasses approximately 160 square miles in southwest San Diego County and is one of the three hydrologic units that discharge to San Diego Bay. The watershed consists largely of unincorporated areas in the County of San Diego, but also includes portions of the cities of Chula Vista, Imperial Beach, Coronado, National City, and San Diego. From east to west, the watershed is made up of the Coronado, Otay Valley, and Dulzura hydrologic areas. Village 8 West is within the Otay Valley hydrologic area (Basin #910.20). The major inland hydrologic features, Upper and Lower Otay Lakes, are two water supply reservoirs that also provide important habitat and recreational opportunities. Village 8 West is located downstream of the Otay Lakes. San Diego Bay, located west of Village 8 West, and Otay River, located south of Village 8 West, are the other major water bodies in the watershed. Approximately 36 square miles of the watershed are within MSCP conservation areas (Project Clean Water 2011).

The receiving waters of Village 8 West are Wolf Canyon, Otay River, and the San Diego Bay. Drainage from Village 8 West flows to either Wolf Canyon or directly to Otay River. Wolf Canyon is a tributary to

Otay River, which is a tributary to San Diego Bay. Wolf Canyon is located approximately 0.4 mile west of Village 8 West. Otay River is located approximately 0.6 mile south of Village 8 West. San Diego Bay is located approximately 8.6 miles west of Village 8 West.

1. On-site Hydrology

The site is currently composed of three drainage areas with three distinct discharge points. The three drainage areas are shown in Figure 5.11-1. Drainage areas A and B, which encompass the southern and northeastern areas of Village 8 West, drain southwesterly toward outlet points along the southern boundary of the project. Drainage Area A is an 83.9-acre drainage area and Drainage Area B is a 127.1-acre drainage area. Drainage Area B receives off-site flow from Village 7. Flow through these drainage areas consists of natural channel flow. The flow from Drainages Areas A and B exit the project boundary by way of natural channel flow and continues southwesterly along the natural channel to Otay River. Drainage Area C, which encompasses the northwest area of Village 8 West, drains westerly toward an outlet point along the western boundary of the project. Drainage Area C is a 183.6-acre drainage area composed of 89.6 acres of off-site flow and 94.0 acres of on-site flow. This basin receives off-site flow from Otay Ranch Village 7. Flow through the drainage area consists of natural channel flow. This flow exits the project boundary and continues southwesterly along the natural channel to Wolf Creek, which is a tributary to Otay River.

2. Water Quality

a. Surface Water Quality

The Porter-Cologne Act establishes a comprehensive program for the protection of beneficial uses of the waters of the state. California Water Code Section 13050(f) describes the beneficial uses of surface and ground waters that may be designated by the state or regional board for protection as follows: "Beneficial uses of the waters of the state that may be protected against quality degradation include, but are not necessarily limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves." Twenty-three beneficial uses are now defined statewide and are designated within the San Diego Region. The complete list of the beneficial uses and their definitions for Otay River, Wolf Canyon, and San Diego Bay are provided in the water quality report in Appendix I1. On October 25, 2006, the SWRCB approved the 303(d) list. Subsequently on November 30, 2006, the EPA approved the SWRCB's inclusion of all waters and pollutants identified for the San Diego region in its 2006 List of Water Quality Limited Segments. Within the Otay Hydrologic Unit, the San Diego Bay is impaired for pollution from organic compounds. Wolf Canyon and Otay River are not on the 303(d) list.

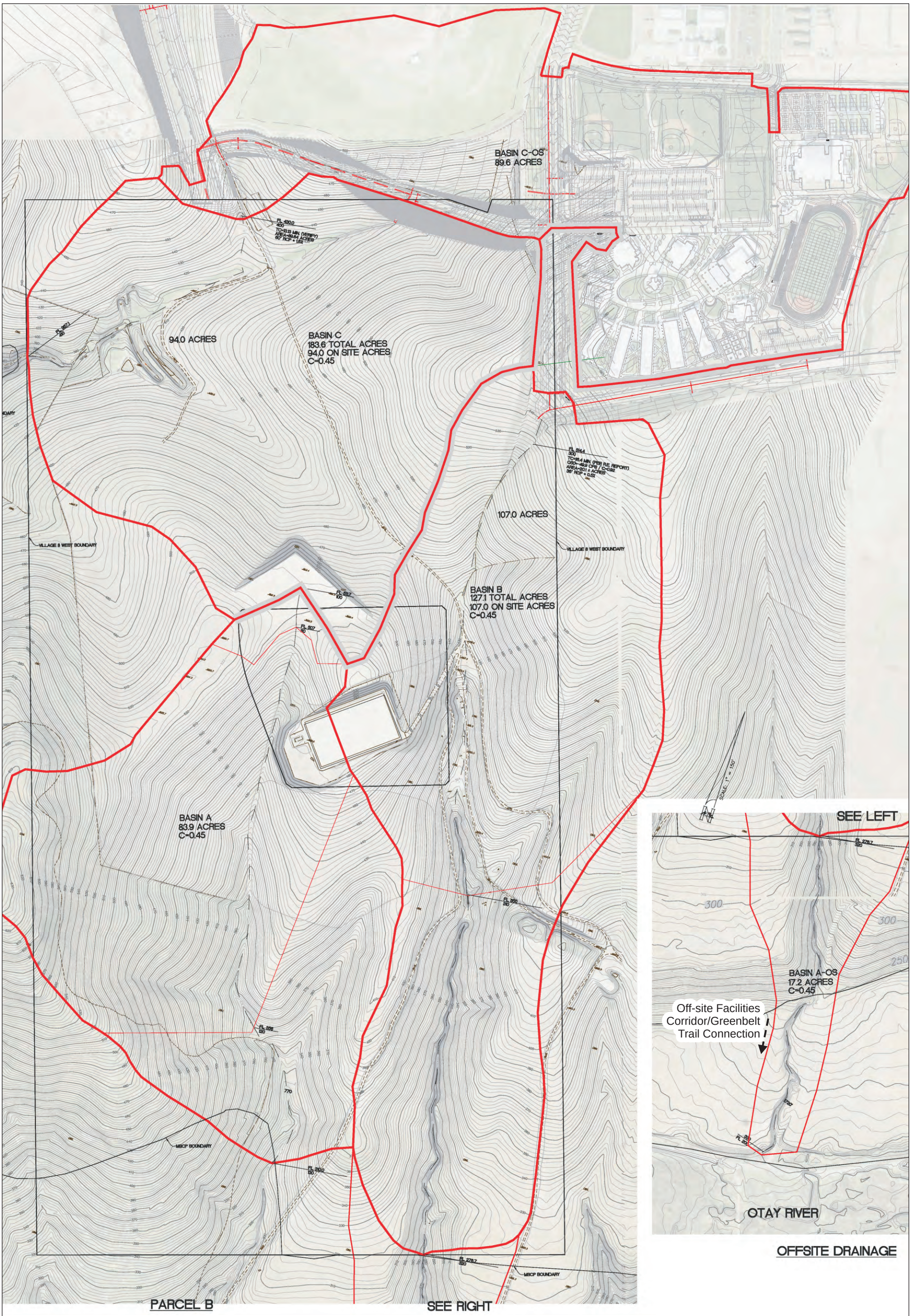
b. Groundwater

Groundwater in the Otay Valley hydrologic area has been identified for the following beneficial uses: municipal and domestic water supply, agricultural water supply, and industrial service water supply. However, active springs or surface seeps have not been observed on Village 8 West. It is possible that seasonal groundwater associated with precipitation intermittently occurs in on-site drainages or trapped along joints or rock beds, especially in the Santiago Peak Volcanics rock formation (Advanced Geotechnical Solutions, Inc. 2010). This rock formation occurs in the southwest portion of the project site.

Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, impacts regarding hydrology and water quality would be significant if the project would:

- **Threshold 1:** Violate any water quality standards or waste discharge requirements, including City of Chula Vista engineering standards for storm water flows and volumes.
- **Threshold 2:** 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).
- **Threshold 3:** 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 the site or City of Chula Vista Engineering Standards for storm water flows and volumes.
- **Threshold 4:** 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 the site.
- **Threshold 5:** Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- **Threshold 6:** Otherwise substantially degrade water quality.
- **Threshold 7:** 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.
- **Threshold 8:** Place structures within a 100-year flood hazard area which would impede or redirect flood flows.
- **Threshold 9:** Be inconsistent with General Plan, GDP or other objectives and policies regarding water quality thereby resulting in a significant physical impact.
- **Threshold 10:** 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.
- **Threshold 11:** Result in a substantial increase in risk of exposure to inundation by seiche, tsunami, or mudflow.



Source: Hale Engineering 2012

0 225 450
Feet

N

EXISTING DRAINAGE AREAS
FIGURE 5.11-1

This page intentionally left blank.

5.11.2 Impact Analysis

A. Threshold 1: Violate any water quality standards or waste discharge requirements, including City of Chula Vista Engineering Standards for storm water flows and volumes.

1. Construction

The project would result in sources of polluted runoff during construction which would have short-term impacts on surface water and groundwater quality through activities such as demolition, clearing and grading, excavation of undocumented fill materials, stockpiling of soils and materials, concrete pouring, painting, and asphalt surfacing. Construction activities would involve various types of equipment such as dozers, scrapers, graders, loaders, compactors, dump trucks, cranes, water trucks, and concrete mixers. Additionally, soils and construction materials are typically stockpiled outdoors.

Pollutants associated with construction would degrade water quality if they were washed by storm water or non-storm water into surface waters. Sediment is often the most common pollutant associated with construction sites because of the associated earth-moving activities and areas of exposed soil. Sediment that is washed off site can result in turbidity in surface waters, which can impact aquatic species. In addition, when sediment is deposited into receiving water it can smother species, alter the substrate and habitat, and alter the drainage course. Hydrocarbons such as fuels, asphalt materials, oils, and hazardous materials such as paints and concrete slurries discharged from construction sites could also impact aquatic plants and animals downstream. Debris and trash could be washed into existing storm drainage channels to downstream surface waters and could impact aquatic wildlife, wetland or riparian habitat and aesthetic value. Construction activities would potentially result in a significant change in local receiving water quality if BMPs are not put in place to prevent polluted runoff from entering the Wolf Canyon or Otay River.

The NPDES General Construction Permit program requires a SWPPP to be prepared for the project prior to construction. For coverage by the General Construction Permit, the applicant is required to submit to the SWRCB a NOI and develop a SWPPP describing BMPs to be used to prevent discharge of sediment and other pollutants. The BMPs may include, but are not limited to, silt fences, fiber rolls, gravel bags, temporary desilting basins, velocity check dams, temporary ditches or swales, storm water inlet protection, or soil stabilization measures such as erosion control mats. Prior to the issuance of grading permits, the SWPPP would be required to be prepared to the satisfaction of the City Engineer and the Director of Public Works.

Additionally, all construction activities would comply with the Chula Vista Development Storm Water Manual. In addition to the requiring compliance with a project-specific SWPPP and General Construction Permit, the manual requires proper inspection, monitoring, and maintenance of construction BMPs during dry and wet weather conditions. A qualified person who is trained and competent in the use of BMPs shall be on site daily, although not necessarily full time, to evaluate the conditions of the site with respect to storm water pollution prevention.

In accordance with the manual, the City of Chula Vista will evaluate the adequacy of the owner's/ contractor's site management for storm water pollution prevention, inclusive of BMP implementation on construction sites based on performance standards for storm water BMPs. Ineffective BMPs would be replaced with more effective BMPs. The manual lists specific BMPs that must be implemented seasonally during wet and dry season. Additionally, the manual sets limitations specific to grading

activities. The area that can be cleared or graded and left exposed at one time is limited to the amount of acreage that the owner/contractor can adequately protect prior to a predicted rainstorm. At no time shall the disturbed soil area on the site be more than 100 acres for an individual grading permit or a combination of grading permits under an associated TM. Construction sites that pose an exceptional threat to water quality from sediment are required to implement advanced treatment to eliminate or minimize the discharge of sediment from the construction site to storm drainage systems and/or receiving waters. The project would be considered an exceptional threat to water quality because it would disturb more than five acres; therefore, advanced treatment would be implemented for the project in accordance with the manual requirements.

Compliance with applicable regulatory requirements described above, which is prescribed as mitigation for the project, would ensure that potentially significant water quality impacts during on-site construction would be reduced to a less than significant level.

2. Operation (Post-Construction)

Equipment and hazardous materials associated with construction activities would be removed from the project site after buildout is complete, which would reduce the potential for pollutants to be discharged. However, there are multiple pollutants associated with operations of land uses proposed in Village 8 West. The pollutants of concern for the project are listed in Table 5.11-1 and are described below.

Table 5.11-1 Pollutants Potentially Generated by the Project

Priority Project Categories	General Pollutant Categories[1]								
	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oils & Grease	Bacteria & Viruses	Pesticides
Detached Residential	X	X			X	X	X	X	X
Attached Residential	X	X			X	P[2]	P[3]	P	X
Commercial (> 1 ac)	P[2]	P[2]		P[3]	X	P[6]	X	P[4]	P[6]
Auto Repair Shops			X	X[5][6]	X		X		
Restaurants					X	X	X	X	
Hillside Development (>5,000 S.F.)	X	X			X	X	X		X
Parking Lots	P[2]	P[2]	X		X	P[2]	X		P[2]
Gasoline Outlets			X	X	X	X	X		
Streets	X	P[2]	X	X[5]	X	P[6]	X		

[1] X = Anticipated Pollutants, P = Potential Pollutants
[2] A potential pollutant if landscaping exists on site
[3] A potential pollutant if the project includes uncovered parking areas
[4] A potential pollutant if land use involved food or animal waste products
[5] Including petroleum hydrocarbons
[6] Including solvents
Source: Hale Engineering 2011a.

Sediment. Sediments are soils or other surface materials eroded and then transported or deposited by the action of wind, water, ice, or gravity. Sediments can increase turbidity, clog fish gills, reduce spawning habitat, lower young aquatic organisms survival rates, smother bottom dwelling organisms, and suppress aquatic vegetation growth.

Nutrients. Nutrients are associated with landscaping, which would occur throughout the project site. Nutrients are inorganic substances, such as nitrogen and phosphorus. They commonly exist in the form of mineral salts that are either dissolved or suspended in water. Primary sources of nutrients in urban runoff are fertilizers and eroded soils. Excessive discharge of nutrients to water bodies and streams can cause excessive aquatic algae and plant growth. Such excessive production, referred to as cultural eutrophication, may lead to excessive decay of organic matter in the water body, loss of oxygen in the water, release of toxins in sediment, and the eventual death of aquatic organisms.

Heavy Metals. Metals are raw material components in non-metal products such as fuels, adhesives, paints, and other coatings. Primary sources of metal pollution in storm water are typically commercially available metals and metal products. Metals of concern include cadmium, chromium, copper, lead, mercury, and zinc. At low concentrations naturally occurring in the soil, metals are not toxic. However, at higher concentrations, certain metals can be toxic to aquatic life. Humans can be impacted from contaminated ground water resources, and bioaccumulation of metals in fish and shellfish.

Organic Compounds. Organic compounds are carbon-based, commercially available or naturally occurring, and are found in pesticides, solvents, and hydrocarbons. Organic compounds can, at certain concentrations, indirectly or directly constitute a hazard to life or health. When rinsing off objects, toxic levels of solvents and cleaning compounds can be discharged to storm drains. Dirt, grease, and grime retained in the cleaning fluid or rinse water may also absorb levels of organic compounds that are harmful or hazardous to aquatic life.

Trash and Debris. Trash (such as paper, plastic, polystyrene packing foam, and aluminum materials) and biodegradable organic matter (such as leaves, grass cuttings, and food waste) are general waste products. The presence of trash and debris may have a significant impact on the recreational value of a water body and aquatic habitat. Excess organic matter can create a high biochemical oxygen demand in a stream and thereby lower its water quality. In addition, in areas where stagnant water exists, the presence of excess organic matter can promote septic conditions resulting in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide.

Oxygen Demanding Substances. This category includes biodegradable organic material as well as chemicals that react with dissolved oxygen in water to form other compounds. Proteins, carbohydrates, and fats are examples of biodegradable organic compounds. Compounds such as ammonia and hydrogen sulfide are examples of oxygen-demanding compounds. The oxygen demand of a substance can lead to depletion of dissolved oxygen in a water body and possibly the development of septic conditions.

Oil and Grease. Oil and grease are characterized as high-molecular weight organic compounds. The primary sources of oil and grease are petroleum hydrocarbon products, motor products from leaking vehicles, esters, oils, fats, waxes, and high molecular-weight fatty acids. Introduction of these pollutants to the water bodies are very possible due to the wide uses and applications of some of these products in municipal, residential, and commercial areas. Elevated oil and grease content can decrease the aesthetic value of the water body, as well as the water quality.

Bacteria and Viruses. Bacteria and viruses are ubiquitous microorganisms that thrive under certain environmental conditions. Their proliferation is typically caused by the transport of animal or human fecal wastes from the watershed, such as pet waste. Water, containing excess bacteria and viruses can alter the aquatic habitat and create a harmful environment for humans and aquatic life. Also, the decomposition of organic waste causes increased growth of undesirable organisms in the water.

Pesticides. Pesticides (including herbicides) are chemical compounds commonly used to control nuisance growth or prevalence of organisms. Excessive application of a pesticide may result in runoff containing toxic levels of its active component.

Generally, these constituents can be referred to as non-point source pollutants. As stated in the Development Storm Water Manual, any anticipated pollutants potentially generated by the project that are on the 303(d) list are considered pollutants of concern. The San Diego Bay is impaired for organic compounds. Therefore, organic compounds are a pollutant of concern associated with the project. Increased runoff from the development of future land uses as designated in the project area, and an associated increase in impervious surfaces, would potentially result in the contribution of non-point source pollution, including organic compounds, into Wolf Canyon and Otay River, and ultimately San Diego Bay, that would degrade water quality.

3. Operational Best Management Practices

As required by the development storm water manual, implementation of the project would minimize impacts on receiving water quality by incorporating post-construction BMPs into project design, including low impact development site design, source control, and treatment control BMPs. Implementation of the SPA Plan and TM is subject to site design and source control BMPs that apply to the entire project area, as outlined in Section 3.6.2 of the Development Storm Water Manual. Additionally, individual land uses types are subject to additional requirements specific to the activities associated with that land use.

Impervious surfaces and associated runoff would increase with urban development of Village 8 West. However, development of the project would be designed to minimize directly connected impervious surfaces and to promote infiltration using low impact development techniques. The BMPs identified in the water quality report would also minimize, to the maximum extent practicable, the introduction of pollutants and conditions of concern into the storm water conveyance system. The water quality report identifies the following low impact development and site design BMPs that would be implemented for the project:

- Minimize the Impervious Footprint
  - Incorporate alternative street layouts to reduce road networks. La Media Road, a 4-lane major road is designed with a 94 feet right-of-way rather than the typical 100 foot right-of-way.
  - Provide public safety and a walkable environment for pedestrians is not compromised, constructing streets and sidewalks to the minimum widths. All sidewalks are constructed to the minimum width.
  - Whenever practical, preserve existing native trees and shrubs to maximize canopy interception and water conservation. A total of 21.1 acres of Village 8 West is to remain undeveloped and set aside as a combination of open space and MSCP.
  - Plant native or drought tolerant trees and large shrubs to maximize canopy interception and water conservation.
  - Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design. Landscaping within the parkways throughout the project also serve as bioretention BMPs and contain minimal use of impervious surfaces.

- Conserve Natural Resources and Areas
  - Utilize natural drainage systems to the maximum extent practicable. The site shall outlet to three existing discharge points. Two of the three points discharge directly to the Otay River; the third point discharges to an existing drainage path in Wolf Canyon that ultimately outlets to the Otay River as well.
  - Minimize soil compaction.

- Minimize Directly Connected Impervious Areas
  - Where landscaping is proposed, drain impervious sidewalks, pathways, and trails into adjacent landscaping prior to discharging to the storm drain. Specifically, all sidewalks within the proposed parkways are designed to drain to the adjacent landscaped areas prior to discharging to the storm drain.

- Protect Slopes and Channels
  - Minimize disturbances to natural drainages. The project utilizes existing discharge points to minimize impacts to natural drainages. A regional analysis for the overall Otay development directly tributary to the Otay River is being undertaken to demonstrate that an increase in peak 100-year event flows will not have a negative effect on the downstream receiving waterway. This regional analysis will also investigate hydromodification impacts upon the Otay River to address current hydromodification management plan criteria.
  - Convey runoff safely from the tops of slopes. Runoff is collected within concrete drainage ditches located at the tops of the proposed slopes and transported safely to the proposed storm drain system.
  - Vegetate slopes with native or drought tolerant vegetation
  - Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems. The project incorporates bioretention BMPs in the median along La Media Road and parkways throughout the site. These BMPs shall treat flows prior to their entrance to the proposed storm drain system and subsequent discharge to the existing natural drainage systems.
  - Install energy dissipaters, such as rip rap, at the outlets of new storm drains, culverts, or conduits that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed at each of the three outlet points in such a way as to minimize impacts to receiving waters.

- Use natural site design features to the maximum extent practicable
  - Incorporate alternative street layouts to reduce road networks. La Media Road, a 4-lane major road is designed with a 94 foot right-of-way rather than the typical 100 foot right-of-way.
  - Whenever practical, preserve existing native trees and shrubs to maximize canopy interception and water conservation. A total of 21.1 acres of Village 8 West is to remain undeveloped and set aside as a combination of open space and MSCP.
  - Plant native or drought tolerant trees and large shrubs to maximize canopy interception and water conservation.
  - Minimize soil compaction.

- Utilize natural drainage systems to the maximum extent practicable. The site shall outlet to three existing discharge points. Two of the three points discharge directly to the Otay River; the third point discharges to an existing drainage path in Wolf Canyon that ultimately outlets to the Otay River as well.
- Where landscaping is proposed, drain impervious sidewalks, pathways, and trails into adjacent landscaping prior to discharging to the storm drain. Specifically, all sidewalks within the proposed parkways are designed to drain to the adjacent landscaped areas prior to discharging to the storm drain.

Source-control BMPs are activities, practices, and procedures that are designed to prevent urban runoff pollution. These measures either reduce the amount of runoff from the site or prevent contact between potential pollutants and storm water. Source-control BMPs are often the best method to address non-storm (dry-weather) flows. The following source-control BMPs would be required for implementation of the SPA Plan and TM.

- **Provide Storm Drain System Stenciling and Signage.** Storm drain stencils are highly visible source control messages, typically placed directly adjacent to storm drain inlets. The stencils contain a brief statement that prohibits the dumping of improper materials into the urban runoff conveyance system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the anti-dumping message. The project design shall include the following requirements:
  - Provide stenciling or labeling of all storm drain inlets and catch basins with the project area with prohibitive language (such as "NO DUMPING - I LIVE DOWNSTREAM") and/or graphical icons to discourage illegal dumping.
  - Maintaining legibility of stencils and signs.

- **Use Efficient Irrigation Systems and Landscape Design, and Employ Integrated Pest Management Principles.** The project shall design the timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water conveyance system. In compliance with the Water Conservation in Landscaping Act, the following methods to reduce excessive irrigation runoff shall be considered, and incorporated and implemented where determined applicable and feasible by the City of Chula Vista:
  - Employ rain shutoff devices to prevent irrigation 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.

- Incorporate Requirements Applicable to Individual Priority Project Categories
  - The project shall meet all applicable BMP requirements identified in Section 3.6.2 of the Chula Vista Development Storm Water Manual.
  - The project shall select a single or combination of storm water BMPs that maximize pollutant removal efficiency for the particular primary pollutants of concern, which are organic compounds. BMPs with a high efficiency for organic compound removal are bioretention facilities, setting basins (dry ponds), wet ponds and wetlands, low impact development, and media filters.

Post-construction treatment control BMPs provide treatment for storm water emanating from Village 8 West. These BMPs are also known as structural BMPs. Implementation of NPDES General Permit requirements include the use of post-construction BMPs that will remain in service to protect water quality throughout the life of the project. Structural BMPs are an integral element of post-construction storm water management and include storage, filtration, and infiltration practices. BMPs have varying degrees of effectiveness versus different pollutants of concern. The pollutant of concern for the project is organic compounds. Other anticipated pollutants for the project are sediments, nutrients, heavy metals, trash and debris, and oil and grease. Bioretention facilities are a BMP that has a high pollutant removal efficiency for organic compounds, meets the maximum extent practicable standard for all other anticipated pollutants, is relatively inexpensive to construct and maintain, can be incorporated into the proposed landscaping, has a low probability of ground water contamination, and requires a relatively small footprint for treatment. Therefore, bioretention facilities would be incorporated into the project in the form of bioretention tree wells and bioretention swales. The bioretention integrated management practices would be designed to meet the area-based treatment control BMP standards as set forth in Section 3.6.2.C of the Chula Vista Development Storm Water Manual.

Bio-retention areas would be incorporated into all single-family, detached residential lots and bioretention tree wells would be located along roadways. The bioretention tree wells necessary to provide treatment for runoff from the small portion of Otay Valley Road that drains easterly to Village 8 East would treat runoff from Village 8 West prior to the confluence with the Village 8 East storm drain system. The bioretention areas on the residential lots would be tied to the bioretention swales within the roadways via perforated pipe. Each bioretention BMP shall be fully operational prior to the use of any dependent phase of development. In the event that interim storm water BMPs are deemed necessary, said interim BMPs shall proved equivalent or greater treatment than is required per the design criteria set forth in the development storm water manual. Such interim BMPs shall remain in use until the permanent structural BMPs are operational.

Lot-specific structural BMPs would also be implemented as lots are developed that would meet the numeric sizing standards set forth in the Chula Vista Development Storm Water Manual. The proposed off-site utility access road consists of a 12-foot wide asphalt paved roadway edged on either side with permeable gravel. Given the minimal traffic expected on this roadway and the lack of run-on onto the roadway, no bioretention BMPs are necessary or proposed along this portion of project roadways. Rather, the permeable gravel shall provide adequate infiltration of the minor runoff due to the access roadway. BMP design calculations are provided in the water quality report, provided as Appendix I1 to this EIR. The report also includes an inspection, operation, and maintenance plan for the BMPs to ensure their effectiveness during operation of the project. Implementation of the BMPs outlined in the water quality report would ensure that mass grading of Village 8 West and development of infrastructure would comply with the manual.

In conclusion, with implementation of the proposed storm water BMPs, including the BMPs identified in the water quality report that are prescribed as mitigation measures for the project, potentially significant impacts to downstream drainage facilities identified as conditions of concern in this analysis would be reduced to a less than significant level.

B. Threshold 2: 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).

Groundwater on Village 8 West is seasonal and results from rainwater or runoff that is trapped along joints or rock beds. The project does not propose to use groundwater during construction or operation. Operation is anticipated to result in an increase in groundwater because runoff from watering for landscaping and other activities would seep into groundwater through infiltration basins and low impact development BMPs. This increase would be beneficial by raising the water table slightly. Increased groundwater would be expected to improve the quality of water slightly in the watershed because runoff from the project site would be treated by the basins and BMPs and would dilute existing pollutants in groundwater (Advanced Geotechnical Solutions, Inc. 2013). Therefore, development of Village 8 West would not interfere with groundwater recharge or deplete groundwater supplies such that there would be a net deficit in aquifer volume of lowering of the local groundwater table. This impact would be less than significant.

C. Threshold 3: 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 the site or Chula Vista Engineering Standards for storm water flows and volumes.

As shown in Figure 5.6-3, Jurisdictional Delineation Results, several natural drainages traverse the project site. Otay River is located approximately one-quarter mile south of the project site. However, there are no streams or rivers on the project site or immediately adjacent to Village 8 West. No alteration of the course of a stream or river would result from implementation of Village 8 West. However, natural channel flow occurs on site and development of Village 8 West would alter the existing drainage pattern of the site, as discussed below.

1. Post-Project Drainage Conditions

A drainage study has been prepared to determine the drainage system requirements to support the proposed development. As discussed above under the discussion of On-site Hydrology, Village 8 West is currently composed of three drainage areas that flow either directly to Otay River or to Wolf Creek, which is a tributary to Otay River. Following implementation of the project, the site would be divided into five drainage basins. The proposed drainage system is shown in Figure 3-12, Hydrologic Basins and Proposed Drainage System. The northern portion of the site would drain to Wolf Canyon via two of five proposed storm drain systems. The other three storm drain systems would drain the remainder of the site south to the Otay River. The remaining project areas that are not included in one of these five drainage areas consist of areas that would remain as open space, including the Preserve. No change in the existing natural drainage pattern is proposed for the open space areas; therefore, the project would not alter the existing drainage pattern in these areas.

a. Post-Project Drainage Area 1

Post-project Drainage Area 1 is a 37-acre drainage area in the southwest corner of Village 8 West in the Neighborhood Edge Zone. Proposed improvements within this drainage area include mass grading of

pads and roadways within Planning Area P for future development. Development proposed for Planning Area P consists of detached single-family homes. Runoff in this drainage area would be transported to the proposed storm drain system via proposed catch basins and curb inlets located at intervals within the proposed roadways. This storm drain system would ultimately confluence with areas Drainage Areas 2 and 3 and flows would be conveyed southerly through the storm drain system that follows the Otay Valley Regional Park trail connection alignment to drain directly to the Otay River.

b. Post-Project Drainage Area 2

Post-project Drainage Area 2 is a 42-acre drainage area in the southeast corner of Village 8 West in the Neighborhood General, Neighborhood Edge Zones, and the Neighborhood Park. Proposed improvements within this area include mass grading of building pads and roadways within Planning Areas T, U, and V. Future development proposed for these planning areas consists of detached and attached single-family homes and a neighborhood park that would include amenities such as small-scale multi-purpose play fields, sport courts, playgrounds, and picnic areas. Runoff in this drainage area would be transported to the proposed storm drain system via proposed curb inlet located at intervals within the drainage area. This storm drain would ultimately confluence with drainage area 1 and flows would be conveyed southerly through the storm drain system that follows the Otay Valley Regional Park trail connection alignment to drain directly to the Otay River.

c. Post-Project Drainage Area 3

Post-project Drainage Area 3 is a 100-acre drainage area composed of 20.1 acres of off-site flow and 82.7 acres of on-site flow from the central and eastern areas of Village 8 West. This area includes the Neighborhood Center and Neighborhood General Zones, a portion of Town Center, and the Community Purpose Facility. Proposed improvements within this area include mass grading of pads and roadways within Planning Areas M, O, Q, R, and S for future development. These planning areas are proposed for single-family development, multi-family residences, an elementary school, mixed-use development, and the CPF.

The basin receives off-site flow from Village 7. The quantity of off-site flow was previously determined in *Drainage Study for McMillin Village 7 Vista Verde* prepared by Rick Engineering. Runoff from this drainage area would be transported to the proposed storm drain system via proposed curb inlet located at intervals within the proposed roadways. This storm drain would ultimately confluence with Drainage Area 1 and flows would be conveyed southerly through the storm drain system. The southerly drainage system extends off site along the Otay Valley Regional Park trail connection alignment to the Otay River bottom to avoid potential finger canyon erosion on the slope between the southern edge of Village 8 West and Otay River. A USBR Type IV impact basin and 20-inch rip rap energy dissipater would be used to decrease the velocity of flows from Drainage Areas 1, 2, and 3.

A southeast segment of Otay Valley Road discharges to the Village 8 East site. Flows from this area would be accounted for in the design of the drainage system for Village 8 East. Until development of Village 8 East, flows from this area of Village 8 West would flow directly to Otay River.

d. Post-Project Drainage Area 4 and Basin P

Post-project Drainage Area 4 is a 144-acre drainage area in the northeast corner of the site that consists of the Town Center. This area is composed of 89.6 acres of off-site flow and 54.0 acres of on-site flow. Proposed improvements within this drainage area would include mass grading of pads and portions of La Media Road, Street A, and Main Street within Planning Areas B, C, D, E, and F, and portions of

Planning Areas G and H. These planning areas are proposed for mixed-use development, multi-family residences, the Town Square, and a middle school.

This basin receives off-site flow from Otay Ranch Village 7. The quantity of off-site flow was determined in the *Addendum Rough Grading Hydrology Study for Otay Ranch Village* 7 prepared by Hunsaker Engineering. Runoff for this drainage area would be transported to the proposed storm drain system via proposed catch basins and curb inlets located at intervals within the proposed roadways. This storm drain system would confluence with Drainage Area 5 and Basin P. Basin P encompasses Planning Area A, which is proposed to be development as a community park and is not included in the overall drainage design for the project. The Community Park would be self-treating because the large areas of landscaping and open parkland would detain and treat the runoff from the limited impervious development that would occur inside the park. Discharge from Drainage Areas 4 and 5 would outlet through energy dissipaters, including an impact basin and rip rap, and flow westerly to a natural drainage in Wolf Canyon. Basin P would also flow to Wolf Canyon.

e. Post-Project Drainage Area 5

Post-Project Drainage Area 5 is a 59-acre drainage area that encompasses the central and western portions of Village 8 West including the Town Center and Neighborhood Center Zones. Proposed improvements within this drainage area include mass grading of pads and portions of La Media Road, Main Street, and other roadways within Planning Areas I, J, L, and N, and portions of Planning Areas G and H. Future development proposed for these planning areas included the Town Square, mixed-use development, detached single-family residences, and multi-family residences.

Runoff from this drainage area would be transported to the proposed storm drain system via proposed catch basins and curb inlets located at intervals within the proposed roadways. This storm drain system would confluence with Drainage Area 4 and ultimately outlet to an existing natural drainage channel running westerly from Village 8 West to Wolf Canyon.

2. Post-Project Drainage Flows

The Advanced Engineering Software Rational Method computer program based on the 2002 Chula Vista Subdivision Manual, and the County of San Diego Hydrology Manual Methodology were used to determined pre- and post-project flow rates. Refer to the drainage study in Appendix I2 for additional information regarding the study methodology. Pre- and post-project flows to Wolf Canyon are shown in Table 5.11-2 and pre- and post-project flows to Otay River are shown in Table 5.11-3.

Table 5.11-2 Pre- and Post-Project Drainage to Wolf Canyon

Storm Event	Pre-Project (cubic feet per second)	Post Project (cubic feet per second)			
		Flow Into Detention Basin (Drainage Areas 4 & 5)	Flow Out of Detention Basin (Drainage Areas 4 & 5)	Basin P	Total Basin P and Flow out of Detention Basin
2-Year Storm	155.6	243.8	42.6	18.4	61
10-Year Storm	246.0	380.1	136.4	28.7	165.1
25-Year Storm	261.2	402.8	157.2	30.5	187.7
50-Year Storm	322.3	493.8	241.2	37.4	278.6
100-Year Storm	368.3	559.3	313.4	42.4	355.8
Source: Hale Engineering 2011b					

Table 5.11-3 Pre- and Post-Project Drainage to Otay River

Storm Event	Pre-Project (cubic feet per second)	Post-Project Drainage Areas 1-3 and Otay Valley Road (cubic feet per second)	Percent Increase from Pre-Project Conditions
2-Year Storm	118.6	155.5	31%
10-Year Storm	191.2	243.9	28%
25-Year Storm	203.5	258.7	27%
50-Year Storm	253.4	319.9	26%
100-Year Storm	291.4	362.5	24%
Source: Hale Engineering 2011b			

As shown in Table 5.11-2, the proposed on-site hydromodification detention basin within the storm drain system would reduce post-construction flows discharging into Wolf Canyon to less than existing flows. Refer to the hydromodification study in Appendix I3 for detail on the design of the detention basin. Therefore, the project would not increase the rate of erosion or siltation off site. Refer to the drainage study in Appendix I2 for additional information regarding the Advanced Geotechnical Solutions Review. The project would result in less than significant impacts related to alteration of the existing drainage pattern of Wolf Canyon.

As shown in Table 5.11-3, the post-project peak flow from the projects to Otay River is anticipated to increase up to approximately 31 percent over existing flows from Village 8 West. However, an Otay River Watershed Assessment Technical Report, prepared in August 2004 by Aspen Environmental Group, determined that the Savage Dam at the Lower Otay Reservoir impounds runoff from over 60 percent of the Otay River's tributary watershed and, as such, the flow capacity for the Otay River downstream of the dam is approximately 22,000 cubic feet per second for the 100-year storm event. The attenuation provided by the Savage Dam on 60 percent of the overall watershed reduces flows in the river such that even with the increase in flows from development downstream of the dam, including flows from Village 8 West, total flow would still be reduced compared to the flows prior to the dam construction.

Detention for any development below the dam would be ineffective as the peak flows from these smaller watersheds would pass well before the reservoir would fill to the point that flows would overtop the spillway (Hunsaker & Associates 2011). Village 8 West is located downstream of the Savage Dam. The Otay River Watershed Assessment Technical Report also notes that the existing Otay River downstream of the dam is starved for sediment and peak flows, stating that an increase in peak flow would tend to counteract the degradation trends by replacing water impounded by the reservoir. The peak flows of the river are due mainly to outputs into the river from upstream of Village 8 West, such as the Otay Reservoir. The post project peak flow for the 100-year storm event would be 362.5 cubic feet per second, with a peak flow time of 21 minutes. For a 100-year storm event the Otay River has a peak discharge of 20,161 cubic feet per second and a time of peak flow of 21 hours 5 minutes at the Village 8 outlet point. Therefore, the post-project peak flow would be a minor portion of the total flow within the Otay River at the project's discharge point. Additionally, due to differences in peak flow timing, the peak flows with the river and those from the discharge point would not coincide during the 100-year storm event. The impact of the increased flow at the project's discharge point is negligible at peak river flow.

The project is not required to reduce post-project flows to pre-project conditions because Otay River is exempt from hydromodification requirements. A hydromodification management plan was approved by the County of San Diego in July 2010. Characteristics of the Otay River, including low gradients, significant natural peak flow attenuation, and wide floodplain areas result in this system having a low

potential for channel erosion. Consequently, the Otay River system is exempt from hydromodification requirements (see Appendix I1). Therefore, the portion of the project directly tributary to the Otay River is exempt from the hydromodification requirements and the project is not required to reduce post-project flows to pre-project conditions. The increase in flows from the project would not result in substantial erosion or siltation. Additionally, the proposed outlet point from the project site to the Otay River would include a USBR Type IV Energy Dissipater and additional erosion control provided by a section of rip rap. The proposed energy dissipater would reduce flow velocity from Village 8 West and minimize the potential for erosion. The drainage study concluded that the alteration to the existing Otay River drainage pattern associated with project implementation would result in a less than significant impact with respect to increases in erosion and siltation.

In conclusion, drainages serving the southern basin would be susceptible to increased erosion resulting from increased peak flow rates, increased runoff volumes, and duration, which would result in a potentially significant impact. Implementation of the proposed drainage facilities at construction would minimize these impacts to a less than significant level. However, mitigation would be required to ensure that the facilities are implemented and monitored throughout buildout of the project.

D. Threshold 4: 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 the site.

Village 8 West currently consists almost entirely of permeable surfaces. The project, which would involve the replacement of the permeable surfaces and exposed soils with urban development, would substantially change the amount of impervious surface area within the project. As discussed under Threshold 3, site-generated surface water runoff would be directed from Village 8 West to off-site drainage facilities. The post-project drainage conditions were designed to adequately convey post-project flows off site during a 100-year storm event. Therefore, the project would not result in flooding on site. As shown in Table 5.11-2, post-project flows to Wolf Canyon would be less than existing flows. Therefore, the project would not result in flooding off the project site in Wolf Canyon.

The project would result in an increase in flows to Otay River (see Table 5.11-3). However, as discussed under Threshold 3, the project's contribution to peak river flow is negligible. The Otay River has a 100-year design flow of 20,000 cubic feet per second. The project would result in an increase in runoff during the 100-year storm of only 71 cubic feet per second. The Savage Dam attenuates regional impacts downstream of the dam so that the increase in the amount of runoff from Village 8 West would not result in flooding along the Otay River. The small increase in flows from development of Village 8 West would not increase the total flow to above pre-dam construction flows. Additionally, due to differences in peak flow timing, the peak flows with the river and those from the Village 8 West discharge point would not coincide during the 100-year storm event. Therefore, the project would not substantially increase the rate or amount of surface runoff that would result in an increase in flooding along Otay River.

In conclusion, drainages serving the southern basin would be susceptible to increased peak flow rates and increased runoff volumes, which would result in a potentially significant flooding impact. Implementation of the proposed drainage facilities at construction would minimize these impacts. However, mitigation would be required to ensure that the facilities are implemented and monitored throughout buildout of the project.

E. Threshold 5: Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

As discussed under Threshold 3, a drainage system has been designed for the project with the capacity to convey post-project flows during the 100-year storm event and includes energy dissipaters to minimize the potential for erosion. The project would reduce flows to Wolf Canyon and would not result in an increase in siltation or erosion as a result of increased flows to Otay River. The project would not result in runoff water that would exceed the capacity of drainage systems. Even though the project includes features to reduce the amount and rate of runoff to a less than significant level, these features are also prescribed as mitigation measures to assure implementation and facilitate monitoring through buildout of the project.

F. Threshold 6: Otherwise substantially degrade water quality.

As discussed under Threshold 1, the project is required to comply with the Chula Vista Development Storm Water Manual and the General Construction Permit. Implementation of a project-specific SWPPP during construction in accordance with these regulations would ensure that significant impacts to water quality would not occur as a result of runoff from Village 8 West. Management, inspections, and maintenance are required for construction impacts to ensure that BMPs are operating efficiently.

Additionally, as discussed under Threshold 3, a drainage system has been designed for the project with the capacity to convey post-project flows during the 100-year storm event and includes energy dissipaters to minimize the potential for erosion. The project would reduce flows to Wolf Canyon and would not result in an increase in siltation or erosion as a result of increased flows to Otay River. The BMPs proposed in the water quality report would ensure that runoff associated with development of infrastructure and mass grading of the site would not result in a substantial source of polluted runoff that would degrade water quality. The proposed drainage system would not result in an increase in erosion or siltation off site. However, supplemental water quality studies are required to indentify which site-specific BMPs identified in the water quality technical report would be necessary for individual development projects to comply with the manual. Therefore, impacts related to water quality would be potentially significant.

G. Threshold 7: 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, and

Threshold 8: Place structures within a 100-year flood hazard area which would impede or redirect flood flows.

The 100-year flood hazards boundary of the Otay River, as designated by the Federal Emergency Management Agency (FEMA), is shown on the proposed drainage plan provided in the Drainage Report (Appendix I2). Village 8 West is not within a 100-year or 500-year floodplain as mapped by FEMA (DWR 2011), as the flood hazard boundary is located 0.3 mile south of the project site. The southern end (approximately 100 feet) of the proposed off-site trail and access road would be within the 100-year flood hazard area; however, the trail does not include any structures or other components for which flooding would be a hazard. Therefore, the project would not place housing or other structures within a 100-year flood hazard area. No impact would occur.

H. Threshold 9: Be inconsistent with General Plan, GDP, or other objectives and policies regarding water quality thereby resulting in a significant physical impact.

Table 5.11-4 evaluates the consistency of the project with the applicable General Plan objectives and policies and Table 5.11-5 evaluates the consistency of the project with the applicable GDP goals and objectives. As shown in Table 5.11-4 and Table 5.11-5, the project would be consistent with the General Plan and GDP policies that pertain to hydrology and water quality.

Table 5.11-4 Project Consistency with Applicable General Plan Drainage and Water Quality Policies

Applicable Policies	Evaluation of Consistency
Objective PFS 2: Increase efficiencies in water use, wastewater generation and its re-use, and handling of storm water runoff throughout the city through use of alternative technologies. **Policy PFS 2.2:** As part of project construction and design, assure that drainage facilities in new development incorporate storm water runoff and sediment control, including state-of-the-art technologies, where appropriate. **Policy PFS 2.3:** In designing water, wastewater, and drainage facilities, limit the disruption of natural landforms and water bodies. Encourage the use of natural channels that simulate natural drainage ways while protecting property.	**Consistent.** The project would be consistent with these policies regarding drainage. As discussed under Threshold 2, the drainage study for Village 8 West outlines the drainage infrastructure required for detention of storm runoff and sediment control, including incorporation of energy dissipaters to minimize potential erosion. The project would reduce flows to Wolf Canyon and would contribute a negligible amount of new flow to Otay River. Additionally, as discussed under Threshold 1, the water quality report outlines the proposed water quality BMPs including low impact development to encourage the use of natural channels that simulate natural drainage ways. Implementation of the project would not disrupt any natural water bodies.
Objective E 2: Protect and improve water quality within surface water bodies and groundwater resources within and downstream of Chula Vista. **Policy E 2.4:** Ensure compliance with current federal and state water quality regulations, including the implementation of applicable NPDES requirements and the Chula Vista Pollution Prevention Policy. **Policy E 2.5:** Encourage and facilitate construction and land development techniques that minimize water quality impacts from urban development.	**Consistent.** The project would be consistent with these applicable water quality policies. As discussed under Threshold 1, prior to construction a site-specific SWPPP would be prepared in accordance with the NPDES General Construction Permit. 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. Section 3 of the manual has been followed in order to identify pollutants of concern for the project, and to determine BMP requirements. Low impact development BMPs have been proposed to meet treatment requirements.
Objective E 15: Minimize the risk of injury and property damage associated with flood hazards. **Policy E 15.1**: Prohibit proposals to subdivide, grade, or develop lands that are subject to potential flood hazards, unless adequate evidence is provided that demonstrates that such proposals would not be adversely affected by potential flood hazards and that such proposals would not adversely affect surrounding properties. Require site-specific hydrological investigations for proposals within areas subject to potential flood hazards; and implement all measures deemed necessary by the City Engineer to avoid or adequately mitigate potential flood hazards.	**Consistent.** Village 8 West is not located in a floodplain or dam inundation hazard area. Implementation of Village 8 West would include a drainage system that adequately conveys flows from the project area.

Table 5.11-5 Project Consistency with Applicable GDP Drainage and Water Quality Policies

Applicable Policies	Evaluation of Consistency
Part II, Chapter 5 – Capital Facilities, Section C –Public Facility Plans	
Goal: Provide protection to the Otay Ranch project area and surrounding communities from fire, flooding and geologic hazards. **Objective:** Individual projects will provide necessary improvements consistent with the National Flood Insurance Program, drainage master plan(s) and engineering standards. **Policy:** Storm drain runoff should be managed to minimize water degradation, to reduce the waste of fresh water, to protect wildlife and to reduce erosion.	**Consistent.** As discussed under Threshold 3, the grading and drainage plans for Village 8 West meet these goals and objectives by sizing drainage facilities appropriately to convey the generated flows and detain run-off as required. The development limits would avoid encroachment into floodways. The plans provide for protection of adjacent sensitive habitats by directing flows away from habitat to drain directly into Otay River.
Objective: Storm water flows shall be controlled and conveyed based on statistical models and engineering experience, as specified in the city engineering standards consistent with NPDES BMPs.	**Consistent.** As discussed under Threshold 1, development would comply with NPDES and other regulatory requirements, including implementation of BMPs.
Objective: Reduction ion the need for construction of flood control structures **Objective:** Preservation of the floodplain environment from adverse impacts due to development.	**Consistent.** As discussed under Thresholds 7, 8, 10, and 11, Village 8 West is not located in a flood hazard area. The proposed drainage system would prevent flooding on site.
Objective: Require on-site detention of storm water flows such that existing downstream structures will not be overloaded. **Policy:** Require measures to decrease the adverse impacts created by increased quantity and degradation in the quality of runoff from urban areas.	**Consistent.** As discussed under Threshold 3, the proposed drainage system would include a hydromodification detention basin and other facilities to detain storm water to prevent overloading downstream facilities.
Goal: Ensure that water quality within the Otay Ranch project area is not compromised. **Objective:** Ensure that water quality within the Otay Ranch project area is not compromised, consistent with NPDES BMPs, and the RWQCB Basin Plans. **Policy:** Discretionary land development applications dependent on imported water will only be approved if the service provider reasonably expects that water facilities will be available concurrent with need, and that all appropriate requirements will be met through conditions placed on project approval.	**Consistent.** As discussed under Threshold 1 and Threshold 3, a drainage plan has been prepared for Village 8 West that would adequately provide for management and containment of urban runoff, and development would comply with all applicable city and regional water quality protection standards.
Part II, Chapter 8 – Safety	
Goal: Promote public safety and provide public protection from fire, flooding, seismic disturbances, geologic phenomena and manmade hazards in order to preserve life, health and property; continue government functions and public order; maintain municipal services; and rapidly resolve emergencies and return the community normalcy and public tranquility.	**Consistent.** As discussed under Thresholds 7, 8, 10, and 11, Village 8 West is not located in a flood hazard area. As discussed under Threshold 3, The proposed drainage system would prevent flooding on site. Hazards and fire are addressed in Section 5.13, Hazards and Hazardous Materials and seismic disturbances and geologic phenomena are addressed in Section 5.8, Geology and Soils.
Objective: Prevent property damage and loss of life due to seiches, dam failure and heavy rains. **Objective:** Preservation of the floodplain environment from adverse impacts due to development.	**Consistent.** As discussed under Thresholds 7, 8, 10, and 11, Village 8 West is not located in a floodplain or flood hazard area. As discussed under Threshold 3, The proposed drainage system would prevent flooding on site, including during heavy rain events.

Table 5.11-5 Project Consistency with Applicable GDP Drainage and Water Quality Policies (continued)

Applicable Policies	Evaluation of Consistency
Part II, Chapter 10 – Resource Protection, Conservation and Management	
Goal: Preserve floodways and undisturbed flood plain fringe areas. **Objective:** Restore and enhance highly disturbed floodways and flood plains to regain former wildlife habitats and retain/restore the ability to pass 100-year flood flows. **Objective:** Preserve floodways and undisturbed flood plain fringe areas in their natural state where downstream development will not be adversely affected.	**Consistent.** The development limits in the SPA Plan would avoid encroachment into floodplain areas. The proposed drainage system would detain storm water on site and direct project storm water flows directly to Otay River. The project would not significantly impact a floodplain area. As discussed under Threshold 3, Otay River Valley in the proximity of the project is starved for sediment and peak flows, and an increase in peak flow from the project would tend to counteract the degradation trends by replacing water impounded by the reservoir.

I. Threshold 10: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

As discussed under Threshold 8, Village 8 West, including off-site area, is not located within a 500-year floodplain. Additionally, according to the EIR prepared for the Chula Vista General Plan and the inundation map for the Savage Dam, Village 8 West is not located within a potential dam inundation area (City of Chula Vista 2005b, City of San Diego 1974). Therefore, the project would not 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. No impact would occur.

J. Threshold 11: Result in a substantial increase in risk of exposure to inundation by seiche, tsunami, or mudflow.

Seismically induced hazards such as tsunamis and seiches are not considered significant hazards because Village 8 West is located more than ten miles inland, is outside of the 500-year floodplain, and is not within the potential dam inundation of the Otay Lakes. If at full capacity, it is possible that during a strong seismic event with a long duration of shaking, minor localized overtopping of the City of San Diego reservoir could occur. However, according to the Geotechnical Investigation prepared by Advanced Geotechnical Solutions, Inc. for the project (Appendix G), an adequate margin of safety to protect against overtopping exists for nearly the entire reservoir, except at the low point where the paved access road meets the reservoir. At this location, any overtopping would be directed onto the proposed paved access road and down to the proposed storm drain improvements. Given the likelihood, volume of the reservoir, and area of potential overtopping, flooding from the reservoir is not considered a substantial risk. Additionally, the Geotechnical Investigation determined that seismically induced landslides, which include mudflows, are not a significant concern for Village 8 West. Therefore, the project would not result in a substantial increase in risk of exposure to inundation by seiche, tsunami, or mudflow. No impact would occur.

5.11.3 Level of Significance Prior to Mitigation

A. Water Quality Standards

Even though the project includes features and would implement BMPs to reduce the amount and rate of runoff to a less than significant level, these features are also prescribed as mitigation measures to assure implementation and facilitate monitoring through buildout of the project.

B. Groundwater Supplies and Recharge

No significant impacts related to groundwater supplies and recharge have been identified with implementation of Village 8 West.

C. Erosion or Siltation

Even though the project includes features and would implement BMPs to reduce the amount and rate of runoff to a less than significant level, these features are also prescribed as mitigation measures to assure implementation and facilitate monitoring through buildout of the project.

D. Surface Runoff

Even though the project includes features and would implement BMPs to reduce the amount and rate of runoff to a less than significant level, these features are also prescribed as mitigation measures to assure implementation and facilitate monitoring through buildout of the project.

E. Exceed Drainage Capacity

Even though the project includes features and would implement BMPs to reduce the amount and rate of runoff to a less than significant level, these features are also prescribed as mitigation measures to assure implementation and facilitate monitoring through buildout of the project.

F. Degradation of Water Quality

Even though the project includes features and would implement BMPs to reduce the amount and rate of runoff to a less than significant level, these features are also prescribed as mitigation measures to assure implementation and facilitate monitoring through buildout of the project.

G. 100-Year Flood Hazards

No significant impacts related to 100-year flood hazards, have been identified with implementation of Village 8 West.

H. Consistency with Water Quality Policies

No significant impacts related to consistency with water quality policies have been identified with implementation of Village 8 West.

I. Flooding

No significant impacts related to flooding have been identified with implementation of Village 8 West.

J. Inundation

No significant impacts related to inundation have been identified with implementation of Village 8 West.

5.11.4 Mitigation Measures

A. Water Quality Standards

5.11-1 **Storm Water Pollution Prevention Plan.** Prior to issuance of each grading permit for the Village 8 West SPA Plan area or any land development permit, including clearing and grading, the

project applicant shall submit a notice of intent and obtain coverage under the National Pollutant Discharge Elimination System permit for construction activity from the State Water Resources Control Board. Adherence to all conditions of the General Permit for Construction Activity is required. The applicant shall be required under the State Water Resources Control Board General Construction Permit to develop a Storm Water Pollution Prevention Plan and monitoring plan that shall be submitted to the City Engineer and the Director of Public Works. The Storm Water Pollution Prevention Plan shall be incorporated into the grading and drainage plans and shall specify both construction and post-construction structural and non-structural best management practices 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 best management practices requirements. The Storm Water Pollution Prevention Plan 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 Storm Water Pollution Prevention Plan shall incorporate construction and post-construction best management practices as outlined in the Village 8 West Edge Plan. The grading plans shall note the condition requiring a Storm Water Pollution Prevention Plan and monitoring plans.

5.11-2 **Supplemental Water Quality Report.** Prior to issuance of each grading permit, the applicant shall submit a supplemental report to the Preliminary Water Quality Technical Report for Village 8 West prepared by Hale Engineering dated December 8, 2011 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 parcel owner that is not shown in the water quality technical report, a project-specific water quality technical report shall be prepared for the planning area, referencing the Preliminary Water Quality Technical Report for Village 8 West for information relevant to regional design concepts (e.g., downstream conditions of concern) to the satisfaction of the City Engineer.

5.11-3 **Post-Construction/Permanent Best Management Practices.** Prior to issuance of each grading permit, the City Engineer shall verify that parcel owners have incorporated and will implement post-construction best management practices in accordance with current regulations. In particular, applicants are required to comply with the requirements of Section 2c of the Chula Vista Standard Urban Storm Water Management Plan, the Chula Vista Development Storm Water Manual, and the Preliminary Water Quality Technical Report for Village 8 West or any supplements thereto to the satisfaction of the City Engineer. Specifically, the applicant shall implement low impact development best management practices 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 best management practices as well as requirements of the hydromodification management plan. The applicant shall monitor and mitigate any erosion in downstream locations that may occur because of on-site development.

5.11-4 **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 best management practices in areas that may not be completed, before grading of additional area begins.

5.11-5 **Hydromodification Criteria.** The project applicant shall comply, to the satisfaction of the City Engineer, with city hydromodification criteria or the hydrograph modification management plan, as applicable, addressed regionally at the SPA Plan level concurrent with grading and improvement plans for the project.

B. Groundwater Supplies and Recharge

No mitigation measures are required.

C. Erosion or Siltation

Mitigation measures 5.11-1 through 5.11-5 would reduce impacts related to erosion or siltation.

D. Surface Runoff

Mitigation measures 5.11-1 through 5.11-5 would reduce impacts related to surface runoff.

E. Exceed Drainage Capacity

Mitigation measures 5.11-1 through 5.11-5 would reduce impacts related to drainage capacity.

F. Degradation of Water Quality

Mitigation measures 5.11-1 through 5.11-5 would reduce impacts related to degradation of water quality.

G. 100-Year Flood Hazards

No mitigation measures are required.

H. Consistency with Water Quality Policies

No mitigation measures are required.

I. Flooding

No mitigation measures are required.

J. Inundation

No mitigation measures are required.

5.11.5 Level of Significance After Mitigation

A. Water Quality Standards

With implementation of mitigation measures 5.11-1 through 5.11-5 identified above, impacts related to water quality would be reduced to below a level of significance.

B. Groundwater Supplies and Recharge

Impacts would be less than significant without mitigation.

C. Erosion or Siltation

With implementation of mitigation measures 5.11-1 through 5.11-5 identified above, impacts related to erosion would be reduced to below a level of significance.

D. Surface Runoff

With implementation of mitigation measures 5.11-1 through 5.11-5 identified above, impacts related to runoff related to implementation of the project would be reduced to below a level of significance.

E. Exceed Drainage Capacity

With implementation of mitigation measures 5.11-1 through 5.11-5 identified above, impacts related to runoff related to implementation of the project would be reduced to below a level of significance.

F. Degradation of Water Quality

With implementation of mitigation measures 5.11-1 through 5.11-5 identified above, impacts related to water quality would be reduced to below a level of significance.

G. 100-Year Flood Hazards

Impacts would be less than significant without mitigation.

H. Consistency with Water Quality Policies

Impacts would be less than significant without mitigation.

I. Flooding

Impacts would be less than significant without mitigation.

J. Inundation

Impacts would be less than significant without mitigation.

5.12 Agricultural Resources

This section describes the agricultural setting of Village 8 West and evaluates the potential for changes in agricultural land use due to implementation of the SPA Plan and TM.

As stated in Section 2.3, Purpose and Legal Authority, this EIR tiers from the 2013 GPA/GDPA SEIR (09-01). The SEIR did not address agricultural resources, but relies on the analysis in the 2005 GPU EIR (EIR 05-01) and the 1993 Program EIR for the GDP (EIR 90-01). Section 3.7, Agricultural Resources, of the Otay Ranch GDP Program EIR (90-01) analyzed impacts relating to agricultural resources for the entire Otay Ranch and concluded that implementation of the Otay Ranch GDP would result in significant cumulative effects on agricultural resources. The Otay Ranch GDP Program EIR includes a mitigation measure that requires the preparation of an Agricultural Plan as a condition of approval for Village 8 West. However, even with implementation of this mitigation the permanent loss of agricultural land was determined to be a significant and unmitigable effect of the Otay Ranch GDP. The analysis and discussion of agricultural resources contained in the Otay Ranch GDP Program EIR are incorporated by reference. The agricultural resources evaluation in this section also updates information in Section 5.7 of the 2005 GPU EIR pertaining to the Village 8 West site and off-site locations. The analysis and discussion of agricultural resources contained in the 2005 GPU EIR is incorporated by reference.

5.12.1 Existing Conditions

A. Regulatory Framework

1. State

a. Farmland Mapping and Monitoring Program

In response to the need for assessing the location, quality, and quantity of agricultural lands and conversion of these lands over time, the California Department of Conservation established the Farmland Mapping and Monitoring Program (FMMP) in 1982. The goal of the FMMP is to provide consistent and impartial data to decision makers for use in assessing present status, reviewing trends, and planning for the future of California's agricultural land resources. A basic purpose of the FMMP is to produce Important Farmland Maps and statistical data for California's agricultural resources. Important Farmland Maps identify the location and quality of agricultural land across the state. The quality of agricultural lands, which is rated on soil quality and irrigation status, is classified into five categories as described below: prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, and grazing land. The minimum mapping unit for all categories is ten acres unless otherwise specified. In addition, the FMMP identifies non-agricultural lands as either urban and built-up land or other land. Important Farmland Maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance. The FMMP is a non-regulatory program.

Prime Farmland

Prime farmland is land that has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management. Prime farmland must have been used for the production of irrigated crops at some time during the two update cycles to the mapping date.

Farmland of Statewide Importance

Farmland of statewide importance is similar to prime farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture. Farmland of statewide importance must have been used for the production of irrigated crops at some time during the two cycles prior to the mapping date.

Unique Farmland

Unique farmland is land of lesser quality soils used for the production of specific high economic value crops (as listed in *California Agriculture* produced by the California Department of Food and Agriculture) at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. Unique farmland is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Examples of crops on unique farmland include oranges, olives, avocados, rice, grapes, and cut flowers.

Farmland of Local Importance

Farmland of local importance is important to the local agricultural economy, as determined by the County of San Diego Board of Supervisors and a local advisory committee. The County defines farmland of local importance as land with the same characteristics as prime farmland and farmland of statewide importance.

Grazing Land

Grazing land is land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock. The minimum unit for grazing land is 40 acres.

Urban and Built-Up Land

This classification consists of land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

Other Land

Other land consists of land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres. Vacant and non-agricultural land that is greater than 40 acres and surrounded on all sides by urban development is mapped as other land.

b. Williamson Act Program

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space

uses as opposed to full market value. The goal of the Williamson Act is to encourage the preservation of California's agricultural land and to prevent its premature conversion to urban uses. Currently, there are no active Williamson Act contracts or properties, which are established agricultural preserves, within Chula Vista (City of Chula Vista 2005b).

2. Local

a. City of Chula Vista General Plan

According to the Chula Vista General Plan, through the early 1990s, the last of the large-scale agricultural operations were located primarily on large landholdings within the eastern portion of the city. Agricultural production has been historically constrained due to the limited availability of water for irrigation and the high cost of water where it has been available.

Although the city does not contain any lands specifically designated for agricultural uses within its General Plan area, the potential for agricultural uses to occur within certain portions of the city on both an interim and long-term basis still exists.

A limited number of parcels in the city retain agricultural zoning, which is considered a holding zone, pending development proposals in conformance with the applicable land use plans. Agricultural production associated with these areas is not significant in terms of countywide agricultural value. Long-term agricultural use is not planned for the General Plan area, but is allowed where it is consistent with the Chula Vista MSCP Subarea Plan and zoning, including within portions of the Chula Vista Greenbelt open space system.

The Chula Vista General Plan environmental element includes Objective E 4 which is to maintain the opportunity for limited agricultural and related uses to occur as an interim land use within planned development areas and as a potential permanent land use within appropriate locations.

b. Otay Ranch Grazing Ordinance

The Otay Ranch Grazing Ordinance (CVMC Chapter 17.30) has been prepared as one of several Chula Vista MSCP Subarea Plan implementing ordinances. The purpose of the ordinance is to implement the goals and recommendations of the range management plan for the Otay River Valley Management Area. The ordinance states that it is unlawful to conduct grazing activities in Chula Vista on land designated by the Otay Ranch GDP as Otay Ranch Preserve, except as provided in the ordinance. Ordinance regulations apply to all land designated in the Otay Ranch GDP as Otay Ranch Preserve and as 100 percent conservation area in the Chula Vista MSCP Subarea Plan. As shown on Figure 5.6-1, Vegetation Communities, the southwest portion of Village 8 West is located in the 100 percent conservation area and the Otay Ranch Preserve. Additionally, for areas where interim grazing is allowed, the draft grazing ordinance establishes controls or provides for grazing to be phased out in highly sensitive areas (i.e., riparian areas), unless grazing is determined to be biologically beneficial. For areas designated for restoration, cessation of grazing is required for a period of time prior to initiation of restoration activities to facilitate soil preparation and exotic plant control.

c. Otay Ranch General Development Plan

The Otay Ranch GDP establishes goals, objectives and policies related to the protection of agricultural resources. While these are general in nature, they are intended to be applicable to the entire Otay Ranch GDP area, including Village 8 West. The applicable GDP objectives and policies related to agricultural resources are listed below.

- **Objective:** Preserve sensitive and significant biological, cultural, paleontological, flood plain, visual, and agricultural resources.
- **Policies:**
  - Provide opportunities for demonstration agricultural activities within the Preserve. A site, which supports prime or statewide important soils, should be located near proposed composting facilities and Bird Ranch. A plan for the size and operation of the demonstration agricultural activities will be subject to review and approval of the Preserve Owner/ Manager and/or the Otay Valley Regional Park management and shall be submitted concurrent with the conveyance for this area or prior to adoption of the last SPA on the Otay Valley parcel, whichever occurs first. In addition to the demonstration agricultural site, sites should be made available for smaller community gardens adjacent to or within individual villages. Some community gardens may be located within open space areas being maintained by an open space maintenance district, with specific design and maintenance issues to be addressed at the SPA Plan review.
  - Existing agricultural uses, including cultivation and grazing, shall be permitted to continue as an interim activity only where they have occurred historically and continually. No increase in irrigation shall be allowed, except for temporary irrigation that may be installed as part of restoration plans. Grazing by sheep and goats shall not be allowed. Cattle grazing shall be phased out in accordance with the conveyance program and range management plan.

- **Objective:** Encourage effective utilization of agricultural soils located within the Preserve.
- **Policies:**
  - Provide opportunities for an agricultural activity area within the Preserve.
  - Allow historical agricultural uses during project build-out within the Preserve except on the Otay Valley parcel, where all grazing shall cease upon approval of the Otay Ranch GDP/SRP.
  - The Preserve Manager shall determine a grazing policy for parcels conveyed to the Preserve.
  - Allow historical agricultural uses during project build-out within areas subject to development during project phases.
  - Important agricultural soils shall be further evaluated at the SPA level and placed in open space or if contiguous to, added to the Preserve where feasible.
  - Establish a composting program for the Otay Ranch that utilizes lost reclaimed water nutrients mixed with dry shredded landscape trimmings and other similar materials.
  - Policies and guidelines shall be developed at the SPA level for community gardens adjacent to or within individual villages. Some community gardens may be located within open space areas being maintained by an open space maintenance district, with specific design and maintenance issues to be addressed during SPA Plan review.

d. Otay Ranch Resource Management Plan

Chapter 3 of the Otay Ranch RMP contains several objectives and policies related to agriculture. The single unifying goal of the RMP is the establishment of an open space system that will become a permanent preserve dedicated to the protection and enhancement of environmental resources. In conformance with the RMP, a range management plan for Otay Ranch was subsequently prepared. In general, the range management plan recommendations and implementing actions provide for ongoing managed grazing activities on conveyed lands if the activity is shown not to negatively affect biological resources.

B. Existing Agricultural Operations

The 2005 GPU EIR identifies the entire Otay Ranch area as important potential agricultural land. However, the 2005 GPU EIR also acknowledges that agricultural opportunities in the area are becoming less feasible. The land utilized for agricultural activities in areas surrounding the Otay Ranch has decreased over the years. Factors that have led to the decrease in agricultural use include the conversion of farmland to urban uses as a result of land value. The high cost of importing water for irrigation has also resulted in many agricultural activities becoming cost prohibitive. Nonetheless, the Village 8 West site contains Farmlands of Local Importance and Grazing Land according to the FMMP. Historical agricultural uses within the site include farming as well as cattle and sheep ranching. Crop production was limited to the dry farming of hay and grains due to the lack of water. No cattle or farming activities are currently active on the site; however, interim agricultural activity is permitted.

5.12.2 Thresholds of Significance

According to the CEQA Guidelines, Appendix G, impacts to agricultural resources would be significant if the project would:

- **Threshold 1:** Convert prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use.
- **Threshold 2:** Conflict with existing zoning for agricultural use or a Williamson Act contract.
- **Threshold 3:** Be inconsistent with General Plan agricultural resource policies thereby resulting in a significant physical impact.

5.12.3 Impact Analysis

A. Threshold 1: Convert prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use.

Based on the 1993 Otay Ranch GDP EIR, any conversion of agricultural land to non-agricultural use in Otay Ranch is considered a significant direct impact due to an incremental and irreversible regional loss or impairment of agricultural land. Development of the SPA Plan and TM would not convert prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use, based on the maps prepared by the California Department of Conservation pursuant to the FMMP (DOC 2008). The project would, however, convert approximately 250 acres of farmland of local importance and grazing land to urban uses resulting in a countywide incremental loss of agricultural land. Once fully developed, the project would eliminate the potential for agricultural activity to occur on site; however, portions of Village 8 West may continue to be used for grazing or dry farming while adjacent uses are developed. Agricultural use of Village 8 West is currently constrained by of the lack of a reliable and affordable source of water. Additionally, the General Plan states that agricultural production in Chula Vista is not significant in terms of countywide agricultural value and is not a major factor in the local economy. Long-term agricultural uses are not planned for the city. Nevertheless, the project will contribute to an incremental loss of grazing land. Consistent with earlier findings in the 1993 Otay Ranch GDP Program EIR, this is considered a potentially significant impact.

Additionally, if agricultural activities occur on site, the potential for land use conflicts between agricultural land uses and the proposed urban land uses may increase. This incompatibility was identified as a short-term impact in the 1993 Otay Ranch GDP Program EIR and was associated with

noise, odor, rodents, and chemical applications. Conflicts would cease upon completion of Village 8 West construction because agricultural land uses would be phased out during development.

The 1993 Otay Ranch GDP Program EIR requires the preparation of an agricultural plan concurrent with the processing and approval of an SPA plan where existing or future on-site agricultural uses may affect contemplated development. The Findings of Fact require that the agricultural plan indicate the type of agriculture activity allowed as an interim use and that it includes guidelines designed to minimize land use interface impacts related to noise, odors, dust, insects, rodents, and chemicals that may be produced or used by agricultural activities or operations. An Agricultural Plan has been prepared as part of the Village 8 West SPA Plan in accordance with the mitigation identified in the 1993 Otay Ranch GDP Program EIR. The plan would allow for interim agricultural activity within Village 8 West and adjacent ownership area, and prevent potential land use conflicts by providing separation between urban uses and adjacent agricultural uses. The Agriculture Plan includes a requirement for notification of adjacent property owners of pesticide use and other potentially harmful activities, as well as physical barriers, if warranted. Implementation of the Agricultural Plan would reduce impacts associated with incompatible land uses to a less than significant level.

B. Threshold 2: Conflict with existing zoning for agricultural use or a Williamson Act contract.

The project would not affect Williamson Act contract lands because there is no land under a Williamson Act Contract within Chula Vista. No impact related to Williamson Act contracts would occur.

Agricultural activities in the city are allowed on lands zoned for Agriculture (A-8, A-X), and Planned Community (P-C) on an interim basis. The SPA area is zoned planned community and interim agricultural land uses are allowed within Village 8 West, although no agricultural activities currently take place on the site. Interim agricultural activities would continue to be permitted on the project site during the phased development of the project, but would cease upon full project buildout. Development is not required to maintain the potential for agricultural land used in the planned community zone. Therefore, implementation of the project would not conflict with existing zoning and this impact would be less than significant. Refer to the analysis under Threshold 1 for a discussion of the potential for the project to convert farmland to non-agricultural use and the potential for interim conflicts between agricultural and urban land uses to occur.

C. Threshold 3: Be inconsistent with General Plan agricultural resource policies, thereby resulting in a significant physical impact.

The comparison of the project with the relevant agriculture objective and policies of the General Plan is provided in Table 5.12-1. As shown in Table 5.12-1, the project would be consistent with all applicable General Plan policies.

The Otay Ranch Grazing Ordinance applies to the project because it states that it is unlawful to conduct grazing activities in Otay Ranch Preserve. For areas where interim grazing is allowed, the grazing ordinance establishes controls or provides for grazing to be phased out in highly sensitive areas. Agricultural activities in Village 8 West would be phased out as the project is developed, consistent with this ordinance. No agricultural activities would be permitted in the Preserve. Access to the Preserve would be limited to the proposed public access trails. Therefore, the project would be consistent with the Otay Ranch Grazing Ordinance.

Table 5.12-1 Project Consistency with Applicable General Plan Agriculture Policies

Applicable Policies	Evaluation of Consistency
Objective E 4: Maintain the opportunity for limited agricultural and related uses to occur as an interim land use within planned development areas and as a potential permanent land use within appropriate locations. **Policy E 4.1:** Allow historical agricultural uses to continue within planned development areas as an interim land use in accordance with the MSCP Subarea Plan. **Policy E 4.2:** Allow agricultural uses on privately owned property within the Chula Vista greenbelt and elsewhere, provided the use is consistent with the provisions of the Chula Vista MSCP Subarea Plan, as well as the zoning of the property. **Policy E 4.3:** Encourage the development of community gardens and similar related uses within appropriate, compatible locations throughout the city.	**Consistent.** The SPA Plan and TM is consistent with these relevant policies. Although no agricultural uses currently exist on the site, agricultural activity would be permitted in the interim phases until the project is fully developed in accordance with the agricultural plan. Should agricultural activities occur on site, there is the potential for land use conflicts with adjacent ownership areas that would be addressed by an Agricultural Plan. An Agricultural Plan has been prepared as part of the SPA Plan in accordance with the mitigation identified in the 1993 Otay Ranch GDP Program EIR. The plan would allow for interim agricultural activity within Village 8 West, and would prevent potential land use impacts between developed land and ongoing agricultural activities by providing separation between urban uses and adjacent agricultural uses. No impacts regarding Williamson Act contract lands, or conflicts with existing zoning for an agricultural use would occur. Community gardens would be permitted within all residential, mixed use, parks, and CPF sites.

The Otay Ranch GDP also establishes goals, objectives and policies related to the protection of agricultural resources. The consistency of the SPA Plan with the applicable GDP objectives and policies is provided in Table 5.12-2. As shown in this table, the project is consistent with the Otay Ranch GDP policies because the project would phase out interim agricultural activities on the project site, but agricultural opportunities would continue to be provided through community gardens.

Table 5.12-2 Project Consistency with Applicable GDP Agriculture Policies

Applicable Policies	Evaluation of Consistency
Objective: Preserve sensitive and significant biological, cultural, paleontological, flood plain, visual, and agricultural resources. **Policy:** Provide opportunities for demonstration agricultural activities within the Preserve. A site, which supports prime or statewide important soils, should be located near proposed composting facilities and Bird Ranch. A plan for the size and operation of the demonstration agricultural activities will be subject to review and approval of the Preserve Owner/ Manager and/or the Otay Valley Regional Park management and shall be submitted concurrent with the conveyance for this area or prior to adoption of the last SPA on the Otay Valley parcel, whichever occurs first. In addition to the demonstration agricultural site, sites should be made available for smaller community gardens adjacent to or within individual villages. Some community gardens may be located within open space areas being maintained by an open space maintenance district, with specific design and maintenance issues to be addressed at the SPA Plan review.	**Consistent.** The project is not located near the Bird Ranch Area, and the SPA Plan does not include a site for demonstration agricultural activities. Community gardens are permitted in Village 8 West within all residential, mixed use, parks, and CPF sites.

Table 5.12-2 Project Consistency with Applicable GDP Agriculture Policies (continued)

Applicable Policies	Evaluation of Consistency
Policy: Existing agricultural uses, including cultivation and grazing, shall be permitted to continue as an interim activity only where they have occurred historically and continually. No increase in irrigation shall be allowed, except for temporary irrigation that may be installed as part of restoration plans. Grazing by sheep and goats shall not be allowed. Cattle grazing shall be phased out in accordance with the conveyance program and range management plan.	As discussed under Threshold 1, interim agricultural uses would continue to be permitted within the project site during the phased construction of Village 8 West in accordance with the Agricultural Plan, but would cease upon project buildout.
Goal: Recognize the presence of important agricultural soils both in areas subject to development and within the Preserve. **Objective:** Encourage effective utilization of agricultural soils located within the Preserve. **Policy:** Provide opportunities for an agricultural activity area within the Preserve. **Policy:** Allow historical agricultural uses during project build-out within the Preserve except on the Otay Valley parcel, where all grazing shall cease upon approval of the Otay Ranch GDP/SRP. **Policy:** The Preserve Manager shall determine a grazing policy for parcels conveyed to the Preserve. Allow historical agricultural uses during project build-out within areas subject to development during project phases. **Policy:** Important agricultural soils shall be further evaluated at the SPA level and placed in open space or if contiguous to, added to the Preserve where feasible. Establish a composting program for the Otay Ranch that utilizes lost reclaimed water nutrients mixed with dry shredded landscape trimmings and other similar materials. **Policy:** Policies and guidelines shall be developed at the SPA level for community gardens adjacent to or within individual villages. Some community gardens may be located within open space areas being maintained by an open space maintenance district, with specific design and maintenance issues to be addressed during SPA Plan review.	**Consistent.** As discussed under Threshold 1, interim agricultural uses would continue to be permitted in the project area until project buildout in 2030 in accordance with the Agricultural Plan. Village 8 West is designated as grazing and farmland of local importance; however, agricultural activities on the site are constrained by access to water and do not currently occur on the site. Therefore, the project site does not contain agricultural soils that would be considered important for conservation. A portion of Village 8 West contains land designated as MSCP Preserve; however, with implementation of the SPA Plan, no agricultural activities would be permitted in this area. Opportunities for agricultural activity on the site would be provided through community gardens, which would be permitted in all residential, mixed use, parks, and CPF sites.

5.12.4 Level of Significance Prior to Mitigation

A. Direct Conversion of Agricultural Resources

Development of Village 8 West would not result in significant land uses conflicts that would result in the conversion of agricultural resource. However, implementation of the SPA Plan and TM would result in a significant impact to agricultural resources, due to the on-site loss of approximately 250 acres of farmland of local importance and grazing land. Short-term land use incompatibility issues from ongoing agricultural activities adjacent to urban land uses would be significant without implementation of the Agricultural Plan.

B. Land Use Zoning Conflicts

Impacts related to land use zoning conflicts and consistency with agricultural resource policies would be potentially significant if the Agriculture Plan is not implemented concurrent with development.

C. Agricultural Resource Policies

No significant impacts related to agricultural resources policies have been identified for implementation of the SPA Plan and TM.

5.12.5 Mitigation Measures

A. Direct Conversion of Agricultural Resources

No feasible mitigation measures are available for the loss of farmland of local importance and grazing land. The following measure would reduce impacts related to short-term land use incompatibility issues.

5.12-1 **Agricultural Plan.** The Agricultural Plan included in the SPA Plan shall be implemented as development proceeds in Village 8 West. The following measures shall be implemented to the satisfaction of the Chula Vista Development Services Director (or their designee):

i. Prior to approval of each building permit, the applicant shall ensure that a 200-foot fenced buffer shall be maintained between development and any ongoing agricultural operations on the property.

ii. In those areas where pesticides are to be applied, the farmland owner shall utilize vegetation to shield adjacent urban development (within 400 feet) from agricultural activities. Use of pesticides shall comply with federal, state and local regulations.

iii. If permitted interim agricultural uses require the use of pesticides, the farmland owner shall notify adjacent developed property owners of potential pesticide application a minimum of 10 days prior to application through advertisements in newspapers of general circulation. Limits shall be established as to the time of day and type of pesticide applications that may be used. The use of pesticides shall comply with federal, state, and local regulations.

B. Land Use Zoning Conflicts

Mitigation measure 5.12-1 would also reduce impacts related to land use zoning conflicts.

C. Resource Policies

No mitigation measures are required.

5.12.6 Level of Significance After Mitigation

A. Direct Conversion of Agricultural Resources

The incremental loss of agricultural lands (farmland of local importance, grazing land), which was considered a significant impact in the 1993 Otay Ranch GDP Program EIR, remains significant. No mitigation measures are available to reduce this impact to below a level of significance without restricting the development proposed in the Village 8 West SPA Plan and TM to allow interim agricultural uses to continue in perpetuity. This incremental loss remains significant and unavoidable. With implementation of mitigation measure 5.12-1, agricultural impacts related to short-term land use incompatibilities would be reduced to below a level of significance.

B. Land Use Zoning Conflicts

With implementation of mitigation measure 5.12-1, agricultural impacts related to land use zoning conflicts would be reduced to below a level of significance.

C. Agricultural Resource Policies

Impacts would be less than significant without mitigation.

5.13 Hazards and Hazardous Materials

This section describes existing hazards and hazardous materials in Village 8 West and surrounding area and evaluates the potential for hazards and hazardous materials impacts due to implementation of the SPA Plan and TM.

As stated in Section 2.3, Purpose and Legal Authority, this EIR tiers from the 2013 GPA/GDPA SEIR (09-01). The SEIR does not address hazards and hazardous materials, but relies on analysis in the 2005 GPU EIR (EIR 05-01) and the 1993 Program EIR for the GDP (EIR 90-01). The following evaluation of hazards and risk of upset is based on the project-level Phase I Environmental Site Assessment Report (Phase I ESA), prepared by Geocon Incorporated (March 2011). The Phase I ESA updates the applicable information contained in these previously certified EIRs. This site-specific study is contained in Appendix J of this EIR.

5.13.1 Existing Conditions

A. Regulatory Framework

1. Federal

a. Environmental Protection Agency

The EPA enforces a mandated National Hazardous Waste Management Program, as established by the Federal Resources Conservation and Recovery Act (RCRA). Under RCRA regulations, hazardous wastes must be tracked from the time of generation to the point of disposal. The RCRA program also sets out standards for hazardous waste treatment, storage and disposal units in a manner that minimizes the present and future threat to the environment and human health. The EPA also sets forth regional preliminary remediation goals, which establish contamination values for residential land uses. The remediation goals are "risk-based tools for evaluating and cleaning up contaminated sites. The EPA Region 9 remediation goals combine current EPA toxicity values with standard exposure factors to estimate contaminated concentrations in environmental media (soil, air, and water) that are considered protective of humans, including sensitive groups, over a lifetime.

b. Federal Aviation Administration

The FAA, which oversees airport safety and rules associated with development that may present a safety concern near existing airports, requires that Form 7460-1, Notice of Proposed Construction or Alteration, be filed with the FAA regional office prior to construction of buildings that are 200 feet or higher above the graded terrain. Minimum FAA safety standards include the marking or lighting of any structures 200 feet in height or greater from the graded terrain.

2. State

a. California Environmental Protection Agency Department of Toxic Substances Control

The CalEPA Department of Toxic Substances Control (DTSC) is the primary regulatory agency administering RCRA and non-RCRA hazardous waste programs. Under CCR Title 22, Division 4.5, wastes are classified as California hazardous, if 1) the total constituent content exceeds the total threshold limit concentration, or 2) the soluble constituent content exceeds the soluble threshold limit concentration based on a waste extraction test. If transported off site, California hazardous wastes require management as a hazardous waste and disposal at a Class 1 disposal facility.

b. California Environmental Protection Agency Office of Environmental Health Hazard

The CalEPA Office of Environmental Health Hazard sets forth the California Human Health Screening Levels (CHHSLs), a standard minimum level for risk-based concentrations of various chemicals on contaminated properties. The CHHSL values are non-regulatory and do not necessarily imply that adverse effects to human health would occur if concentrations were above the respective CHHSL.

c. 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 the 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 schools 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.

3. Regional

a. Regional Water Quality Control Board

The RWQCB implements the California Water Code which regulates waste discharges to land. If a discharge of waste threatens the waters of the state, a report of 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.

4. Local

a. Brown Field Airport Land Use Compatibility Plan

The purpose of an ALUCP is to provide for the orderly growth of airports and the areas surrounding the airports, and to safeguard the general welfare of inhabitants within an airport's vicinity. An ALUCP addresses compatibility between airport operations and future land uses that surround them by providing policies and criteria for noise, safety, airspace protection, and overflight. An ALUCP serves to both minimize the public's exposure to excessive noise and safety hazards within an Airport Influence Area and preserve the viability of airport operations. The 2004 Brown Field ALUCP was revised and adopted by the County ALUC on December 20, 2010.

b. Existing Emergency Response Plans

San Diego County Emergency Plan

This comprehensive emergency management system 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 8 West is 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.

c. 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 and to manage household hazardous waste are 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).

B. Hazardous Site Database Record Search

The Phase I ESA for Village 8 West evaluated current environmental conditions and the presence of hazardous materials or substances. As part of the Phase I ESA, a search of standard environmental regulatory databases was conducted to determine if any listed hazardous sites are located within Village 8 West, or within one mile of the SPA boundaries. The Phase I ESA reviewed a broad range of standard federal, state, and local environmental regulatory databases, as well as additional environmental record sources to supplement the standard databases. Village 8 West is not listed in any of the standard regulatory databases; however, the search identified one site within one mile of Village 8 West listed in the DTSC Site Mitigation and Brownfields Reuse Program's (SMBRP) EnviroStor database: Otay Ranch Village 7, approximately 3,200 feet north of Village 8 West. The status of Otay Ranch Village 7 is listed in the EnviroStor as "no further action" as of December 2, 2008. This facility is also listed in the database as a school investigation site as part of the SMBRP. Past uses of this property are reported as agricultural. The school site is listed as "no further action" as of March 8, 2007.

Geocon also reviewed the *Final Site Inspection Report Former Brown Field Bombing Range, San Diego County, California,* prepared by Parsons dated December 2007. Included in the report are site plans that depict the location of the former bombing range, the bomb and aerial rocket target boundaries, and the extent of the formerly used defense sites property boundary. These features are located a minimum of one mile to the east-southeast of Village 8 West and of any proposed off-site improvements (sewer, storm drain, and recreation trail).

1. Conditions Associated with Existing Uses

Village 8 West is currently unoccupied and undeveloped. No paved roads are present on the SPA. A concrete enclosed reservoir owned by the City of San Diego is present on a parcel in the central portion of Village 8 West, enclosed by the site boundaries. Several existing potable water pipelines are located underground in the project area. An unnamed aqueduct extends across Village 8 West from the southern boundary and intersects with the pipelines. Wood and barbed wire fences and concrete brow ditches are also located on site. The site has several dirt roads, primarily in the northern, eastern, and southern portions of Village 8 West. The reservoir is accessed by a dirt road that extends from La Media Road at the northern site boundary. During the site reconnaissance, Geocon observed a piece of agricultural equipment that appeared to be a sprayer. The Phase I ESA did not identify any current activities of environmental concern on Village 8 West. Geocon did not observe stained soil, evidence of pits, storage tanks, underground utilities of concern, or stressed vegetation on site.

2. Conditions Associated with Prior Uses

According to the Phase I ESA, prior uses of Village 8 West include agricultural use, specifically cultivated fields, at various times between 1953 and 2009. The Phase I ESA concluded that potential soil contamination may be present on site from residual concentrations of pesticides/herbicides from past agricultural use. Similar conditions were identified in Village 7 and Village 4. In Village 7 and Village 4, organochlorine pesticides were detected above the analytical method limits in the upper three feet of soil. Concentrations of toxaphene, dichlorodiphenyldichloroethane (DDD), dichlorodiphenyltrichloro-ethane (DDT), and dichlorodiphenyldichloroethylene (DDE) were detected in various samples above their respective residential preliminary remediation goals. The pollutant concentrations were not high enough to be classified as hazardous waste; however, remediation would be required during grading. Geocon recommended reusing the soils on site in Village 7 and Village 4 in accordance with the waste discharge requirements of the RWQCB. Remediation included the removal of the potentially

contaminated soil and replacement on site as fill covered by a minimum of 10 feet of clean fill either from on site or imported sources.

3. Conditions Associated with Adjacent Uses

North and northeast of the site are La Media Road, Santa Luna Street, Magdalena Avenue, and Main Street. A vacant and graded area of land for future residential development is located north of Santa Luna Street. Olympian High School is located east of Magdalena Avenue and north of Main Street. Dry farmed fields are located east of the project site and SR-125 is located east of the agricultural land. The service road that provides access to the project site continues south to the southern adjacent parcel where it connects to the access road in the Otay River Valley. Vacant undeveloped land is adjacent to the west and south of the project area. An active hard rock quarry is approximately 0.3 mile to the southwest and the Otay Landfill is approximately one mile northwest of the site. The Phase I ESA did not identify any activities of environmental concern associated with these adjacent uses.

C. Other Potential Environmental Hazards

The Otay Ranch GDP Program EIR identifies land uses surrounding the Otay Ranch, including the Otay Landfill, Brown Field, and Rock Mountain Quarry, that could potentially create a hazard or risk of upset. According to the EIR prepared for the EUC, the Otay Landfill, located approximately one mile west of Village 8 West, is the site of a former hazardous waste reprocessing operation and continues to provide disposal waste services. The Rock Mountain Quarry, located approximately 0.3 mile to the southwest of Village 8 West, represents a potential source of contamination from waste oil, fuel spillage, residual blasting chemicals, and air emissions. As discussed above, the Phase I ESA did not identify any conditions of concern to Village 8 West associated with these adjacent uses.

Brown Field, a municipal airport operated by the City of San Diego, may also present a risk due to flights occurring over Village 8 West. The manager of Brown Field wrote a comment letter on the Village 8 West EIR NOP for the project that expressed concern that Village 8 West would be subject to over flight operations due to its location in relation to the POGGI VORTAC, located approximately 500 feet north of the project site. A copy of the letter is provided in Appendix A. Currently, there is an instrument approach procedure which brings aircraft to Brown Field from the north and terminates at POGGI. Once at POGGI, pilots must be able to see the airport visually, and then circle to land. Aircraft fly the approach in any weather condition, day or night, 24 hours a day. According to the ALUCP for Brown Field, the northern portion of project site is located within the Airport GPS approach and Airport Composite Circling Approach and would be subject to overflights.

Village 8 West is not located within any safety zone for the airport, including the traffic pattern zone, as defined in the Brown Field Airport Land Use Compatibility Plan. However, the project site is located within the FAA Height Notification Boundary, Part 77 Airspace Surfaces, Airport Overflight Notification Area for residential development and Review Area 2 of the Airport Influence Area. Review Area 2 consists of locations within the airspace protection and/or overflight notification areas. Limits on the heights of structures, particularly in areas of high terrain, are the only restrictions on land uses within Review Area 2.

5.13.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, impacts from hazards and hazardous materials would be significant if the project:

- **Threshold 1:** Creates a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials.
- **Threshold 2:** 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.
- **Threshold 3:** Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- **Threshold 4:** 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.
- **Threshold 5:** 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.
- **Threshold 6:** Is located within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area.
- **Threshold 7:** Impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan.
- **Threshold 8:** 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.
- **Threshold 9:** Be inconsistent with General Plan, GDP, and other objectives and policies regarding hazards thereby resulting in a significant physical impact.
- **Threshold 10:** 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; and/or the historic use of pesticides would result in soil contamination and health effects.

5.13.3 Impact Analysis

A. Threshold 1: Creates a significant hazard to the public or environment through the routine transport, use or disposal of hazardous materials, and

Threshold 2: 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 activities in Village 8 West would involve the use of common but potentially hazardous materials, including vehicle fuels, paints, cleaning materials, and caustic construction compounds. While these substances could pose a potential health risk to construction workers and to the general public during transport, handling of these common, potentially hazardous materials would occur in accordance with California Occupational Safety and Health Administration (Cal/OSHA) guidelines and would be disposed of in accordance with state and county regulations. Adherence to federal, state, and local regulations regarding the use and disposal of hazardous materials and wastes would reduce potential impacts on human health and safety from handling and transport of hazardous construction materials to less than significant.

Occupation of proposed commercial and residential development and maintenance of parks and other public facilities would also involve the use or storage of common hazardous materials, including cleaning solvents typically used in multi-family residential and commercial development, pesticides and related chemicals associated with landscaping maintenance, and paints and solvents. Certain permitted land uses, such as dry cleaners and gas stations, also require the use, storage, and transport of hazardous chemicals or materials, which are regulated by current federal and state regulations, such a RCRA. Health clinics and urgent care facilities would have the potential to generate hazardous medical wastes; however, these facilities would also be regulated by federal and state regulation. Compliance with all applicable regulations would reduce impacts to a less than significant level.

Other commercial, residential, and park land uses are not subject to the same regulatory oversight as land uses that routinely generate hazardous waste. However, Allied Waste Management Services provides solid waste services to Village 8 West and operates drop-off facilities that accept paint, batteries, computers, television sets, and other electronics and household hazards. Allied Waste offers curbside pickup for used oil and electronic waste. Additionally, the South Bay Regional Household Hazardous Waste Collection facility is located approximately 2.5 miles west of Village 8 West at 1700 Maxwell Road. These facilities would encourage proper disposal of household hazardous wastes. Compliance with manufacturers' instructions and existing regulations is anticipated and would reduce potential exposure of the public and the environment to hazardous materials. Due to the limited amounts and frequency of use of hazardous materials in the proposed land uses, the frequency and severity of exposure to hazardous materials and waste as a result of the commercial, residential, and park land uses proposed for Village 8 West would be less than significant.

As stated in the Phase I ESA, the potential exists for pesticide residue to be uncovered in the soils on site that could result in an exposure risk to construction workers and future residents of Village 8 West. This potential impact is addressed under Threshold 10.

B. Threshold 3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Village 8 West includes an approximately 21-acre middle school site and an 11-acre elementary school site. Prior to approval of the future school, conditions on the site will be required to comply with Chula Vista Elementary School District, Sweetwater Union High School District, and state standards for health and safety issues, including School Facilities Construction requirements in CCR Title 5. In addition, Village 8 West is located within 0.25 mile of Olympian High School, located adjacent to the northeast corner of the project area, and Wolf Canyon Elementary School, which is located just north of Olympian High School. As discussed under Threshold 2, use of hazardous materials during construction or operation of the project land uses would not result in a significant risk to the public from the use, transport or disposal of hazardous materials and wastes. However, due to past agriculture activities on the project site, the Phase I ESA identified the potential for pesticide residue in soils that could result in exposure to schools during grading or, if left exposed, during operation of the proposed schools. As the potential exists for exposure to pesticide contaminated soils on the future Village 8 West school sites, or at other nearby school sites, the project could present a potential impact with respect to health standards for public schools.

C. Threshold 4: 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.

A search of standard environmental regulatory databases was conducted to determine if any listed hazardous sites are located within Village 8 West, or within one mile of the SPA boundaries. Village 8 West is not listed in any of the standard regulatory databases; however, Otay Ranch Village 7, approximately 3,200 feet north of Village 8 West, was listed in the EnviroStor database due to the presence of pesticide-contaminated soils on site. This site does not present a risk to Village 8 West; although, the Phase I ESA did determined Village 8 West also contains pesticide-contaminated soil, as discussed under Threshold 10. Geocon also reviewed the *Final Site Inspection Report Former Brown Field Bombing Range, San Diego County, California,* prepared by Parsons dated December 2007. Based on the distance of this facility from Village 8 West, the Phase I ESA determined that this facility did not present a threat to the project. Therefore, no impacts with respect to this threshold would occur.

D. Threshold 5: 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, and

Threshold 6: Is located within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area.

Village 8 West is located approximately 1.5 miles to the northeast of Brown Field, a City of San Diego municipal airport. Village 8 West is located within the approach area for Brown Field subject to overflights from both Brown Field and the Tijuana Airport, a commercial facility just over one mile to the south of Brown Field. Aircraft operations at Brown Field would be required to comply with all applicable FAA regulations that are intended to ensure safe operation of aircraft. Flights to and from the Tijuana Airport in U.S. airspace over Village 8 West would be required to coordinate with FAA traffic controllers. Additionally, Mexico is rated Category 1, the top category, in FAA's International Aviation Safety Assessment Program (Aviation Safety Network 2011). This program focuses on a country's ability to adhere to international standards and recommended practices for aircraft operations and maintenance established by the United Nation's technical agency for aviation, the International Civil Aviation Organization (FAA 2010). With continued compliance with safety regulations and standards, it is not reasonably foreseeable that continued operations at Brown Field or the Tijuana Airport would result in a safety hazard to Village 8 West.

Village 8 West is located within the Brown Field Airport FAA height notification boundary, a Part 77 Airspace Surface, and Airport Overflight Notification Area for residential development, and Review Area 2 of the Brown Field Airport Influence Area. If the project results in development that would obstruct the flight approach paths for Brown Field, a potentially significant safety hazard from flight operations at Brown Field would occur. Exhibits III-3 and III-4 of the Brown Field ALUCP show the elevations above mean sea level that would penetrate an approach surface or Part 77 Airspace Surface. Four Part 77 Airspace Surface height contours traverse the project area.

The two lowest contours at 676.3 feet AMSL and 700 feet AMSL traverse the middle of the site, approximately through areas designated as Neighborhood Edge Zone, the City of San Diego reservoir site, the proposed CPF site, and the proposed elementary school site. After grading, the highest ground

level in this area would be 500 feet AMSL. The maximum allowable height in this area under the SPA Plan would be 45 feet in the Neighborhood Edge Zone, including the elementary school site. Therefore, development in Village 8 West would not penetrate the 676.3 feet AMSL or the 700 feet AMSL Part 77 Airspace Surface contours.

A third airspace surface contour at 750 feet AMSL traverses the northern portion of Village 8 West, approximately through the Community Park, Neighborhood Center Zone, and Town Center. After grading, the highest ground level in this area would be 490 feet AMSL. The maximum building height allowed in this area would be four stories or 60 feet above the finished grade in the Town Center. Therefore, development under the SPA Plan would not penetrate this Part 77 Airspace Surface.

The fourth airspace surface contour at 800 feet AMSL traverses the northeast corner of Village 8 West near Santa Luna Road, which is designated as part of the Town Center. The ground level in this area would be 510 feet AMSL after grading. The maximum building height would be 60 feet and would not penetrate the 800 feet AMSL airspace surface. The lowest airspace protection surface for an approach surface over Village 8 West is 920 feet AMSL for the airport composite circling approach. This surface is higher than all of the FAR Part 77 Airspace Surfaces; therefore, it would not be penetrated by the buildings in Village 8 West. Due to the limited height allowed in Village 8 West, it is not anticipated that development of the tallest structures would result in an obstruction to air traffic. However, because Village 8 West is located within the FAA Height Notification Boundary and Airport Overflight Notification Area, proper notification in compliance with the Brown Field ALUCP is required to reduce this impact to a less than significant level.

E. Threshold 7: Impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan.

As stated in Section 8.9.4 of the SPA Plan, Emergency Disaster Plan, the GDP requires all SPA plans to provide an "Emergency Disaster Plan" that addresses the various hazards that have the potential for disrupting communities, causing damage, and creating casualties within the area. These disaster situations are implemented by the regional plans available in the area, as listed in Section 3.3.1.3(J) of the Emergency Disaster Plan. The SPA Plan and TM would support the intent of local and regional emergency response and evacuation plans through accessibility to fire services from Fire Station #7, approximately one mile from the northern border of Village 8 West.

The project would not interfere with city emergency response plans because it would not obstruct any existing roadways or evacuation routes. The construction of Main Street and Otay Valley Road through the site would provide regional connectivity to both the I-805 and SR-125, and would reduce the potential for gridlock on these major highways that serve as evacuation routes during major disasters. The proposed circulation system would also enhance evacuation from and emergency response within Village 8 West by providing multiple internal access points as well as access to the surrounding regional circulation system (see Figure 3-5, Roadway Circulation System).

Additionally, as discussed in Section 5.9, Public Services, the implementation of the PFFP prepared for Village 8 West, payment of the Public Facilities Development Impact Fee, and implementation of the GMOC threshold standards would ensure that development of Village 8 West will not adversely impact fire protection and emergency services. Therefore, impacts with respect to emergency preparedness and evacuation would be less than significant.

F. Threshold 8: 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.

Village 8 West is located within an area designated at a high risk for wildland fire hazards (Figure 9-9 of the General Plan). The site has been used historically for agricultural purposes and is currently undeveloped. The project is surrounded on three sides by undeveloped land, including the Otay River Valley. The exposure of people and structures to wildland fires is greatest in areas located within or adjacent to wildlands; however, vacant lands in which weeds and brush have not been controlled in close proximity to occupied uses may also present a wildfire hazard. Upon project buildout, development along the western eastern and southern boundaries may be adjacent to undeveloped land. With completion of development of Village 4 and Village 8 East, only the southernmost portion of Village 8 West would be adjacent to undeveloped land. During the interim phases of project construction, occupied development may be adjacent to vacant areas within the site.

In accordance with the requirements of the Chula Vista Fire Department, Chapter 47 of the 2007 California Fire Code, the SPA Plan includes a Fire Protection Plan for all new development in the Urban Wildland Interface. The purpose of the Fire Protection Plan is to identify a fuel management strategy that would reduce the risk of fire and protect the life, safety, and property of residents living adjacent to wildland areas that are susceptible to fire. The project Fire Protection Plan includes requirements for fuel management during all phases of project construction.

As the project site is constructed in phases, fuel management zones would be established for parcels within 100 feet of any structure under construction or existing. The fuel modification zones would be installed and maintained prior to any flammable material being brought onto the parcel. Following buildout of Village 8 West and the surrounding area, the plan requires a minimum of 150 feet of fuel management for development adjacent to the Preserve. The proposed fuel modification area is shown in Figure 3-13. The plan establishes standards for vegetation to be included in the fuel management area, planting guidelines, and maintenance requirements. With implementation of the Fire Protection Plan, the impact associated with the risk of wildland fires would be reduced to a less than significant level.

G. Threshold 9: Be inconsistent with General Plan, GDP, and other objectives and policies regarding hazards, thereby resulting in a significant physical impact.

The project's consistency with applicable policies of the Chula Vista General Plan is described in Table 5.13-1 and the project's consistency with the GDP is described in Table 5.13-2. As shown in Tables 5.13-1 and 5.13-2, the project would meet the policy requirements of General Plan and GDP and would result in a less than significant impact.

Table 5.13-1 Project Consistency with Applicable General Plan Hazards Policies

Applicable Policies	Evaluation of Consistency
Objective LUT 6: Ensure adjacent land uses are compatible with one another. **Policy LUT 6.8:** Require that any land use that handles, generates and/or transports hazardous substances, will not negatively impact existing or future sensitive receptors/land uses, as defined by state and federal regulations.	**Consistent.** As discussed under Threshold 1, all future development would be required to comply with state and federal hazardous material regulations.

Table 5.13-2 Project Consistency with Applicable GDP Hazards Policies

Applicable Policies	Evaluation of Consistency
Goal: Promote public safety and provide public protection from fire, flooding, seismic disturbances, geologic phenomena and manmade hazards in order to preserve life, health and property; continue government functions and public order; maintain municipal services; and rapidly resolve emergencies and return the community normalcy and public tranquility.	**Consistent.** The SPA Plan is consistent with this policy. Although Village 8 West is located in a designated high hazard area (General Plan, Figure 9-9) and may be susceptible to fires, the implementation of a Fire Protection Plan as part of the SPA Plan would minimize wildland fire potential, as discussed above under Threshold 8. Additionally, as discussed under Threshold 1, Hazards and Hazardous Materials, all future development would be required to comply with state and federal hazardous material regulations. Therefore, the project would be consistent with this policy as it related to fire and manmade hazards. Flooding is addressed in Section 5.11, Hydrology and Water Quality, and seismic disturbances are addressed in Section 5.8, Geology and Soils.
Objective: Minimize social and economic dislocations resulting from injuries, loss of life and property damage. **Policy:** Incorporate the Otay Ranch Project Area into existing regional disaster preparedness programs including mutual aid agreements. **Policy:** Establish and maintain safe and effective evacuation routes.	**Consistent.** As discussed under Threshold 7, the SPA Plan would implement the regional disaster plans available in the area, listed in Section 3.3.1.3(J) of the SPA Plan, Emergency Disaster Plan. The SPA Plan would support the intent of local and regional emergency response and evacuation plans through accessibility to fire services, connectivity to major arterials, and future connectivity to SR-125. Evacuation from and emergency response within Village 8 West would be enhanced by the proposed circulation system. The project would not interfere with city emergency response plans because it does not interfere with any existing roadways of evacuation routes. The proposed Main Street would provide regional connectivity to both the I-805 and SR-125, which would reduce the concentration of gridlock or blockage of either of these major highways, which would be needed to provide evacuation during major disasters.
Objective: Prevent property damage and loss of life due to fire, crime or hazardous substances. **Policy:** Arrange land uses in a manner consistent with recognized health, fire, crime prevention and protection practices.	**Consistent.** The SPA Plan is consistent with this policy. Although Village 8 West is located in a designated high hazard area (General Plan, Figure 9-9) and may be susceptible to fires, the implementation of a Fire Protection Plan as part of the SPA Plan would minimize wildland fire potential, as discussed above under Threshold 8. Health and crime prevention are addressed in Section 5.9, Public Services.

H. Threshold 10: 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; and/or the historic use of pesticides would result in soil contamination and health effects.

As discussed under Thresholds 2 and 3 above, impacts associated with the routine transport, use, or disposal of hazardous materials would be less than significant because the project would be required to adhere to federal, state, and local regulations pertaining to handling, storage and transport of hazardous materials, and the dose and frequency of exposure to household hazardous materials would be limited.

The Phase I ESA prepared for the Village 8 West area identified the possible presence of pesticides/ herbicides in shallow soil from the historical agricultural use within the area. Herbicides reportedly have historically been and are currently used on site but pesticides have not recently been used on site. Research conducted by the California Department of Food and Agriculture indicated that detectable concentrations of at least one of the dichlorodiphenyldichloroethane, dichlorodiphenyltrichloroethane, or dichlorodiphenyldichloro-ethylene compounds had been found in soil throughout California's

agricultural areas associated with the application of pesticides from 1944 to 1974. According to the San Diego County Department of Agriculture, Weights, and Measures permits, the pesticide 2,4-D Amine was applied to adjacent parcels to the west and east of the project. Elevated levels of pesticides in the near surface soils at the project area could be disturbed from grading and trenching activities and result in an increased health risk to construction workers on site and future inhabitants of the proposed development, particularly the future residential and school uses, and potentially impact water quality through storm water runoff. This impact is potentially significant.

5.13.4 Level of Significance Prior to Mitigation

A. Routine Use and Accidental Release of Hazardous Materials

Potentially significant impacts related to accidental release of hazardous materials could result from the exposure of construction workers, future residents, and the future on-site schools to pesticide residue occurring in soils on the site. Impacts related to routine transport, use, and disposal would be less than significant.

B. Hazards to Schools

Potentially significant impacts related to hazards to schools could result from the exposure of construction workers, future residents, and the future on-site schools to pesticide residue occurring in soils on the site.

C. Existing Hazardous Materials Sites

No significant impacts related to listed hazardous sites have been identified for implementation of the SPA Plan and TM.

D. Airport Hazards

Potentially significant impacts could result from the location of structures proposed in Village 8 West within a FAA notification area.

E. Emergency Response and Evacuation Plans

No significant impacts related to emergency evacuation plans have been identified for implementation of the SPA Plan and TM.

F. Wildland Fires

No significant impacts related to wildland fire hazards have been identified for implementation of the SPA Plan and TM.

G. Consistency with Hazard Policies

Potentially significant impacts related to consistency with hazard polities could result from the exposure of construction workers, future residents, and the future on-site schools to pesticide residue occurring in soils on the site.

H. Historic Use of Pesticides

Potentially significant impacts related to historic use of pesticides could result from the exposure of construction workers, future residents, and the future on-site schools to pesticide residue occurring in soils on the site.

5.13.5 Mitigation Measures

A. Routine Use and Accidental Release of Hazardous Materials

5.13-1 **Soil Assessment.** Prior to issuance of a mass grade permit, 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, dichlorodiphenyltrichloroethane, and dichlorodiphenyldichloroethylene, which have been historically identified at properties in the site vicinity. The concentrations of the contaminants shall be compared to Department of Toxic Substances Control soil screening levels for residential land use. If levels of contamination exceeding the Department of Toxic Substances Control 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.

B. Hazards to Schools

Mitigation measure 5.13-1 would also reduce impacts related to hazards to schools.

C. Existing Hazardous Materials Sites

No mitigation measures are required.

D. Airport Hazards

5.13-2 **Federal Aviation Administration Notification.** 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 in Village 8 West would present a hazard to air navigation.

5.13-3 **Federal Aviation Administration Clearance.** 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).

5.13-4 **Airport Overflight Agreement.** 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 Chula Vista Development Service Director (or their designee).

E. Emergency Response and Evacuation Plans

No mitigation measures are required.

F. Wildland Fires

No mitigation measures are required.

G. Consistency with Hazard Policies

Mitigation measure 5.13-1 would also reduce impacts related to consistency with hazard Policies.

H. Historic Use of Pesticides

Mitigation measure 5.13-1 would also reduce impacts related to historic use of pesticides.

5.13.6 Level of Significance After Mitigation

A. Routine Use and Accidental Release of Hazardous Materials,

With the implementation of mitigation measure 5.13-1 identified above, hazards and hazardous materials impacts related to the historic pesticide use in Village 8 West would be reduced to below a level of significance.

B. Hazards to Schools

With the implementation of mitigation measure 5.13-1 identified above, hazards and hazardous materials impacts related to the historic pesticide use in Village 8 West would be reduced to below a level of significance.

C. Existing Hazardous Materials Sites

Impacts would be less than significant without mitigation.

D. Airport Hazards

With the implementation of mitigation measures 5.13-2 through 5.13-4 identified above, impacts related to the airport hazards would be reduced to below a level of significance.

E. Emergency Response and Evacuation Plans

Impacts would be less than significant without mitigation.

F. Wildland Fires

Impacts would be less than significant without mitigation.

G. Consistency with Hazard Policies

With the implementation of mitigation measure 5.13-1 identified above, hazards and hazardous materials impacts related to the historic pesticide use in Village 8 West would be reduced to below a level of significance.

H. Historic Use of Pesticides

With the implementation of mitigation measure 5.13-1 identified above, hazards and hazardous materials impacts related to the historic pesticide use in Village 8 West would be reduced to below a level of significance.

This page intentionally left blank.

5.14 Housing and Population

This section describes the existing conditions in the project vicinity, and growth projections for Village 8 West and the surrounding area, and evaluates the potential for impacts to housing and population due to implementation of the project.

As stated in Section 2.3, Purpose and Legal Authority, this EIR tiers from the 2013 GPA/GDPA SEIR (09-01). The SEIR addressed the GPA/GDPA development's growth-inducing effect on population, housing, and employment opportunities, and determined that implementation of the land uses proposed in the GPA/GDPA would not result in significant growth inducement. The analysis and discussion of population and housing issues contained in the 2013 GPA/GDPA SEIR is incorporated by reference.

5.14.1 Existing Conditions

A. Regulatory Framework

1. Regional

a. SANDAG Regional Comprehensive Plan

SANDAG's 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 also 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.

b. 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 (RHNA) 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 (City of Chula Vista 2011). Since January 1, 2010, Chula Vista has produced a total of 1,546 new units, including 155 low and very low-income housing units. The City anticipated that its remaining development capacity would exceed the RHNA 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.

2. Local

a. Chula Vista General Plan

The Chula Vista General Plan divides the city into three planning areas: 1) the Southwest Planning Area, 2) the Northwest Planning Area, and 3) the East Planning Area. Within the East Planning Area, Village 8 West is located within the Central Otay Ranch District. The vision for the district in the General Plan is a mixture of land uses and intensities that includes a large community park; a pedestrian-oriented mixed-use town center; single-family and multi-family residential uses surrounding a typical village core; and a middle school.

Town center arterials in the form of couplets or other pedestrian-oriented arterial street design would be located along portions of La Media Road and Main Street, where Villages 4, 7, and 8 West meet.

The intent of the General Plan is to meet housing demand, instead of "exporting" housing demand to neighboring regions. Therefore, the efforts of the Chula Vista General Plan to add mixed use and higher densities is consistent with the intent of the SANDAG RCP, which encourages local jurisdictions to add housing capacity to their general plans. The Chula Vista General Plan also incorporates a Housing Element (adopted October 24, 2006) that identifies strategies for expanding 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 that residential developments with fifty or more dwelling units provide 10 percent of total units for low and moderate-income households, with at least half of those (five percent) designated for low-income households.

The General Plan Housing Element includes objectives and policies to minimize impacts on housing choice that result from conversion or demolition of rental housing units (Objective H 4); encourage the provision of a wide range of housing choices (Objectives H 5 and H 6); facilitate affordable housing for lower and moderate-income households (Objective H 7); and 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 (Objective H 8).

b. 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. Relevant policies associated with this objective include the following:

- **Objective:** Each Otay Ranch Village will proportionately assist the appropriate land use jurisdiction to meet or exceed Otay Ranch's share of the 5-year regional share allocation as provided by each jurisdiction's Housing Element.

- **Policies:**
  - Encourage each "Urban Village" to offer a variety of housing types, densities and prices which will enable affordability within each income group under the regional share.

- Encourage housing opportunities for very low, low and moderate-income households, and the dispersal of such housing among Otay Ranch villages to promote a balanced community.
- Support the exploration and use of innovative and alternate building technologies and materials which reduce costs, increase affordability, and address environmental issues such as energy and water conservation, air quality improvements and recycling.

c. Otay Land Company Affordable Housing Program

The OLC Affordable Housing Program determines the allocation of affordable housing units to each area of Otay Ranch. The City of Chula Vista requires that ten percent of proposed dwelling units be affordable. Five percent of those units must be affordable to households earning at or below moderate income (80 percent to 120 percent of the San Diego area median income) and the remaining five percent of those units must be affordable to households earning at or below low Income (combined incomes do not exceed 80 percent of the San Diego area median income). The median income is adjusted annually. The OLC Affordable Housing Program Implementation Plan for Village 8 West assigns Village 8 West an obligation of providing approximately 200 affordable housing units.

B. Existing Population and Housing

Village 8 West has been used in the past for agricultural purposes, specifically cattle grazing and dry farming including barley, wheat, and oat hay (Gallegos & Associates 2009). Village 8 West has not been formerly, nor is currently, occupied with residential uses. The following discussion focuses on projected population and housing growth in the San Diego region, the city of Chula Vista, and Otay Ranch.

1. Regional Setting

Trends important to determining future population growth in the San Diego region include birth and death rates, domestic and international migration, and major economic indicators such as proposed major new employment centers or a closure or expansion of a military base. In October 2011, the SANDAG Board of Directors adopted the 2050 Regional Growth Forecast, which incorporates data from the 2000 U.S. Census and the SANDAG Demographic and Economic Forecasting Model. The purpose of the 2050 Regional Growth Forecast is to provide a starting point for regional planning, specifically the 2050 Regional Transportation Plan. Table 5.14-1 presents the change in population for both the incorporated cities and unincorporated areas of San Diego County from 2008 to 2050 based on the 2050 Regional Growth Forecast. Although the region's population will grow by over a million people over the forecast period, the rate of growth is slowing compared to the previous 40 years. The updated growth forecasts take into account the recent economic recession and reflect more current market conditions than the previous growth forecasts.

Table 5.14-1 2050 Total Population Forecast

Location	2008	2020	2030	2050	2008-2050 Change	
					Numeric Increase	Percent Increase
Incorporated Cities	2,641,594	2,989,591	3,253,630	3,691,950	1,050,356	40%
Unincorporated Area	489,958	545,409	616,370	692,917	202,959	41%
San Diego Region	3,131,552	3,535,000	3,870,000	4,384,867	1,253,315	40%
Source: SANDAG 2011						

The region as a whole is anticipated to grow by 40 percent over the 42-year period. Table 5.14-1 indicates that the growth rates are similar between the unincorporated and incorporated areas of the county. The incorporated cities, including Chula Vista, would accommodate the largest amount of population growth over the forecast period; however, the unincorporated area would experience a slightly higher growth rate compared to the region due to its relatively low existing population.

a. Employment and Housing

The forecast of total jobs for the region is shown in Table 5.14-2. The region is expected to add 501,958 jobs over the forecast period, a 33 percent increase. Similar to population forecasts, the incorporated cities account for the largest share of employment growth, accounting for approximately 90 percent of the total increase in jobs; however, the growth rate is higher in the unincorporated area.

Table 5.14-2 2050 Regional Employment and Housing Forecast

Location	2008	2020	2030	2050	2008-2050 Change	
					Numeric Increase	Percent Increase
Jobs						
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%
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%
Jobs to Housing Ratio						
Incorporated Cities	1.4	1.3	1.6	1.4	NA	NA
Unincorporated Area	0.8	0.8	0.8	0.9	NA	NA
San Diego Region	1.3	1.3	1.3	1.3	NA	NA

Note: Includes Civilian and Military Employment
NA = not available
Source: SANDAG 2011

The projected distribution of new housing units from 2008 to 2050 is shown in Table 5.14-2. Similar to population and job forecasts, the incorporated cities account for the largest share of housing growth. Comparing housing forecast to the job forecast, also shown in Table 5.14-2, the increase in jobs is greater than the increase in housing in the incorporated cities and the region as a whole. The jobs to housing ratio is slightly higher in the incorporated cities compared to the region as a whole because housing growth would be greater than job growth in the unincorporated area.

SANDAG anticipates that approximately 50 percent of regional future job and housing growth would be in the smart growth opportunity areas, such as Otay Ranch. In addition, this forecast projects that more than 70 percent of future job and housing growth will likely occur within the transit investment areas, defined as the areas with highest priority for future transit investments. The Otay Ranch area is identified as a transit priority area in the 2050 Regional Growth Forecast Update. Therefore, regional forecasts anticipate intensified development in the smart growth areas, such as Village 8 West, compared to the region as a whole.

2. City of Chula Vista

a. Population

Table 5.14-3 compares population growth in Chula Vista to the other surrounding south bay cities of Imperial Beach and National City, and the San Diego region based on the 2050 Regional Growth Forecast. Between 2008 and 2050, Chula Vista is anticipated to grow at a similar pace (43 percent) as the region (40 percent), a faster pace than Imperial Beach (30 percent), and a slower pace than National City (64 percent). The updated SANDAG projection is similar to the population projection used in the Chula Vista General Plan.

Table 5.14-3 Total Population by Jurisdiction

Jurisdiction	2008	2020	2030	2050	2008-2050 Change	
					Numeric Increase	Percent Increase
Chula Vista	230,397	267,418	288,978	330,049	99,652	43%
Imperial Beach	28,092	28,233	30,216	36,125	8,033	30%
National City	56,144	62,058	68,808	92,137	35,993	64%
San Diego Region	3,131,552	3,535,000	3,870,000	4,384,867	1,253,315	40%

Note: Totals may be affected by rounding.
Source: SANDAG 2011

b. Employment and Housing

The forecast of total employment for the region and south bay cities is shown in Table 5.14-4. The region is expected to add about 501,958 jobs over the forecast period, a 33 percent increase. Chula Vista is projected to absorb the largest amount of this growth, increasing by 73 percent. Imperial Beach and National City would accommodate a similar percent increase as the region. As described above, SANDAG anticipates that approximately 50 percent of regional future job and housing growth would occur in the smart growth opportunity areas.

Table 5.14-4 shows the housing forecast for the region and south bay cities from 2008 to 2050. Chula Vista would experience more housing growth than the region as a whole; however, National City shows the largest projected increase in total housing units among the south bay cities (56 percent), and a faster growth rate compared to the region. The jobs to housing ratio in Chula Vista is expected to be slightly lower than the region, but would still be greater than one job per house. Imperial Beach would have a lower jobs-to-housing ratio than the region, less than one job per house, and National City would have a higher jobs-to-housing ratio compared to the region.

3. Otay Ranch

a. Population

Build out of the entire Otay Ranch GDP will result in an additional estimated population of 86,245 persons (Otay Ranch Joint Planning Project 2005). The projected resident population of Village 8 West is 5,737 persons, based on a population generation factor of 2.58 persons per household for multi-family residential units and 3.3 persons per household for single-family residential units. The population for each phase of Village 8 West is provided in Table 5.14-5, based on these population generation factors.

Table 5.14-4 Total Employment and Housing by Jurisdiction

Location	2008	2020	2030	2050	2008-2050 Change	
					Numeric Increase	Percent Increase
Jobs						
Chula Vista	70,230	82,146	101,001	121,551	51,321	73%
Imperial Beach	7,543	8,835	9,560	10,240	2,697	36%
National City	28,743	29,677	32,831	37,668	8,925	31%
San Diego Region	1,501,080	1,619,615	1,752,630	2,003,038	501,958	33%
Housing						
Chula Vista	77,484	88,186	94,608	106,999	29,515	38%
Imperial Beach	9,851	9,866	10,389	12,148	2,297	23%
National City	15,773	17,052	18,685	25,272	9,499	60%
San Diego Region	1,140,654	1,262,488	1,369,807	1,529,090	388,436	34%
Jobs to Housing Ratio						
Chula Vista	0.9	0.9	1.1	1.1	NA	NA
Imperial Beach	0.8	0.9	0.9	0.8	NA	NA
National City	1.8	1.7	1.8	1.5	NA	NA
San Diego Region	1.3	1.3	1.3	1.3	NA	NA

Note: Includes Civilian and Military Employment
NA = not available
Source: SANDAG 2011

Table 5.14-5 Village 8 West Population Projections

Phase	Dwelling Units	Population
Orange phase	Multi-family: 351	1,292
	Single-family: 117	
Blue phase	Single-family: 284	937
Yellow phase	Multi-family: 765	1,974
Purple phase	Single-family: 220	726
Green phase	Multi-family: 313	808
Total	Multi-family: 1,429	5,737
	Single-family: 621	
Source: Otay Land Company 2012		

b. Employment

The Otay Ranch GDP proposes several major regional employment areas in the GDP area including the EUC, RTP, and the University site. Additionally, the town centers would provide local employment centers that would provide a balance between jobs and housing in the Otay Ranch area. Resident-serving commercial and retail uses permitted throughout the Otay Ranch area would provide additional employment opportunities near homes.

c. Housing

The Otay Ranch GDP proposes a variety of single-family and multi-family residences. The 2013 GPA/GDPA included an additional 880 housing units beyond housing projections accounted for in the 2005 General Plan, including 494 in Village 8 West. The Otay Ranch GDP, as amended, projects a total of 2,050 new homes in Village 8 West.

5.14.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, impacts to housing and population would be significant if the project would:

- **Threshold 1:** Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.
- **Threshold 2:** Be inconsistent with General Plan, GDP, and other objectives and policies regarding housing and population thereby resulting in a significant physical impact.

Appendix G of the CEQA Guidelines also states that impacts to housing and population would be significant, if the project induced substantial population growth in an area, either directly or indirectly. Growth inducement is discussed in Chapter 7, Growth Inducement.

5.14.3 Impact Analysis

A. Threshold 1: Displace substantial numbers of existing households or people, necessitating the construction of replacement housing elsewhere.

Village 8 West is currently undeveloped; no existing or former residential uses occupy the site. As such, the 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 Village 8 West SPA and TM would be subject to the requirements of the Chula Vista Affordable Housing Program, which requires the SPA Plan and TM to provide a minimum of ten percent of the total residential units as low and moderate-income housing. The affordable housing program has assigned an obligation of approximatley 200 affordable units to Village 8 West. The SPA Plan includes an Affordable Housing Plan to meet this requirement. High-density housing in the Town Center and accessory second units, allowed throughout the site provide opportunities for affordable housing. Therefore, the project would have no impact associated with displacement of households or people.

B. Threshold 2: Be inconsistent with General Plan, GDP, and other objectives and policies regarding housing and population thereby resulting in a significant physical impact.

Table 5.14-6 compares the project to applicable housing policies of the General Plan and Table 5.14-7 evaluates the project's consistency with applicable GDP policies. As shown in these tables, the project would be consistent with all applicable General Plan and GDP policies.

Table 5.14-6 Project Consistency with Applicable General Plan Housing Policies

Applicable Policies	Evaluation of Consistency
Objective H 4: Minimize impacts on housing choice within each of the four geographic planning areas, especially to very low-and low-income residents, that result from conversion or demolition of rental housing units. **Policy H 4.1:** Promote an equitable distribution of housing types (e.g., multi-family rental and owner occupied housing) based upon identified needs within the northwest, southwest, and east planning areas to provide a range of housing opportunities for all income levels.	**Consistent.** The SPA Plan is consistent with this General Plan policy. The Chula Vista General Plan Housing Element addresses housing needs citywide. The city's housing division monitors and ensures that housing opportunities for all income levels are provided. The SPA Plan includes an Affordable Housing Plan that will be reviewed and approved by the city prior to approval of the SPA. The SPA Plan includes a variety of housing types, including single-family attached and detached, and multi-family residential uses, to provide housing opportunities for all income levels.
Objective H 5: Encourage the provision of a wide range of housing choices by location, type of unit, and price level, in particular the establishment of permanent affordable housing for low-and moderate-income households. **Policy H 5.1:** Balanced Communities-Affordable Housing: Require newly constructed residential developments to provide a portion of their development affordable to low-and moderate-income households. **Policy H 5.2:** Encourage the development of sufficient and suitable new rental housing opportunities within each of the city's four geographic planning areas, particularly for very low-and low-income households.	**Consistent.** The SPA Plan is consistent with these policies. The city's affordable housing policy requires that ten percent of the total residential units be provided at affordable levels. An affordable housing program has been prepared for Village 8 West to meet this requirement, and identifies that the obligations are met through a combination of rental and for-sale housing, in compliance with affordability criteria as defined in the state, federal and city codes and policies. The Village 8 West Affordable Housing Plan will be reviewed and approved by the city prior to approval of the SPA Plan. The SPA Plan also includes a wide range of housing choices for a variety of age groups and income levels. The SPA Plan includes opportunities for new rental housing, including high-density residential land use in the Town Center and second dwelling units on lots greater than 4,000 square feet.
Objective H 6: Promote the development of a variety of housing choices, coupled with appropriate services, to meet the needs of special population groups, including the homeless, those at-risk of becoming homeless, persons with physical and/or development disabilities, emancipated foster youth, students, athletes at the Olympic Training Center, single-parent households, farmworkers and seniors. **Policy H 6.2:** Encourage the development of alternative housing types in locations with easy access to goods, services, transportation, recreation and other appropriate services to accommodate the special needs of seniors, persons with disabilities, emancipated foster youth, students, athletes, and single person households.	**Consistent.** The SPA Plan is consistent with this General Plan policy. The Affordable Housing Plan identifies all areas of Village 8 West as suitable for affordable housing but encourages consideration of proximity and availability of amenities. Village 8 West will further provide housing for all levels of the population, as discussed under Objective H 4 and Objective H 5, and would be designed to meet ADA requirements in accordance with law.
Objective H 7: Facilitate the creation, maintenance, preservation and conservation of affordable housing for lower and moderate-income households through comprehensive planning documents and processes, and the provision of financial assistance and other incentives. **Policy H 7.1:** Ensure Chula Vista's plans and policies addressing housing, such as the zoning ordinance, sectional planning area plans, and specific plans, encourage a variety of housing product that responds to variations in income level, the changing live-work patterns of residents and the needs of the city's diverse population.	**Consistent.** The SPA Plan is consistent with this General Plan policy. The development of Village 8 West would respond to market conditions. The Affordable Housing Plan provides compliance with the balanced communities policy for affordable units and will have access to financial incentives and other assistance as provided for in the General Plan Housing Element and the city's inclusionary housing policies.
Objective H 8: Ensure the availability of housing opportunities to persons regardless of race, color, ancestry, national origin, religion, sex, disability, marital status, and familial status, source of income or sexual orientation. **Policy H 8.1:** Ensure equal housing opportunities to prevent housing discrimination in the local housing market.	**Consistent.** The SPA Plan is consistent with this General Plan policy. The Affordable Housing Plan for Village 8 West provides a marketing plan to the city for proactive marketing of the low and moderate-income housing units. All development in Village 8 West must comply with local, state and federal fair housing laws.

Table 5.14-7 Project Consistency with Applicable GDP Housing Policies

Applicable Policies	Evaluation of Consistency
Part II, Chapter 1, Section D: Land Use Design, Character, and Policies, 1a. Village/Town Center Land Use Policies	
Goal: Organize land uses based upon the village/town center concept to produce a cohesive, pedestrian friendly community. Encourage non-vehicular trips and foster interaction amongst residents. **Policy:** Include a variety of uses and housing types within each village to meet the needs of residents. **Policy:** Accessory units are permitted on single-family lots within Villages 1 through 11, consistent with the provisions of Chapter 3, Housing.	**Consistent.** Proposed residential land uses within the SPA Plan area include a wide range of densities and formats within multi-family and single-family residential uses which will accommodate a variety of housing types to meet the needs of all potential residents. Accessory units are a permitted use in the SPA Plan.
Part II, Chapter 3 – Housing, Section B, Balanced Community	
Goal: Create a balanced community exemplified by the provision of a diverse range of housing styles, tenancy types and prices. **Objective:** Provide a variety of housing opportunities sufficient to meet a proportionate share of the Regional Share allocation of housing. **Objective:** Each Otay Ranch Village will proportionately assist the appropriate land use jurisdiction to meet or exceed Otay Ranch's share of the 5-year regional share allocation as provided by each jurisdiction's housing element.	**Consistent.** The SPA Plan provides a wide variety of housing types, including affordable housing. Proposed housing includes apartments, townhomes, condominiums, attached housing (duplexes and/or triplexes), small lot single-family, and conventional lot single-family residential. The SPA Plan includes an Affordable Housing Plan to ensure that ten percent of units in the SPA would be affordable units. High-density development and accessory units would provide opportunities for affordable housing.
Part II, Chapter 3 – Housing, Section B, Fair Housing and Special Housing Needs	
Goal: The provision of sufficient housing opportunities for persons of all economic, ethnic, religious and age groups, as well as those with special needs such as the handicapped, elderly, single parent families and the homeless. **Objective:** Ensure that the Otay Ranch provides housing opportunities sufficient to meet a proportionate share of identified special housing needs, and applies fair housing practices for all needs groups in the sale, rental, and advertising of housing units. **Policy:** Ensure compliance with all state and federal statutes regarding barrier free environments and elimination of racial, age, religious, sexual and economic bias and discrimination in housing sales, rental, advertising and lending practices. **Policy:** Include an adequate amount of land designated for community purpose facilities within Otay Ranch to provide for the location of facilities to shelter the homeless.	**Consistent.** Village 8 West would contain a wide variety of housing types ranging in density from low-medium to high. The variety of housing types would accommodate families, singles, and those with special housing needs, including the handicapped and the elderly. The project is required to meet all California handicap accessibility requirements. Fair housing practices would be employed in the sale, rental, and advertising of all units. In addition, an affordable housing program is included in the SPA Plan. Ten percent of all units within Village 8 West would be income-qualified homes.

5.14.4 Level of Significance Prior to Mitigation

No significant impacts related to population and housing have been identified for implementation of the SPA Plan and TM.

5.14.5 Mitigation Measures

No mitigation measures are required.

5.14.6 Level of Significance After Mitigation

No significant impacts related to population and housing were identified for implementation of the SPA Plan and TM.

5.15 Public Utilities

This section describes the public utilities that would serve Village 8 West and evaluates the potential for impacts to water, wastewater, recycled water, and energy services due to implementation of the project. Water services is addressed in subsection 5.15.1, including existing conditions, regulatory framework, and impact analysis. Wastewater is addressed in subsection 5.15.2, solid waste in subsection 5.15.3, recycled water in subsection 5.15.4, and energy in subsection 5.15.5.

As stated in Section 2.3, Purpose and Legal Authority, the analysis of public utilities in this EIR tiers from the 2013 GPA/GDPA SEIR (09-01). The 2013 GPA/GDPA SEIR and 2005 GPU EIR concluded that impacts related to water and energy would be significant and unavoidable because there is no assurance that water supply or energy will be available to adequately serve the projected increase in population resulting from development under the GPA/GDPA. The 2013 GPA/GDPA SEIR and 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 2013 GPA/GDPA SEIR and 2005 GPU EIR concluded that impacts related to solid waste would be less than significant.

The portions of this analysis related to water and sewer service are also based on the Final Overview of Sewer Service and the Final Overview of Water Service for Otay Ranch Village 8 West, both prepared by Dexter Wilson Engineering, Inc in November 2010. The analyses in this section pertaining to Village 8 West update the applicable information in these previously certified EIRs, which are incorporated by reference.

5.15.1 Water

The following discussion of water impacts is based on the 2005 Urban Watershed Management Plans (UWMP) adopted by the OWD and other relevant agencies. A 2010 UWMP was subsequently approved in 2011. The 2010 UWMP included the water demand for Village 8 West. However, this analysis is based on the 2005 UWMP because it was the most recent resource available at the time that the Notice of Preparation for this EIR was published (July 2010), and during preparation of the Final Overview of Water Service and the WSAV, discussed below.

5.15.1.1 Existing Conditions

A. Regulatory Framework

1. State

a. Senate Bills 610 and 221

SB 610 requires public water agencies, parties, or purveyors that may supply water to certain proposed development projects to prepare a water supply assessment for use by the planning agency in compliance with CEQA. A water supply assessment is required for any project that is subject to the CEQA Guidelines and proposes to construct 500 or more residential units or the equivalent. SB 221 requires proof of a sufficient water supply, while placing the initial burden of proof on the public water system. SB 221 requires a city, county, or local agency to include as a condition in any TM that includes a subdivision a requirement that a sufficient water supply shall be available to serve the subdivision.

The availability of a sufficient water supply is based on written verification from a water supplier with more than 3,000 service connections (prior to or as a result of serving a subdivision) which may provide water to the project. "Sufficient water supply" is the total water supplies available during normal, single-dry and multiple-dry water years within a 20-year projection that will meet the projected demand of a proposed subdivision. Moreover, and likely as an attempt to arrest reliance on "paper water" entitlements from the State Water Project (SWP), SB 221 further requires any verification of "projected" water supplies to be based on entitlement contracts, capital outlay programs, and regulatory permits and approvals regarding the right to and capability of delivering the projected supply. These statutes basically require that the water supplies be sufficient and meet projected demand, but do not specify a particular number of gallons that must be provided.

b. Urban Water Management Plan Act

In 1983, the California Legislature enacted the Urban Water Management Act (California Water Code Sections 10610 through 10657). The Act requires that any urban water supplier that provides water for municipal purposes, either directly or indirectly to more than 3,000 customers or supplies more than 3,000 acre-feet of water, prepare and annually update an UWMP at least once every five years.

The Act requires a description of specific water supply projects and implementation schedules to meet projected demands over the planning horizon; a description of the opportunities for the development of desalinated water; information on groundwater (where groundwater is identified as an existing or planned water source); description of water quality over the planning horizon; and description of water management tools that maximize local resources and minimize imported water supplies. Additionally, the Act requires evaluation of the reliability of a water supply as part of a development plan. This includes a water supply reliability assessment, a 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 Village 8 West. All of these agencies have prepared and updated UWMPs in accordance with this statutory requirement.

c. 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 on the premise that water conservation increases the water supply by reducing 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 Regarding Urban Water Conservation in California, OWD has made BMP implementation 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 BMP programs implemented by OWD and regional BMP programs implemented by the SDCWA that benefit all their member agencies are addressed in the OWD 2005 UWMP.

As a signatory to the MOU Regarding Urban Water Conservation in California, 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. The OWD

BMP reports for 2001 to 2004, as well as the BMP Coverage Report for 2003-04, are included in the OWD 2005 UWMP.

2. Local

a. 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 as the city's population grows. The Chula Vista 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.

b. 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 Vista adopted the Chula Vista Landscape Water Conservation Ordinance (Chapter 20.12 of the Municipal Code). This ordinance calls for greater efforts at water conservation and more efficient use of water in landscaping.

c. Otay Water District Growth Management Oversight Commission Questionnaire

Prepared by the OWD in support of the 2012 GMOC Annual Report, the GMOC Questionnaire responds to the issue of whether existing water systems are able to serve projected growth for Chula Vista. The questionnaire provided an opportunity for OWD to identify capital improvement programs required to serve the forecasted water demands. The questionnaire identified a list of capital improvement projects (CIPs) that would need to be implemented by the OWD in order to meet projected demand. The questionnaire concluded that the near-term water supply outlook remains "unsettled," while the city's long-term growth should be assured of a reliable water supply. The water supply is considered unsettled because water supply agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water source supply conditions. However, challenges such as these are expected to always be present, and the OWD nevertheless fully intends to have sufficient, reliable supplies to serve demands.

d. City of Chula Vista Growth Management Program

Chula Vista's Growth Management Program's goal for water supply is to ensure that adequate supplies of quality water (appropriate for intended uses) are available to the City of Chula Vista. The Growth Management Program has two objectives regarding water supply and distribution: 1) ensure that adequate storage, treatment, and transmission facilities are constructed concurrently with planned growth; and 2) ensure that water quality standards are not jeopardized during growth and construction.

The growth management threshold standard for water supply and distribution states:

1. The applicant will request and deliver to the City a service availability letter from the water district for each project.
2. The City shall provide annually to the San Diego County Water Authority, 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 shall be provided to the GMOC for inclusion in its review.

The Chula Vista Growth Management Ordinance (CVMC Section 19.09.050C) requires a Water Conservation Plan (WCP) to be submitted with all SPA Plans. In accordance with the Growth Management Program, WCPs must provide an analysis of water usage requirements of the project.

B. Existing Water Services

1. Water Service Providers and Planning

Water service to Village 8 West would be provided by OWD. OWD purchases water from the SDCWA, which in turn imports water from the MWD. The projected supply and demand and planning documents for each of these agencies is described below.

a. Metropolitan Water District

MWD supplies water to approximately 19 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 27 member agencies. Supply and demand projection information for MWD is included in its 2005 UWMP. 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 the 242-mile Colorado River Aqueduct. The second source is water from northern California, which supplies water through a series of dams, aqueducts, pipelines, and other facilities known as the SWP. The SWP is operated by the California Department of Water Resources.

Since 1996, MWD has operated under a 20-year resource plan designed to balance local and imported supplies. The 1996 Integrated Water Resources Plan called for investments in water conservation, recycling, groundwater treatment storage, and water transfers in order to diversify and stabilize MWD's water supplies. On November 8, 2005, the MWD adopted its 2005 Regional UWMP. In its 2005 UWMP, MWD evaluated water supply reliability over a 20-year period, for average, single-dry and multiple-dry water years. 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. MWD's reliability assessment showed that MWD can maintain reliable water supplies to meet projected

demands through the year 2030. MWD also identified buffer supplies, including other SWP groundwater storage and transfers, which could serve to supply additional water needs. Appendix A-3 to the MWD 2005 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 California Aqueduct deliveries (SWP supplies).

Additionally, MWD has comprehensive plans for stages of actions it would undertake to address up to a 50 percent reduction in its water supplies and a catastrophic interruption in water supplies through its Water Surplus and Drought Management and Water Supply Allocation Plans. MWD is working with the state to implement a comprehensive improvement plan to address catastrophic occurrences that could occur outside of the Southern California region, such as a maximum probable seismic event in the Sacramento-San Joaquin Delta, a key water resource, which would cause levee failure and disruption of SWP deliveries.

b. San Diego County Water Authority

The SDCWA service area covers approximately 922,000 acres and encompasses the western third of San Diego County. SDCWA has 24 member agencies. The SDCWA is responsible for ensuring a safe and reliable water supply to support the region and the quality of life for three million residents. Because of the county's semi-arid climate and limited local water supplies, SDCWA imports between 70 and 95 percent of the water used in the San Diego region from MWD. In 2008, MWD provided 71 percent of the San Diego region's water supply. Historically, SDCWA has relied on imported water supplies purchased from the MWD to meet the needs of its member agencies. SDCWA is the largest MWD member agency in terms of deliveries, purchasing approximately 25 percent of MWD's water. 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.

The SDCWA 2005 UWMP reports that the San Diego region conserved an average of 40,500 acre feet per year (AFY) over a five year period. In addition, in 2003, conserved agricultural transfer water from the Imperial Valley began flowing to the San Diego region, which will provide 200,000 AFY by 2021. This additional water supply is the result of SDCWA entering into the Quantification Settlement Agreement with other water agencies in October 2003, including the SDCWA/Imperial Irrigation District (IID) transfer agreement. Transfers from IID began in late 2003 with the signing of the settlement agreement. The SDCWA will receive up to 200,000 AFY after an initial ramp-up in water deliveries. A summary of projected imported water supply is provided in Table 5.15-1.

Table 5.15-1 Projected Imported Water Supplies (AFY)

Water Source	2010	2015	2020	2025	2030
IID Water Transfer	70,000	100,000	190,000	200,000	200,000
Supply from MWD	445,858	378,544	311,438	324,624	356,922
Coachella Canal and All American Canal Lining Projects	77,700	77,700	77,700	77,700	77,700
Total Imported Supplies	**593,558**	**556,244**	**579,138**	**602,324**	**634,622**
Source: Dexter Wilson Engineering, Inc. 2010					

On November 17, 2005, the SDCWA adopted its 2005 UWMP. Sections 4 and 5 of SDCWA's 2005 UWMP contain documentation of SDCWA's existing and planned water supplies, including MWD supplies, SDCWA supplies, and local member agency supplies. SDCWA supplies include: 1) IID water transfer supplies, 2) 77,770 AFY 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 AFY of additional water supplies. Additionally, since 1980, five percent to 30 percent of the water used by SDCWA member agencies 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 also made SDCWA member agencies less dependent on imported water. Projected local water supply is summarized in Table 5.15-2.

Table 5.15-2 Projected Local Water Supplies (AFY)

Water Source	2010	2015	2020	2025	2030
Surface Water	59,649	59,649	59,649	59,649	59,649
Water Recycling	33,668	40,662	45,548	46,492	47,584
Groundwater	28,575	30,345	31,175	31,175	31,175
Seawater Desalinization	0	56,000	56,000	56,000	56,000
Total Local Supplies	**121,892**	**186,656**	**192,372**	**193,316**	**194,408**
Source: Dexter Wilson Engineering, Inc. 2010					

Based on the imported and member agency local water sources discussed above, SDCWA estimates there is available water to meet all of the region's anticipated demand, in average/normal and single-dry water years, as demonstrated in Tables 5.15-3, 5.15-4, and 5.15-5.

Table 5.15-3 Average/Normal Year Supply and Demand (AFY)

Water Supplies	2010	2015	2020	2025	2030
Local Supplies					
Surface Water	59,649	59,649	59,649	59,649	59,649
Water Recycling	33,668	40,662	45,548	46,492	47,584
Groundwater	28,575	30,345	31,175	31,175	31,175
Seawater Desalinization	0	56,000	56,000	56,000	56,000
Imported Supplies					
IID Water Transfer	70,000	180,000	190,000	200,000	200,000
Supply From MWD	445,858	378,544	311,438	324,624	356,922
Coachella Canal and All American Canal Lining Projects	77,700	77,700	77,700	77,700	77,700
Total Projected Supplies	715,450	742,900	771,510	795,640	829,030
Total Estimated Demands[(1)]	**715,450**	**742,900**	**771,510**	**795,640**	**829,030**
Difference	0	0	0	0	0
[(1)] With conservation. Source: Dexter Wilson Engineering, Inc. 2010					

Table 5.15-4 Average/Normal Year Supply and Demand (AFY)

Water Supplies	Single Dry Water Year (2010)	Multiple Dry Years		
		Year 1 (2006)	Year 2 (2007)	Year 3 (2008)
Local Supplies		**56,670**	**60,230**	**80,900**
Surface Water and Groundwater	22,284	---	---	---
Water Recycling	33,668	---	---	---
Groundwater Recovery	22,238	---	---	---
Imported Supplies		**687,850**	**689,550**	**674,130**
IID Water Transfer	70,000	---	---	---
Supply From MWD	541,760	---	---	---
Coachella Canal and All American Canal Lining Projects	77,700	---	---	---
Total Projected Supplies	767,650	744,520	749,780	755,030
Total Estimated Dry Year Demands	**767,650**	**744,520**	**749,780**	**755,030**
Difference	0	0	0	0

Source: Dexter Wilson Engineering, Inc. 2010

Table 5.15-5 MWD Demand/Supply Balance

Scenario	Near Term[2]			Long Term[3]			
	2001	2002	2003	2005	2010	2015	2020
Multiple Dry Years							
Demands							
Retail	4.19	4.05	3.99	4.16	4.40	4.65	4.94
GW Replenishment	0.18	0.17	0.16	0.17	0.17	0.17	0.18
Total Demands	**4.37**	**4.22**	**4.15**	**4.33**	**4.57**	**4.82**	**5.12**
Supply							
Local	2.05	2.04	2.06	2.13	2.32	2.46	2.55
MWD[1]	2.32	2.18	2.09	2.20	2.25	2.36	2.57
Total Supply	**4.37**	**4.22**	**4.15**	**4.33**	**4.57**	**4.82**	**5.12**
Single Dry Years[4]							
Demands							
Retail	4.04	---	---	4.21	4.46	4.71	5.03
GW Replenishment	0.17	---	---	0.17	0.17	0.18	0.19
Total Demands	4.21	---	---	4.38	4.63	4.89	5.22
Supply							
Local	2.28	---	---	2.47	2.66	2.80	2.90
MWD	1.93	---	---	1.19	1.97	2.09	2.32
Total Supply	4.21	---	---	4.38	4.63	4.89	5.22
Average Years[5]							
Demands							
Retail	3.91	---	---	4.07	4.31	4.55	4.85
GW Replenishment	0.16	---	---	0.16	0.16	0.17	0.18
Total Demands	4.07	---	---	4.23	4.47	4.72	5.03
Supply							
Local	2.18	---	---	2.33	2.52	2.64	2.73
MWD	1.89	---	---	1.90	1.95	2.08	2.30
Total Supply	4.07	---	---	4.23	4.47	4.72	5.03

(1) MWD supplies include imported supplies, storage programs and transfers.
(2) Multiple Dry Years for 2001-2003 are based on the worst three-year sequence from the historical hydrologic record (1990-1991-1992).
(3) Multiple Dry Years for 2005-2020 are three-year average figures based on the worst three-year sequence from the historical hydrologic record (1990-1991-1992) ending in the year displayed.
(4) Single Dry Year is based on the single worst year from the historical hydrologic record (1977).
(5) Average Year is based on the average over all years in the historical hydrologic record (1922-1998). In average years, MWD will be adding water to storage, but the additional water supplies are reported in this table.

Source: Dexter Wilson Engineering Inc., 2010

SDCWA's Board of Directors prepared the 2008 Strategic Plan and the 2008 Business Plan to provide clear direction for the 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 its adoption, 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 are using 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.

c. Otay Water District

Potable water would be supplied to Village 8 West by OWD, which currently relies on SDCWA for its water supply. In San Diego County, OWD provides water services to southern El Cajon, La Mesa, Rancho San Diego, Jamul, Spring Valley, Bonita, eastern Chula Vista, the Eastlake community, Otay Ranch, and Otay Mesa along the U.S./Mexico international border. OWD covers 137 square miles and has approximately 38,870 meter connections. OWD has approximately 450 miles of pipelines, 21 pump stations, and 37 reservoirs with a total storage capacity of 190 million gallons. OWD provides 90 percent of its water service to residential land uses, and 10 percent to commercial, industrial, and other land uses. Average daily consumption for OWD is 40,324 acre feet. OWD maintains five major systems to supply and deliver water, which include Hillsdale, Regulatory, La Presa, Central, and Otay Mesa. OWD also operates the Ralph W. Chapman Water Recycling Facility.

On December 7, 2005, OWD's Board of Directors adopted the OWD 2005 UWMP. Section 7 of the 2005 UWMP contains OWD's water service reliability assessment. OWD is investigating the potential for developing local groundwater to reduce its dependence on imported water. OWD's UWMP identifies sources of water other than imported water that are being evaluated, including local groundwater supply, proposed regional seawater desalination project at the Encina Power Station, and recycled water programs. OWD currently does not use local groundwater to meet any of its demands. OWD maintains an active recycled water program and is actively pursuing conservation programs.

2. Water Supply Challenges

Since adoption of the 2005 UWMPs, multiple events occurred that affected 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.

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 Court ruling. Additionally, climate change due to global warming also creates uncertainties that may significantly affect California's water resources over the long-term.

3. Existing Infrastructure

The project would be served by the Central Service Area of the OWD. This area of OWD is supplied water from Connection Numbers 10 and 12 to the SDCWA aqueduct, which fills the reservoirs in the 624 Zone. Water is then distributed within the 624 Zone and pumped to the 711 Zone storage and distribution system. The following paragraphs describe the existing potable water facilities located in the vicinity of the project.

a. 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 Number 10 to the SDCWA aqueduct. The 624-1 and 624-3 Reservoirs are supplied by Connection Number 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 5 and the 624-3 reservoir is located along Eastlake Parkway, just north of the Olympic Parkway. In the vicinity of Village 8 West, there are currently no 624 Zone facilities. Water will be supplied to the 624 Zone in this area by the 711 Zone system.

b. 711 Zone

There is currently one pump station in the 711 Zone, referred to as the Central Area Pump Station, which is located at the 624-1 Reservoir site adjacent to the eastern boundary of Otay Ranch Village 5. 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, 711-3, was constructed north of the Rolling Hills Ranch project. With the construction of this reservoir, the OWD now has enough storage within the 711 Zone to meet the demands from ultimate projected development in the Central Area.

The major 711 Zone pipelines in the vicinity of Village 8 West include a 12-inch line in La Media Road and a 12-inch line in Main Street.

5.15.1.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, the project would result in a significant impact to water services if it would:

- **Threshold 1:** 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.
- **Threshold 2:** Have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.

- **Threshold 3:** Exceed city threshold standards which seek to ensure that adequate supplies of quality water, appropriate for intended uses, are available. The standards require the applicant must request and deliver to the city service availability letters from the appropriate water district for each project; the applicant is required to submit a Water Conservation Plan along with the SPA Plan application; and the project plans shall ensure an adequate supply of water on a long-term basis prior to the development of each Otay Ranch SPA.
- **Threshold 4:** Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding water supply thereby resulting in a significant physical impact.

5.15.1.3 Impact Analysis

A. Threshold 1: 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.

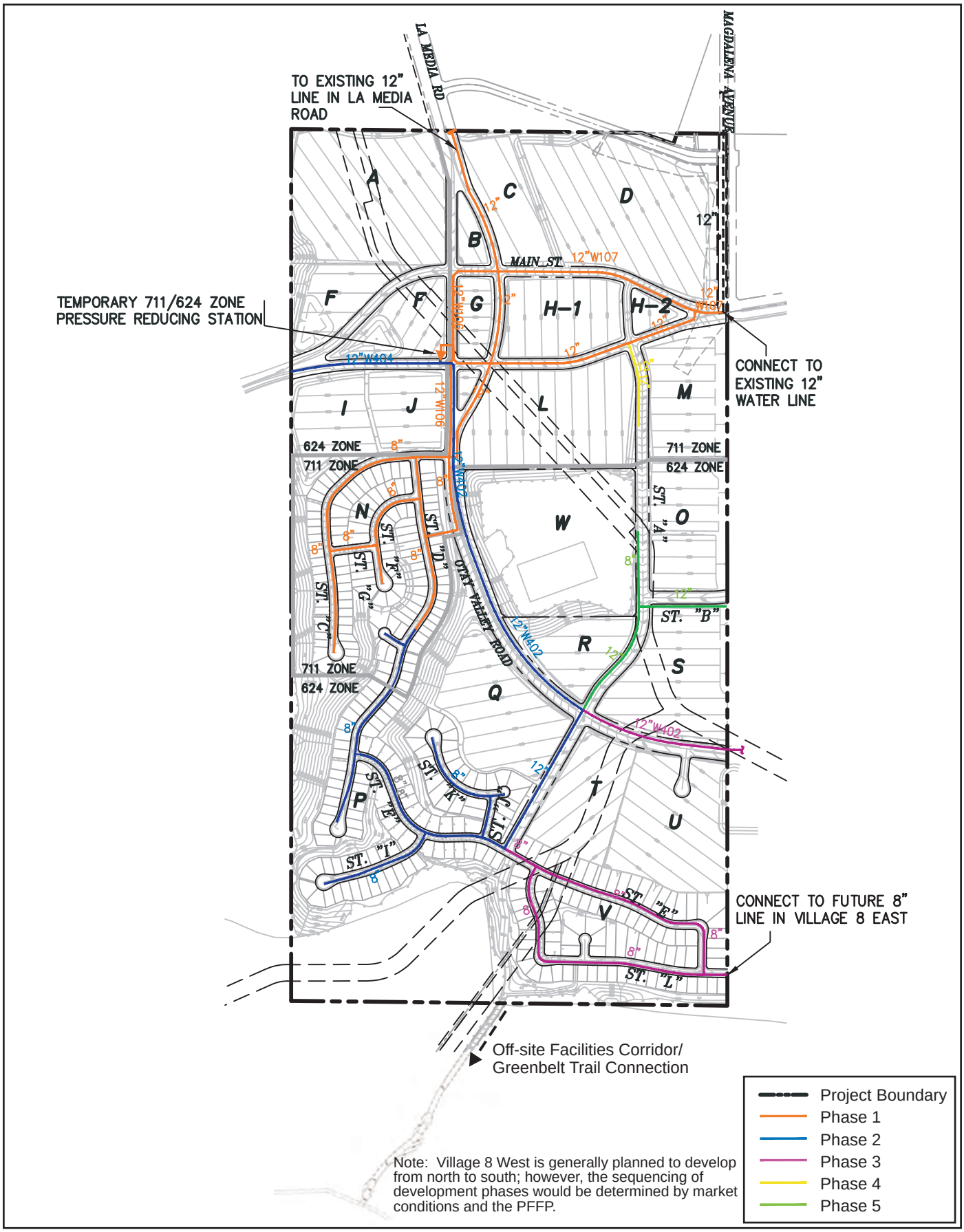
Village 8 West would receive water service by expanding the existing 624 and 711 Zone water systems, described above under Existing Infrastructure. Figure 3-9, Potable Water System, provides the recommended on-site potable water facilities for the project. In general, the project will be phased and must ensure that the OWD looping criteria is met during all phases of development. The proposed phasing for the potable water facilities is provided in Figure 5.15-1. Final location, sizing, phasing, and hydraulic modeling of the project water system will be presented in the final SAMP that is prepared for the project and submitted to OWD. A brief description of the facilities that would be required to serve Village 8 West, based on the SPA Plan and TM, is provided below.

1. 624 Zone

The southern and northwest portions of the project would be served by the 624 Zone. The OWD Master Plan identifies a 624 Zone line that will be extended from Heritage Road to the west and a line from Otay Valley Road to the east that will ultimately supply this area. These pipelines would be installed during construction Otay Valley Road and the extension of Heritage Road. Development of Village 8 West would begin prior to installation of these OWD pipelines and temporary infrastructure would be installed if necessary to supply water until the ultimate pipelines are constructed. Based on OWD criteria, if more than 70 equivalent dwelling units would be constructed prior to connection of the OWD projects to the 624 Zone system, the 711 Zone system to the north would be expanded through the installation of temporary 711/624 Zone pressure reducing stations within Village 8 West as needed as part of the project (Nielsen 2012).

2. 711 Zone

The OWD Master Plan identifies proposed 12-inch 711 Zone water lines that are planned to be routed through Village 8 West from Main Street to the east and La Media Road to the north. The 711 Zone would be looped on site and will provide service to the northeast corner of the project and to a portion of development by the western boundary of the project. The 711 Zone would also temporarily supply the 624 Zone on site via a pressure reducing station until the OWD completes two pipeline extensions in the 624 Zone, described above.



Source: Dexter Wilson Engineering 2012

0 400 800

Feet

N

POTABLE WATER INFRASTRUCTURE PHASES
FIGURE 5.15-1

3. Project Phasing

Village 8 West is anticipated to develop in five major phases. The order in which the facilities will develop is not known at this time. At the time the SAMP is prepared for the project, more detailed information on the project phasing will be presented. A description of the water facilities required to serve each individual phases of the project is described below. Figure 3-18, Development Phases, graphically shows the proposed phasing of the project.

a. Orange Phase

The Orange phase is mostly in the 711 Zone with a few lots in the 624 Zone. The 711 Zone development would be served by connecting to the existing 12-inch line in La Media Road and extending 711 Zone lines to the development area. The 624 Zone portion of the project would require a temporary 711/624 Zone pressure reducing station until the other phases of the SPA and associated infrastructure would be completed.

b. Blue Phase

The Blue phase is located in the southwest portion of the project. This area is primarily within the 624 Zone and would be served by constructing the off-site 12-inch line in La Media Road and constructing the temporary 711/624 Zone pressure reducing station until the other phases of the SPA and associated infrastructure would be completed.

c. Purple Phase

The Purple phase is located in the southeast corner of the project. Development in this area is within the 624 Zone and requires looped connections to the 624 Zone east of the project. If the 624 Zone has not been developed east of the project, the 711 Zone system to the north would be expanded and the temporary 711/624 Zone pressure reducing stations would be required.

d. Yellow Phase

The Yellow phase is located in the north portion of the project. To provide water service to this area of the project, 8-inch and 12-inch water lines would need to be constructed. These lines would include extending a 12-inch 711 Zone line off site to the north to connect to the existing 12-inch line in La Media Road. A temporary 711/624 Zone pressure reducing station would be required to supply the proposed 624 Zone development to be constructed during this phase.

e. Green Phase

The Green phase is located on the eastern side of the project site. This area of the project would be served by connecting to the off-site 12-inch water line in La Media Road and existing 12-inch line at the intersection of main street and Magdalena Avenue and extending a 12-inch 711 Zone line to the development area. The southern portion of this phase is within the 624 Zone and would require a temporary 711/624 Zone pressure reducing station if the 624 Zone system has not been developed east of the project.

The proposed pipeline 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 contamination of groundwater and erosion. These issues have been addressed as part of the construction analyses presented in Sections 5.4 Air Quality,

5.6 Biological Resources, 5.7 Cultural Resources, 5.11 Hydrology and Water Quality, and 5.5 Noise of this EIR. Mitigation measures are proposed in these sections to reduce construction impacts to a less than significant level with the exception of air quality. Air pollutant emissions from installation of infrastructure are included in the trenching phase of construction in Table 5.4-6, Maximum Daily Emissions per Construction Activity. As shown in this table, all air pollutant emissions associated with the installation of the underground utilities would be less than significant. Therefore, installation of the water infrastructure required by buildout of Village 8 West would not result in significant environmental effects and this impact would be less than significant.

B. Threshold 2: Have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.

Water service for the project would be provided by the OWD. Annexation into Improvement Districts 22 and 27 would be required prior to water service being provided. The OWD has existing and planned facilities in the vicinity of the project and water service can be provided by expanding the existing system, as detailed in the overview of water service (Appendix K2).

Water demand and required facilities for the project were determined based on the October 2008 OWD Water Resources Master Plan. This document was amended in November 2010 to include the current Village 8 West development plan. Table 5.15-6 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 of Chula Vista utilizes the California Fire Code for determining required fire flows and durations for new development. The fire code utilizes a number of factors to determine the required fire flow for a building. These factors include building footprint, building construction materials, and whether or not the building has sprinklers. Since this level of detail is not known at the planning stage, this report uses the fire flow requirements utilized by the OWD in master planning storage, transmission, and distribution facilities throughout the OWD. The projected water demand for Village 8 West is summarized in Table 5.15-7. Additional details, such as the projected water demand for each planning area, are available in the overview of water service (Appendix K2). As shown in Table 5.15-7, the total estimated potable water use is approximately 0.79 mgd, or 881 acre feet per year.

Table 5.15-6 Water Demand Factors

Land Use Designation	Unit Domestic Demand	Required Fire Flow (gpm)	Required Fire Flow Duration Hours
Single-family Medium (1-3 DU/AC)	850 gpd/unit	1,500[(1)]	2
Single-family High (3-8 DU/AC)	500 gpd/unit	1,500[(1)]	2
Multi-family (>8 DU/AC)	255 gpd/unit[(2)]	2,500	2
Schools	1,428 gpd/acre[(2)]	5,000	4
Commercial	0.14 gpd/square feet	3,500	3
Community Purpose Facility	714 gpd/acre[(2)]	3,500	3
Irrigation (Recycled Water)	2,155 gpd/acre	---	---

(1) Applies to single-family homes that are less than 3,600 square feet.
(2) Demand factors for these land uses are from Table 4-27 of the OWD Master Plan, assuming the use of recycled water.
gpd = gallons per day; DU/AC = dwelling unit per acre
Source: Dexter Wilson Engineering, Inc. 2010a

Table 5.15-7 Village 8 West Potable Water Demand

Planning Area	Land Use	Quantity	Unit Demand	Total Demand (gpd)
711 Zone				
B	Multi-family	25 units	255 gpd/unit	6,375
C	Commercial	36,000 acre	0.14 gpd/sf	5,040
	Multi-family	130 units	255 gpd/unit	33,150
D	Schools	21.0 acre	1,428 gpd/acre	29,990
G	Parks	3.1 acre	--- (1)	1,230
H-1	Commercial	144,000 sf	0.14 gpd/sf	20,160
	Multi-family	33 units	255 gpd/unit	8,415
H-2	Commercial	12,000 sf	0.14 gpd/sf	1,680
L	Commercial	65,000 sf	0.14 gpd/sf	9,100
	Multi-family	448 units	255 gpd/unit	114,240
M	Multi-family	153 units	255 gpd/unit	39,015
N	Single-family	117 units	500 gpd/unit	58,500
			Subtotal 711 Zone	326,895
624 Zone				
A	Park	17.4 acre	--- (1)	15,730
E	Multi-family	95 units	255 gpd/unit	24,225
F	Commercial	25,000 sf	0.14 gpd/sf	3,500
	Multi-family	103 units	255 gpd/unit	26,265
I	Multi-family	122 units	255 gpd/unit	31,110
J	Commercial	18,000 sf	0.14 gpd/sf	2,520
	Multi-family	160 units	255 gpd/unit	40,800
O	Multi-family	160 units	255 gpd/unit	40,800
P	Single-family	124 units	500 gpd/unit	62,000
Q	Single-family	160 units	500 gpd/unit	80,000
R	Community Purpose Facility	5.8 acre	714 gpd/acre	4,140
S	School	11.4 acre	1,428 gpd/acre	16,280
T	Park	7.5 acre	--- (1)	2,670
U	Single-family	130 units	500 gpd/unit	65,000
V	Single-family	90 units	500 gpd/unit	45,000
			Subtotal 624 Zone	459,680
			Total	**786,575**

(1) Planning Areas A, G and T will be irrigated with recycled water. See Appendix K1 for potable water estimates for the park sites.

gpd = gallons per day; sf = square feet

Source: Dexter Wilson Engineering Inc. 2010a

The Village 8 West SPA Plan allows intensity transfer between planning areas provided that the overall target intensity of 2,050 residential units and 300,000 square feet of non-residential floor area is not exceeded. A request for an intensity 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 an updated technical study (in this case a water study) that ensures adequate infrastructure exists to accommodate the transfer and that the target intensity is not exceeded. This provision in the SPA Plan ensures that while water demand by planning area may shift, the total water demand for Village 8 West would not exceed 786,575 gpd. A mitigation measure has been added to enforce this SPA provision.

As previously discussed, the OWD currently relies on the SDCWA for its water supply, which relies on the MWD for 70 percent to 95 percent of its water supply. Therefore, the water supply overview relied on the MWD, SDCWA, and OWD 2005 UWMPs, all of which are incorporated herein by reference, to ensure that the project would have sufficient water supplies to meet demand for the project, in conjunction with other planned and future development within the SDCWA service area.

In accordance with SB 610 and SB 221, OWD approved a WSAV in November 2010 for Village 8 West. The WSAV includes, among other information, an identification of existing water supply entitlements, water rights, water services contracts and agreements relevant to the identified water supply needs for the proposed project. The WSAV evaluates water supplies that are or will be available during normal, single-dry and multiple-dry water years during a 20-year projection to meet existing demands, expected demands associated with the project, and reasonably foreseeable planned future water demands served by OWD. The WSAV incorporates by reference the UWMPs and other water resources planning documents of the OWD, SDCWA, and MWD. The WSAV determined that sufficient water supplies are planned for and are intended to be available over a 20-year planning horizon, under normal conditions and in single-dry and multiple-dry water years to meet the projected demand of Village 8 West and the existing and other planned development projects to be served by the OWD.

Additionally, the Chula Vista Landscape Water Conservation Ordinance calls for greater water conservation efforts and more efficient use of water in landscaping. The SPA Plan requires landscaping to comply with this ordinance, and the requirements of the ordinance have been incorporated into the WCP included in the SPA Plan. The 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 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 WCP. The 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 the regional water supply issues and are in various stages of the planning process.

Although the WSAV for the SPA Plan and the water supply and reliability studies from OWD identify adequate water supplies for Village 8 West, the WSAV cannot ensure that water resources will be available when needed. Conditions such as unanticipated drought conditions or delays in providing planned infrastructure would potentially interfere with projected water supply. As stated in the 2005 GPU EIR and 2013 GPA/GDPA SEIR, because a long-term water supply is not assured, increases in water demand would result in a significant impact. Therefore, because there is still no assurance of a long-term supply of water in the future, the increase in water consumption associated with Village 8 West would be significant.

C. Threshold 3: Exceed city threshold standard which seeks to ensure that adequate supplies of quality water, appropriate for intended uses, are available. The standard requires the applicant to request and deliver to the city service availability letters from the appropriate water district for each project; the applicant is required to submit a Water Conservation Plan along with the SPA Plan application; and the project plans shall ensure an adequate supply of water on a long-term basis prior to the development of each Otay Ranch SPA.

The City of Chula Vista requires an applicant to provide service availability letters prior to issuance of a building permit. Individual developers would be required to obtain service availability letters prior to construction of land uses within Village 8 West. In addition, the SPA Plan includes a WCP to address water use during project construction and operation. The WCP provides an analysis of water usage requirements of the project, an overview of mandated water conservation measure, a detailed plan of proposed measures for water conservation, use of recycled water, other means of reducing per capita water consumption from the project, and a program to monitor compliance. The mandatory measures identified in the WCP for residences are as follows:

1. Insulate hot water pipes with 1-inch walled pipe insulation, separate hot and cold water piping.
2. Set the maximum service pressure to 60 pounds per square inch to reduce any leakage present and prevent excessive flow of water from all appliances and fixtures.
3. Install Water Efficient Dishwashers.
4. Install dual flush toilets within the project.
5. Comply with the Chula Vista Landscape Water Conservation Ordinance to reduce outdoor water use. This will include selection of a more drought tolerant plant selection, including less turf area as well as installation of water efficient irrigation systems.

The mandatory measures identified in the WCP for non-residential land uses are as follows:

1. Insulate hot water pipes with 1-inch walled pipe insulation.
2. Comply with Division 5.3 of the California Green Building Standards Code in effect at the time of plan submittal.
3. Install pressure reducing valves.
4. Install dual flush toilets.
5. Install water efficient landscaping.

The project would also 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 WCP, the 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 WCP is estimated to reduce total water demand for the project by 202,505 gpd, which is a 22 percent reduction in estimated water use compared to the usage without the incorporation of the conservation measures. As the project would implement a WCP, it would be consistent with this threshold requirement.

Finally, as discussed above under Threshold 2, 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 for Village 8 West. 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 the project. 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 Village 8 West (see Appendix K2). However, future individual developers within Village 8 West would be required to obtain service availability letters and submit SAMPs for OWD approval in order to ensure that the project is consistent with the city GMO thresholds. Therefore, this impact is potentially significant.

D. Threshold 4: Be inconsistent with General Plan, GDP, or other relevant objectives and policies regarding water supply thereby resulting in a significant physical impact.

Table 5.15-8 evaluates the consistency of the project with the applicable General Plan objectives and Table 5.15-9 evaluates the project's consistency with applicable GDP goals and objectives. As shown in these tables, the project would be consistent with applicable water supply policies.

Table 5.15-8 Project Consistency with Applicable General Plan Water Service Policies

Applicable Policies	Evaluation of Consistency
Objective LUT 62: Require development to consider and plan for careful use of natural and man-made resources and services, and maximize opportunities for conservation while minimizing waste. **Policy LUT 62.1:** Require developments within the East Planning Area to provide resource management plans for water, air quality, recycling, solid waste management, and energy.	**Consistent.** The project is consistent with this General Plan objective and Policy 62.1 because the SPA Plan includes a WCP. The WCP addresses state, federal, and local water conservation requirements as well as on-site water conservation measures and estimated savings.
Objective PFS 2: Increase efficiencies in water use, wastewater generation and its re-use, and handling of storm water runoff throughout the city through use of alternative technologies. **Policy PFS 2.3:** In designing water, wastewater, and drainage facilities, limit the disruption of natural landforms and water bodies. Encourage the use of natural channels that simulate natural drainage ways while protecting property.	**Consistent.** The project is consistent with this objective and Policy PFS 2.3. The proposed water distribution facilities would be placed underground. No new water storage facilities are required for the project.
Objective E 3: Minimize the impacts of growth and development on water supply resources through the efficient use and conservation of water by residents, businesses, and city government. **Policy E 3.2:** Promote the use of low water demand landscaping and drought tolerant plant materials in both existing and new development.	**Consistent.** The project would be consistent with General Plan Policy E 3.2. The SPA Plan includes a WCP to promote water conservation.
Objective H 2: Promote efficient use of water and energy through adopted standards and incentive-based policies to conserve limited resources and reduce long-term operational costs of housing. **Policy H 2.1:** Encourage the efficient use and conservation of water by residents.	**Consistent.** See the analysis for Objective E 3.

Table 5.15-8 Project Consistency with Applicable General Plan Water Service Policies (continued)

Applicable Policies	Evaluation of Consistency
Objective GM 1: Concurrent public facilities and services. **Policy GM 1.1:** Maintain a set of quantitative levels of service measures (Growth Management Threshold Standards) as a tool to assess the relative impact of new facility and service demands created by growth and apply those standards as appropriate to approval of discretionary projects.	**Consistent.** The GMO contains a threshold standard to ensure that the supply of water for existing and future residents is available at a level and quality necessary for its intended use. As discussed above, a WSAV has been prepared for the project. The WSAV ensures that adequate water would be available to serve the project. Should conditions change, this General Plan objective includes policies that require detailed forecasting of water demands, updating of threshold standards, and monitoring of development activities to impose limits on the rate of development to ensure water is available commensurate with need. Therefore, the project would be consistent with this objective.
Objective GM 3: Create and preserve vital neighborhoods. **Policy GM 3.3:** Assure that all new and infill development within existing urban areas pays its proportional share of the cost for urban infrastructure and public facilities required to maintain the Threshold Standards, as adopted for its area of impact.	**Consistent.** See analysis for Objective GM 1.

Table 5.15-9 Project Consistency with Applicable GDP Water Service Policies

Applicable Policies	Evaluation of Consistency
Part II, Chapter 5 – Capital Facilities, Section C –Public Facility Plans	
Goal: Ensure an adequate supply of water for build-out of the entire Otay Ranch project area; design the Otay Ranch project area to maximize water conservation. **Objective:** Ensure an adequate supply of water on a long-term basis prior to the development of each phase of the Otay Ranch project area. **Objective:** Ensure infrastructure is constructed concurrently with planned growth, including adequate storage, treatment, and transmission facilities, which are consistent with development phasing goals, objectives and policies, and the Service/Revenue Plan.	**Consistent.** The project is consistent with this objective because it demonstrates that adequate water supply is available. The project would implement a WCP to reduce water use and help ensure long-term water supply. Implementation of mitigation measure 5.15.1-1 would ensure that water service is available to serve development prior to construction. The SPA Plan includes a Water Infrastructure Plan, provided in Appendix K2, which identifies the infrastructure required for each phase of development, and the project as a whole.
Objective: Promote water conservation through increased efficiency in essential uses and use of low water demand landscaping.	**Consistent.** Landscaping on the project site would be required to comply with the City's Landscape Water Conservation Ordinance (CVMC §20.12). Additionally, the site would utilize recycled water to reduce potable water use for landscaping.
Goal: Conserve water during and after construction of Otay Ranch. **Objective:** Reduce CWA water use within Otay Ranch to a level that is 75% of County-wide, 1989 per capita levels. **Objective:** Create a comprehensive framework for the design implementation and maintenance of water conserving measures, both indoor and outdoor. **Objective:** Comply with the water conservation standards and policies of all applicable jurisdictions.	**Consistent.** Development on the project site would be required to adhere to the provisions of the WCP included in the SPA Plan. Development would also be required to comply with all city regulations related to water conservation, such as the City's Landscape Water Conservation Ordinance

5.15.1.4 Level of Significance Prior to Mitigation

A. New Water Treatment Facilities

No significant impacts related to new water treatment facilities have been identified for implementation of the SPA Plan and TM.

B. Long-Term Water Supply and Entitlements

Long-term water supply availability cannot be guaranteed; therefore, the increase in water demand that would result from implementation of the project would be potentially significant. Additionally, the transfer of density between planning areas could have a significant impact to on-site infrastructure.

C. Compliance with City Water Supply Thresholds

Until future developers provide service availability letters and get approved SAMPs from OWD, the project would not be in compliance with the city threshold standards.

D. Consistency with Water Supply Policies

No significant impacts related to consistency with water supply policies have been identified for implementation of the SPA Plan and TM.

5.15.1.5 Mitigation Measures

A. New Water Treatment Facilities

No mitigation measures are required.

B. Long-Term Water Supply and Entitlements

The WSAV verifies that the OWD has adequate water supply for the project. Additionally, the project would comply with the Chula Vista Landscape Water Conservation Ordinance, implement a WCP, and utilize recycled water to reduce water demand. However, no mitigation measures are available to guarantee a long-term water supply would be available to serve the project. The following mitigation measure reduces impacts related to density transfers.

5.15.1-1 **Density Transfer Technical Report.** Prior to design review approval in accordance with the Intensity Transfer provision in the Village 8 West SPA, the applicant shall provide an update to the Overview of Water Service for Otay Ranch Village 8 West (Dexter Wilson Engineering, Inc. 2010) with each proposed project requesting an intensity transfer. The 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.

C. Compliance with City Water Supply Thresholds

5.15.1-2 **Service Availability Letters.** Prior to approval of each final map, the applicant shall request and obtain a service availability letter from the Otay Water District and submit the letter to the City of Chula Vista.

5.15.1-3 **Subarea Master Plan Preparation.** Prior to approval of the first final map, the applicant shall provide a Subarea Master Plan to the Otay Water District. Water facilities improvements shall be financed or installed on the site and off the site in accordance with the fees and phasing in the approved Public Facilities Finance Plan and Subarea Master Plan. The Subarea Master Plan shall include, but shall not be limited to:

i. Existing pipeline locations, size, and capacity;
ii. The proposed points of connection and system;
iii. The estimated water demands and/or sewer flow calculations;
iv. Governing fire department's flow requirements (flow rate, duration, hydrant spacing, etc);
v. Agency Master Plan;
vi. Agency's planning criteria (see Sections 4.1 through 4.3 of the Water Agencies Standards);
vii. Water quality maintenance; and
viii. Size of the system and number of lots to be served.

5.15.1-4 **Subarea Master Plan Approval.** Prior to approval of the first final map, the applicant shall obtain Otay Water District's approval of the Subarea Master Plan for potable water. Any on-site and off-site facilities identified in the Subarea Master Plan required to serve a final mapped area shall be secured or constructed by the applicant prior to the approval of the final map and in accordance with the phasing in the Public Facilities Finance Plan.

D. Consistency with Water Supply Policies

No mitigation measures are required.

5.15.1.6 Level of Significance After Mitigation

A. New Water Treatment Facilities

Impacts would be less than significant without mitigation.

B. Long-Term Water Supply and Entitlements

Mitigation measure 5.15.1-1 would reduce impacts related to density transfers to a less than significant level. No mitigation measures are available to guarantee a long-term water supply would be available to serve the project. As such, any increase in water demand would be considered significant. Therefore, impacts would be significant and unavoidable.

C. Compliance with City Water Supply Thresholds

With implementation of mitigation measures 5.15.1-2 through 5.15.1-4 identified above, impacts related to compliance with city thresholds would be mitigated to less than significant.

D. Consistency with Water Supply Policies

Impacts would be less than significant without mitigation.

5.15.2 Wastewater

5.15.2.1 Existing Conditions

A. Regulatory Framework

1. Local

a. City of Chula Vista General Plan

The Chula Vista General Plan recognizes that to ensure adequate and reliable sewer service and facilities, services need to be maintained and expanded as the city population grows. 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 demonstrated to be out of compliance with applicable threshold standards for wastewater service.

b. Wastewater Master Plan

The Chula Vista Wastewater Master Plan was adopted in May 2005 for the purpose of evaluating the capacity of the sewerage system, assessing the condition of existing pump station facilities, developing a CIP for rehabilitation and expansion of the collection system, and recommendation of a revised capacity charge. The 20-year CIP includes the recommended system improvements to address existing and projected demand at build out. Future city flow estimates, based on 2005 growth projections, indicate that the city would exceed its existing (or increased to 20.870 mgd) share in the City of San Diego Metropolitan Wastewater Department Sewerage System (Metro system) by 2010. 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 future sewage capacity acquisitions to allow for the implementation of the Chula Vista General Plan, as adopted in 2005. 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 five 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 under the Wastewater Master Plan are based on the Chula Vista Subdivision Manual Section 3-300. Recommended wastewater unit generation rates for use in design of sewer improvements are shown in Table 5.15-10.

Table 5.15-10 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 2005c	

c. 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 sewer and other public services. The preparation of the PFFP is required in conjunction with the SPA Plan 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, 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 19.09.040G specifically requires that "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 the San Diego Metropolitan Sewer Authority 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 their ability to accommodate the forecast and continuing growth, or the City Engineering Department staff shall gather the necessary data. The information provided to the GMO must include the following:

- Amount of current capacity now used or committed;
- Ability of affected facilities to absorb forecast growth;
- Evaluation of funding and site availability for projected new facilities;
- Other relevant information.

The development (growth) forecast and authority response letters are to be provided to the GMOC for inclusion in its review. Section 19.09 also requires a PFFP and the demonstration that utilities, such as sewer services, meet the GMOC quality of life threshold standards. The analysis of sewer services provided in this section, along with the PFFP are intended to ensure funding for any needed expansion of sewers and to confirm that wastewater services will be provided commensurate with development and demand.

d. City of Chula Vista Municipal Code, 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 provides that the fees are to be collected by the City for properties to be served by the Salt Creek Interceptor.

B. Existing Sewer Service

The City of Chula Vista operates and maintains it 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) the Point Loma Wastewater Treatment Plant, 2) the Southbay Water Reclamation Plant, and 3) the 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 the Otay Ranch area will eventually be conveyed to the Salt Creek Sewer Interceptor that discharges into the Metro system. The wastewater would ultimately be treated by the City of San Diego at the Point Loma Wastewater Treatment Plant. The Point Loma Wastewater Treatment Plant currently treats approximately 180 million gallons of wastewater each day for the City of San Diego and 15 other cities and districts in the region, and has a maximum daily treatment capacity of 240 million gallons.

Chula Vista has wastewater treatment capacity rights to 20.864 mgd in the Metro system. According to GMOC's 2012 Annual Report, Chula Vista generated an average flow of 16.219 mgd in fiscal year 2010; therefore, it has remaining capacity of approximately 4.645 mgd. According to the Chula Vista Wastewater Master Plan, Chula Vista would require 5.358 mgd of additional 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 amendments have been adopted since 2005 to accommodate increased development capacities in some areas, including Otay Ranch. The General Plan was recently amended to accommodate an additional 494 homes in Village 8 West compared to 2005 General Plan projections.

The Salt Creek Interceptor Technical Sewer Study for the South Otay Ranch, prepared by Atkins (formerly PBS&J) in November 2010, specifically looked at the impact of the updates to the General Plan growth projection since approval of the 2005 General Plan, including Village 8 West. The Salt Creek Interceptor Technical Sewer Study determined the City would need to acquire an additional 11.684 mgd of capacity above current capacity rights. The City may acquire rights for this additional capacity in the Metro system through negotiations with the City of San Diego, but the City of Chula Vista is also evaluating the 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. Building permits will be issued only if the City Engineer had determined that adequate sewer capacity exists.

Village 8 West is located 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 areas in San Diego County. At the location where the Salt Creek Interceptor passes south of Village 8 West the line is 36 inches in diameter. There are no existing sewer facilities within Village 8 West but facilities exist in Village 2 and Village 7.

5.15.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, the project would result in a significant impact to wastewater services if it would:

- **Threshold 1:** 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 providers existing commitments.
- **Threshold 2:** Require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of would cause significant environmental effects.
- **Threshold 3:** Generate sewage flows and volumes that exceed City Engineering Standards as set forth in the Subdivision Manual.
- **Threshold 4:** Be inconsistent with the General Plan, GDP or other relevant objectives and policies regarding wastewater thereby resulting in a significant physical impact.

5.15.2.3 Impact Analysis

A. Threshold 1: 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 providers existing commitments.

Sewer service for the project will be provided by the City of Chula Vista. Village 8 West is within the Salt Creek sewer basin. The Salt Creek Interceptor was constructed to serve regional development in the Otay Ranch area, and is located approximately 1,500 feet 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 L. The project's sewer generation according to proposed land uses is shown in Table 5.15-11. As shown in Table 5.15-11, the projected average sewer flow for the project is 0.55 mgd. The estimated peak sewage flow is 1.07 mgd, which is equal to 2,074.4 equivalent dwelling units. Converting the proposed land uses to equivalent dwelling units create a standard growth projection for utility demand that can easily be compared to growth projections for Village 8 West in other documents.

Table 5.15-11 Village 8 West Projected Sewage Flows

Land Use	Quantity	Unit Flow	Total Flow (gpd)
Single-family	621 units	265 gpd/unit	164,570
Multi-family	1,429 units	199 gpd/unit	284,370
School – Middle	1,200 students	20 gpd/each	24,000
School – Elementary	800 students	15 gpd/each	12,000
Commercial	14.5 acre	2,500 gpd/acre	36,250
Community Purpose Facility	5.8 acre	2,500 gpd/acre	14,500
Parks	28.0 acre	500 gpd/acre	14,000
Total			549,700
gpd = gallons per day Source: Dexter Wilson Engineering, Inc. 2010b			

The Village 8 West SPA allows intensity transfer between planning areas provided that the overall target intensity of 2,050 residential units and 300,000 square feet of non-residential floor area is not exceeded. A request for an intensity 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 ensure adequate infrastructure exists to accommodate the transfer and that the target intensity is not exceeded. This provision in the SPA Plan ensures that while sewerage generation by planning area may shift, the total sewerage generation for Village 8 West would not exceed 549,700 gpd. A mitigation measure has been added to enforce this provision.

Chula Vista has wastewater treatment capacity rights of 20.864 mgd in the Metro system. According to the GMOC 2012 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 adequate capacity to serve the project's direct impact on wastewater demand. However, like other properties in the area, the proposed intensity of development in the SPA Plan has increased from what was accounted for in the Wastewater Master Plan projections and would contribute to a regional increase in wastewater generation. According to the November 2010 Salt Creek Interceptor

Technical Sewer Study, the City would need to acquire an additional 11.684 mgd of capacity above current capacity rights to serve the estimated buildout of the city by 2030 under the current General Plan, including implementation of the project.

Development of Village 8 West would require 0.55 mgd of treatment capacity. The increase of 0.55 mgd is the portion of the city's estimated 11.684 mgd capacity requirement that is attributable to Village 8 West. With a limited amount of treatment capacity remaining, the City is working on a variety of alternatives that would provide additional treatment capacity in order to serve all of the anticipated development within city limits. Building permits will be issued only if the City Engineer had determined that adequate sewer capacity exists.

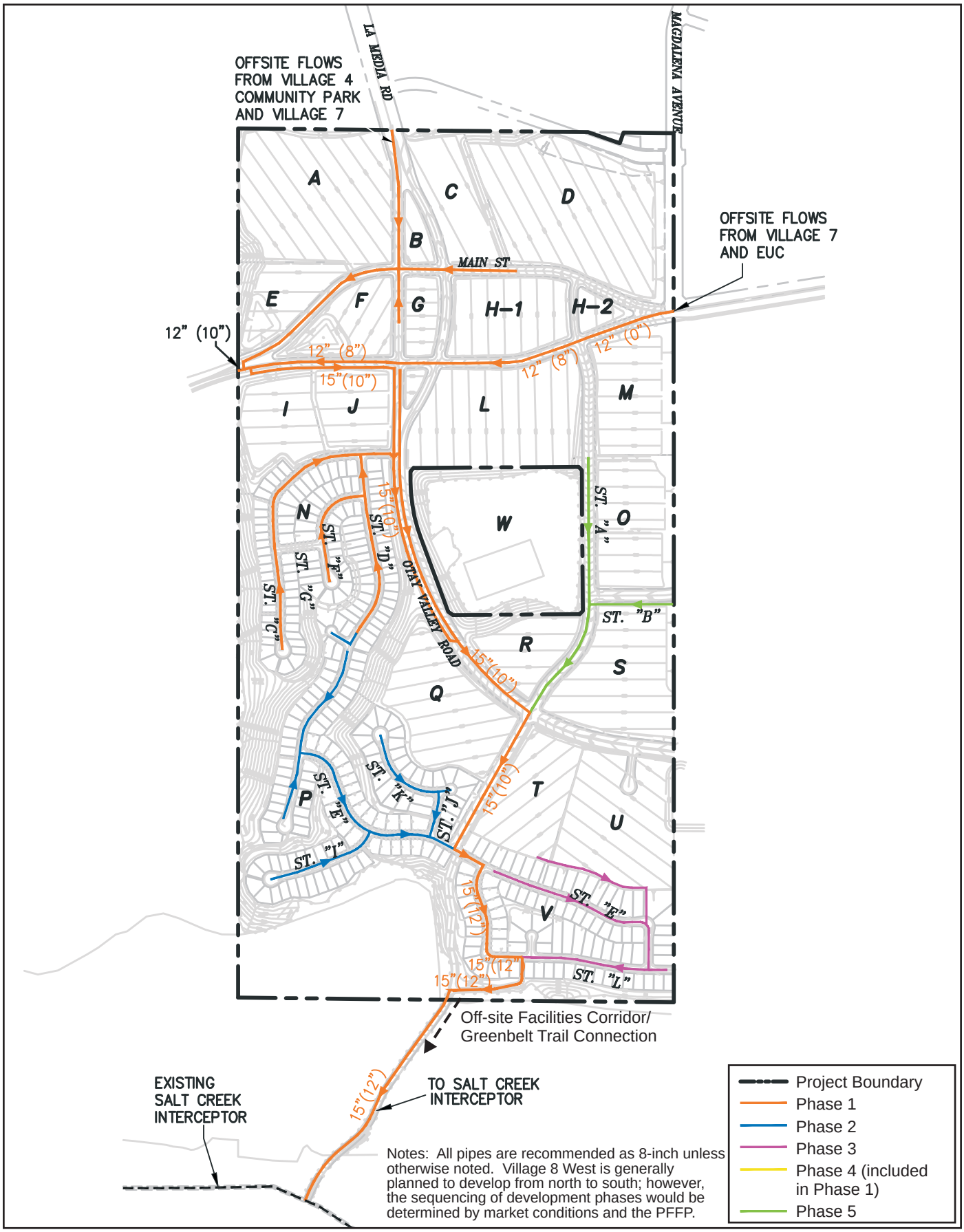
The Salt Creek Interceptor Technical Sewer Study also concluded that certain sections of the Salt Creek Interceptor may require upgrades at ultimate buildout. However, these sections are upstream of the project site and the study determined that the projected development of Village 8 West would not exceed the capacity of the Salt Creek Interceptor or trigger the need for any upgrades. The total equivalent dwelling units proposed for the project in the SPA Plan and TM (2,074.4 equivalent dwelling units) is less than what was estimated in the Salt Creek Interceptor Technical Study (2,242.8 equivalent dwelling units). Therefore, the development proposed in the project would not exceed the capacity of the Salt Creek Interceptor.

The approximately 549,700 gpd generated by the project is within the city's remaining capacity of 4.664 mgd. However, the project would be phased over a period of up to 20 years. The city's sewer system would potentially reach capacity during this time. If adequate sewer facilities are not provided concurrently with demand, a significant impact would occur.

B. Threshold 2: Require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of 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 as part of development of Village 8 West. The on-site sewer system would consist of 8- to 15-inch diameter pipes, depending on the projected flows, available grade, and anticipated land use. Several currently planned on-site sewer lines may also need to be extended during final engineering to accommodate development of the individual blocks at multiple or alternative connection points. The proposed system is described in greater detail under Threshold 3 below. Figure 3-11, Sewer System, illustrates the location of the proposed on-site sewer system. The proposed phasing of the sewer system is provided in Figure 5.15-2.

The sewer pipeline would be installed using conventional construction practices, either open trench excavation or a boring and jacking method. Installation of on- and off-site site sewer lines has the potential to generate vehicle and equipment emissions and dust, increase noise levels, impact undiscovered cultural resources, affect biologically sensitive habitats, contaminate groundwater, and cause erosion. These issues have been addressed as part of the construction analyses presented in Sections 5.4 Air Quality, 5.6 Biological Resources, 5.7 Cultural Resources, 5.11 Hydrology and Water Quality, and 5.5 Noise. Mitigation measures are proposed in these sections to reduce construction impacts to a less than significant level, with exception of air quality emissions from grading. Air pollutant emissions from installation of infrastructure are included in the trenching phase of construction in Table 5.4-6, Maximum Daily Emissions per Construction Activity. As shown in this table, all air pollutant emissions associated with installation of the underground utilities would be less than significant.



Source: Dexter Wilson Engineering 2010

0 400 800

Feet

N

SEWER INFRASTRUCTURE PHASES
FIGURE 5.15-2

The proposed project 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. 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 facilities 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 facilities may occur.

C. Threshold 3: 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.

The proposed sewer facility improvements that would be required to serve Village 8 West were developed by Dexter Wilson Engineering, Inc. and are provided in Appendix L. Sewer facility improvements required to serve Village 8 West include on-site gravity sewer lines, including a temporary deep sewer line, and an off-site connection to the Salt Creek Interceptor. Figure 3-11, Sewer System, shows the conceptual sewer facilities. These facilities are summarized below.

The southern portion of the site would be served by constructing gravity sewer pipelines to convey flows south to a single point of connection with the Salt Creek Interceptor. This would require approximately 2,000 feet of off-site 15-inch gravity sewer pipelines that would be located within the right-of-way for the trail connection to the Otay Valley Regional Park. The northern portion of Village 8 West would drain by gravity to the western boundary of the project site. A deep sewer line is proposed to convey flows to the south to the gravity sewer system that would serve the project.

The maximum depth of cover over the sewer is approximately 50 feet. The deep gravity sewer would be sized to convey on-site flows plus off-site flows from the Village 4 community park, Village 7, and the EUC, as described below.

The SPA Plan has identified five phases of development. The order in which these phases will occur is not yet known. The sewer service report for Village 8 West describes the sewer facilities that would be required to serve each phase, assuming development of each phase would occurs independent of the other project phases. Figure 3-18, Development Phases, graphically shows the proposed phasing of the project. The required improvements are summarized below. Prior to the approval of the final map for each phase, the sewer improvements described below would be required to be installed.

The Orange phase is located in the southwest corner of the site. This area of the site can be served by constructing 8-inch through 15-inch gravity sewer lines. These lines will collect flows and convey them south through Planning Area V and off site to the connection with the Salt Creek Interceptor.

The Blue phase is located in the southwest portion of the site. To serve this area, gravity sewer lines would need to be installed in La Media Road, through Planning Area V, and off site to the connection with the Salt Creek Interceptor.

The Purple phase is located in the southwest corner of the site. Development in this area can be served by installing 8-inch through 15-inch gravity sewer lines and installing the off-site gravity sewer line to the point of connection with the Salt Creek Interceptor.

The Yellow phase is located in the northern portion of the site. To provide sewer service to this area of the site, gravity sewer lines ranging from 8-inch to 15-inch will need to be installed. This includes extending a sewer line to the northern project boundary to serve the Village 4 community park and a temporary deep gravity sewer line to divert flows from the northern portion of the project to the south. Development of this phase would also require the installation of the gravity system in La Media Road, through Planning Area V, and off site to a connection with the Salt Creek Interceptor.

The Green phase is located on the eastern side of the site. This area of the site can be served by installing 8-inch through 15-inch gravity sewer lines. These lines will convey flow southerly through planning Area V and off site to the connection with the Salt Creek Interceptor.

The on-site sewer system in the northern portion of Village 8 West would also be sized to accommodate flows from the Village 4 community park, a portion of Village 7, and a portion of the EUC. Flows from existing development in Village 7 and the EUC are currently being diverted to the Poggi Basin. The gravity collection system for Village 8 West would include a stub to the northern project boundary in La Media Road to allow the Village 4 community park site and a portion of Village 7 to be connected to this system. The Village 4 community park is located at the northern boundary of Village 8 West. Average flows from the portion of the park to the north of Village 8 West are estimated to be 22,100 gpd. The proposed on-site gravity sewer line in La Media Road would be extended to the northern boundary of the site to accommodate these flows. Development east of Magdalena Avenue in Village 7, which would be conveyed to Village 8 West, generates an estimated 120,894 gpd. A maximum average flow of 660,297 gpd would be conveyed from the EUC to the Village 8 West sewer system. Flow from Village 7 and the EUC would connect to the Village 8 West system at the intersection of Main Street and Magdalena Avenue.

Detailed calculations for the on-site sewer system are provided in the Overview of Sewer Service, contained in Appendix L of this EIR. Since Village 8 West has the potential to develop in a variety of ways, flow projections are based on the maximum buildout. Several on-site lines may need to be relocated (with respect to the existing preliminary plan) during final engineering to accommodate development of the individual blocks at multiple or alternative connection points.

The design of the proposed on-site system would be required to comply with the existing Subdivision Manual, Section 3 (General Design Criteria) and would be subject to review by the City's Engineering Department. Compliance with regulatory design criteria would ensure that on-site lines would not exceed 75 percent of pipe capacity for pipes greater than 12 inches in diameter or 50 percent for pipes 12 inches or less in diameter, including projected flows for the off-site developments that would be served by Village 8 West infrastructure. Therefore, the project would be less than significant with respect to this threshold.

D. Threshold 4: Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding wastewater, thereby resulting in a significant physical impact.

Table 5.15-12 evaluated the project's consistency with the General Plan policies related to wastewater and Table 5.15-13 evaluated the project's consistency with applicable GDP policies. The evaluations demonstrate that the project would be consistent with applicable General Plan and GDP policies.

Table 5.15-12 Project Consistency with Applicable General Plan Sewer Service Policies

Applicable Policies	Evaluation of Consistency
Objective PFS 2: Increase efficiencies in water use, wastewater generation and its re-use, and handling of storm water runoff throughout the city through use of alternative technologies. **Policy PFS 2.3:** In designing water, wastewater, and drainage facilities, limit the disruption of natural landforms and water bodies. Encourage the use of natural channels that simulate natural drainage ways while protecting property.	**Consistent.** The proposed sewer infrastructure would be placed underground. No new storage facilities or other above ground facilities would be required. Refer to the analysis of the sewer system's impact under Threshold 2. Installation of the facilities would not significantly disrupt any natural landforms or water bodies.
Objective PFS 4: Provide long-term wastewater treatment capacity to meet the needs of existing and new development in Chula Vista.	**Consistent.** Project development would be consistent with the growth anticipated for Village 8 West and would not result in a determination by the City of Chula Vista or San Diego Metropolitan Sewer Authority that it has inadequate capacity to serve the project's demand in addition to the providers' existing commitments. The PFFP for Village 8 West identifies the appropriate funding mechanisms to support the City's provision of public services, including a future expansion of waste water treatment capacity.
Objective GM 1: Concurrent public facilities and services.	**Consistent.** Development in Village 8 West would be subject to this policy. This objective provides the authority to impose limits on the rate of development if adequate sewer treatment facilities would not be available.
Objective GM 3: Create and preserve vital neighborhoods. **Policy GM 3.3:** Assure that all new and infill development within existing urban areas pays its proportional share of the cost for urban infrastructure and public facilities required to maintain the threshold standards, as adopted for its area of impact.	**Consistent.** See analysis for Objective GM 1.

Table 5.15-13 Project Consistency with Applicable GDP Sewer Service Policies

Applicable Policies	Evaluation of Consistency
Part II, Chapter 5 – Capital Facilities, Section C –Public Facility Plans	
Goal: Provide a healthful and sanitary sewerage collection and disposal system for the residents of Otay Ranch and the region, including a system designed and constructed to accommodate the use of reclaimed water. **Objective:** The on-going planning, management and development of sewerage conveyance, treatment and disposal facilities to adequately meet future demands. **Policy:** Land use planning will be coordinated with sewerage system planning, which is the responsibility of facility providers. **Policy:** Ensure that the Otay Ranch project will not use all available regional facility capacity, such as sewer, water and roads, and thus compromise the ability of other South County and East County parcels to develop as planned. **Objective:** Assure that wastewater treatment plans are consistent with sewerage master plans.	**Consistent.** A sewer plan was developed for project, provided as Appendix L, which includes the infrastructure required to serve the entire project site, as well as by individual phase. The infrastructure plan was developed based on the City's Wastewater Master Plan, which was updated by the November 2010 Salt Creek Interceptor Technical Sewer Study for the South Otay Ranch. The updated Wastewater Master Plan factored Village 8 West into the city wastewater demand. See also the analysis of impact on the city sewer system under Thresholds 1, 2 and 3. The City currently has the capacity to serve development of Village 8 West and has the authority through the General Plan to withhold permits in the future if adequate sewer capacity is not available.

5.15.2.4 Level of Significance Prior to Mitigation

A. Adequate Wastewater Facilities

A significant impact would occur if adequate wastewater facilities are not provided concurrently with new demand. Additionally, the transfer of density between planning areas could have a significant impact on on-site infrastructure.

B. New Wastewater Treatment Facilities

With respect to conveyance lines, no significant impacts have been identified for implementation of the SPA Plan and TM. However, the proposed project would require sewerage treatment 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 is unknown and the development of additional capacity may require construction of new treatment facilities. As the location and scope of construction for any newly developed treatment facilities is unknown, the development of treatment capacity beyond the City's existing and allocated capacity may result in a potentially significant environmental impact, even understanding that such projects would likely be subject to environmental review.

C. Consistency with City Engineering Standards

No significant impacts City engineering standards have been identified for implementation of the SPA Plan and TM.

D. Consistency with Wastewater Policies

No significant impacts related to consistency with wastewater policies have been identified for implementation of the SPA Plan and TM.

5.15.2.5 Mitigation Measures

A. Adequate Wastewater Facilities

5.15.2-1 **Sewer System Improvements.** The applicant shall finance or install all on-site and off-site sewer facilities required to serve development in Village 8 West in accordance with the fees and phasing in the approved Public Facilities Finance Plan to the satisfaction of the City Engineer.

5.15.2-2 **Salt Creek Development Impact Fee.** 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. Existing fees are provided in Table 5.15-14.

Table 5.15-14 Salt Creek Interceptor Development Impact Fee

Land Use	EDU Factor	Fee
Single-family Residential	1.0 EDU/unit	$1,330/unit
Multi-family Residential	0.75 EDU/unit	$997.5/unit
Elementary School	0.06 EDU/student	$79.80/student
Junior High School	0.08 EDU/student	$106.4/student
Commercial/Industrial	9.43 EDU/acre	$12,541.9/acre
Community Purpose Facility	9.43 EDU/acre	$12,541.9/acre
Parks	1.89 EDU/acre	$2,513.7/acre
EDU = equivalent dwelling unit Source: Dexter Wilson Engineering Inc. 2010b		

5.15.1-3 **Density Transfer Technical Report.** Prior to design review approval in accordance with the Intensity Transfer provision in the Village 8 West SPA Plan, the applicant shall provide an update to the Overview of Sewer Service for Otay Ranch Village 8 West (Dexter Wilson Engineering, Inc. 2010) with each proposed project requesting an intensity transfer. The technical study shall demonstrate to the satisfaction of the City Engineer that adequate on-site wastewater infrastructure will be available to support the transfer. The transfer of residential density shall be limited by the ability of the on-site sewerage facilities to accommodate flows.

B. New Wastewater Treatment Facilities

No mitigation measures are required for wastewater conveyance facilities in compliance with standards are policies. The means by which additional capacity is obtained from the San Diego Metropolitan Sewer Authority or other sources to support treatment city-wide is unknown at this time.

C. Consistency with City Engineering Standards

No mitigation measures are required.

D. Consistency with Wastewater Policies

No mitigation measures are required.

5.15.2.6 Level of Significance After Mitigation

A. Adequate Wastewater Facilities

With implementation of mitigation measures 5.15.2-1 through 5.15.2-3, no significant impacts with respect to wastewater conveyance facilities would occur and adequate treatment capacity to serve new development within Village 8 West would be ensured through review of available capacity by the City Engineer prior to approval of building permits.

However, the project in combination with foreseeable growth 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 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 new treatment facilities. As

the location and scope of construction for any future expanded or newly developed treatment facilities is unknown, the development of treatment capacity beyond the city's existing and allocated capacity may result in potentially significant and unavoidable impacts associated with construction of new or expanded facilities. This cumulative impact is addressed in Chapter 6.

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.

C. Consistency with City Engineering Standards

Impacts would be less than significant without mitigation.

D. Consistency with Wastewater Policies

Impacts would be less than significant without mitigation.

5.15.3 Solid Waste

5.15.3.1 Existing Conditions

A. Regulatory Framework

1. State

a. California Integrated Waste Management Act of 1989

The Integrated Waste Management Act of 1989 (PRC Section 4000, et.seq.) requires each city and county in California to recycle or divert 50 percent (or as much as feasible) of its current waste stream from landfills by 2000. In 2008, California diverted 60 percent of its solid waste stream in accordance with the Integrated Waste Management Act (CIWMB 2009). The term "integrated waste management" refers to the use of a variety of waste management practices to safely and effectively handle the municipal solid waste stream with a minimum impact on human health and the environment. The Integrated Waste Management Act establishes the following waste management priorities: source reduction, recycling, composting, energy recovery, deposits in landfills, and household hazardous waste management.

2. Local

a. City of Chula Vista General Plan

Objective PFS 25 of the Public Facilities and Services Element of the Chula Vista General Plan encourages the city to "efficiently handle solid waste disposal throughout the city." The General Plan policies related to solid waste address city-wide methods to manage waste generation, permit transfer stations, promote recycled materials and participate in interjurisdictional efforts to maintain available landfill capacity. As such, the policies are regional in nature and do not specifically address individual developments.

B. Existing Solid Waste Service

The Chula Vista Public Works Department, Environmental Services Division provides guidance in the disposal of solid waste for residences and businesses, recycling, and household hazardous materials disposal. Currently, Allied Waste Management Services is the exclusive solid waste and recycling services provider for Chula Vista's residential, commercial, and industrial waste. The City of Chula Vista Public Works Department, Environmental Services Division also enforces a Special Event Recycling and Solid Waste Management Plan in which a permit for special events requires a plan for litter control before, during, and after a special event (City of Chula Vista 2009b).

The Environmental Services Division also provides a household hazardous waste program at the Public Works Center in which household hazardous materials can be dropped off or picked up for a nominal donation. Household waste collected at the city facility is sent to various locations throughout the United States for treatment and/or recycling. The City has a mandatory construction and demolition recycling program mandating that 90 percent of all inert materials (rock, dirt, concrete, brick, etc.) and 50 percent of all other debris be diverted from disposal (Municipal Code 15.12). Allied Waste provides a construction and demolition debris processing facility to ensure that these materials are separated from trash and recycled material (City of Chula Vista 2009b). Several processing facilities are currently available in Chula Vista: untreated wood and mixed load recycling at Otay Landfill; dirt and rocks, concrete, and asphalt recycling at the Reclaimed Aggregates facility at 855 Energy Way; and concrete and asphalt recycling at the Rimrock CA, LLC facility at 2041 Heritage Road (City of San Diego 2010).

Per the City's franchise agreement with Allied Waste, both the Otay Landfill and the Sycamore Canyon Landfill are City-authorized landfills, in accordance with all applicable laws.

The Otay Landfill, located in Chula Vista, is a private landfill operated by San Diego Landfill Systems that receives the majority of solid waste from the city. Based on permitted daily maximum disposal rates, the Otay Landfill is expected to be in operation until 2028. Once the Otay Landfill is closed, it is anticipated that a portion of the site could be used for a trash transfer facility and/or a material recovery facility where recyclables are prepared for secondary markets. The City has also acquired rights to approximately 30 acres of space at the Otay Landfill for a composting facility when the landfill closes. Continued efforts to expand recycling and to accommodate compostable materials will reduce future waste transfer costs (City of Chula Vista 2007). When the Otay Landfill closes, it is expected that Allied Waste will build a transfer station at the Otay Landfill site to enable trash hauling to Sycamore Canyon or a more distant landfill.

5.15.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, the project would result in a significant impact to solid waste services if it would:

- **Threshold 1:** Would be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
- **Threshold 2:** Does not comply with federal, state, and local statutes and regulations relating to solid waste.
- **Threshold 3:** Be inconsistent with General Plan, GDP, or other relevant objectives and policies regarding solid waste thereby resulting in a significant physical impact.

5.15.3.3 Impact Analysis

A. Threshold 1: Would be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

The Otay Landfill has a total permitted capacity of 62.4 million cubic yards and has a permitted remaining capacity of 33.1 million cubic yards (53 percent capacity). According to the 2013 GPA/GDPA SEIR, buildout of the city under the General Plan would generate a solid waste disposal quantity of 274,063 tons, after which there would be 26.2 million tons of remaining landfill capacity. Based on the city's generation rate of 4.0 pounds per person per day, implementation of the 2013 GPA/GDPA, including Village 8 West, would result in an additional disposal quantity of 22,433 tons above the 2005 General Plan projection. The Otay Landfill has sufficient capacity to accommodate the increased waste disposal. The Otay Landfill is scheduled to close in 2028. However, an existing agreement will permit waste from the city to be transferred to the Sycamore Canyon Landfill upon the closing of the Otay Landfill. There would be no interruption of service (City of Chula Vista 2013).

Since there is sufficient existing and future landfill capacity to accommodate projected development of the GPA/GDPA, impacts associated with insufficient permitted capacity to accommodate solid waste disposal from Village 8 West would be less than significant, consistent with the conclusion of the 2013 GPA/GDPA SEIR.

B. Threshold 2: Does not comply with federal, state, and local statutes and regulations relating to solid waste.

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.

Landfills used for the disposal of Chula Vista's solid waste are legally permitted and consistent with the California Integrated Waste Management Board requirements and other state and federal requirements. Waste collection for Village 8 West commercial and residential land uses would be provided by the City of Chula Vista under its contract agreement with Allied Waste. The Village 8 West 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. Threshold 3: Be inconsistent with General Plan, GDP, or other relevant objectives and policies regarding solid waste thereby resulting in a significant physical impact.

Table 5.15-15 evaluates the consistency of the project with the applicable General Plan policies and Table 5.15-16 evaluates the project's consistency with that applicable GDP goal and objective. As shown in these tables, the project would be consistent with the General Plan and GDP policies that pertain to solid waste.

Table 5.15-15 Project Consistency with Applicable General Plan Solid Waste Policy

Applicable Policies	Evaluation of Consistency
Objective E 8: Minimize the amount of solid waste generated within the General Plan area that requires landfill disposal. **Policy E 8.1**: Promote efforts to reduce waste, minimize the need for additional landfills, and provide economically and environmentally sound resource recovery, management, and disposal facilities. **Policy E 8.3:** Implement source reduction strategies, including curbside recycling, use of small collection facilities for recycling, and composting.	**Consistent.** Waste collection service to Village 8 West would be provided by Allied Waste. Allied Waste also provides a comprehensive recycling program for residential, commercial and industrial generators, including curbside pickup and drop-off facilities within the city.

Table 5.15-16 Project Consistency with Applicable GDP Solid Waste Policy

Applicable Policies	Evaluation of Consistency
Part II, Chapter 5 – Capital Facilities, Section C –Public Facility Plans	
Goal: Provide solid waste facilities and services which emphasize recycling of reusable materials and disposal of remaining solid waste so that the potential adverse impacts to public health are minimized. **Objective:** Reduce the volume of waste to be landfilled by 30% by 1995 and by 50% by 2000.	**Consistent.** During construction, solid waste disposal and recycling of materials will adhere to best management practices and city standards. Curb-side recycling for residents and businesses will be provided to the project site by Allied Waste. Recycling containers will also be provided throughout the Town Center as part of the street furniture program.

5.15.3.4 Level of Significance Prior to Mitigation

No significant impacts related to solid waste have been identified for implementation of the project.

5.15.3.5 Mitigation Measures

No mitigation measures are required.

5.15.3.6 Level of Significance After Mitigation

No significant impacts related to solid waste were identified for implementation of the project.

5.15.4 Recycled Water

5.15.4.1 Existing Conditions

A. Regulatory Framework

1. Chula Vista Landscape Water Conservation Ordinance

Section 20.12.200 of the Landscape Water Conservation Ordinance (Chapter 20.12 of the City Municipal Code) requires that all newly constructed and rehabilitated landscapes for public agencies and private development projects with a landscape area equal to or greater than 2,500 square feet including, but are not limited to, industrial, commercial, cemetery, public, quasi-public, institutional and multi-family residential development shall use recycled water for irrigation purposes where it is available.

B. Existing Recycled Water Service

Historically, the only source of recycled water for the OWD has been the Ralph W. Chapman Water Recycling Facility. This facility currently has a rated capacity of 1.3 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. OWD 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 the OWD obtained capacity rights to 6.0 mgd of recycled water. This additional source of recycled water will allow OWD to meet existing and future recycled water demands. OWD has planned and begun constructing a series of pump stations, reservoirs, and transmission lines to integrate this source of water into the existing recycled water system. A 12-inch pipeline has been constructed beneath La Media Road to the north of Village 8 West and an 8-inch line will be extended to the western and eastern boundaries for future extension by others. Some piping may be required in the northeast corner of Village 8 West per the OWD Master Plan but this line will not provide service to the project.

5.15.4.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, the project would result in a significant impact to recycled water services if it would:

- **Threshold 1:** 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.
- **Threshold 2:** Be inconsistent with General Plan, GDP, or other relevant objectives and policies regarding recycled water thereby resulting in a significant physical impact.

5.15.4.3 Impact Analysis

A. Threshold 1: 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.

The OWD will also be the purveyor of recycled water to the project. The project would use recycled water for landscape irrigation, including medians, parks, open space, and common landscaped areas. The primary benefit of using recycled water is that it would offset potable water demand. Table 5.15-17 summarizes the recycled water demand for Village 8 West. As shown in this table, the estimated recycled water demand is 0.14 mgd.

Recycled water would be provided to the project by extending the 680 Zone recycled water system from the 12-inch line in La Media Road to the north. Some 927 Zone recycled water piping exists in the northeast corner of the project but no 927 Zone service is proposed within Village 8 West. The slopes on the western edge of the project that approach elevations of up to 600 feet will require private booster systems at the landscape connections. Figure 3-10, Recycled Water System, provides the proposed on-site recycled water system.

Table 5.15-17 Village 8 West Recycled Water Demand

Land Use	Area (acres)	Percentage to be Irrigated	Irrigated Acreage	Recycled Water Irrigation Factor (gpd/acre)	Average Recycled Water Demand (gpd)
Multi-family Residential	29.5	15	4.4	2,155	9,480
Open Space Slopes	20.0	100	20.0	2,155	43,100
Schools	32.4	20	6.5	2,155	14,010
Community Purpose Facility	5.8	10	0.6	2,155	1,290
Parks	28.0	100	28.0	2,155	60,340
Mixed Use	42.2	10	4.2	2,155	9,050
Total					137,270

gpd = gallons per day
Source: Dexter Wilson Engineering Inc. 2010a

Installation of on- and off-site recycled water pipelines have the potential to generate vehicle and equipment emissions and dust, increase noise levels, impact undiscovered cultural resources, disturb biological resources, contaminate groundwater, and increase erosion. These issues have been addressed as part of the construction analyses presented in Sections 5.4 Air Quality, 5.6 Biological Resources, 5.7 Cultural Resources, 5.11 Hydrology and Water Quality, and 5.5 Noise of this EIR. Mitigation measures are proposed in these sections to reduce construction impacts to a less than significant level, with exception of air quality impacts related to grading. Air pollutant emissions from installation of infrastructure are included in the trenching phase of construction in Table 5.4-6, Maximum Daily Emissions per Construction Activity. As shown in this table, all air pollutant emissions associated with installation of the underground utilities would be less than significant. Therefore, construction of the recycled water infrastructure required by buildout of the project would not result in significant environmental effects. However, if the proposed recycled water facilities are not constructed, the project would result in an additional impact related to water supply because a greater amount of potable water would be needed. If recycled water facilities are not provided concurrently with demand, a potentially significant impact would occur.

B. Threshold 2: Be inconsistent with General Plan, GDP, or other relevant objectives and policies regarding recycled water thereby resulting in a significant physical impact.

The evaluation in Table 5.15-18 demonstrates that the project would be consistent with General Plan Policy E 3.3. The evaluation in Table 5.15-19 demonstrates that the project would be consistent with applicable GDP goals and objectives. Therefore, this impact would be less than significant.

Table 5.15-18 Project Consistency with Applicable General Plan Recycled Water Policy

Applicable Policies	Evaluation of Consistency
Objective E 3: Minimize the impacts of growth and development on water supply resources through the efficient use and conservation of water by residents, businesses, and city government. **Policy E 3.3:** Where safe and feasible, promote and facilitate the continued use of recycled water in new developments, and explore opportunities for the use of recycled water in redevelopment projects.	**Consistent.** Village 8 West would use recycled water for landscape irrigation, including medians, parks, open space, and common landscaped areas.

Table 5.15-19 Project Consistency with Applicable GDP Recycled Water Policies

Applicable Policies	Evaluation of Consistency
Part II, Chapter 5 – Capital Facilities, Section C – Public Facility Plans	
Goal: Provide a healthful and sanitary sewerage collection and disposal system for the residents of Otay Ranch and the region, including a system designed and constructed to accommodate the use of reclaimed water. **Objective:** Sewage disposal systems should maximize the provision and utilization of reclaimed water. **Goal:** Design a sewerage system which will produce reclaimed water. Ensure a water distribution system will be designed and constructed to use reclaimed water. Construction of a dual system of water supply will be required for all development where reclaimed water is used. **Objective:** Encourage development of public and private recreational uses that could utilize reclaimed water. **Goal:** Conserve water during and after construction of Otay Ranch. **Objective:** Develop an extensive water restoration and recycling system throughout the developed areas of Otay Ranch. **Objective:** Investigate traditional and non-traditional uses for reclaimed water and identify potential restraints for reclaimed water use.	**Consistent.** Village 8 West would use recycled water for landscape irrigation, including medians, parks, open space, and common landscaped areas. The project would connect to the OWD sewer system, which diverts wastewater for treatment at the Ralph W. Chapman Water Recycling Facility.

5.15.4.4 Level of Significance Prior to Mitigation

A. New Recycled Water Facilities

If recycled water facilities are not provided concurrently with demand, a potentially significant impact would occur.

B. Consistency with Recycled Water Policies

No significant impacts related to recycled water polices have been identified for the project.

5.15.4.5 Mitigation Measures

A. New Recycled Water Facilities

5.15.4-1 **Subarea Master Plan Preparation.** Prior to approval of the first final map, the applicant shall provide a Subarea Master Plan to the Otay Water District. Recycled water facilities improvements shall be financed or installed on the site and off the site in accordance with the fees and phasing in the approved Public Facilities Finance Plan and Subarea Master Plan. The Subarea Master Plan shall include, but shall not be limited to the following information related to recycled water:

i. Existing recycled water pipeline locations, size, and capacity;
ii. The proposed points of connection and system;
iii. The estimated recycled water demand calculations; and
iv. Size of the system and number of lots to be served.

5.15.4-2 **Subarea Master Plan Approval.** Prior to approval of the first final map, the applicant shall obtain Otay Water District approval of the Subarea Master Plan for recycled water. Any on-site and off-site facilities identified in the Subarea Master Plan required to serve a final mapped area shall be secured or constructed by the applicant prior to the approval of the final map and in accordance with the phasing in the Public Facilities Finance Plan.

B. Consistency with Recycled Water Policies

No mitigation measures are required.

5.15.4.6 Level of Significance After Mitigation

A. New Recycled Water Facilities

With implementation of mitigation measures 5.15.4-1 and 5.15.4-2, impacts related to recycled water facilities would be less than significant.

B. Consistency with Recycled Water Policies

Impacts would be less than significant without mitigation.

5.15.5 Energy

5.15.5.1 Existing Conditions

A. Regulatory Framework

1. State

a. Leadership in Energy and Environmental Design

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System is a certification program and the nationally accepted benchmark for the design, consumption, and operation of high performance green buildings. LEED provides building owners and operators with the tools they need for an immediate and measurable impact on their building's performance. The LEED green building certification program encourages and accelerates global adoption of sustainable green building and development practices through a suite of rating systems that recognize projects that implement strategies for better environmental and health performance.

b. 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 percent improvement in energy efficiency over the previous 2005 Title 24 standards.

c. California Flex Your Power Campaign

California's intent to reduce energy consumption is also reflected in the established Flex Your Power Campaign. Flex Your Power aims to partner Californians across the state to maximize energy conservation and efficiency. The goal is to get local governments and elected officials to implement innovative energy conservation and efficiency measures in facilities throughout communities. Flex Your Power collaborates with local businesses and community groups to get local business leaders and building owners to sign an Energy Conservation Declaration Action, thereby committing to follow measures that will help "achieve collectively an overall 20 percent reduction in energy use as compared to the same period last summer."

Some of the activities outlined in the declaration include setting building temperatures no cooler than 78 degrees during the months of May through October, reducing lighting levels by 25 percent, closing blinds and shades where windows contribute to indoor temperature increases, and turning off and unplugging all appliances in commercial and residential buildings. Businesses can also benchmark buildings using the Energy Star rating system, which calculates energy use in a building or a group of buildings, providing a tool with which to measure the impact of energy efficiency improvements. This can provide a way to compare energy use in buildings of similar size, shape, location, and operating characteristics. The results (a number on a scale of 1 to 100) determine which buildings will benefit most from energy efficiency upgrades. By increasing energy efficiency in buildings, local governments can save energy immediately.

2. Regional

a. 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. The plan describes SDG&E's recommended resource portfolio and includes a number of policy recommendations that SDG&E believes should be adopted by the California Public Utilities Commission as guidance for future resource planning and procurement. The plan included four different portfolio proposals: one portfolio emphasized on-system fossil generation; one emphasized resources delivered over added transmission; another emphasized resources delivered over added transmission but builds in additional fuel diversity by including an off-system coal based resource in the mix; and the fourth represented SDG&E's recommended balanced portfolio, which included the best elements of each of the prior three.

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 percent Renewable, 53 percent Natural Gas, 14 percent Nuclear, and 19 percent Off-System Resources.

3. Local

a. Climate Change Working Group Measures – Implementation Plans

The Chula Vista Climate Change Working Group recommended seven measures to reduce city-wide GHG emissions that were adopted by the City Council on April 1, 2008. Two of these measures would reduce GHG emissions by reducing electricity and natural gas use. These measures include adopting a green building standard, and providing cost-effective and streamlined mechanism for property owners to implement solar and energy efficiency upgrades.

b. Chula Vista Green Building Standards

The Green Building Standards ordinance includes standards for energy efficiency. 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.

c. City of Chula Vista Municipal Code Section 15.26, Energy Code

Since the adoption of the 2005 GPU EIR, the City adopted its Energy Code, Municipal Code sections 15.26, et seq. The Energy Code incorporates the requirements of the state's 2008 energy code (i.e., Title 24), discussed above, with an additional requirement for increased energy efficiency standards to be applied to most new development within the city (Section 15.26.030). The Energy Code went into effect on February 26, 2010. There are several different volumes of information that make up the Energy Code including:

- **Building Energy Efficiency Standards for Residential and Non-Residential Buildings.** This volume is the actual Energy Code text.

- **Residential Compliance Manual.** This volume is intended to help owners, designers, builders, inspectors, plans examiners, and energy consultants comply with and enforce building energy efficiency standards for low-rise (3 stories or less) residential buildings.
- **Non-Residential Compliance Manual.** This volume is intended to help owners, designers, builders, inspectors, plans examiners, and energy consultants comply with and enforce building energy efficiency standards for non-residential, high-rise residential and hotel/motel buildings.
- **Reference Appendices**. This volume contains the testing standards and methods as well as the background and support information used throughout the Energy Code package.
- Residential Compliance Forms
- Non-Residential Compliance Forms

Energy efficiency reduces energy costs, increases reliability and availability of electricity, improves building occupant comfort, and reduces impacts to the environment. All building permits applied for and submitted after February 2010 are subject to these increased energy efficiency standards. The increase in energy efficiency is a percentage above the 2008 Title 24 energy code and is dependent on Climate Zone and type of development proposed. The project area is located within Climate Zone 7. Generally, new residential and non-residential projects within the project area must be at least 15 percent more energy efficient than the 2008 Title 24 energy code.

d. 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.

e. 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 2001a).

f. 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.

g. 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 integrate sensible and efficient electrical and natural gas facilities into the natural and developed environment (Objective PFS 23).

h. 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.

- **Objective**: Reduce the use of non-renewable energy resources within Otay Ranch below per capita non-renewable energy consumption in San Diego County.

  Policy: Prepare a non-renewable energy-conservation plan for each SPA.

- **Objective**: Provide land use patterns and project features which result in the conservation of non-renewable energy resources.

  Policy: Reduce the reliance for project residents to utilize the automobile, thereby minimizing automobile trips and miles traveled. Encourage the provision of regional mass transit facilities within the Otay Ranch.

B. Existing Energy Demand

As discussed in the 2013 GPA/GDPA SEIR, existing energy use in Chula Vista consists of fixed uses, such as homes and businesses and mobile uses primarily cars and trucks. The discussion of energy demand from each of these uses is provided below.

1. Fixed Uses

a. 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.

Electricity consumption in the San Diego region varies greatly by type of use. In 2010, the city consumed approximately 872 million kilowatt-hours (kWh) (City of Chula Vista 2012e). As mirrored in the county,

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 5.15-20 shows average existing annual consumption rates.

Table 5.15-20 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: City of Chula Vista 2013		

b. 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 general, power plants account for the highest percentage of natural gas consumption in the San Diego region. Residential consumption of natural gas is the second highest percentage, followed by co-generation, commercial consumption, industrial consumption, and natural gas vehicles. In 2010, the city consumed approximately 48 million therms of natural gas (City of Chula Vista 2012e).

Natural gas consumption for this analysis is likewise calculated using rates obtained from CARB's 2011 CalEEMod. Table 5.15-20 shows average existing annual consumption rates for natural gas.

2. 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 percent over the last 20 years. Nearly 26 million registered vehicles operating in California produce about 40 percent of the state's GHG emissions (CEC 2010).

5.15.5.2 Thresholds of Significance

According to the City of Chula Vista, the project would result in a significant impact to energy resources if it would:

- **Threshold 1:** Increase the demand of energy resources to exceed the available supply or cause a need for new and expanded facilities.
- **Threshold 2:** Result in the wasteful, inefficient, or unnecessary use of energy.

- **Threshold 3:** Be inconsistent with General Plan, GDP, or other relevant objectives and policies regarding energy thereby resulting in a significant physical impact.

5.15.5.3 Impact Analysis

A. Threshold 1: Increase the demand of energy resources to exceed the available supply or cause a need for new and expanded facilities.

A significant impact to energy resources would occur if implementation of Village 8 West would result in a demand for energy that would exceed the city's available supply or cause a need for new and expanded facilities. Table 5.15-21 provides for the projected energy demand for Village 8 West. Adjustments to the existing rates of average energy consumption were made in these calculations to reflect improvements in energy-efficient building design due to the 2008 Title 24 updates (which became effective January 2010) and the new Increased Energy Efficiency Standards of the city Energy Code (which became effective February 2010). Combined, these increased energy-efficiency requirements would achieve 30 percent less energy consumption for the project compared to existing average rates of energy consumption. This 30 percent reduction is based on the 15 percent increase in energy efficiency in building design required in the 2008 Energy Code plus an additional 15 percent energy improvement required by the Chula Vista Increased Energy Efficiency Ordinance (City of Chula Vista 2013). As shown in Table 5.15-21, Village 8 West would increase electricity demand by 11.2 million kWh and natural gas demand by 37.3 million cubic feet.

Table 5.15-21 Estimated Annual Increase in Energy Demand above 2005 General Plan Projections

Land Use Type	Maximum Allowable Units/sf	Electricity Consumption Rate	Electricity Demand	Natural Gas Consumption Rate	Natural Gas Demand
Single-family Residential	621 DU	2,127.17 kWh/unit	1.3 million kWh	18,715.32 cf/year	11.6 million cf
Multi-family Residential	1,429 DU	1,297.40 kWh/unit	1.9 million kWh	11,264.29 cf/year	16.1 million cf
Commercial	300,000 sf	4.23 kWh/sf	1.3 million kWh	10.44 cf/sf	3.1 million cf
Schools	1,376,496 sf	1.91 kWh/sf	2.6 million kWh	4.65 cf/sf/year	6.4 million cf
Community Purpose Facility	252,648 sf	2.81 kWh/sf	0.7 million kWh	0.09 cf/sf/year	22,738 cf
Parks	1,215,324 sf	2.81 kWh/sf	3.4 million kWh	0.09 cf/sf/year	0.1 million cf
Total Increase			11.2 million kWh		37.3 million cf

DU = dwelling units; cf = cubic feet; sf = square feet; kWh = kilowatt-hours
Source for Consumption Rates: City of Chula Vista 2013

The Climate Change Working Group's recommendations to reduce energy use are actions for the City to implement and do not include any measures to be implemented by individual projects. However, the project would be required to comply with any ordinances that are adopted as a result of the recommendations. At a minimum, future development in Village 8 West would be required to meet the mandatory energy standards of the Chula Vista Green Building Standards (Ordinance No. 3140), the Chula Vista Energy Code (Municipal Code Sections 15.26, et seq.) and current CCR Titles 24, Part 6 California Energy Code, Part 11 California Green Building Standards, and the Chula Vista Energy Code includes Increased Energy Efficiency Standards (Municipal Code Section 15.26.030). These standards require projects to use 15 to 20 percent less energy than the California Energy Code requires, depending on climate zone. Village 8 West lies within the climate zone that requires 15 percent increased energy efficiency. Additionally, some of the recommendations of the Climate Change Working Group's Adaptation Strategies have been incorporated into the SPA Plan. The SPA Plan encourages shared

parking and parking structures that would minimize expansive paved areas for parking lots, requires streetscaping that would include shade trees and other vegetation, and encourages the use of cool roofs, photovoltaics, and other energy saving materials and features.

To further address energy efficiency, the city also participates in the LEED Rating System and private developments are strongly encouraged to utilize green building practices. The city's adoption of the Green Building Standards Ordinance in 2009 represented early adoption of the now-effective (as of January 1, 2011) California Green Building Standards. Respective to energy efficiency, these standards mandate 20 percent less water use than currently required by the state plumbing code.

The City's Landscape Water Conservation Ordinance calls for greater efforts at water conservation and more efficient use of water in landscaping. Because energy consumption is embodied in the acquisition, treatment and distribution of water resources, less water consumption yields less energy consumption. Development would also be required to comply with the Chula Vista Solar Ready ordinances, which would encourage the use of solar energy.

As required by the Otay Ranch GDP, the SPA Plan includes a non-renewable energy conservation plan addressing preservation of energy resources. This includes the development of land use patterns and project features which reduce the reliance for project residents to utilize the automobile, encourage the use of regional mass transit facilities, and reduce fossil fuel consumption through better siting and design. Application of the city Energy Code, requiring a 15 percent less energy use than the state 2008 Energy Code, would add to the overall decrease in energy use throughout the project area. Therefore, average energy consumed by future occupants of Village 8 West would not be excessive, and would in fact be less than the regional average and less than statewide business-as-usual projections made by the CARB as part of its GHG emissions forecasting.

Although these programs and policies would result in more efficient use of energy, they do not ensure that increased resources will be available when needed. SDG&E has indicated that without an increased import capacity, including a new substation within the Otay Ranch area, future energy needs could not be assured. The new substation would be located in the EUC, south of the east end of Hunte Parkway. Construction of the substation is expected to begin in late 2014 and is expected to be placed in service in late 2015 (SDG&E 2012). 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, consistent with the conclusion of the 2013 GPA/GDPA SEIR, because there is still no assurance of a long-term supply of energy in the future, the increase in energy consumption associated with the project would be significant.

B. Threshold 2: Result in the wasteful, inefficient, or unnecessary use of energy.

As discussed above, future development in Village 8 West 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. Compliance with these policies and the energy conservation plan would ensure that average energy consumed by future occupants of Village 8 West 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, GDP, or other relevant objectives and policies regarding energy thereby resulting in a significant physical impact.

Table 5.15-22 evaluates the consistency of the project with the applicable General Plan policies and Table 5.15-23 evaluates the project's consistency with applicable GDP goals and objectives. As shown in these tables, the project would be consistent with the General Plan and GDP policies that pertain to energy.

Table 5.15-22 Project Consistency with Applicable General Plan Energy Policies

Applicable Policies	Evaluation of Consistency
Objective E 7: Promote energy conservation through the efficient use of energy and through the development of local, non-fossil fuel-based renewable sources of energy. **Policy E 7.1:** Promote development of regulations and building design standards that maximize energy efficiency through appropriate site and building design and through the use of energy-efficient materials, equipment, and appliances.	**Consistent.** As discussed in Section 5.10, Global Climate Change, Village 8 West 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 Plan includes a Non-Renewable Energy Conservation Plan that identifies 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.
Objective H 2: Promote efficient use of water and energy through adopted standards and incentive-based policies to conserve limited resources and reduce long-term operational costs of housing. **Policy H 2.1:** Encourage the efficient use and conservation of water by residents. **Policy H 2.2**: Promote the efficient use of energy.	**Consistent.** See the analysis for Objective E 7.

Table 5.15-23 Project Consistency with Applicable GDP Energy Policies

Applicable Policies	Evaluation of Consistency
Part II, Chapter 6 – Air Quality	
Objective: Minimize fossil fuel emission by conserving energy.	**Consistent.** As discussed in Section 3.3.1(C), Mobility, Village 8 West is designed to provide alternate modes of travel and reduce vehicle trips to reduce fossil fuel emissions.
Part II, Chapter 10 – Resource Protection, Conservation and Management	
Goal: Establish Otay Ranch as a "showcase" for the efficient utilization of energy resources and the use of renewable energy resources. **Objective:** Reduce the use of non-renewable energy resources within Otay Ranch below per capita non-renewable energy consumption in San Diego County. **Policy:** Prepare a non-renewable energy-conservation plan for each SPA.	**Consistent.** The design of Village 8 West encourages walking, bicycling, and public transit use to lower fuel consumption. A non-renewable energy conservation plan is included in the SPA Plan and will contribute to efficient use of resources.

5.15.5.4 Level of Significance Prior to Mitigation

A. Energy Resources

While energy consumed by future occupants of Village 8 West would not be excessive, implementation of the SPA Plan and TM 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. Although development pursuant to the project would be required comply with state and city building and energy codes and regulations related to reduction in energy use, there is no long-term assurance that energy supplies will be available as needed to support subsequent development projects. Therefore, impacts associated with energy consumption would be significant.

B. Wasteful Use of Energy

No significant impacts related to wasteful use of energy have been identified for the project.

C. Consistency with Energy Policies

No significant impacts related to consistency with energy policies have been identified for the project.

5.15.5.5 Mitigation Measures

A. Energy Resources

The 2013 GPA/GDPA SEIR included mitigation measure 5.3.5-1, as identified in the 2005 GPU EIR, to be incorporated into future SPA plans to reduce impacts related to energy use. This plan required continued focus on the Energy Strategy and Action Plan and continued implementation of the Adaptation Strategies to lessen the impacts from energy. The project is consistent with this mitigation measure because it includes a non-renewable energy conservation plan to reduce energy use. Implementation of this plan would reduce average energy consumption, but would not guarantee that future energy supplies will be available as needed to support future development project. No mitigation measures are available that would guarantee future energy supplies.

B. Wasteful Use of Energy

No mitigation measures are required.

C. Consistency with Energy Policies

No mitigation measures are required.

5.15.5.6 Level of Significance After Mitigation

A. Energy Resources

Consistency with 2013 GPA/GDPA SEIR mitigation measure 5.3.5-1, along with the programs and policies identified above, would reduce impacts to energy resources; however, because there is no assurance that energy resources will be available to adequately serve the projected increase in population resulting from the project, impacts would remain significant and unmitigated.

B. Wasteful Use of Energy

Impacts would be less than significant without mitigation.

C. Consistency with Energy Policies

Impacts would be less than significant without mitigation.

This page intentionally left blank.

5.16 Mineral Resources

This section describes the mineral resources setting of Village 8 West and evaluates the potential for changes in mineral resource availability due to implementation of the SPA Plan and TM.

As stated in Section 2.3, Purpose and Legal Authority, this EIR tiers from the 2013 GPA/GDPA SEIR (09-01). The SEIR did not address mineral resources but relies on analysis in the 2005 GPU EIR (EIR 05-01) and the 1993 Program EIR for the GDP (EIR 90-01). Section 3.8, Mineral Resources, of the Otay Ranch GDP Program EIR (90-01) analyzed impacts relating to mineral resources for the entire Otay Ranch and 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. The analysis and discussion of mineral resources contained in the Otay Ranch GDP Program EIR are incorporated by reference. Section 5.16, Mineral Resource, of the 2005 GPU EIR (05-01) concluded that development that complies with the Chula Vista MSCP Subarea Plan would result in a less than significant impact to mineral resource because the open space designations in the MSCP Subarea Plan also protect mineral resource availability. The analysis and discussion of Mineral Resources contained in EIR 05-01 is incorporated by reference.

5.16.1 Existing Conditions

A. Regulatory Framework

1. State

a. California Department of Conservation

The California Department of Conservation is the primary state agency that has jurisdiction over mineral resource protection. The State Mining and Geology Board serves as a regulatory, policy, and appeals body representing the state's interests in conservation of mineral resources and reclamation of lands following surface mining activities. The State Mining and Geology Board operates within the Department of Conservation and is granted certain autonomous responsibilities and obligations under several statutes including the Surface Mining and Reclamation Act of 1975. The Surface Mining and Reclamation Act addresses the protection and subsequent beneficial use of mineral resources considered essential to the economic well-being of the state and to the needs of society while at the same time providing for the reclamation of mined lands to prevent or minimize adverse effects on the environment and to protect public health and safety. If a proposed land use conflicts with the conservation of mineral resources, the Act (Sections 2762 and 2763) requires justification that demonstrates why an approved use would be more important to the region than the loss of the designated mineral resource.

2. Local

a. City of Chula Vista General Plan

The Environmental Element of the Chula Vista General Plan 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.

B. Existing Regional Mineral Resources

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 River Valley 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.

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 8 West, produces quarried rock from a metavolcanic deposit at Rock Mountain, which meets the quality specifications for PCC-grade aggregate. The majority of other land in the area identified as a regionally significant aggregate resource area (MRZ-2) is designated open space in the City's MSCP Preserve. An estimated 200 acres are designated or zoned for other uses. The MRZ-2 area, as depicted in Figure 16-1 of the 2005 GPU EIR, Regionally Significant MRZ-2 Aggregate Resource Areas, includes the southern portion of Village 8 West, which is designated in the SPA for open space and single-family residential development.

5.16.2 Thresholds of Significance

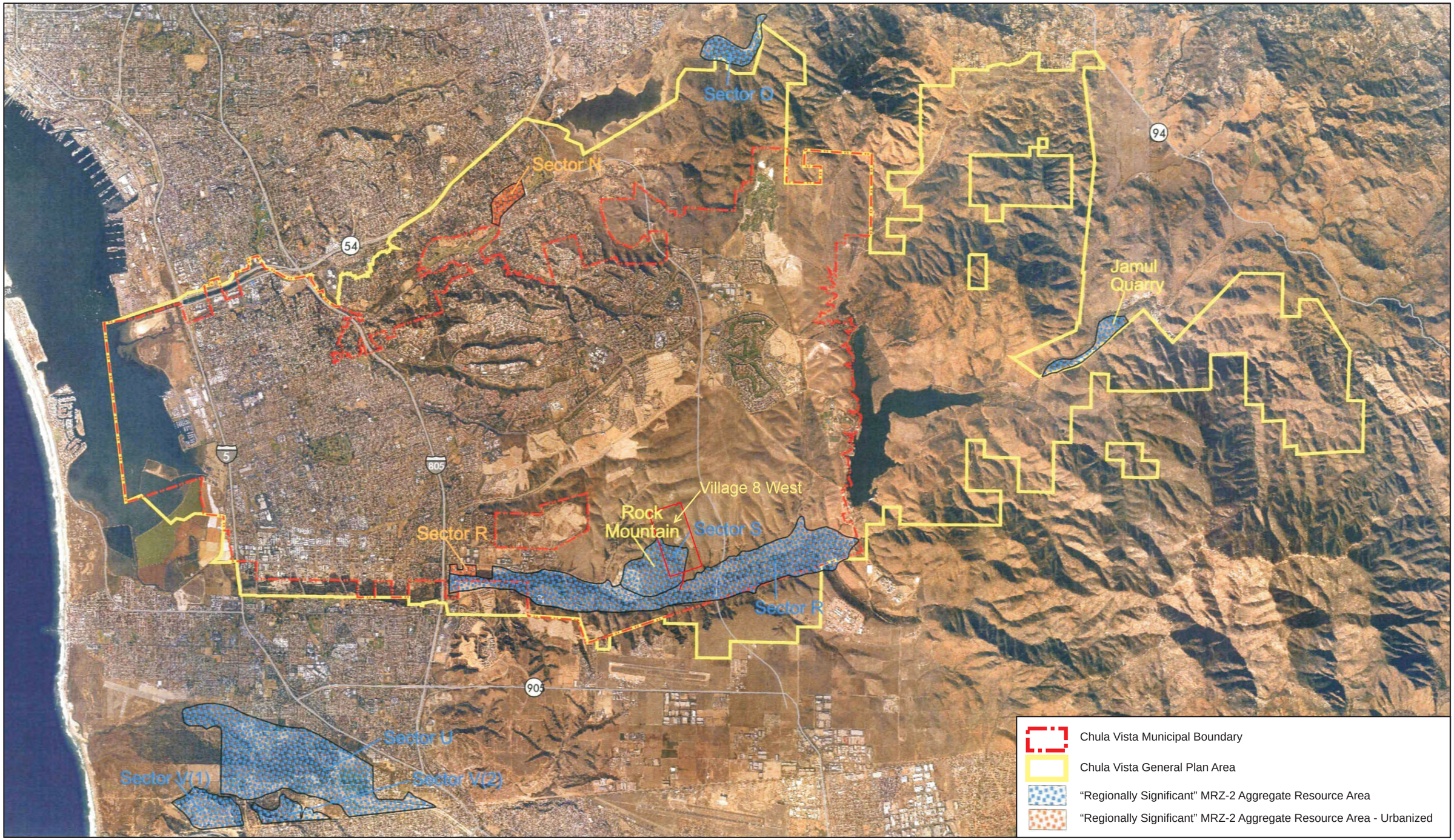
According to the CEQA Guidelines, Appendix G, impacts to mineral resources would be significant if the project would:

- **Threshold 1:** 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.
- **Threshold 2:** 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.
- **Threshold 3:** Be inconsistent with General Plan, GDP, and other objectives and policies regarding mineral resources thereby resulting in a significant physical impact.

5.16.3 Impact Analysis

A. Threshold 1: 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.

The 2005 GPU EIR identified regionally significant aggregate resource areas, including the MRZ-2 area encompassing Rock Mountain and the Otay Valley Quarry (see Figure 5.16-1). Since that time, the Otay Valley Quarry Reclamation Plan Amendment was approved in 2011. That Plan established the limits of ownership (approximately 388 acres) and limits of the actively mined open pit (approximately 278 acres). The plan amendment also provided a detailed plan for reclamation of the site once active mining ceases in about 2089. As such, the majority of the regionally significant aggregate resources in this area has been included within the Otay Valley Quarry ownership and is available for extraction.



Source: Geocon 2011, 2005 GPU EIR

No Scale

N

MRZ-2 ZONE
FIGURE 5.16-1

This page intentionally left blank.

Approximately 90 acres of the MRZ-2 resource remains outside of the quarry ownership and within the western portion of Village 8 West. Approximately 15.6 acres of this area will remain in open space, as it is included in the MSCP Preserve. The SPA Plan proposes to develop the remaining MRZ-2 area (74.4 acres) with single-family development.

The MSCP Subarea Plan does not preclude mining in the Preserve; therefore, if the requirements of the MSCP Subarea Plan, CEQA and other applicable regulations are met, the potential remains to extract significant MRZ-2 resources from this area. Similarly, development of the remainder of the resource area does not preclude the owner from extracting the aggregate prior to development. Therefore, the majority of the significant mineral resource has been identified and protected for extraction by inclusion in the Otay Valley Quarry ownership. While not proposed as part of the SPA Plan at this time, the approximately 90 acres of this on-site resource could still be made available. As such, there would be no loss of availability of this regionally valuable aggregate resource. No significant impacts would occur.

B. Threshold 2: 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 MRZ-2 Zone as shown in the 2005 GPU EIR (see Figure 5.16-1) identifies regionally significant aggregate resource areas, including the MRZ-2 area encompassing Rock Mountain and the Otay Valley Quarry. Since that time, the resource has been further defined since adopting the Otay Valley Quarry Reclamation Plan in 2011. Please see the discussion under Threshold 1. No significant impacts would occur.

C. Threshold 3: Be inconsistent with General Plan, GDP, and other objectives and policies regarding mineral resources thereby resulting in a significant physical impact.

Tables 5.16-1 and 5.16-2 evaluate the consistency of the project with the applicable General Plan and GDP goals and objectives. As shown, the project would be consistent with all applicable mineral resource policies.

Table 5.16-1 Project Consistency with Applicable General Plan Mineral Resource Policies

Applicable Policies	Evaluation of Consistency
Objective E 5: Efficiently extract regionally significant mineral resources in accordance with the Chula Vista MSCP Subarea Plan and require the appropriate reclamation of mined areas for suitable future development, recreation, open space, and/or habitat restoration. **Policy E 5.1:** Ensure that permit applications for proposed mineral resource extraction are consistent with the Chula Vista MSCP Subarea Plan. **Policy E 5.2:** Consider and minimize impacts from mining operations to existing and future surrounding land uses. **Policy E 5.3:** Ensure that approved mining reclamation plans fully comply with requirements of the Chula Vista MSCP Subarea Plan; Chula Vista Greenbelt Master Plan; Otay Valley Regional Park Concept Plan; and all other applicable plans regarding the restoration of biological habitats and the creation of trails and parkland.	**Consistent.** The project does not propose any mineral extraction facilities. Additionally, as discussed under Threshold 1, the project would not interfere with operations at the existing Rock Mountain Quarry. The project would be consistent with this objective and policies.

Table 5.16-2 Project Consistency with Applicable GDP Mineral Resource Policies

Applicable Policies	Evaluation of Consistency
Part II, Chapter 10 – Resource Protection, Conservation and Management	
Goal: Encourage the completion of the extraction of mineral resources before conflicts with planned development could occur. **Objective:** Extract mineral resources so as not to impair other conservation efforts.	**Consistent.** As discussed under Threshold 1, the project would not interfere with operations at the Rock Mountain Quarry, which includes the majority of the significant mineral resources within its boundary, and would not preclude future extraction of resources within the project area. The project would be consistent with this goal and objective.

5.16.4 Level of Significance Prior to Mitigation

No significant impacts related to mineral resources have been identified for the project.

5.16.5 Mitigation Measures

No mitigation measures are required.

5.16.6 Level of Significance After Mitigation

No significant impacts related to mineral resources were identified for implementation the project.

Chapter 6 Cumulative Impacts

The CEQA Guidelines (Section 15355) define a cumulative impact as "an impact which is created as a result of the combination of the project evaluated in the environmental impact report together with other projects causing related impacts."

Section 15130(a) of the CEQA Guidelines requires a discussion of cumulative impacts of a project "when the project's incremental effect is cumulatively considerable." Cumulatively considerable, as defined in CEQA Section 15065(c), "means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

The evaluation of cumulative impacts as required by CEQA Section 15130(b)(1) is to be based on either (a) "a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those impacts outside the control of the agency," or (b) "a summary of projections contained in an adopted plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact." Section 6.1 describes the cumulative projects that are considered in the cumulative analysis. Section 6.2 includes the cumulative analysis for each of the environmental topics covered in Chapter 5, Environmental Impact Analysis.

6.1 Probable Future Projects

6.1.1 Land Development

This section provides a cumulative analysis based on the probable future (foreseeable) land use development as well as plans that were identified in the cumulative analysis of the 2013 GPA/GDPA SEIR (SEIR 09-01). Table 6-1 shows the land uses used for this cumulative analysis. These projects include Village 8 East and Village 10/University. The analysis of these cumulative projects is based on Land Offer Agreements between JPB Development and the City of Chula Vista, and OLC and the City of Chula Vista. Other projects within the Otay Ranch area that are approved but not yet built out, such as the EUC and portions of Villages 2, 3 and 4, are included as part of existing adopted plans for the Otay Ranch area, and as such are included in the General Plan and GDP, rather than identified as foreseeable future projects.

Table 6-1 Land Uses within Cumulative Project Area

Land Use Type	Village 8 West	Village 9, Regional Technology Park, Portion of University Site in Village 9	Village 8 East, Village 10, Remaining University Site	Village 3	Total Cumulative Project Area
Single-family Residential	621 DU	266 DU	0	0	887 DU
Multi-family Residential	1,429 DU	3,734 DU	5,756 DU	0	10,919 DU
Commercial	300,000 sf	1,500,000 sf	0	0	1,800,000 sf
Industrial/Regional Technology Park	0	85.0 acres	0	176.6	261.6 acres
Community Purpose Facility	5.8 acres	5.0 acres	8.0 acres	10.2	29 acres
School	31.6 acres	19.8 acres	20.0 acres	0	71.4 acres
Park	27.9 acres	27.5 acres	45.1 acres	0	100.5 acres
Future University	0	50.0 acres	210.0 acres	0	260.0 acres

DU = dwelling units
Source: City of Chula Vista 2013

The four cumulative projects identified in Table 6-1, including Village 8 West, comprise what is referred to as the "cumulative area." Where applicable, a quantitative analysis of the potential cumulative impacts is provided, based on the methodology used in the 2013 SEIR. The SEIR used a cumulative increase factor based on the ratio of ADTs attributed to the foreseeable projects compared to ADTs from Village 8 West (without accounting for any project-specific trip reductions). The SEIR reported the ADT for Village 8 West to be 43,564 trips. This was divided into total ADT for the cumulative study area (174,700 trips) resulting in a coefficient of 4.0. This factor is applied for the issues of schools, water, wastewater, recycled water, and energy to represent total cumulative impact.

6.1.2 Adopted Plans

From a regional approach, the cumulative analysis relies on the RCP, GDP, and the Chula Vista General Plan, along with other regional planning documents, including the MSCP Subarea Plan, and RAQS in accordance with CEQA Section 15130(b)(1)(B).

6.2 Cumulative Impact Analysis

The geographic scope of the cumulative impact analysis varies depending upon the specific environmental topic being analyzed. In accordance with CEQA Guidelines Section 15130(b)(3), Table 6-2 summarizes the geographic area within which past, present, and probable future projects may contribute to a specific cumulative impact, when considered in conjunction with the impacts associated with implementation of the Village 8 West SPA Plan and TM.

Each topic analyzed in the Sections 5.1 through 5.16 of the EIR includes an evaluation of the project's consistency with applicable GP and GDP policies. Policy consistency is project specific and is not cumulative in nature. Similar to the project, other cumulative projects would be required to demonstrate compliance with the General Plan and GDP as part of their project-specific approval process. Therefore, cumulative impacts associated with consistency of GP and GDP policies is not further analyzed in this section.

Table 6-2 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 and limited to the area directly adjacent to Village 8 West.
Aesthetics	The cumulative study area associated with aesthetics impacts is the viewshed of Village 8 West, 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 B). Impacts related to aircraft traffic are generally specific and limited to the area within two miles of a specific airport.
Air Quality	The geographic scope of cumulative impact analysis for criteria air pollutants, sensitive receptors, and air quality plans is the San Diego Air Basin. Impacts relative to objectionable odors are limited to the area immediately surrounding the odor source and are not cumulative in nature because the air emissions that cause odors disperse beyond the sources of the odor.
Noise	The area of cumulative impact that would be considered for the noise and vibration cumulative analysis would be only those cumulative projects within the immediate vicinity of Village 8 West. 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.
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.

6.2.1 Land Use

A. Physical Division of an Established Community and Conflicts with Land Use Plans, Policies, and Regulations

Village 8 West's contribution to the cumulative impacts on land use was included in the 2013 GPA/GDPA SEIR. The SEIR concluded that the GPA/GDPA, including Village 8 West, would result in increased density and intensity of land uses within the GPA/GDPA area compared to the development analyzed in the 2005 GPU EIR. The SEIR concluded that this intensification is consistent with the goals and objectives of the RCP, General Plan and Otay Ranch General Development Plan. Through conformance with the General Plan, the cumulative projects analyzed in the SEIR, including Village 8 West, would promote mobility, increase jobs/housing balance, and encourage transit-oriented development. The cumulative projects would realize SANDAG's vision for the cumulative project area. The SEIR further concluded that because adherence to the smart growth principles and objectives of the Chula Vista General Plan, cumulative land use impacts would be less than significant.

As discussed in Section 5.1, Land Use and Planning, the proposed project would be consistent with the General Plan as approved in 2013. Village 8 West would be a continuation of planned development in the Otay Ranch. It would provide intensities and densities of residential development as well as mixed-use development that would promote alternative transportation. The project would also provide parks, schools and CPF acreage in conformance with City policies and ordinances. As such, the proposed project, as part of and combined with the cumulative projects, would not result in a significant cumulative land use impact.

B. 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. The cumulative projects, including Village 8 West, would be required to demonstrate compliance with the MSCP Subarea Plan and the RMP as part of project approval. Therefore, cumulative land use impacts associated with potential conflicts with HCPs or NCCPs would be less than significant.

6.2.2 Aesthetics/Landform Alteration

A. Scenic Vistas and Scenic Resources

Scenic vistas and scenic resources are project-specific issues because they are limited to individual view points and therefore cumulative impacts related to scenic vistas and scenic resources were not addressed at the programmatic level in the SEIR for the GPA/GDPA. As discussed in Section 5.2, Aesthetic/Landform Alteration, implementation of Village 8 West would not result in any significant direct impacts on scenic vistas and scenic resources because scenic views would continue to be available throughout the site and the project design guidelines would ensure that grading on Rock Mountain would be sensitive to landform. However, the project, in combination with the cumulative projects, would contribute to a cumulative loss of views of natural open space. Therefore, the project would result in a cumulatively considerable contribution to a significant and unavoidable cumulative impact.

B. Visual Character or Quality

Village 8 West's contribution to the cumulative impacts on landform alteration/visual resources was included in the 2013 GPA/GDPA SEIR. As concluded in the SEIR, the GDP/GDPA would result in cumulatively considerable and unavoidable impact related to permanent alteration to the open, rolling hills within the planning area. Grading and development of the project site's vacant land with 2,050 residential units, 300,000 square feet of commercial 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. Project alternatives that would reduce this cumulative impact, including a No Project Alternative, are discussed in Chapter 10, Alternatives.

C. Lighting and Glare

Lighting and glare impacts are project specific issues and therefore cumulative impacts were not addressed at the programmatic level in the SEIR for the GPA/GDPA. Although Village 8 West is currently undeveloped, substantial nighttime lighting is currently generated by the existing development in Otay Ranch and the remainder of the city. Development of Village 8 West and cumulative growth in Otay Ranch would result in additional sources of nighttime lighting. Village 8 West would contribute new lighting from streetlights, security lighting, and decorative lighting throughout the planning area. The SPA Plan includes lighting performance standards to minimize the project's contribution to nighttime lighting. In addition, compliance with city and state energy conservation measures and city lighting standards currently in place would limit the amount of unnecessary interior illumination during evening and nighttime hours. Similar to the proposed project, the cumulative projects would be required to submit photometric analyses and landscape master plans for approval. Therefore, the project's contribution to this potentially significant cumulative impact would be less than significant. Impacts related to glare and solar access are limited to the area immediately surrounding the source and are not cumulative in nature. However, the SPA Plan also includes requirements for buildings that would limit glare. Therefore, the project would not result in a cumulatively considerable contribution to lighting and glare.

D. Landform Alteration

Impacts to steep slopes were not specifically addressed in the SEIR for the GPA/GDPA because the SEIR only included an analysis of environmental topics that resulted in new or additional impacts compared to the land use assumptions made for the project area in the 2005 GPU EIR. As discussed in Section 5.2 under Threshold 6, the Otay Ranch RMP includes a ranch-wide steep slope standard that requires preservation of at least 83 percent of the natural steep slopes (natural slopes with gradients of 25 percent or greater) throughout the Otay Ranch. Compliance with the RMP would ensure that a cumulative impact related to steep slopes would not occur. The project would impact a total of 29.07 acres of steep slopes. Impacts to natural steep slopes in the cumulative project area would be speculative at this time as some areas do not have proposed development plans. However, as demonstrated in Table 5.2-1 and in the analysis in Section 5.2, the proposed project combined with the other projects in Otay Ranch would not exceed the ranch-wide preservation requirement (1,670 acres). Furthermore, other cumulative projects would also be required to demonstrate compliance with the RMP steep slope standard. Therefore, cumulative impacts related to steep slopes would be less than significant.

A cumulative impact to Rock Mountain would occur if grading would substantially alter the existing landform. However, only a small area of Rock Mountain is located in Village 8 West, and implementation of the Landscape Master Plan and the SPA Plan grading and design guidelines would ensure that any alterations to the landform would be visually compatible with the existing landform. Therefore, the project would not result in a cumulatively considerable contribution to landform alteration.

6.2.3 Transportation/Traffic

A. Traffic and Level of Service Standards and Congestion Management

Village 8 West's contribution to the potential cumulative impacts on traffic and level of service standards was included in the 2013 GPA/GDPA SEIR. The SEIR concluded that cumulative traffic impacts would occur to a segment of Otay Valley Road in Chula Vista, several segments of Heritage Road in the City of San Diego, I-805, SR-125 and SR-905. Payment of appropriate development impact fees and adding an additional lane to Otay Valley Road between SR-125 and Street A would reduce impacts to all freeways and Otay Valley Road to a less than significant level. However, the SEIR concluded that impacts to the segments of Heritage Road in the city of San Diego would remain significant and unmitigable.

The Otay Ranch Village 8 West Traffic Impact Analysis Report (RBF 2013) updates the analysis in the 2013 GPA/GDPA SEIR with a project-specific analysis. The traffic impact report included an analysis of the proposed project's contribution to cumulative regional traffic. The analysis included a Mitigated Year 2030 scenario that analyzed the potential traffic impacts that would occur as a result of buildout of Village 8 West and the cumulative growth in the region through the year 2030. At full buildout, the project would result in a cumulatively considerable contribution to a significant impact at the following intersections:

- Birch Road/La Media Road (LOS F - AM and PM Peak Hour)
- Birch Road/SR-125 northbound ramps (LOS F - AM Peak Hour)
- Birch Road/Eastlake Parkway (LOS F - AM Peak Hour, LOS E - PM Peak Hour)
- Main Street/I-805 northbound ramps (LOS E - PM Peak Hour)
- Main Street/La Media Couplet
  - Westbound Main Street/northbound La Media Road (LOS F - AM Peak Hour)
  - Eastbound Main Street/southbound La Media Road (LOS F - AM and PM Peak Hour)
  - Eastbound Main Street/northbound La Media Road (LOS F - AM Peak Hour)
- Main Street/Magdalena Avenue (LOS F - AM and PM Peak Hour)
- Main Street/Eastlake Parkway (LOS F - AM Hour)

Additionally, the project would result in a cumulatively considerable contribution to a significant impact to the following roadway segments in year 2030:

- Birch Road: La Media Road to SR-125 (LOS F)
- Birch Road: SR-125 to Eastlake Parkway (LOS F)
- Main Street: I-805 to Brandywine Avenue (LOS D)
- Main Street: Brandywine Avenue to Heritage Road (LOS D)
- Heritage Road: Main Street to Entertainment Circle (LOS E)

- Heritage Road: Entertainment Circle to Avenida de Las Vistas (LOS D)
- Eastlake Parkway: Birch Road to Main Street (LOS D)

However, with implementation of mitigation measures 5.3-1 through 5.3-20, all intersections and roadways would operate at LOS D or better. Implementation of these mitigation measures would reduce the proposed project's traffic impacts to a less than cumulatively considerable level by providing the necessary road improvements to accommodate project traffic.

B. Air Traffic Patterns, Road Safety, Emergency Access

Impacts related to air traffic patterns, road safety, and emergency access are project-specific issues and therefore cumulative impacts were not addressed at the programmatic level in the SEIR for the GPA/GDPA. Impacts related to air traffic patterns, road safety, and emergency access are site-specific and are not cumulative in nature. Construction of a project that would interfere with air traffic, result in a traffic hazard, or have inadequate emergency access would not affect these issues at another site. Similar to the project, cumulative development would be required to provide proper notification in compliance with Brown Field Airport Land Use Compatibility Plan when applicable and comply with all city requirements for parking, roadway design, and emergency access. Therefore, cumulative impacts would be less than significant.

6.2.4 Air Quality

A. Air Quality Violations

Village 8 West's contribution to cumulative impacts to air quality violations was included in the 2013 GPA/GDPA SEIR, which concluded that implementation of the GPA/GDPA would result in cumulatively considerable and unavoidable impacts related to air quality violations. The Air Quality Technical Report prepared for Village 8 West (Atkins 2013a) updates the analysis in the 2013 GPA/GDPA SEIR with a project-specific analysis, as described below.

The project would contribute to a cumulative impact during construction if air pollutant emissions from simultaneous construction activities would combine to exceed the significance thresholds for criteria air pollutants. The closest cumulative projects to Village 8 West with the potential to generate cumulative construction emissions are Village 4 and Village 8 East. The Village 8 West project alone would result in potentially significant NO_x, PM_{10}, and $PM_{2.5}$ emissions during construction. If any cumulative project is constructed during the same time period, emissions of criteria pollutants would combine to further exacerbate the violations. Mitigation measures 5.4-1, 5.4-2, and 5.4-3 would reduce impacts but not to below the significance thresholds. Impacts would be cumulatively considerable and unavoidable.

Cumulative daily operational air quality emissions are regulated on a regional level by the RAQS. If a project is not consistent with the growth assumptions included in the RAQS, then the project would result in a significant cumulatively considerable contribution to an air quality impact. As discussed in Section 5.4, Air Quality, under Threshold 4, Village 8 West would exceed the growth projections of the RAQS. Additionally, the project would result in unavoidably significant emissions of VOCs, NO_x, and PM_{10} during operation. Therefore, the project would result in a cumulatively considerable and unavoidable contribution to a significant air quality impact.

B. Sensitive Receptors

Impacts related to sensitive receptors are project-specific issues and therefore cumulative impacts were not addressed at the programmatic level in the SEIR for the GPA/GDPA.

Carbon Monoxide. Carbon monoxide concentrations were analyzed for four scenarios that included interim cumulative traffic growth: 2015, 2020, 2025, and full project buildout (2030). As shown in Table 5.4-8, Estimated Carbon Monoxide Concentrations, the concentrations at all of the studied intersections were below state and federal standards. Therefore, a cumulative impact would not occur.

Toxic Air Contaminants. Impacts related to siting new sensitive receptors near sources of 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. Therefore, cumulative impacts related to TACs would be less than significant.

C. Objectionable Odors

Impacts related to objectionable odors are project specific issues and therefore cumulative impacts were not addressed at the programmatic level in the SEIR for the GPA/GDPA.

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.

D. Air Quality Plans

The SEIR concluded that implementation of the GPA/GDPA would result in a cumulatively considerable and unavoidable impact related to consistency with air plans.

A project that conflicts with the RAQS growth projections would be inconsistent with the RAQS and SIP and result in cumulative impact. As discussed in Section 5.4 under Threshold 4, the SPA Plan would exceed regional growth projections and therefore the project would result in a cumulatively considerable and unavoidable impact to consistency with adopted air quality plans.

6.2.5 Noise

A. Excessive Noise Levels

Cumulative impacts related to excessive noise levels were not specifically addressed in the SEIR for the GPA/GDPA because the SEIR only included an analysis of environmental topics that resulted in new or additional impacts compared to the land use assumptions made for the project area in the 2005 GPU EIR.

The noise study conducted for Village 8 West (Atkins 2013b) included an analysis of impacts from cumulative traffic growth in 2030 to contribute to excessive noise levels on noise sensitive land uses

(NSLU) within Village 8 West. Noise levels would potentially exceed the Chula Vista noise compatibility standards along Main Street, La Media Road, Otay Valley Road, and Street A. Therefore, a cumulative impact would occur. However, the proposed project's contribution to long-term traffic noise would be less than significant. Additionally, mitigation measures 5.5-1 through 5.5-5 would require future new development on site to reduce noise levels to comply with Chula Vista noise standards so that new residents and visitors would not be exposed to excessive traffic noise. Therefore, the project's contribution to exposure to cumulative traffic noise would be reduced to less than cumulatively considerable.

Village 8 West would be adjacent to future development proposed in the GDP to the east in Village 8 East, to the west in Village 4, and to the north in Village 7. According to the GDP, these villages would be developed with similar land uses compared to Village 8 West, including commercial, residential, and parkland development. 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 5.5-2 through 5.5-4 and 5.5-7 would ensure that operational noise levels comply with city standards. Cumulative projects would also be required to demonstrate compliance with city noise standards. Therefore, a cumulative operational noise impact would not be significant.

Quarry operations have been approved to expand to approximately 300 feet from the western boundary of Village 8 West. However, the existing Declaration of Covenants of Operation for the quarry includes provisions to ensure that the quarry does not exceed the city's noise ordinance standards at surrounding residences (City of Chula Vista 2008a). See Appendix D for the list of applicable covenants. Therefore, implementation of the existing covenants for operation at the quarry would ensure that the expansion of the quarry would not result in the cumulatively considerable exposure of NSLU to excessive noise from quarry operation.

B. Excessive Groundborne Vibration

Cumulative impacts related to groundborne vibration were not specifically addressed in the SEIR for the GPA/GDPA because the SEIR only included an analysis of environmental topics that resulted in new or additional impacts compared to the land use assumptions made for the project area in the 2005 GPU EIR.

In order to result in a cumulative vibration impact, major construction activities would have to be located within 200 feet of another project, or within 600 feet for pile driving (Caltrans 2002). The future cumulative projects that would potentially be located within 600 feet of Village 8 West construction activity include a mixed-use village and residential development in Village 8 East, residential development and a community park in Village 4, and residential development in Village 7. These land uses are not considered vibration sensitive.

However, the existing quarry has been approved to expand to approximately 300 feet from the western boundary of Village 8 West. The proposed residential, commercial, and park land uses along the western edge of Village 8 West are not vibration sensitive. Additionally, the existing Declaration of Covenants of Operation for the quarry includes provisions to minimize nuisance impacts from groundborne vibration. See Appendix D for the list of applicable covenants. Therefore, cumulative groundborne vibration impacts would be less than significant.

C. Permanent Increase in Ambient Noise Levels

Village 8 West's contribution to cumulative permanent increases in noise levels was included in the programmatic SEIR for the GPA/GDPA, which concluded the increases in noise levels as a result of traffic noise would be cumulatively significant and unavoidable.

The Noise Technical Report prepared for Village 8 West (Atkins 2013b) updates the analysis in the 2013 GPA/GDPA SEIR with a project-specific analysis. The potential regional noise impacts that would result from traffic increases as a result of cumulative projects and regional growth are included in the Mitigated Year 2030 scenario. Table 14 in Appendix D, Cumulative Traffic Noise Impacts, compares Mitigated Year 2030 traffic noise levels to existing conditions. As shown in this table, 17 of the 22 existing roadway segments currently generate noise levels that exceed 65 dBA CNEL without cumulative development. Cumulative growth, including the proposed project, would result in six new roadway segments that would exceed 65 dBA CNEL. Cumulative growth would cause three existing roadway segments to exceed 65 dBA, and would result in an increase in traffic noise of 3 dBA CNEL or more on 12 existing roadway segments. A cumulatively considerable impact would occur on a total of 21 roadway segments.

The project's contribution to the cumulative noise impact is based on the increase in traffic noise attributable to the proposed project under the Mitigated Year 2030 scenario. Implementation of the proposed project would result in a 1 dBA increase on five impacted roadways. Noise increases that are 1 dBA are generally not discernable, although project traffic would incrementally contribute to an already noisy environment that may exceed compatibility standards for NSLU in the vicinity. The significance threshold for traffic-related noise increases is 3 dBA CNEL. Implementation of the project would not result in a cumulatively considerable contribution to roadway noise.

D. Temporary Increase in Ambient Noise Levels

Cumulative impacts related to temporary noise increases were not specifically addressed in the SEIR for the GPA/GDPA because the SEIR only included an analysis of environmental topics that resulted in new or additional impacts compared to the land use assumptions made for the project area in the 2005 GPU EIR.

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 would be up to 87 dBA Leq at 50 feet from the source (Atkins 2013b). However, the cumulative projects and the proposed project would be subject to the Chula Vista construction noise ordinance, which limits the hours of construction to 7:00 a.m. and 10:00 p.m., Monday through Friday, and between the hours of 8:00 a.m. and 10:00 p.m., Saturday and Sunday. Compliance with the Chula Vista ordinance would reduce impacts to a less than significant level. The project would comply with the Chula Vista construction limits and would not result in a cumulatively considerable contribution to construction noise.

E. Excessive Noise Exposure from a Public of Private Airport

Exposure to airport noise is a project specific issue and therefore cumulative impacts were not addressed at the programmatic level in the SEIR for the GPA/GDPA. No additional aviation uses are planned to be introduced in the vicinity of Village 8 West. Impacts related to nuisance noise from overflights are site specific and are not cumulative in nature. Therefore, a cumulative impact related to aviation would not occur.

6.2.6 Biological Resources

As stated in Section 2.2.3, the SEIR did not address biological resources but relies on analysis in the 2005 GPU EIR (EIR 05-01) and the 1993 Program EIR for the GDP (EIR 90-01).

A. 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 PEIR prepared for the entire Otay Ranch development (EIR 90-01) analyzed the existing conditions, potential impacts, and mitigation measures related to biological resources for the entire Otay Ranch area, which consists of approximately 23,000 acres in the county of San Diego, and the cities of Chula Vista and San Diego. The Otay Ranch PEIR identified significant unavoidable impacts to biological resources in Otay Ranch due to loss of raptor foraging habitat. Subsequent to the certification of the PEIR and adoption of the Otay Ranch GDP, the City adopted the Chula Vista MSCP Subarea Plan. The MSCP planning program provided for mitigation of cumulative impacts from regional development on sensitive species and their habitats on a regional basis, including raptor forage habitat. As such, a cumulatively considerable impact would occur if a project would be inconsistent with the Chula Vista MSCP Subarea Plan.

Implementation of Village 8 West would contribute to the loss of biological resources within the Otay Ranch and Chula Vista Subarea. However, with implementation of mitigation measures 5.6-1 through 5.6-19, the project would comply with the MSCP Subarea Plan conditions for coverage, and well as the Otay Ranch RMP, the requirements for conveyance of compensatory mitigation lands to the Preserve Owner Manager, and compensatory wetland mitigation required by state and federal wetlands permitting agencies. Implementation of these measures would ensure long-term sustainability of sensitive species and their associated habitats, and mitigates cumulative biological impacts to MSCP covered species and their associated habitats. Therefore, the project would not result in a cumulatively considerable contribution to biological impacts.

B. Local Policies, Ordinances, HCP and NCCP

The Chula Vista MSCP Subarea Plan and the Otay Ranch RMP are the applicable natural resource plans for the project and cumulative projects. Similar to the SPA Plan and TM, the cumulative projects would be required to demonstrate compliance with the MSCP Subarea Plan and the RMP as part of project approval. Pursuant to the City's MSCP Subarea Plan, no single facility may permanently impact more than two acres of covered habitat. In addition, permanent impacts to covered habitats in the Preserve resulting from future facilities may not exceed a cumulative total of 50 acres. Permanent impacts to covered habitats associated with the development of planned infrastructure facilities (future facilities) within the Preserve are discussed in Section 5.6, Biological Resources. Temporary impacts associated with future facilities are not subject to the limitations for permanent impacts to covered habitat; however, all areas of temporary impacts must be revegetated. The temporary impact area associated with Village 9 would be revegetated pursuant to a restoration plan reviewed and approved by the City (refer to mitigation measure 5.6-5).

Future facilities associated with the project include the off-site storm water conveyance facility. Development of this facility will permanently impact 0.09 acres of covered habitat, which is less than the two acre single facility limitation. Cumulative impacts to covered habitat associated with future facilities

are estimated at 0.85-acres, as shown in Table 6-3, which is less than the 50-acre cumulative acreage. Therefore, cumulative land use impacts associated with conflicts with HCPs or NCCPs would be less than significant.

Table 6-3 Future Facilities Cumulative Covered Habitat Impact

Project	Permanent Impacts to Covered Habitat (acres)
Village 11 (approved)	0.5
Village 2 (approved)	0.09
Village 8 West (proposed)	0.09
Village 9 (reasonably foreseeable)	0.17
Total	**0.85**
Note: While development in accordance with the land offer agreements for Village 8 East, Village 10, the University/ RTP are included in the cumulative analysis for other environmental issues, no calculation of impacts to future facilities is provided for these areas because no site plans have been filed. Identifying permanent impacts to covered habitats for these projects would be speculative at this time.	

6.2.7 Cultural and Paleontological Resources

As stated in Section 2.2.3, the SEIR did not address cultural or paleontological resources but relies on analysis in the 2005 GPU EIR (EIR 05-01) and the 1993 Program EIR for the GDP (EIR 90-01).

A. Historic Resources, Archaeological Resources, and Human Remains

The 2005 GPU EIR evaluated impacts to cultural resources in its cumulative analysis. This cumulative assessment of impacts to archaeological and historic resources incorporates by reference the cumulative impact analysis in the 2005 GPU EIR. 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 2005 GPU EIR 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.

As discussed in Section 5.7, Cultural Resources, the project would not result in a significant impact on historical resources or known archaeological resources. The proposed project would not contribute to a cumulative impact related to historic resources. It is not anticipated that construction would extend beyond the defined APE. However, construction activities associated with the project could result in significant impacts to CA-SDI-12809 if construction activities inadvertently extended beyond the defined APE in the proximity of site. While mitigation has been included that would reduce project-related impacts to cultural resources to a less than significant level, the extent of potential cultural resources is unknown at this time and unknown resources are potentially located in Village 8 West. Therefore, implementation of the Village 8 West SPA Plan and TM would result in cumulatively considerable and unavoidable contribution to this cumulative impact, consistent with the findings in the 2005 GPU EIR.

B. Paleontological Resources

The 2005 GPU EIR evaluated impacts to paleontological resources in its cumulative analysis. This cumulative assessment of impacts to paleontological resources incorporates by reference the cumulative impact analysis in the 2005 GPU EIR. As with archaeological and historic resources, the continued pressure to develop undeveloped areas would result in incremental impacts to the paleontological record in the San Diego region. Regardless of the efforts to avoid impacts to these resources, the more land that is converted to developed uses, the greater the potential for adverse impacts. While any individual project may avoid or mitigate the direct loss of a specific resource, the effect was considerable when considered cumulatively.

Cumulative buildout would result in an increased probability of disturbance to paleontological resources causing potentially significant cumulative impacts. However, this could be a positive effect of development due to fact that the discoveries of paleontological resources contribute to important scientific information about the natural history in southwestern San Diego County. As discussed in Section 5.7, Cultural Resources, geological formations underlying the project area and off-site improvement area have been identified as having high sensitivity for paleontological resources. Therefore, the project could result in significant impacts to sensitive paleontological deposits. Mitigation measures 5.7-8 through 5.7-11 have been included that would reduce project-related impacts to paleontological resources to a less than significant level. Because the extent of potential paleontological resources is unknown at this time, cumulative impacts are concluded to be significant, consistent with the findings in the 2005 GPU EIR. However, the proposed mitigation measures would reduce cumulative paleontological impacts to below significance because paleontological resources would be protected from damage and the discoveries of paleontological resources as a result of development contribute to important scientific information about the natural history in southwestern San Diego County.

6.2.8 Geology and Soils

A. Exposure to Seismic Related Hazards, Soil Stability, and Expansive Soils

Geologic hazards are generally site specific and not cumulative in nature. Potential impacts related to geologic hazards in Village 8 West are not additive with other projects and are therefore not cumulatively significant. Additionally, as discussed in Section 5.8, Geology and Soils, geological hazards related to seismicity, slope stability, and expansive soils would be reduced to less than significant levels through compliance with the Uniform Building Code and other applicable regulations, and adherence to the recommendations of a site-specific geotechnical investigation (mitigation measure 5.8-2). Although the proposed project and related projects would have potentially significant geological impacts requiring mitigation, these projects are geographically removed to the extent that a hazardous geologic event, such as seismically induced ground failure, at one site would not necessarily occur at the other. Therefore, any potential geological impacts would not be cumulatively significant.

B. Soil Erosion or Topsoil Loss

Potentially cumulative impacts related to soil erosion or top soil loss are addressed in Section 6.2.11, Hydrology and Water Quality. As discussed in that section, future growth and redevelopment in the city, including Otay Ranch, would result in an increase in impermeable surfaces, alteration of the hydrology of local streams and drainage, and grading and clearing of vegetation. All of these actions have the potential to contribute to a cumulative increase in erosion. However, compliance with all applicable regulations, the BMPs identified in the Water Quality Technical Report, and the policies associated with

General Plan Objectives PFS 1 and 2 would ensure that development and redevelopment would not result in significant erosion. The project and the other cumulative projects in Otay Ranch and the city would be required to comply with the federal, state, and local regulations and Chula Vista General Plan policies. Therefore, a cumulative impact related to erosion or topsoil loss would not occur.

C. Waste Water Disposal Systems

Development in the city of Chula Vista and Otay Ranch would be serviced by city wastewater and would not require septic tanks or alternative waste water disposal systems. A cumulative impact would not occur.

6.2.9 Public Services

Village 8 West's contribution to the cumulative impacts on public services was included in the 2013 GPA/GDPA SEIR. The SEIR determined a significant cumulative impact would not occur to any public services because increased demands will be accommodated through the maintenance of the city GMO threshold standards prior to discretionary project approval. Specifically, Objective GM 1 from the Chula Vista General Plan assures public facilities and services are available to residents and visitors of the city in a timely manner as development occurs. Compliance with this General Plan objective would allow individual development projects to avoid adding a cumulatively considerable drain on city resources. Implementation of the SPA Plan and TM's compliance with the GMOC threshold standards and Objective GM 1 is discussed below for each public service.

A. Fire and Emergency Medical Services

Implementation of the SPA Plan and TM for Village 8 West in combination with cumulative development in the city would result in an increased demand for fire and emergency medical services. If growth would outpace the CVFD's ability to expand and serve new development, a cumulative impact would occur. However, 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 percent of the cases." Section 19.09 also requires a PFFP and the demonstration that public services such as fire services meet the GMOC quality of life threshold standards. A project that is consistent with the city GMO quality of life threshold standards would not result in a cumulative impact.

As discussed in Section 5.9, Public Services and Utilities, the Village 8 West SPA Plan and TM has been prepared in coordination with the CVFD. According to the CVFD, all areas of Village 8 West are within a CVFD five minute response time area (Gipson 2011). With implementation the mitigation measures identified in Section 5.9.1, the project would meet the GMOC standards for fire protection, including paying its fair share of funding for public services with each building permit. The PFFP for the SPA Plan and TM identifies Village 8 West's fair share of costs to provide the public services required to serve the project. As such, the project meets the quality of life threshold standards. The project would not result in a cumulatively considerable contribution to fire protection services.

B. Police Services

Implementation of the SPA Plan and TM in combination with cumulative development in the city would result in an increased demand for police services. If growth outpaces the Chula Vista Police

Department's ability to expand and serve new development a cumulative impact would occur. However, Section 19.09 (Growth Management) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040A specifically requires that properly equipped and staffed police units shall respond to 81 percent of priority one emergency calls within seven minutes and maintain an average response time to all priority one emergency calls of 5.5 minutes or less. Section 19.09 also requires a PFFP and the demonstration that public services, such as police services, meet the GMOC quality of life threshold standards. A project that is consistent with the city GMO quality of life threshold standards would not result in a cumulative impact.

Maintaining current response times would require additional police officers. With implementation of the mitigation measures identified in Section 5.9.2, the project would meet the GMOC standards for police protection, including paying its fair share of funding for public services with each building permit. The PFFP for the SPA Plan and TM identifies the proposed projects fair share of costs to provide the public services required to serve the project. Additionally, Village 8 West is designed to incorporate crime prevention through environmental design features, which would reduce demand on police services. Therefore, the project would not result in a cumulatively considerable contribution to police services.

C. Schools

Implementation of the SPA Plan and TM and cumulative development in the city would result in an increased demand for elementary, middle, and high schools. If new growth in school-aged children would exceed the capacity of available schools, a cumulative impact would occur. However, Section 19.09 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 GMOC quality of life threshold standards. A project that is consistent with the city GMO quality of life threshold standards would not result in a cumulative impact.

As discussed in Section 5.9, Public Services and Utilities, the proposed project would generate approximately 556 elementary school students, 175 middle schools students, and 291 high school students. Based on the cumulative factor of 4.0, the cumulative increase in students would be 2,224 elementary school students, 700 middle school students, and 1,164 high school students. The cumulative factor is extremely conservative for student generation because the RTP and University would not be anticipated to generate elementary, middle, or high school students. The SPA Plan proposes a new elementary school and middle school, and the existing Olympian High School has adequate capacity to accommodate growth from the project. The PFFP prepared as part of the SPA Plan includes 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. As concluded in the 2013 GPA/GDPA SEIR, the project would not result in a cumulatively considerable contribution to school impacts.

D. Libraries

Implementation of the SPA Plan and TM and cumulative development in the city would result in an increased demand for library services. Based on the GMO threshold standard of 500 square feet of

library space per 1,000 residents, the total library space needed to serve the existing population of the city would be approximately 123,500 square feet. As approximately 95,400 square feet of library space is currently provided, a shortfall of approximately 28,080 square feet currently exists. Therefore, a cumulative impact currently exists.

As discussed in Section 5.9, Public Services and Utilities, the project would require the collection of the PFDIF with each building permit. The City's development impact fee program for library facilities assumes the construction of facilities sufficient to meet the service standard of 600 square feet of library space per 1,000 population, which is more conservative than the GMOC standard of 500 square feet per 1,000 population. The funds are expended on a number of projects, but for the most part are being reserved for planned facilities yet to be constructed in eastern Chula Vista. These funds on account will be combined with the impact fees to be collected from future development, including the SPA Plan. Payment of the PFDIF would provide the SPA Plan's fair share contribution to meet the city's threshold standard for library space. As concluded in the 2013 GPA/GDPA SEIR, the project would not result in a cumulatively considerable contribution to libraries.

E. Parks, Recreation, Open Space, and Trails

Implementation of the Village 8 West SPA Plan and TM and cumulative development in the city would result in an increased demand for park, recreation, open space, and trails. If growth outpaces the city's ability to provide additional facilities, a cumulative impact would occur. However, Section 19.09 provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040 E specifically requires a population coefficient of "three acres of neighborhood and community park land with appropriate facilities per 1,000 residents east of I-805." Section 19.09 also requires a PFFP and the demonstration that public services, such as parks, meet the GMOC quality of life threshold standards. A project that is consistent with the city GMO quality of life threshold standards would not result in a cumulative impact.

As discussed in Section 5.9, Public Services and Utilities, the project would potentially increase use of existing and proposed regional and community parks. However, the project would provide parks and recreational facilities to serve the population of Village 8 West. Village 8 West would be obligated to provide approximately 17.8 acres of parkland. The SPA Plan and TM for Village 8 West provides a total of 28 acres of parks. Development in Village 8 West would also pay the PFDIF for park facilities with each building permit, which provides for development of major recreational facilities, including community centers and aquatic facilities. The project would also provide approximately 221 acres of open space, consistent with the open space requirement of the Otay Ranch RMP. The mitigation measures identified in Section 5.9 would ensure that park facilities are provided concurrently with demand. As concluded in the 2013 GPA/GDPA SEIR, the project would not result in a cumulatively considerable contribution to parks, recreation and open space.

6.2.10 Global Climate Change

A. Compliance with AB 32

The 2013 GPA/GDPA SEIR included an analysis of cumulative impacts related to global climate change as a result of implementation of the GPA/GDPA land uses, including Village 8 West. The SEIR concluded that the annual GHG emissions generated by the cumulative projects including Village 8 West would total 333,426 MT CO_2e per year, based on the Global Climate Change Analysis prepared for the SEIR.

As discussed in Section 5.10, Global Climate Change, Village 8 West would contribute approximately 59,915 MT CO_2e annually to the cumulative total. Given that individual projects (within the cumulative area) would be subject to the City's existing Green Building Standards, Increased Energy Efficiency Standards, and General Plan policies, similar to the proposed project, future emissions from these projects would be ensured to be at least 20 percent below business as usual GHG emissions, consistent with the goals of AB 32. As discussed in Section 5.10, the project would reduce its GHG emissions by 32 percent compared to the business as usual emissions. Therefore, consistent with the conclusion of the SEIR, cumulative climate change impacts would be less than significant.

B. Potential Effects of Global Climate Change

Similar to compliance with AB 32, impacts related to the potential effects of global climate change can only be addressed at a cumulative level because climate change and its potential effects are caused by the collective of human actions taking place throughout the world. The cumulative impacts of the project associated with the potential effects of climate change are addressed in Section 5.10, Global Climate Change. As discussed in that section, the project would have significant impacts related to regional and local air quality resulting from vehicular emissions of ozone precursors. Increased temperatures would have the potential to increase the creation of ground-level ozone (smog) in the basin, which could exacerbate to health impacts associated with ozone, such as asthma. There are no feasible mitigation measures currently available to further reduce the potential criteria pollutant emissions of the project. Therefore, emissions of ozone precursors that would potentially exacerbate air quality problems would be cumulatively considerable and unavoidable.

6.2.11 Hydrology and Water Quality

As stated in Section 2.2.3, the SEIR did not address hydrology or water quality, but relies on analysis in the 2005 GPU EIR (EIR 05-01) and the 1993 Program EIR for the GDP (EIR 90-01).

A. Water Quality Standards and Degradation of Water Quality

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 cumulative projects including Village 8 West would have the potential to result in sources of polluted runoff during construction and result in an increase impervious surfaces following construction that would potentially result in the contribution of non-point source pollution. The project would be consistent with Objective E 2 and the policies applicable to new development: Policies E 2.4 and E 2.5. As discussed in Section 5.11, Hydrology and Water Quality, under Threshold 1, prior to construction in Village 8 West, the applicant would be required to prepare and implement a SWPPP that would outline the BMPs that would reduce water quality impacts during construction to a less than significant level. Prior to the issuance of grading permits, the SWPPP would be required to be prepared to the satisfaction of the City of Chula Vista Engineer and the Director of Public Works. Additionally, all construction activities would comply with the Chula Vista Development Storm Water Manual.

Following construction, the project would comply with the City's Development Storm Water Manual, which would minimize impacts on receiving water quality by incorporating post-construction BMPs into project design, including LID site design, source control, and treatment control. The mitigation measures identified in Section 5.11 require compliance with all applicable regulations, usage of the BMPs identified in the Water Quality Technical Report for Village 8 West. Further, and development of individual parcels within Village 8 West would be required to demonstrate compliance with the City's Development Storm Water Manual.

The proposed project and all new development and redevelopment in the city, including Otay Ranch, would be required to comply with federal, state, and local regulations that protect water quality, including the City's Development Storm Water Manual. Compliance with the applicable regulatory requirements described above would ensure that the potential water quality impacts of the proposed project, and all cumulative projects, would not result in significant cumulative impact. Therefore, a cumulatively considerable impact related to water quality would not occur.

B. Erosion or Siltation, Surface Runoff, and Exceed Drainage Capacity

The 2005 GPU EIR concluded that compliance with policies associated with Objectives PFS 1 and 2 would ensure that development would not result in a significant impact to the area's drainage pattern in a manner which would result in substantial erosion or siltation or flooding. No additional cumulative impacts were identified related to hydrology because the General Plan was intended to reduce cumulative city-wide drainage impacts to a less than cumulatively considerable level.

The cumulative projects, including the proposed project, would result in an increase in impermeable surfaces, alteration of the hydrology of local streams and drainage, and clearing of vegetation. As discussed in Table 5.11-4, Project Consistency with Applicable General Plan Drainage and Water Quality Policies, the project would comply with Objectives PFS 1 and 2 and all applicable policies. The Drainage Study for Village 8 West outlines the drainage infrastructure required for detention of storm runoff and sediment control associated with buildout of the plan, including incorporation of energy dissipaters to minimize potential erosion.

The project would contribute new flows to Otay River. As discussed under Threshold 3 in Section 5.11, Hydrology and Water Quality, a Hydromodification Management Plan prepared for the County of San Diego exempts the Otay River from hydromodification criteria. The plan already determined that slight increases in flows such as the post-construction conditions of Village 8 West would not be considered a cumulatively considerable impact. Additionally, the Water Quality Report outlines the proposed water quality BMPs that would reduce potential erosion and sedimentation impacts to a less than significant level. Implementation of the mitigation measures identified in Section 5.11 would ensure that the Village 8 West drainage system in implemented concurrently with demand and in compliance with applicable regulations. The other cumulative projects in Otay Ranch and the city would also be required to comply with the Chula Vista General Plan policies. Therefore, a cumulatively considerable impact related to hydrology would not occur.

C. Groundwater Supplies and Recharge

Cumulative groundwater impacts are limited to projects that are located within the same groundwater basin. Groundwater on Village 8 West is seasonal and results from rainwater or runoff that is trapped along joints or rock beds. The groundwater does not support an aquifer or local groundwater table.

Therefore, no cumulative groundwater impact would occur as a result of implementation of the SPA Plan and TM.

D. 100-Year Flood Hazards, Flooding, and Inundation

Impacts related to flood and inundation hazards are site specific and not cumulative in nature. The location of one project in a flood hazard area would not affect the location of another cumulative project. The project would not place any structures in a flood hazard area. Therefore, cumulative impacts related to flood and inundation hazards would be less than significant.

6.2.12 Agricultural Resources

As stated in Section 2.2.3, the SEIR did not address agricultural resources, but relies on analysis in the 2005 GPU EIR (EIR 05-01) and the 1993 Program EIR for the GDP (EIR 90-01).

This evaluation of cumulative impacts on agricultural resources incorporates the cumulative analysis in the 2005 GPU EIR by reference. The 2005 GPU EIR concluded that "there are no prime farmlands or farmlands of statewide importance in the city that would be converted as a result of land use changes." Therefore, it was determined that impacts on agricultural resources would be less than significant (City of Chula Vista 2005b).

The SPA Plan is within the development scope of the General Plan. Prime farmlands or farmlands of statewide importance do not occur within the General Plan area; however, Village 8 West is identified as containing Farmland of Local Importance and Grazing Land. The GDP EIR (EIR 90-01) identified the incremental and cumulative loss of agricultural lands in the Otay Ranch as a significant impact. As the project would result in the loss of Farmland of Local Importance and Grazing Land it would have a significant impact with respect to agricultural resources. The incremental loss of farmland as a result of the project in combination with other projects in Otay Ranch would result in a cumulatively significant impact with respect to agricultural resources, consistent with the GDP PEIR (EIR 90-01). As discussed in Section 5.12, agricultural uses would continue to be allowed in Village 8 West in the interim until buildout of the SPA. However, no mitigation measures are available to reduce long-term impacts to below a level of significance without restricting the development proposed in the SPA Plan and TM to allow interim agricultural uses to continue in perpetuity. Therefore, this impact would remain cumulatively considerable and unavoidable.

6.2.13 Hazards and Hazardous Materials

As stated in Section 2.2.3, the SEIR did not address hazards or hazardous materials but relies on analysis in the 2005 GPU EIR (EIR 05-01) and the 1993 Program EIR for the GDP (EIR 90-01).

A. Transport, Use, and Disposal of Hazardous Materials and Accidental Release of Hazardous Materials

This evaluation of cumulative impacts on hazards and risk of upset incorporates the cumulative impact analysis of the 2005 GPU EIR by reference. The 2005 GPU EIR determined that compliance with Objective E 19 would assure that new development would not be approved if there were a potential for the use or transport of hazardous materials to affect residents. Under this objective, Policy E 19.1 states that proposals for hazardous waste storage, collection, treatment, disposal, and transfer facilities shall be accepted for review, only if located on industrial-zoned land within a designated general area.

According to the 2005 GPU EIR, implementation of this objective and policy is assured through compliance with Policy E 20.2, which states that the City shall ensure that significant and potentially significant adverse effects to existing and planned surrounding land uses from facilities that use, store, or handle hazardous materials and waste will be avoided through the environmental review of proposed developments, in accordance with the CEQA. The 2005 GPU EIR concludes that hazards associated with the routine transport, use, disposal, or accidental release of hazardous materials would be less than significant.

The project would support the implementation of Policy E 19.1 and Policy E 20.2. As discussed in Section 5.13 under Thresholds 1 and 2, the project does not propose any incompatible land uses within Village 8 West that would result in a significant hazard from the use, transport, or disposal of hazardous materials, or a reasonable foreseeable upset. All non-residential developments such as urgent care centers would be required to comply with local, state, and federal laws such as RCRA. Household hazardous wastes are limited in the amount and frequency of use, therefore, the frequency and severity of exposure to household hazardous was not present a significant risk. As such, the project would not interfere with the implementation of General Plan Objective 19 or Policy E 20.2 and a cumulative impact related to hazardous materials would not occur.

B. Emergency Response and Evacuation Plans

A cumulative impact related to emergency evacuation plans would occur if development in Village 8 West and the surrounding developments in Otay Ranch would not provide adequate access to regional evacuation routes. As discussed under Threshold 7 in Section 5.13, Village 8 West would not interfere with implementation of any regional response or evacuation plan. Implementation of the SPA Plan and TM would provide connectivity to major arterials with the development of Main Street and Otay Valley Road. Otay Valley Road would provide access to La Media Road, which connects to major roadways for evacuation, including Olympic Parkway, I-805, and SR-125. Evacuation from and emergency response within Village 8 West would be enhanced by the proposed circulation system, which provides multiple accesses to any point within the project area and multiple points of access to the surrounding regional circulation system, as shown in Figure 3-5, Roadway Circulation System. With the completion of Main Street east and west of the project site, and Otay Valley Road to the east of the project site, Village 8 West would connect to SR-125 and I-805 by multiple routes, which would reduce the concentration of gridlock or blockage of either of these major highways during major disasters that may require evacuation. Similar to the proposed project, cumulative development would also enhance the Otay Ranch circulation network and provide additional connections to the regional circulation system. Therefore, cumulative emergency response and evacuation plan impacts would be less than significant.

C. Hazards to Schools, Existing Hazardous Materials Sites, Airport Hazards, Wildland Fires, and Historic Use of Pesticides

Impacts related to schools sites, listing on a hazardous materials site, surrounding airports, wildland fires, and pesticide soil contamination are site specific and not cumulative in nature because impacts to individual projects would be site specific. Potential risks identified for Village 8 West or on other cumulative project sites would not affect potential risks elsewhere in Otay Ranch. Cumulative impacts would be less than significant.

6.2.14 Housing and Population

A. Population Growth

Village 8 West's contribution to cumulative impacts on population growth was included in the 2013 GPA/GDPA SEIR. As discussed in Chapter 7, Growth Inducement, the proposed SPA Plan and TM would be consistent with the GP and GDP, as amended. The amended GDP would not induce substantial population and housing growth because it would implement planned development that would result in an inclusive community, maintain a balance between housing and employment, and allow population to grow adjacent to existing urban areas and in proximity to public transit. The Town Center would provide neighborhood commercial services, increase pedestrian-friendly mobility choices, and medium to high density residential uses in a high-density, mixed use area. Therefore, as concluded in the 2013 GPA/GDPA SEIR, because the increase in population associated with the cumulative projects, including Village 8 West, would be accommodated by the proposed homes and town center commercial services, cumulative impacts associated with housing and population growth would be less than significant.

B. Displacement of Housing and People

Displacement of housing and people is a project specific issue and therefore cumulative impacts were not addressed at the programmatic level in the SEIR for the GPA/GDPA. The project is currently undeveloped and would not result in the displacement of housing or people. Cumulative impacts related to displacement of housing and people are less than significant.

6.2.15 Public Utilities

A. Water

Village 8 West's contribution to the cumulative impacts on water supply was included in the 2013 GPA/GDPA SEIR. The SEIR concluded that impacts would be significant and unmitigated because no water supply verification was required at the program level.

According to the GPA/GDPA SEIR, the cumulative area, including Village 8 West, would result in an increase in water demand of 1.7 mgd. As discussed in Section 5.9, Public Utilities, the project-specific water analysis for Village 9 determined that the project would result in an increase in water demand of 786,575 gpd. A WSAV was prepared based on the most recent water supply information available during assessment preparation (Appendix K1). The report determined that sufficient water supplies are planned for and are intended to be available over a 20-year planning horizon, under normal conditions and in single-dry and multiple-dry water years to meet the projected demand of the project and the existing and other planned development projects to be served by the OWD. The cumulative projects would also be required to obtain WSAVs in compliance with SB 610 and SB 221.

Additionally, the proposed project and the cumulative projects would be required to comply with the Chula Vista Landscape Water Conservation Ordinance, which calls for greater water conservation efforts and more efficient use of water in landscaping. The requirements of this ordinance would be implemented into the design of the proposed project. 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 sites. OWD also requires the implementation of 14 water conservation BMPs. The proposed project and cumulative projects would implement the BMPs for water

conservation, including requiring installation of dual flush toilets, development of a water conversation plan, and use of recycled water.

Long-term water supply cannot be guaranteed; therefore, any increase in water demand would be considered significant. Although the proposed project and the cumulative projects would comply with applicable regulations to reduce water demand, an increase in water demand would occur as a result in development. Cumulative impacts related to water supply would be significant and unavoidable.

B. Wastewater

Village 8 West's contribution to the cumulative impacts on wastewater was included in the 2013 GPA/GDPA SEIR. The SEIR concluded that cumulative impacts would be less than significant because future projects would include a PFFP that articulates needed facilities and identifies funding mechanisms, and the City has the authority to withhold discretionary approvals and subsequent building permits from projects that are out of compliance with threshold standards.

According to the GPA/GDPA SEIR, the cumulative area, including Village 8 West, would result in an increase in sewer demand of 2.3 mgd. The project-specific sewer analysis for Village 8 West determined that the proposed project would result in an increase in wastewater demand of 549,700 gpd. As discussed in Section 5.15, the City would need to acquire an additional 11.68 mgd of capacity above current capacity rights to serve the buildout of Village 8 West and cumulative development in the city.

The 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. The means by which additional treatment capacity would be acquired is unknown and the development of additional capacity may require the expansion of existing or construction of new treatment facilities. Existing policies require major developments to prepare a PFFP that articulates needed facilities and identifies funding mechanisms as well as provides the authority to withhold discretionary approvals and other measures. Implementation of these policies would therefore avoid significant cumulative impacts associated with a shortfall of treatment capacity. Mitigation measures are also provided to ensure that adequate wastewater facilities are provided concurrently with demand. Building permits for any project in the city will be issued only if the City Engineer at that time has determined that adequate wastewater treatment capacity exists to serve the proposed development. However, as stated in Section 5.15, Public Utilities, the location and scope of construction for any future expanded or newly developed treatment facilities is unknown and the development of additional treatment capacity may result in potentially significant and unavoidable cumulative impacts associated with construction of new or expanded treatment facilities even understanding that such projects would likely be subject to environmental review.

C. Solid Waste

Village 8 West's contribution to the cumulative impacts on solid waste management was included in the 2013 GPA/GDPA SEIR. Implementation of the SPA Plan and TM and cumulative development in the city would result in an increased generation of solid waste. The Otay Landfill has a total permitted capacity of 62.4 million cubic yards and has a permitted remaining capacity of 33.1 million cubic yards (53 percent capacity). Pursuant to the 2005 GPU EIR, build out of the city under the 2005 General Plan projections would generate a solid waste disposal quantity of 274,063 tons, after which there would be 26.2 million tons of remaining landfill capacity.

The SEIR determined that the cumulative projects including Village 8 West would generate 35,447 tons per year, of which the proposed project would contribute 9,416 tons. The Otay Landfill has sufficient capacity to accommodate this increased waste disposal in combination with the city-wide cumulative increase in solid waste generation projected in the 2005 GPU EIR. The Otay Landfill is scheduled to close in 2028. However, an existing agreement will permit waste from the city to be transferred to the Sycamore Canyon Landfill upon the closing of the Otay Landfill. There would be no interruption of service (City of Chula Vista 2013). Additionally, the Public Facilities and Services Element and Environmental Element of the General Plan contain objectives intended to encourage the reduction of waste generation and ensure the efficient handling of wastes. As concluded in the 2013 GPA/GDPA SEIR, the project, in combination with the other cumulative projects, would not result in a significant cumulative wastewater impact.

D. Recycled Water

Implementation of the SPA Plan and TM and cumulative development in the city would result in an increased demand for recycled water. The proposed project would result in a demand for recycled water of approximately 137,270 gpd. Based on the cumulative factor of 4.0, the cumulative project area would result in a demand for approximately 549,080 gpd of recycled water. Historically, the only source of recycled water for the OWD has been the Ralph W. Chapman Water Recycling Facility. This facility currently has a rated capacity of 1.3 mgd with a maximum production of approximately 1.1 mgd. Typically, summer demands exceed the 1.1 mgd plant capacity and, as such, a potentially significant cumulative impact exists. However, as discussed in Section 5.15, the South Bay Water Treatment Plant has an ultimate rated capacity of 15 mgd and the OWD obtained capacity rights to 6 mgd of recycled water. This additional source of recycled water will allow OWD to meet existing and future recycled water demands. OWD has master planned and begun constructing a series of pump stations, reservoirs, and transmission lines to integrate this source of water into the existing recycled water system, including service to the project site. However, a cumulatively considerable and unavoidable impact would occur until recycled water from the South Bay Water Treatment Plant is available to meet the projected future recycled water demand.

E. Energy

Village 8 West's contribution to cumulative impacts on energy uses was included in the 2013 GPA/GDPA SEIR. The cumulative assessment of these impacts in the SEIR relies on the 2005 GPU EIR, which concluded that cumulative impacts associated with energy use were significant and unmitigated due to the lack of assurance that resources would be available to adequately serve the projected increase in population.

Implementation of the SPA Plan and TM and cumulative development in the city would result in an increased energy demand of approximately 11.2 million kWh of electricity and 37.3 million cubic feet of natural gas. Based on the cumulative factor of 4.0, the cumulative area would increase electricity demand by 44.8 million kWh and natural gas demand by 149.2 million cubic feet. A significant cumulative impact to energy resources would occur if implementation of the SPA Plan and TM and the cumulative projects result in a demand for energy that exceeds the city's available supply and causes a need for new and expanded facilities.

As discussed in Section 5.15, Public Utilities, implementation of Village 8 West would result in an increased consumption of electricity and natural gas. The SPA Plan and TM 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. Additionally, the project includes a non-renewable energy conservation plan addressing preservation of energy resources. Compliance with these policies and the energy conservation plan would ensure that average energy consumed by future occupants of Village 8 West would not be wasteful, inefficient, or unnecessary. However, while individual cumulative projects may be able to reduce their energy consumption through energy conservation measures, there remains no assurance that an adequate energy supply will be available to serve the cumulative increase in energy demand. As concluded in the 2013 GPA/GDPA SEIR, the project would result in a cumulatively considerable and unavoidable contribution to the significant cumulative impact related to energy.

6.2.16 Mineral Resources

As stated in Section 2.2.3, the Chula Vista General Plan Amendment/Otay Ranch GDP Amendment and SEIR, the SEIR did not address mineral resources, but relies on analysis in the 2005 GPU EIR (EIR 05-01) and the 1993 Program EIR for the GDP (EIR 90-01).

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. As discussed in Section 5.16, Mineral Resources, the majority of the regionally significant aggregate resources in this area is included within the Otay Valley Quarry ownership and is available for extraction. Therefore, the majority of the significant mineral resource has been identified and protected for extraction by inclusion in the Otay Valley Quarry ownership. As shown in Figure 5.16-1, the MRZ-2 area is generally located in areas designated for open space and Preserve in the Otay River Valley. The MSCP Subarea Plan does not preclude mining in the Preserve. Therefore, provided that the requirements of the MSCP Subarea Plan, CEQA and other applicable regulations are met, the potential still remains to extract significant MRZ-2 resources from this area. A portion of the southern area of Village 8 West is identified as MRZ-2 and contains potentially valuable mineral resources, and other areas of the MRZ-2 area are planned for development. However, development of the remainder of the resource area does not preclude the owner from extracting the aggregate prior to development. Because the majority of resources would be available for extraction and extraction of resources outside of the quarry property would not be precluded, a significant cumulative impact would not occur.

Chapter 7 Growth Inducement

Under CEQA Guidelines Section 15126.2(d), a project is defined as growth inducing when it directly or indirectly:

- Fosters economic growth, population growth, or the construction of additional housing in the surrounding environment;
- Removes obstacles to population growth;
- Taxes existing public facilities and services; and/or
- Encourages or facilitates other activities that could significantly affect the environments, either individually or cumulatively.

Growth inducement is generally dependent on the presence or lack of existing utilities and municipal or public services. The provision of services and utilities in a non-serviced area can induce growth between newly serviced areas and the community from which the facilities are obtained. In addition, growth inducement can also be defined as growth that makes it more feasible to increase the density of development in surrounding areas.

1. Growth Inducement due to Population Growth

The project would directly contribute to population growth from the development of residential dwelling units, which would accommodate a population of approximately 5,737 people. The 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 General Plan and Otay Ranch GDP, as amended, includes the 2,050 residential units and 300,000 square feet of commercial and office floor area proposed in the SPA Plan and TM in its growth forecast for Otay Ranch.

Implementation of the SPA Plan and TM would allow the development of residential units within an existing vacant area. As required by the GDP, the SPA Plan includes a site utilization plan, development regulations, and design guidelines to ensure that development is facilitated in a comprehensive and coordinated manner. The development proposed for Village 8 West would result in an inclusive community, maintain a balance between housing and employment, and allow population to grow adjacent to existing urban areas and in proximity to public transit. The Town Center would provide neighborhood commercial services, increase pedestrian-friendly mobility choices, and medium to high-density residential uses in a high-density, mixed-use area.

Implementation of the Village 8 West SPA Plan and TM would not represent "leapfrog" development. The site is surrounded on three sides by developed land or land planned for development by the General Plan and Otay Ranch GDP. Village 7, to the north of Village 8 West, is partially developed. Olympian High School and Magdalena Avenue have already been constructed and are directly northeast of Village 8 West. Village 8 East, to the east of the project site, and the remainder of Village 4, to the west, are currently undeveloped but are planned for development under the General Plan and GDP. The open space to the south of the project site is the Otay River Valley and is part of the Chula Vista MSCP Subarea, the Otay River Valley Regional Park, and the Otay Ranch Preserve. The project does not facilitate growth in an area of the city that was not planned for residential growth or that was projected to remain vacant. Therefore, consistent with the conclusion of the 2013 GPA/GDPA SEIR, implementation of the SPA Plan and TM would not result in a significant growth inducement impact associated with population.

2. Growth Inducement due to Removal of Obstacles to Population Growth

Implementation of the project includes public infrastructure improvements that would support development in Village 8 West, such as water, sewer, and drainage pipelines, and new transportation facilities. These improvements would not open up new areas to development because on-site infrastructure would be sized to the serve Village 8 West and specific surrounding development proposed in the General Plan and GDP. Infrastructure would not include excess capacity that would allow for additional unplanned development. The mitigation measures identified in Section 5.15 would ensure that public utilities would be provided concurrently with development. Therefore, consistent with the conclusion of 2013 GPA/GDPA SEIR, implementation of the SPA Plan and TM would not result in significant growth inducement associated with removal of obstacles to population growth as necessary.

3. Growth Inducement due to Economic Growth

The project would generate direct and indirect population growth and employment opportunities through the construction of housing and non-residential land uses. As people choose to live within the project area rather than elsewhere in the San Diego region, a potential for economic growth would evolve. The project would accommodate economic growth within the development by providing services and employment opportunities to support its residents. The increased population of the area would further foster economic growth by increasing demand for local retail and stimulating employment opportunities. The economic growth of the project area would not be considered growth inducing, because the project includes mixed-use development that would provide a balance between jobs and housing. Village 8 West includes several different of housing options, as well as a variety of retail, commercial, and office space opportunities to provide employment options. Additionally, Village 8 West 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, consistent with the conclusion of the 2013 GPA/GDPA SEIR, implementation of the SPA Plan and TM would not result in significant growth inducement associated with economic growth.

4. Growth Inducement due to Construction of Additional Housing

Village 8 West would accommodate 2,050 residential dwelling units. Residences developed in Village 8 West would be new homes on currently vacant land that are envisioned by and consistent with the General Plan and GDP, as amended. Implementation of the project would accommodate an already projected increase in population. 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. Residential growth in Village 8 West would not induce additional growth beyond what is proposed for the Otay Ranch area because it provides mixed-use development that complements land uses proposed for the surrounding villages. Therefore, consistent with the conclusion of the 2013 GPA/GDPA SEIR, the project would not be growth inducing with respect to the construction of additional housing due to the fact that the SPA Plan and TM include planned commercial growth in the area to support residential development and provide employment opportunities.

5. Taxation of Existing Public Facilities and Services

As discussed in Section 5.9, Public Services, and Section 5.15, Public Utilities, the mitigation measures identified in these sections would ensure that the proposed project would meet the requirements of the Growth Management Plan. The PFFP implements the Chula Vista Growth Management Program and Ordinance. The intent of the PFFP is to ensure that the phased development of the project is consistent with the overall goals and policies of the Chula Vista General Plan, Growth Management Program, and the Otay Ranch GDP. The PFFP ensures that development of Village 8 West will not adversely impact the city's quality of life standards by requiring public facilities and services concurrent with demand.

6. Other Activities that Significantly Affect the Environment

The project does not include any components that would encourage or facilitate any other activities that would significantly affect the environment. The land uses proposed in the SPA Plan are consistent with the General Plan and GDP and would not encourage or facilitate any off-site unplanned uses. The regional circulation connections proposed in the Village 8 West circulation system, such as Main Street and Otay Valley Road, are also consistent with regional planning and the City's Transportation Element. The proposed trail connection through the Preserve that will ultimately connect to the Otay Valley Regional Park and Greenbelt Trail would provide access to open space areas that may include sensitive biological resources. However, the Otay Valley Regional Park is planned to include public access trails, and passive uses such as trails are considered appropriate uses in the MSCP Subarea Plan. The trail would include fencing and signage to direct users to stay within the designated trail. Therefore, the project would not result in other activities that would significantly affect the environment.

This page intentionally left blank.

Chapter 8 Significant Unavoidable Environmental Effects/ Irreversible Changes

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 Effects Which Cannot Be Avoided if the Project Is Implemented

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 SPA Plan and TM would result in impacts associated with air quality (air quality violations, air quality plans), noise (short-term increase in traffic noise), global climate change (potential effects of global climate change), agricultural resources (direct conversion of agricultural resources), aesthetics/landform alteration (visual character or quality), cultural resources (cumulative impacts to unknown archaeological resources and human remains), and public utilities (demand for water, demand for wastewater capacity, demand for energy, and cumulative demand for recycled water) which are significant and unavoidable. 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.

8.2 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 Village 8 West.

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 Plan includes a WCP that includes mandatory water reduction measures for residential and non-residential land uses that would reduce water use by approximately 202,490 gpd. The Non-Renewable Energy Conservation Plan and WCP are described in detail in Section 5.10, Global Climate Change, and Section 5.15, Public Utilities. As indicated in Section 5.10, Global Climate Change, the project's design and features, would reduce vehicle miles traveled by approximately 20 percent compared to the regional average trip length, and total GHG emissions for the GPA/GDPA area would be reduced by 32 percent 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.

Village 8 West has historically been used for agricultural uses, specifically cattle grazing and dry farming including barley, wheat, and oat hay (Gallegos & Associates 2009). Development within Village 8 West would contribute to the incremental and cumulative loss of agricultural lands (Farmland of Local Importance). This would be an irreversible consequence of converting Village 8 West to urban uses. However, this site has been planned as part of the Otay Ranch GDP to serve as an urban village to provide single-family and multi-family residential units, a town center containing commercial uses, parks, community purpose facility uses, schools, affordable housing and a transit stop. No additional loss of agricultural land would occur beyond what was planned for in the 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 Plan includes requirements for future development so that continued use of such resources would be of a relatively small scale compared to similar development. Additionally, the project would accommodate growth forecasted for the Otay Ranch area. 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.

This page intentionally left blank.

Chapter 9 Effects Found Not To Be Significant

All potential environmental impacts associated with the SPA Plan and TM have been addressed in the preceding sections of this EIR.

This page intentionally left blank.

Chapter 10 Alternatives

Section 15126.6 of the CEQA Guidelines requires the discussion of "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 the evaluation of the comparative merits of the alternatives. The alternatives discussion in this chapter is intended to "focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project," even if these alternatives impede to some degree on the attainment of the project objectives.

Implementation of the SPA Plan and TM has been evaluated for significant direct and/or cumulative environmental impacts in Chapter 5, Environmental Impact Analysis, and Chapter 6, Cumulative Impacts. Significant direct and/or cumulative impacts have been identified for the following issues: land use, aesthetics/landform alteration, transportation, air quality, noise, biological resources, cultural resources, geology and soils, public services (fire and emergency medical services, police services, schools, libraries, parks), global climate change, hydrology and water quality, agriculture resources, hazards and hazardous materials, and public utilities (water supply, wastewater facilities, energy supply, recycled water.

Mitigation measures have been identified that would reduce all direct and cumulative impacts to below a level of significance, with the exception of aesthetics (direct and cumulative loss of rolling hills and open space character, and cumulative diminishment of views and scenic resources), air quality (direct and cumulative inconsistency with air quality plans and exceedance of criteria air pollutant emissions), noise (short-term direct increase in traffic noise), archaeological resources and human remains (cumulative loss of resources), potential effects of climate change (direct and cumulative emissions of ozone precursors), agricultural resources (direct and cumulative loss of agricultural land), water (direct and cumulative guarantee of long term water supply), energy (direct and cumulative guarantee of long term energy supply), wastewater (direct and cumulative treatment capacity), and recycled water (cumulative recycled water supply).

In developing the alternatives to be addressed in this chapter, consideration was given to the ability to meet the basic objectives of the project and eliminate or substantially reduce the identified significant environmental impacts. The SPA Plan identifies the project objectives that would implement the Otay Ranch GDP vision for Village 8 West as indicated below:

1. Create a recognizable "place" that is unique, attractive, and full of cultural and social diversity.
2. Develop distinctive design standards and invest in design excellence to create inspiring and memorable places; emphasize the appearance and qualities of the public realm; create

streetscapes, pathways, and public spaces of beauty, interest, and functional benefit to pedestrians.

3. Encourage development patterns that promote orderly growth, prevent urban sprawl, and promote effective resource management.
4. Protect and enhance the natural environment and increase the quality of life. Design neighborhoods with compact and multi-dimensional land use patterns that ensures a mix of uses and joint optimization of transportation modes to minimize the impact of cars, promote walking and bicycling, and provide access to employment, education, recreation, entertainment, shopping, and services.
5. Create an appropriately scaled and economically healthy Town Center. Include a wide range of commercial, residential, cultural, civic, recreational uses, and businesses that serve the daily needs of nearby residents.
6. Establish a pedestrian and transit-oriented village with an intense, vibrant Town Center to reduce reliance on the automobile and promote walking and the use of bicycles, buses, and regional transit.
7. Encourage community development in mixed use and compact pedestrian oriented forms to accommodate all income levels and lifestyles.
8. Foster a compact form facilitated by "form-based planning," resulting in efficient infrastructure investments and advanced opportunities to provide socially diverse housing.
9. Retain and recruit a skilled and motivated workforce to ensure economic stability into the future by providing attainable housing opportunities. Promote jobs that match the skills of existing and future residents through provision of housing opportunities and choices and by providing an opportunity for the City to attract a university or related uses by dedication of land for such purposes.
10. Promote synergistic uses and graceful transitions within the SPA and between the SPA and neighborhoods of adjacent SPAs to balance activities, services, and facilities. Integrate Village 8 West with existing Otay Ranch development, including connectivity to the Greenbelt.
11. Implement the goals, objectives and policies of the Chula Vista General Plan, the Otay Ranch General Development Plan, the Chula Vista Greenbelt Master Plan, and the Otay Valley Regional Park Concept Plan.
12. Encourage the interactivity of a wide range of people, promote community diversity, and enrich the human experience by providing a broad variety of public spaces and housing types and styles that appeal to all ages, incomes, and lifestyles.
13. Establish a plan that is fiscally responsible and viable with consideration of existing and anticipated economic conditions.

Three alternatives have been selected for the SPA Plan and TM. They include the following:

- No Project (No Build) Alternative
- Reduced Project Alternative #1 – 1,167 Dwelling Units
- Reduced Project Alternative #2 – 672 Dwelling Units

A summary of the buildout potential of each reduced project alternative compared to the proposed SPA Plan and TM is shown in Table 10-1. Another alternative considered but eliminated from further analysis included the development of the project at another location. This was determined to be infeasible because the project applicant owns the properties in question, and the goal is to complete the vision of the Otay Ranch GDP, which can only be accomplished at the current project location.

Table 10-1 Alternative Land Use Comparison

Land Use	Proposed Project	Reduced Project Alternative #1 – 1,167 Dwelling Units	Reduced Project Alternative #2 – 672 Dwelling Units
Neighborhood Edge - Residential Low-Medium Density (units)	331	301	155
Neighborhood General - Residential Medium Density (units)	290	287	192
Neighborhood Central - Residential Medium-High Density (units)	530	428	325
Town Center (units)	899	151	0
Commercial (square feet)	300,000	170,000	104,000
Neighborhood Park (acres)	7.5	0	0
Open Space (acres)	23.5	23.5	40.4
Total Residences	2,050	1,167	672

An analysis of the alternatives to the project is presented in Sections 10.1 through 10.3, below. Each subject area included in Chapter 5, Environmental Impact Analysis, has been evaluated under each alternative. A concluding Section 10.4 provides a summary of the comparative assessment and a discussion of the alternatives' ability to meet the project objectives. A discussion of the environmentally superior alternative is provided in Section 10.5.

As required under Section 15126.6(e)(2) of the CEQA Guidelines, an EIR must identify the environmentally superior alternative. Pursuant to the CEQA Guidelines, if the No Project Alternative is determined to be the most environmentally superior project, then another alternative among the alternatives evaluated must be identified as the environmentally superior project. Section 10.5 identifies the Environmentally Superior Alternative.

10.1 No Project (No Build) Alternative

CEQA Guidelines Section 15126.6 (e)(3)(B) states that the No Project (No Build) alternative is "a circumstance under which a project does not proceed" and may be considered the environmental effects of the property remaining in its existing state. The No Project (No Build) Alternative assumes that no SPA Plan would be developed for Village 8 West and that the project area would remain unchanged. Accordingly, the site characteristics of this alternative would be equivalent to the existing conditions for each category analyzed in this EIR. The potential impacts of this alternative are compared to the proposed project below.

Land Use

Similar to the project, the No Project (No Build) Alternative would result in a less than significant impact related to physical division of an established community because no community exists on site and the undeveloped area would be compatible with surrounding land uses. If the site were to remain

undeveloped, open rolling hills would be retained, maintaining the existing character of the project site. The land use incompatibility regarding the City of San Diego water pipeline would be avoided under this alternative because no development would be constructed that would impede access to the pipelines. Similar to the project, the No Project (No Build) Alternative would not conflict with the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP because the site would remain open space and would not include any land uses that would conflict with these resource plans. However, the No Project (No Build) Alternative would have the potential to conflict with the General Plan and GDP because it would not implement the development envisioned for Village 8 West is these documents.

Aesthetics/Landform Alteration

The No Project (No Build) Alternative would avoid impacts related to scenic vistas, scenic roadways, visual character or quality, lighting and glare, sensitive landforms, and steep slopes compared to the project. Under this alternative, views of the project and the character of the site would remain unchanged. Additionally, no new sources of light, glare, or shading would be introduced. The project's cumulatively considerable contribution to a significant cumulative aesthetic impact would be avoided. Similar to the project, this alternative would result in less than significant impact related to consistency with General Plan and GDP policies related to aesthetics and landform alteration.

Transportation and Traffic

The No Project (No Build) Alternative would result in reduced direct impacts to traffic and level of service standards and congestion management compared to the project because no new vehicular trips would be generated by this alternative. However, the proposed extensions of Main Street and Otay Valley Road across the project area would not be implemented under the No Project (No Build) Alternative. These extensions are part of the envisioned circulation network for Otay Ranch and would provide important connections between village and access to SR-125 and the region. These roadways would be incomplete without development on the Village 8 West site; therefore, long-term cumulative traffic impacts would likely still occur under the No Project (No Build) Alternative and mitigation may not be possible without development within the project area. Without the regional connections that would be provided by the Village 8 West SPA Plan circulation network, traffic generated by future growth would be concentrated on fewer roadways. Therefore, this alternative would potentially result in a greater cumulative traffic impact compared to the project.

Additionally, impacts related to emergency access and alternative transportation policies would be greater under this alternative because evacuation, emergency response, and alternative transportation facilities to adjacent development areas would not be enhanced under this alternative. No new points of access, trails, pathways, bicycle paths, or transit routes proposed for Village 8 West would be developed. The No Project (No Build) Alternative would be inconsistent with General Plan polices to increase use of alternative modes of transportation. For example, Objective LUT 17 in the Land Use and Transportation Element is to plan and coordinate development to be compatible and supportive of planned transit. The No Project (No Build) Alternative would conflict with planned transit routes for the Otay Ranch area.

The No Project (No Build) Alternative would avoid impacts to air traffic patterns compared to the project because no development would occur. No roadways would be constructed under this alternative; therefore, impacts related to safety hazards would be less than significant, similar to the project.

Air Quality

The No Project (No Build) Alternative would avoid the project's significant and unavoidable impact related to air quality violations because no construction or operational emissions would result from this

alternative. Impacts related to sensitive receptors would also be avoided because no new potential toxic air contaminant sources or sensitive receptors would be developed in Village 8 West. Similar to the proposed project, no new receptors would be proposed in the vicinity of the Otay Landfill and odor impacts would be less than significant. The No Project (No Build) Alternative would result in no impact related to consistency with the RAQS and SIP because no new criteria air pollutant emissions or growth would occur under this alternative. The significant and unavoidable direct and cumulative air quality impacts that would result from the project would be avoided. Similar to the project, the No Project (No Build) Alternative would result in less than significant impacts related to consistency with General Plan and GDP air quality policies.

Noise

The No Project (No Build) Alternative would avoid impacts related to excessive noise levels compared to the project because no new noise sources or sensitive receptors would be developed in Village 8 West, and no traffic would be generated on site. Impacts related to groundborne vibration and temporary increase in ambient noise would not occur under the No Project (No Build) Alternative because no construction would occur. The No Project (No Build) Alternative would not contribute to any perceived increase in ambient noise levels. Because there would be no sensitive receptors on the site, there would be no potential exposure to quarry noise under this alternative. Similar to the project, the No Project (No Build) Alternative would result in less than significant impacts related to aircraft noise and consistency with General Plan and GDP noise policies.

Biological Resources

The No Project (No Build) Alternative would not result in any impacts related to special status plant and wildlife species, riparian habitat, and other sensitive natural communities, federally protected wetlands, and consistency with the MSCP and RMP because no development would occur. Less than significant impacts related to wildlife movement corridors and nursery sites would also be avoided.

Cultural Resources

Potentially significant direct and cumulative impacts related to archaeological resources, human remains, and paleontological resources would be avoided under the No Project (No Build) Alternative because no earth-disturbing construction activities would occur. Similar to the project, the No Project (No Build) Alternative would be consistent with General Plan and GDP policies related to cultural resources, and impacts would be less than significant. Since there are no historical resources located on the Village 8 West site, potential impacts to these resources would not change with this alternative (no impact).

Geology and Soils

The No Project (No Build) Alternative would avoid potentially significant impacts related to exposure to seismic related hazards, soil stability, expansive soils, and soil erosion and topsoil loss that would occur under the project because no new development would occur. Similar to the proposed project, the No Project (No Build) Alternative would be consistent with General Plan and GDP geotechnical policies and would not require any septic tanks or alternative wastewater disposal systems.

Public Services

Fire and Emergency Medical Services, Police Services, Schools, and Libraries. The No Project (No Build) Alternative would not result in any impacts to fire and emergency medical services, schools, and

libraries because no increase in demand for these services would occur under this alternative; therefore, the ability to meet the City's services standards would not be affected. Impacts related to schools siting would be reduced compared to the project because no new schools would be needed or developed; therefore, no soil testing or geotechnical investigations would be required to identify potential siting conflicts. The No Project (No Build) Alternative would be consistent with all General Plan and GDP policies related to fire and emergency medical, police, school, and library services and there would be no impact on the GMO standards.

Parks, Recreation, Open Space, and Trails. No development would occur under the No Project (No Build Alternative) that would result in additional use of existing or need for new facilities. Impacts related to construction of new facilities would decrease compared to the project. However, the No Project (No Build) Alternative would result in increased impacts related to the City's parkland standard compared to the project. A portion of the Otay Ranch Community Park is proposed for Village 8 West. This park is intended to provide an important recreational resource for the Otay Ranch area and the park would remain incomplete under this alternative. Without implementation of the SPA Plan parkland system, a significant impact related to the parks and recreation standard could occur. The No Project (No Build) Alternative would also result in a conflict with General Plan Policy LUT 81.1, which is to develop a large community park to serve Otay Ranch. A portion of this park is proposed within Village 8 West, which would not be completed under the No Project (No Build) Alternative. In addition, the alternative would conflict with the parkland designations of the Otay Ranch GDP, Greenbelt Master Plan, and Chula Vista Parks and Recreation Master Plan because facilities identified in these plans would not be developed.

Global Climate Change

The No Project (No Build) Alternative would not result in any impact related to GHG emissions and compliance with AB 32 because no construction or operation emissions of GHGs would occur under this alternative. Additionally, the significant and unavoidable direct and cumulative impact related to exacerbation of air quality problems as a result of climate change would be avoided under this alternative because the No Project (No Build) Alternative would not result in any emissions of ozone precursors that would contribute to exacerbation of air quality problems as a result of climate change.

Hydrology and Water Quality

The No Project (No Build) Alternative would not result in any impacts related to water quality standards, erosion and siltation, surface runoff, drainage capacity, and water quality degradation compared to the project because no changes to the existing drainage pattern would occur, and no construction or development activities would take place that would generative pollutants. 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.

Agricultural Resources

The direct and cumulative significant and unavoidable impact related to conversion of agricultural resources would not occur under this alternative because no development would be implemented on the site, and no potential agricultural land would be converted to non-agricultural use. Potentially significant impacts related to land use conflicts would be avoided because no development would occur on site. Similar to the project, the No Project (No Build) Alternative would not result in any conflict with agricultural policies.

Hazards and Hazardous Materials

No development would occur under this alternative; therefore, no hazardous materials would be transported, used, or disposed of for construction or operation. Impacts related to the accidental release of hazardous materials, hazards to schools, and historic use of pesticides would be avoided because no ground disturbing activities with the potential to disturb contaminated soil would occur, and no new schools would be developed. Less than significant impacts related to wildland fire would be avoided because no new development would occur. A Fire Protection Plan would not be required. The potential for a wildland fire on the project would still exist, but the No Project Alternative would not expose any new structures or people to the risk.

Similar to the project, there would be no impacts related to listed hazardous sites because no sites are listed in Village 8 West. The impact associated with the project related to airport hazards would be avoided because no development would occur and no notification in compliance with the Brown Field ALUCP would be required. Impacts related to emergency response and evacuation plans would be greater under this alternative because the circulation system would not be constructed through the site thereby hindering emergency response to the area. Similar to the project, the No Project (No Build) Alternative would not conflict with any General Plan and GDP policies related to hazards and hazardous materials.

Housing and Population

No impacts related to population growth would occur under this alternative because no residential or economic growth would occur and no infrastructure would be installed. Similar to the project, the No Project (No Build) Alternative would not displace any housing or people. However, the No Project Alternative would conflict with any General Plan and GDP housing and population policies that encourage a variety of housing types in the city because it would not implement the range of residential development envisioned for Village 8 West in the General Plan, including affordable housing.

Public Utilities

The No Project (No Build) Alternative would not result in any impacts related to water, wastewater treatment, solid waste, recycled water, and energy compared to the project because no development would occur. The No Project (No Build) Alternative would not result in any increase demand for these services. The potentially significant direct and cumulative impacts related to long-term guarantee of water supply and energy, capacity of wastewater treatment facilities, and recycled water supply would be avoided under this alternative.

Mineral Resources

The less than significant impacts related to mineral resources would be the same as the proposed project under this alternative because no development would occur under the No Project (No Build) Alternative and the small portion of Village 8 West designated MRZ-2 would remain available for future extraction. Similar to the project, the No Project (No Build) Alternative would not result in any conflict with mineral resources policies. Impacts would be less than significant without mitigation.

10.2 Reduced Project Alternative #1

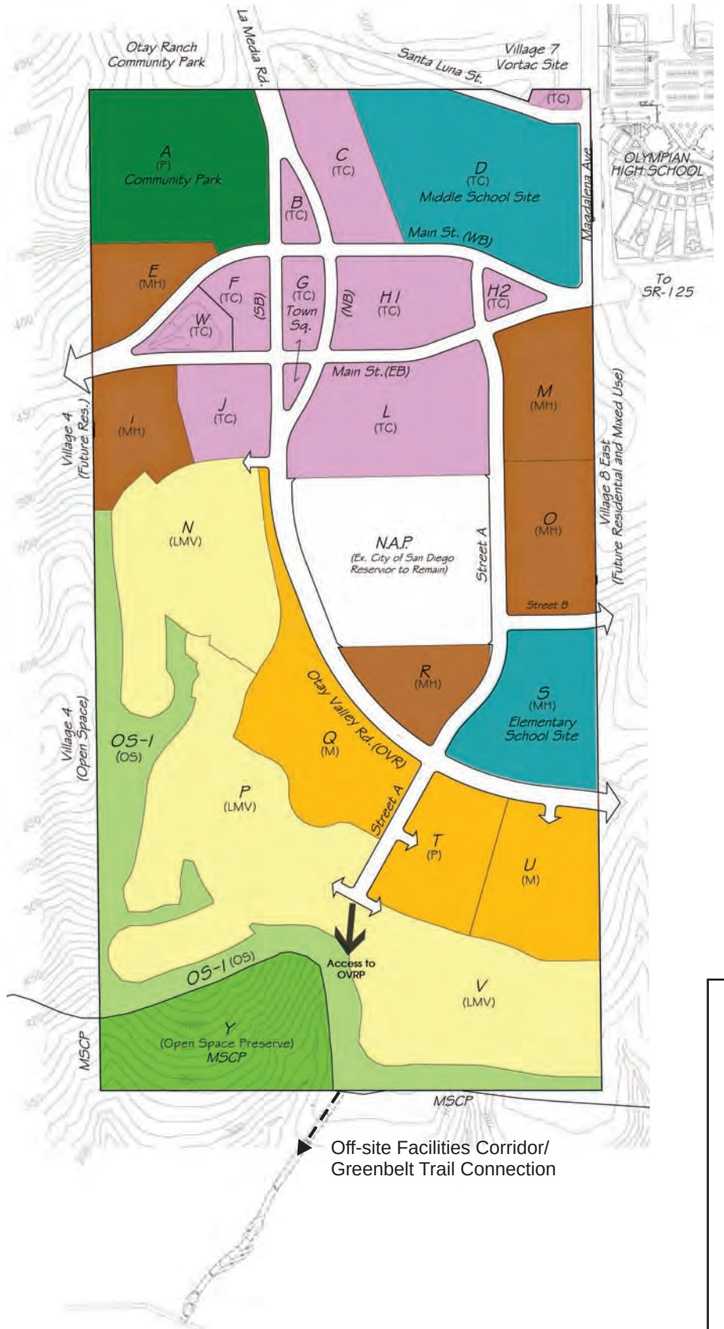
As shown in Table 10-1, Reduced Project Alternative #1 (the 1,167 dwelling unit plan) would include the development of 1,167 residential units, compared to 2,050 units under the proposed Village 8 West SPA Plan and TM. This alternative was derived from the intention to provide a more suburban approach to development in the SPA Plan area. This alternative reduces residential development by almost 50 percent, and promotes a more horizontal mixed-use pattern in place of the more vertical mixed-use town center plan. In addition, it significantly reduces residential density in the town center and the maximum density in the other transects to approximately half of the proposed project.

The greatest reduction in development would occur in the Town Center, which would be reduced to 151 units compared to 899 under the proposed SPA Plan, which encourages horizontal mixed-use rather than vertical. Under the Reduced Project Alternative #1, no residential units would be developed in Planning Areas B, C, H-1, or L. These areas include mixed-use development under the proposed project. Multi-family residential units would still be developed in Planning Areas F and J, at reduced densities compared to the project. Commercial development in the Town Center would also be reduced to 170,000 square feet, compared to 300,000 square feet under the proposed project. Additionally, the Neighborhood Park proposed for the project would be eliminated under this alternative. The park area (Planning Area T) would be designated for single-family residential development to further reduce density in the Neighborhood General Zone. Figure 10-1 summarizes the Reduced Project Alternative #1 site utilization plan. The potential impacts of this alternative are compared to the proposed project below.

Land Use

Similar to the proposed project, the Reduced Project Alternative #1 would result in a less than significant impact related to physical division of an established community because no community exists on site, and the proposed land uses would be compatible with surrounding planned land uses. Similar to the project, the Reduced Project Alternative #1 would not conflict with the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP. This is because this alternative would propose similar commercial and residential development areas as the proposed project, a greater amount of open space, a Preserve Edge Plan, and would not include any land uses that conflict with these resource plans. The land use incompatibility associated with the impedance of access to the City of San Diego water line would still occur under this alternative.

However, the Reduced Project Alternative #1 would result in a significant impact related to consistency with the GDP and Chula Vista General Plan because this alternative would not implement the objectives and policies envisioned in the General Plan and GDP. For example, this alternative would conflict with Objective LUT 81 of the Chula Vista General Plan Land Use and Transportation Element, which is the development of a higher density, mixed-use, transit-oriented town center positioned on the intersection of Main Street and La Media Road, surrounded by lower intensity residential use and a large community park. The Reduced Project Alternative #1 proposes only two mixed-use planning areas (Planning Areas F and J) and does not propose high density residential or retail development. The Town Center would continue to be centered on the intersection of Main Street and La Media Road; however, the mixed-use planning areas would only be located west of La Media Road, rather than surrounding the Main Street and La Media Road couplet intersections. Therefore, this alternative would result in an additional land use impact compared to the project.



Land Use

- Town Center (TC)
- Medium High Density Residential (MH)
- Medium Density Residential (M)
- Low Medium Density Residential Village (LMV)
- Open Space (OS)
- Open Space (Preserve)
- Park (P)
- School

* Lotting and grading to be determined at Tentative Map

Source: William Hezmalhalch Architects, Inc. 2012

0 400 800 Feet

N

Commercial and Residential

Town Center – 18 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]	Target C'ml Sq.Ft. (K)[2]
B	1.4	T-4: TC	0	0
C	6.9	T-4: TC	0	20
F	3.0	T-4: TC	54	14
H-1	7.8	T-4: TC	0	82
H-2	1.3	T-4: TC	0	7
J	5.4	T-4: TC	97	10
L	14.2	T-4: TC	0	37
X	0.7	T-4: TC	0	0
Subtotal	**40.7**		**151**	**170**

Medium High Density Residential – 14.5 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]
E	5.3	T-3: NC	77
I	6.8	T-3: NC	99
M	8.5	T-3: NC	123
O	8.9	T-3: NC	129
Subtotal	**29.5**		**428**

Medium Density Residential Attached/Detached – 8.5 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]
Q	14.7	T-2: NG	125
T	9.5	T-2: NG	81
U	9.5	T-2: NG	81
Subtotal	**33.7**		**287**

Low Medium Density Residential Village – 4.5 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]	
N	19.6	T-2: NE	88	
P	26.9	T-2: NE	121	
V	20.5	T-2: NE	92	
Subtotal	**67.0**		**301**	
TOTAL	**170.9**		**1167**	**170K[3]**

Public, Quasi Public, and Other

Community Purpose Facility (CPF)[4]

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Description
R	MH	5.8	SD: CPF	CPF[4]
Subtotal		**5.8**		

Potential School (S) Sites[5]

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Description
D	TC	20.2	T-4: TC	Middle
S	MH	11.4	T-3: NC	Elementary
Subtotal		**31.6**		

Parks (P)

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Classification
A	P	17.4	SD: P	Community
G	TC	3.0	SD: P	Town Square
Subtotal		**20.4**		

Open Space (OS)

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Classification
Y	CVOSP[6]	15.6	T-1: OP	Preserve (MSCP)
OS-1	OS	23.5	T-1: OS	Open Space
Subtotal		**39.1**		

Other

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Description
W	TC	2.4	SD: R	Basin
Right-of-Way	NA	30.1	NA	Arterials
Subtotal		**32.5**		
TOTAL		**129.4**		

SPA Total Area: 300.3 Gross Acres[7]

[1] Transects are defined in Chapter 3 of the SPA Plan.
[2] See Chapter 9 of the SPA Plan regarding Intensity Transfer
[3] 34,000 square feet of office; 136,000 square feet of retail (excludes Live/Work)
[4] As defined by CVMC 19.48
[5] School sites will revert to the underlying use if sites are not accepted by the school district. Parcel D shall revert to Town Center and Parcel S shall revert to Medium High Density Residential.
[6] Chula Vista Open Space Preserve
[7] Acreage does not include 19.6-acre San Diego Reservoir

REDUCED PROJECT ALTERNATIVE #1 SITE UTILIZATION PLAN
FIGURE 10-1

This page intentionally left blank.

Aesthetics/Landform Alteration

Compared to the project, the Reduced Project Alternative #1 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 up to 60 feet tall, similar to the proposed project, and would result in similar grading. Potentially significant impacts related to alteration of Rock Mountain and shading within the Town Center would still occur under this alternative. Although densities would be reduced, similar land uses would be developed across the Village 8 West SPA. Similar to the 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 project because loss of open rolling hills would still occur. Similar to the project, this alternative would result in a less than significant impact related to consistency with General Plan and GDP policies related to aesthetics and landform alteration.

Transportation and Traffic

The Reduced Project Alternative #1 would result in reduced direct and cumulative impacts to traffic and level of service standards and congestion management compared to the project. Less vehicular trips would be generated by this alternative: 22,185 ADT compared to 26,104 ADT under the project as proposed, based on the trip generation rates utilized in the traffic impact analysis (RBF 2013). This alternative assumes half of the internal capture rate of the proposed project because it would include some mixed-use development and a town center that provides retail and commercial opportunities for residents, but does not propose high density development to the extent of the proposed project.

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 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 for Village 8 West would also be implemented under Reduced Project Alternative #1. The Reduced Project Alternative #1 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. FAA notification would be required to reduce impacts to a less than significant level.

Air Quality

The Reduced Project Alternative #1 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.

Operational emissions would also be reduced because vehicle trips and area sources would be reduced compared to the project. Significant VOC emissions would be reduced by approximately 34 percent. Significant NO_x emission would be required by approximately 7 percent. Significant PM_{10} impacts would be reduced by approximately 15 percent compared to the proposed project. However, as shown in Table 10-2, VOC, NO_x, and PM_{10} emissions would still be significant because the significance thresholds

would still be exceed. Direct and cumulative Impacts would be significant and unavoidable, similar to the project.

Table 10-2 Operation Maximum Daily Emissions – Reduced Project Alternative #1

Emissions Source	Pollutant Emissions (pounds/ day)					
	CO	VOC	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Vehicular Sources[1]	310	33	26	1	170	33
Area Sources						
Natural Gas[2]	19	2	31	0	0	0
Hearth (fireplaces)[3]	1	0	1	0	0	0
Landscape	36	5	0	0	0	0
Consumer Products	0	60	0	0	0	0
Architectural Coatings[4]	0	12	0	0	0	0
Reduced Project Alternative #1 Total Emissions	366	**112**	**58**	1	**170**	33
Proposed Village 8 West Total Emissions	*427*	***169***	***69***	*1*	***201***	*39*
Significance Thresholds	550	55	55	150	150	55
Significant Impact?	No	**Yes**	**Yes**	No	**Yes**	No

CO = carbon monoxide; VOC = volatile organic compounds; NO_x = nitrogen oxides; SO_x = sulfur oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter

(1) Modeling assumptions: Calculations assume the full development of project at buildout (2030). Output is for summer emissions, with the exception of hearth emissions, where winter emissions were added to the daily emissions for a worst-case condition.

(2) Other assumptions include: Based on an ADT of 22,185 trips and an estimated vehicle trip length of 4.62 miles, which accounts for internal capture from mixed-use development, the reduction in vehicle trips compared to similar developments that do not provide access to transit, and the TDM program in the SPA Plan. A 4 percent vehicular emission reduction for VOC, NO_x, CO, and PM_{10} emissions was applied for traffic light synchronization based on the SCAQMD CEQA Air Quality Handbook (1993). Assumes buildings comply with 15 percent above 2008 Title 24 standards.

(3) Assumes 15 percent of homes would have fireplaces, consistent with assumptions of the GPA/GDPA SEIR. No wood burning fireplaces would be allowed.

(4) Assumes model defaults for low VOC coatings (250 grams of VOC per liter or less).

Source: CARB 2007.

Impacts related to sensitive receptors would be comparable to the project because similar land uses would be allowed under this alternative, including gas stations. Impacts would be less than significant with mitigation.

Impacts related to odors would be the same under this alternative. No new receptors would be located in the vicinity of Otay Landfill. The Reduced Project Alternative #1 would not exceed the RAQS growth assumption for Village 8 West (1,556 residential units). 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 GDP air quality policies would be similar to the project under the Reduced Project Alternative #1.

Noise

The Reduced Project Alternative #1 would result in fewer impacts related to excessive noise levels compared to the project because reduced traffic volumes would result in lower noise levels. However, due to cumulative increases in traffic, including the Reduced Project Alternative #1 trips, this alternative's direct and cumulative impacts would still be significant. The reduced density in the Town

Center would also reduce exposure of NSLU to noise from HVAC units and community parks. However, NSLU would still be proposed in areas adjacent to commercial and community park uses, such as mixed-use Planning Areas F and J and the middle school site (Planning Area D). Impacts to residences in Planning Areas B, C, G, H1, H2, and L would be eliminated because no residences are proposed in these areas under the Reduced Project Alternative #1. However, outdoor usable areas in the Town Center in these planning 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 Project Alternative #1 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 Reduced Project Alternative #1 because similar construction activities would occur and short-term traffic related noise would increase. The Reduced Project Alternative #1 would reduce impacts related to the substantial permanent increase in ambient noise levels compared to the project because fewer trips would be generated from Village 8 West. However, the Reduced Project Alternative #1 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 GDP noise policies would be similar to the project.

Biological Resources

The Reduced Project Alternative #1 would result in the same potentially significant but mitigable impacts related to special status plant and wildlife species, riparian habitat, and other sensitive natural communities, federally protected wetlands, and consistency with the MSCP and RMP compared to the project because this alternative would have the same development footprint as the project. The mitigation measures identified for the proposed project would also be required under this alternative.

Cultural Resources

Impacts related to historical resources would be less than significant under the Reduced Project Alternative #1, similar to the project, because no historical resources are located in Village 8 West. Potentially significant impacts related to archaeological resources, human remains, and paleontological resources would be the same as the proposed project because this alternative would have the same development footprint as the project and would require ground disturbing activities. Similar to the proposed project, impacts to unknown historic and archaeological resources, human remains and paleontological resources would be cumulatively considerable and unavoidable due to the potential for discovery of these resources in Village 8 West. Similar to the project, the Reduced Project Alternative #1 would be consistent with General Plan and GDP policies related to cultural resources, and impacts would be less than significant.

Geology and Soils

The Reduced Project Alternative #1 would result in the same potentially significant impacts related to exposure to seismic related hazards, soil stability, soil erosion and topsoil loss, and expansive soils that would occur under the project because similar development would occur across Village 8 West. The geotechnical recommendations and compliance with applicable regulations as required by the project mitigation measures would also be required for this alternative. Similar to the project, the Reduced Project Alternative #1 would be consistent with General Plan and GDP geotechnical policies and would not require any septic tanks or alternative wastewater disposal systems.

Public Services

Fire and Emergency Medical Services, Police Services, Schools, and Libraries. The Reduced Project Alternative #1 would result in a reduced demand for fire and emergency medical services, schools, and libraries because fewer residential units would be constructed, and the Reduced Project Alternative #1 would generate less population growth. However, 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.

Potentially significant impacts related to schools siting would be similar compared to the project because the two new schools proposed for Village 8 West would also be developed under this alternative in the same locations. Similar to the project, the Reduced Project Alternative #1 would be consistent with all General Plan and GDP policies related to fire and emergency medical, police, school, and library services with implementation of the mitigation measures identified for the project.

Parks, Recreation, Open Space, and Trails. Based on the CVMC method for calculating parkland requirements, which is more conservative than the GDP and Quimby Act method, the Reduced Project Alternative #1 would require 10.3 acres of parkland to serve the development. This alternative would provide 20.4 acres of community park and town square parkland. However, similar to the proposed project, impacts related to deterioration of existing park facilities would be significant if parkland would not be provided concurrently with demand. Similar to the project, Reduced Project Alternative #1 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.

Impacts related to construction of new facilities would decrease compared to the project because less construction would occur. The Neighborhood Park proposed for Village 8 West would not be developed. This alternative would not conflict with the parkland designations and policies of the General Plan, Otay Ranch GDP, or Greenbelt Master Plan. However, this alternative would result in a conflict with the Chula Vista Parks and Recreation Master Plan because it would not include the Neighborhood Park identified for Village 8 West in the Master Plan. Impacts related to park policies would increase compared to the project.

Global Climate Change

The Reduced Project Alternative #1 would result in a less than significant impact related to GHG emissions and compliance with AB 32, similar to the proposed project. Total construction and operational emissions of GHGs would be reduced under this alternative. Commercial and residential land uses would be reduced by approximately 40 percent compared to the proposed project; therefore, it is assumed that GHG emissions from implementation of the proposed project would also be reduced approximately 40 percent.

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.

Hydrology and Water Quality

The Reduced Project Alternative #1 would result in similar impacts related to water quality standards, erosion and siltation, surface runoff, drainage capacity, and water quality degradation compared to the

project. The Reduced Project Alternative #1 has the same development footprint as the project and would result in similar impacts to the existing drainage pattern, and similar construction and development activities would take place. Generation of pollutants during operation would be slightly reduced because less development would occur. Similar to the project, mitigation would be required to reduce hydrology and water quality impacts to a less than significant level. 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.

Agricultural Resources

A significant and unavoidable direct and cumulative impact related to conversion of agricultural resources would occur under this alternative, similar to the project, because this alternative would have the same development footprint as the project would result in the conversion of land to non-agricultural use. Similar to the project, the Reduced Project Alternative #1 would potentially result in land use conflicts unless an agricultural plan would be implemented to prevent land us conflicts. This alternative would not result in any conflict with agricultural policies and impacts would be less than significant.

Hazards and Hazardous Materials

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. Impacts would be slightly reduced because less development would occur. Impacts related to accidental release of hazardous materials, hazards to schools, and historic use of pesticides would also be similar because this alternative would result in ground disturbing activities with the potential to disturb contaminated soil, and both new schools proposed for Village 8 West would be developed. Similar to the project, impacts related to listed hazardous sites would be less than significant because no sites are listed for Village 8 West.

The Reduced Project Alternative #1 would result in similar impacts related to airport hazards compared to the project because similar building heights would be allowed. Impacts related to emergency response and evacuation plans would be similar under this alternative because the circulation network proposed for Village 8 West 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 Project Alternative #1 would not conflict with any General Plan and GDP policies related to hazards and hazardous materials.

Housing and Population

Less than significant impacts related to population growth would be reduced under this alternative because less residential and economic growth would occur. Similar to the project, the Reduced Project Alternative #1 would not displace any housing or people, or conflict with any General Plan and GDP housing and population policies.

Public Utilities

The Reduced Project Alternative #1 would result in reduced demand for water, wastewater treatment, solid waste, recycled water, and energy compared to the project because less development would occur. However, the mitigation measures identified for the project to ensure provision of public utilities concurrent with development would also be required under this alternative. Similar to the project,

future water supply, wastewater treatment, and energy availability cannot be guaranteed; therefore, impacts would remain significant and unavoidable under this alternative although demand would be reduced. Additionally, similar to the proposed project, recycled water impacts would remain significant and unavoidable until recycled water from the South Bay Water Treatment Plant is available to meet the projected future recycled water demand.

Mineral Resources

Compared to the proposed project, impacts related to mineral resources would be the same under this alternative. Development of the portion of Village 8 West designated MRZ-2 would not result in a significant impact associated with mineral resources, because excavation of on-site resources would not be precluded. Similar to the project, the Reduced Project Alternative #1 would not result in any conflict with mineral resources policies. Impacts would be less than significant.

10.3 Reduced Project Alternative #2

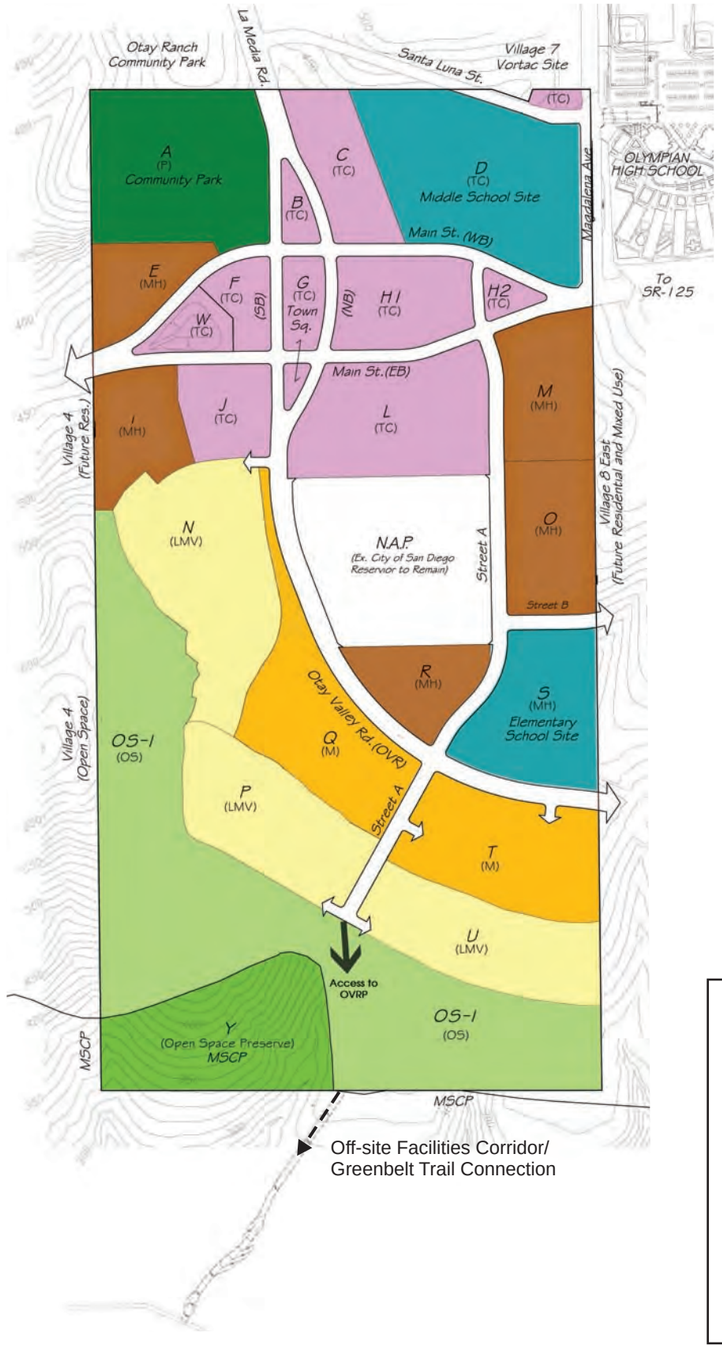
As shown in Table 10-1, Reduced Project Alternative #2 (the 672 dwelling unit plan) would include the development of 672 residential units, compared to 2,050 units under the proposed project. This alternative is a low-density alternative based on the minimum densities accommodated by the proposed land uses, shown in Figure 3-3. The lower density alternative is intended to provide more open space and eliminate mixed-use development.

The greatest reduction in development would occur in the Town Center. Under this alternative, no mixed-use development is proposed and no residential development would occur in the Town Center. Residential densities would also be reduced in the Neighborhood Edge, Neighborhood General, and Neighborhood Central Zones. Commercial development in the Town Center would also be reduced to 104,000 square feet, compared to 300,000 square feet under the project. Additionally, the Neighborhood Park proposed for the project would be eliminated under this alternative. The park area (Planning Area T) would be designated for single-family residential development to further reduce density in the Neighborhood General Zone.

The development footprint would be reduced under this alternative. Portions of Planning Areas N, P, and V of the proposed project would be replaced with an open space designation. This alternative would include 40.4 acres of open space, compared to 23.5 acres under the project. This additional open space area would provide additional transition from developed areas to the MSCP Preserve, but would not be incorporated into the Preserve. Figure 10-2 summarizes the Reduced Project Alternative #2 site utilization plan. The potential impacts of this alternative are compared to the proposed project below.

Land Use

Similar to the project, the Reduced Project Alternative #2 would result in a less than significant impact related to physical division of an established community because no community exists on site and the proposed land uses would be compatible with surrounding planned land uses. Similar to the project, the Reduced Project Alternative #2 would not conflict with the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP. The land use incompatibility associated with impedance of access to the City of San Diego water line would also still occur under this alternative.



Land Use

- Town Center (TC)
- Medium High Density Residential (MH)
- Medium Density Residential (M)
- Low Medium Density Residential Village (LMV)
- Open Space (OS)
- Open Space (Preserve)
- Park (P)
- School

* Lotting and grading to be determined at Tentative Map

Source: William Hezmalhalch Architects, Inc. 2012

0 400 800 Feet

N

Commercial and Residential

Town Center

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]	Target C'ml Sq.Ft. (K)[2]
B	1.4	T-4: TC	0	5
C	6.9	T-4: TC	0	12
F	3.0	T-4: TC	0	8
H-1	7.8	T-4: TC	0	47
H-2	1.3	T-4: TC	0	5
J	5.4	T-4: TC	0	6
L	14.2	T-4: TC	0	21
X	0.7	T-4: TC	0	0
Subtotal	40.7		0	104

Medium High Density Residential – 11 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]
E	5.3	T-3: NC	58
I	6.8	T-3: NC	75
M	8.5	T-3: NC	94
O	8.9	T-3: NC	98
Subtotal	29.5		325

Medium Density Residential Attached/Detached – 6 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]
Q	13.9	T-2: NG	83
U	18.2	T-2: NG	109
Subtotal	32.1		192

Low Medium Density Residential Village – 3 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]	
N	15.7	T-2: NE	47	
P	17.9	T-2: NE	54	
V	18.1	T-2: NE	54	
Subtotal	51.7		155	
TOTAL	154.0		672	104K[3]

Public, Quasi Public, and Other

Community Purpose Facility (CPF)[4]

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Description
R	MH	5.8	SD: CPF	CPF[4]
Subtotal		5.8		

Potential School (S) Sites[5]

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Description
D	TC	20.2	T-4: TC	Middle
S	MH	11.4	T-3: NC	Elementary
Subtotal		31.6		

Parks (P)

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Classification
A	P	17.4	SD: P	Community
G	TC	3.0	SD: P	Town Square
Subtotal		20.4		

Open Space (OS)

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Classification
Y	CVOSP[6]	15.6	T-1: OP	Preserve (MSCP)
OS-1	OS	40.4	T-1: OS	Open Space
Subtotal		56.0		

Other

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Description
W	TC	2.4	SD: R	Basin
Right-of-Way	NA	30.1	NA	Arterials
Subtotal		32.5		
TOTAL		146.3		

SPA Total Area: 300.3 Gross Acres[7]

[1] Transects are defined in Chapter 3 of the SPA Plan.
[2] See Chapter 9 of the SPA Plan regarding Intensity Transfer
[3] 21,000 square feet of office; 83,000 square feet of retail (excludes Live/Work)
[4] As defined by CVMC 19.48
[5] School sites will revert to the underlying use if sites are not accepted by the school district. Parcel D shall revert to Town Center and Parcel S shall revert to Medium High Density Residential.
[6] Chula Vista Open Space Preserve
[7] Acreage does not include 19.6-acre San Diego Reservoir

REDUCED PROJECT ALTERNATIVE #2 SITE UTILIZATION PLAN
FIGURE 10-2

This page intentionally left blank.

The Reduced Project Alternative #2 would result in a significant impact related to consistency with the Otay Ranch General Development Plan and Chula Vista General Plan, as amended, because this alternative would not implement the development envisioned for Village 8 West, or the related objectives and policies. For example, this alternative would conflict with Objective LUT 81 of the Chula Vista General Plan Land Use and Transportation Element, which is the development of a higher density, mixed use, transit-oriented town center positioned on the intersection of Main Street and La Media Road, surrounded by lower intensity residential use and a large community park. The Reduced Project Alternative #2 does not propose any mixed-use development or high density residential or commercial development. The Town Center would continue to be centered on the intersection of Main Street and La Media Road; however, is would not include mixed-uses as envisioned in the General Plan. Therefore, this alternative would result in an additional land use impact compared to the project.

Aesthetics/Landform Alteration

Compared to the project, the Reduced Project Alternative #2 would result in similar less than significant direct impacts related to scenic vistas and scenic roadways. Similar to the proposed project, this alternative would accommodate structures with heights up to 60 feet tall. Therefore, potentially significant impacts related to lighting and glare would also occur under this alternative.

This alternative would reduce the grading footprint by approximately 17 acres compared to the proposed project and impacts to steep slopes by approximately four acres; however, this alternative would still result in some grading on Rock Mountain and would substantially change the visual character of Village 8 West and existing views of the project site. Implementation of a Landscape Master Plan would reduce impacts to Rock Mountain to a less than significant level, similar to the proposed project.

This alternative would require the same grading in the northern portion of the project area, less grading in the southern portion of the project area and, although densities would be reduced, similar land uses would be developed. Similar to the project, implementation of the design guidelines in the SPA Plan would reduce visual character impacts; however, this alternative would still result in a significant and unavoidable direct and cumulative impact to visual character and quality because the loss of rolling hills would occur. Similar to the project, this alternative would result in less than significant impact related to consistency with General Plan and GDP policies related to aesthetics and landform alteration.

Transportation and Traffic

Compared to the project, the Reduced Project Alternative #2 would result in reduced direct and cumulative impacts to traffic and level of service standards and congestion management because approximately 37 percent less vehicular trips would be generated by this alternative: 16,238 ADT compared to 26,104 ADT under Village 8 West as proposed, based on the trip generation rates utilized in the traffic impact analysis (RBF 2013). This alternative assumes an internal capture rate that is approximately 25 percent of the internal capture rate of the project because the Reduced Project Alternative #2 would continue to provide commercial and retail opportunities for residents but would not include any mixed-use or high-density development.

This alternative would include the full circulation network proposed for Village 8 West. The mitigation measures 5.3-7 through 5.3-16 and 5.3-18 through 5.3-20 would not be required under this alternative because this alternative would not reach the equivalent dwelling units and associated trips that would mandate these measures. However, mitigation measures 5.3-1 through 5.3-6, and 5.3-17 would still be required.

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.

Similar to the project, impacts related to emergency access, road safety, and transportation policies would be less than significant under this alternative, because the circulation system proposed for Village 8 West would also be implemented under Reduced Project Alternative #2. The Reduced Project Alternative #2 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. FAA notification would be required to reduce impacts to a less than significant level.

Air Quality

Compared to the project, the Reduced Project Alternative #2 would result in reduced impacts related to air quality violations because a smaller volume of construction and operational emissions would result from this alternative. This alternative would result in similar construction activities as the project, but would require approximately 17 fewer acres of grading, paving, and building construction compared to the project (a 7 percent reduction). Therefore, construction emissions would be reduced. However, similar to the project, construction emissions would remain significant and unavoidable under this alternative due to the amount of grading required, and the potential for simultaneous construction activities.

Operational emissions would also be lower because vehicle trips and area sources would be reduced compared to the project. As shown in Table 10-3, NO_x, and PM_{10} emissions would be reduced to a less than significant level under this alternative. VOC emissions would be reduced by approximately 57 percent; however, direct and cumulative impacts would remain significant and unavoidable, similar to the project, for these pollutants.

Impacts related to sensitive receptors would still potentially occur to residences along the edge of Planning Areas E, I, and M because they would be exposed to similar uses in these areas as the proposed project. Impacts would be less than significant with the mitigation required for the project.

Impacts related to odors would be the same under this alternative because no new receptors would be located in the vicinity of Otay Landfill as the project. The Reduced Project Alternative #2 would not exceed the RAQS growth assumption for Village 8 West (1,556 residential units); however, this alternative would still result in new significant and unavoidable criteria pollutant emissions and would remain inconsistent with the RAQS and SIP. Similar to the project, direct and cumulative impacts would remain significant and unavoidable. Less than significant impacts related to General Plan and GDP air quality policies would be similar to the project under the Reduced Project Alternative #2.

Table 10-3 Operation Maximum Daily Emissions – Reduced Project Alternative #2

Emissions Source	Pollutant Emissions (pounds/ day)					
	CO	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Vehicular Sources[(1)]	228	24	19	1	125	24
Area Sources						
Natural Gas[(2)]	14	1	20	0	0	0
Hearth (fireplaces)[(3)]	0	0	1	0	0	0
Landscape	24	3	0	0	0	0
Consumer Products	0	34	0	0	0	0
Architectural Coatings[(4)]	0	11	0	0	0	0
Reduced Project Alternative #2 Total Emissions	266	**73**	40	1	125	24
Proposed Village 8 West Total Emissions	*427*	***169***	***69***	*1*	***201***	*39*
Significance Thresholds	550	55	55	150	150	55
Significant Impact?	No	**Yes**	No	No	No	No

CO = carbon monoxide; VOC = volatile organic compounds; NO_x = nitrogen oxides; SO_x = sulfur oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter

(1) Modeling assumptions: Calculations assume the full development of project at buildout (2030). Output is for summer emissions, with the exception of hearth emissions, where winter emissions were added to the daily emissions for a worst-case condition.

(2) Other assumptions include: Based on an ADT of 17,854 trips and an estimated vehicle trip length of 4.62 miles, which accounts for internal capture from mixed-use development, the reduction in vehicle trips compared to similar developments that do not provide access to transit, and the TDM program in the SPA Plan. A four percent vehicular emission reduction for VOC, NO_x, CO, and PM_{10} emissions was applied for traffic light synchronization based on the SCAQMD CEQA Air Quality Handbook (1993). Assumes buildings comply with 15% above 2008 Title 24 standards.

(3) Assumes 15 percent of homes would have fireplaces, consistent with assumptions of the GPA/GDPA SEIR. No wood burning fireplaces would be allowed.

(4) Assumes model defaults for low VOC coatings (250 grams of VOC per liter or less).

Source: CARB 2007.

Noise

The Reduced Project Alternative #2 would result in reduced direct and cumulative impacts related to exposure of on-site receptors to excessive noise levels compared to the project because less traffic would result in lower noise levels within Village 8 West. However, due to cumulative increases in traffic, including the Reduced Project Alternative #2 Trips, substantial traffic noise would still be generated by the on-site roadways. No impacts to residences would occur in the Town Center; therefore, impacts to residences in Planning Areas B, C, F, H1, H2, J, and L would be eliminated under this alternative. However, NSLU would still be proposed in areas adjacent to commercial and neighborhood park uses, such as Planning Areas E, I, and M and the middle school site (Planning Area D). Outdoor usable areas in the Town Center would also have the potential to be exposed to excessive noise. The mitigation measures required for the proposed project would also be required for the Reduced Project Alternative #2.

Less than significant impacts related to groundborne vibration and potentially significant temporary increases in ambient noise would be similar to the project under the Reduced Project Alternative #2 because similar construction activities would occur and short-term traffic related noise would increase.

The Reduced Project Alternative #2 would reduce impacts related to the substantial permanent increase in off-site ambient noise levels on off-site roads compared to the project because fewer trips would be generated from Village 8 West. However, due to cumulative increases in traffic on off-site roadways, including the Reduced Project Alternative #2 trips, impacts would still be significant. The short-term significant impact that would result from the project would still occur under this alternative.

Less than significant impacts related to aircraft noise and consistency with General Plan and GDP noise policies would be similar to the project under the Reduced Project Alternative #2.

Biological Resources

The Reduced Project Alternative #2 would result in reduced impacts related to special status plant and wildlife species, riparian habitat, and other sensitive natural communities, federally protected wetlands, and consistency with the MSCP and RMP compared to the project because this alternative would have a smaller development footprint compared to the project. Approximately 10 acres of disturbed coastal sage scrub and approximately 7 acres of extensive agricultural habitat that would be directly impacted under the project would be designated as open space under the Reduced Project Alternative #2. However, potentially significant direct impacts would still occur under this alternative, including impacts to coastal sage scrub.

Indirect impacts to the Preserve would be reduced under this alternative because less development is proposed to the north and east of the Preserve. However, development would still occur adjacent to the Preserve to the northeast and indirect impacts to sensitive species outside of the Preserve would have the potential to occur along the edge of development and open space, similar to the proposed project. The mitigation measures identified for the proposed project would also be required for direct and indirect impacts under this alternative.

Cultural Resources

Similar to the project, impacts related to historical resources would be less than significant under the Reduced Project Alternative #2 because no historical resources are located in Village 8 West. Potentially significant impacts related to archaeological resources, human remains, and paleontological resources would be reduced under this alternative because the alternative development footprint would be reduced compared to the project. However, impacts to unknown resources would still have the potential to occur as a result of ground-disturbing construction activities. Similar to the project, cumulative impacts related to unknown archaeological resources and human remains would be significant and unavoidable. Similar to the project, the Reduced Project Alternative #2 would be consistent with General Plan and GDP policies related to cultural resources, and impact would be less than significant.

Geology and Soils

The Reduced Project Alternative #2 would result in similar potentially significant impacts related to exposure to seismic related hazards, soil stability, soil erosion and topsoil loss, and expansive soils that would occur under the project because similar development is proposed across the majority of the project area. The geotechnical recommendations and compliance with applicable regulations as required by the project mitigation measures would still be required for development under this alternative. Similar to the proposed project, the Reduced Project Alternative #2 would be consistent with General Plan and GDP geotechnical policies and would not require any septic tanks or alternative wastewater disposal systems.

Public Services

Fire and Emergency Medical Services, Police Services, Schools, and Libraries. The Reduced Project Alternative #2 would result in less demand for fire and emergency medical services, schools, and libraries because fewer residential units would be constructed, and the Reduced Project Alternative #2 would generate less population growth. However, 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. The mitigation measures required for the project would also be required for Reduced Project Alternative #2.

Impacts related to schools siting would be similar compared to the project because the two new schools proposed in the SPA Plan and TM would also be developed under this alternative in the same locations. Therefore, the mitigation measures required for the project would also be required for this alternative.

Similar to the project, the Reduced Project Alternative #2 would be consistent with all General Plan and GDP policies related to fire and emergency medical, police, school, and library services with implementation of the mitigation measures identified for the project.

Parks, Recreation, Open Space, and Trails. Based on the CVMC method for calculating parkland requirements, the Reduced Project Alternative #2 would require 6.0 acres of parkland to serve the proposed development. This alternative would provide 20.4 acres of community park and town square parkland. However, similar to the proposed project, impacts related to deterioration of existing park facilities would be significant if parkland would not be provided concurrently with demand. Impacts related to construction of new facilities would decrease compared to the project because the Neighborhood Park proposed in the SPA Plan and TM would not be constructed.

Similar to the project, Reduced Project Alternative #2 would result in similar potentially significant impacts related to the City's parks and recreation standard because mitigation would be required to ensure parkland is provided concurrent with demand. Similar to the proposed project, this alternative would not conflict with the parkland designations and policies of the General Plan, GDP, or Greenbelt Master Plan. However, this alternative would result in a conflict with the Chula Vista Parks and Recreation Master Plan because it would not include the Neighborhood Park identified for Village 8 West in the Master Plan. Impacts related to park policies would be greater than the proposed project.

Global Climate Change

The Reduced Project Alternative #2 would further minimize the less than significant impact related to GHG emissions and compliance with AB 32 identified for the proposed project because construction and operational emissions of GHGs would be reduced under this alternative. Commercial and residential land uses would be reduced by approximately 65 percent compared to the proposed project; therefore, it is assumed that GHG emissions from implementation of the proposed project would also be reduced approximately 65 percent.

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. However, the Reduced Project Alternative #2 would still have the potential to exacerbate air quality problems because it would result in significant and unavoidable VOC emissions. Direct and cumulative impacts related to effects of climate change would be significant and unavoidable, similar to the project.

Hydrology and Water Quality

The Reduced Project Alternative #2 would result in reduced impacts related to water quality standards, erosion and siltation, surface runoff, drainage capacity, and water quality degradation compared to the project. The Reduced Project Alternative #2 has a smaller development footprint than the project, and would result in fewer changes to the existing drainage pattern, and fewer construction and development activities would take place. Generation of pollutants during operation would be reduced because less development would occur. However, similar to the project, mitigation would be required to reduce hydrology and water quality impacts to a less than significant level. 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.

Agricultural Resources

A significant and unavoidable direct and cumulative impact related to conversion of agricultural resources would occur under this alternative, similar to the project. This alternative would have a smaller development footprint compared to the project; however, the undeveloped area would be designated open space and would not be available for agricultural use. This alternative would result in the same conversion of land to non-agricultural use compared to the project. Potentially significant impacts related to land use conflicts would also occur under this alternative unless an agriculture plan is implemented. Similar to the project, the Reduced Project Alternative #2 would not result in any conflict with agricultural policies. Impacts related to agricultural zoning and policies would be less than significant.

Hazards and Hazardous Materials

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. Impacts would be slightly reduced because less development would occur and less population growth would be generated. Impacts related to accidental release of hazardous materials, hazards to schools, and historic use of pesticides would also be similar to the project because this alternative would result in similar ground disturbing activities with the potential to disturb contaminated soil. Similar to the project, impacts related to listed hazardous sites would be less than significant because no sites are listed for Village 8 West.

The Reduced Project Alternative #2 would result in similar impacts related to airport hazards compared to the project because similar building heights would be allowed. Impacts related to emergency response and evacuation plans would be similar under this alternative because the circulation network proposed for Village 8 West would be fully implemented.

Impacts related to wildland fire would be similar to the project because similar development is proposed along the wildland interface at the development edge of the project area, and a Fire Protection Plan would be implemented. Similar to the project, the Reduced Project Alternative #2 would not conflict with any General Plan and GDP policies related to hazards and hazardous materials.

Housing and Population

Direct impacts related to population growth would be reduced under this alternative compared to the project because less residential and economic growth would occur. Similar to the project, the Reduced

Project Alternative #2 would not displace any housing or people, or conflict with any General Plan and GDP housing and population policies.

Public Utilities

The Reduced Project Alternative #2 would result in less demand for water, wastewater treatment, solid waste, recycled water, and energy compared to the project because less development would occur and less population growth would be generated. However, the mitigation measures identified for the project to ensure provision of public utilities concurrent with development would also be required under this alternative. Similar to the project, future water supply, wastewater treatment, and energy availability cannot be guaranteed; therefore, impacts related to water supply, wastewater and energy would remain significant and unavoidable under this alternative although demand would be reduced.

Additionally, similar to the proposed project, recycled water impacts would remain significant and unavoidable until recycled water from the South Bay Water Treatment Plant is available to meet the projected future recycled water demand. This impact would be reduced under the Reduced Project Alternative #2 because demand for recycled water would be reduced under this alternative.

Mineral Resources

Impacts related to mineral resources would be the same as the project under this alternative. Development of the small portion of Village 8 West designated MRZ-2 would not be a significant impact because excavation of significant mineral resources would not be precluded. An additional portion of the MRZ-2 would be designated open space under the Reduced Project Alternative #2. The open space designation would not preclude excavation of mineral resources in this area. Similar to the project, the Reduced Project Alternative #2 would not result in any conflict with mineral resources policies. Impacts would be less than significant.

10.4 Fulfillment of Project Objectives

The following sections provide a discussion of whether each alternative would meet the project objectives. A summary comparison of the alternatives considered to the project objectives is shown in Table 10-4.

Table 10-4 Comparison of Consistency with Project Objectives

Objective	Project Alternatives		
	No Project (No Build) Alternative	Reduced Project Alternative #1 – 1,167 Dwelling Units	Reduced Project Alternative #2 – 672 Dwelling Units
1. Create a recognizable "place" that is unique, attractive, and full of cultural and social diversity.	No	Yes	Yes
2. Develop distinctive design standards and invest in design excellence to create inspiring and memorable places; emphasize the appearance and qualities of the public realm; create streetscapes, pathways, and public spaces of beauty, interest, and functional benefit to pedestrians.	No	Yes	Yes
3. Encourage development patterns that promote orderly growth, prevent urban sprawl, and promote effective resource management.	No	Yes	Yes

Table 10-4 Comparison of Consistency with Project Objectives (continued)

Objective	Project Alternatives		
	No Project (No Build) Alternative	Reduced Project Alternative #1 – 1,167 Dwelling Units	Reduced Project Alternative #2 – 672 Dwelling Units
4. Protect and enhance the natural environment and increase the quality of life. Design neighborhoods with compact and multi-dimensional land use patterns that ensures a mix of uses and joint optimization of transportation modes to minimize the impact of cars, promote walking and bicycling, and provide access to employment, education, recreation, entertainment, shopping, and services.	No	Yes	Partial
5. Create an appropriately scaled and economically healthy Town Center. Include a wide range of commercial, residential, cultural, civic, recreational uses, and businesses that serve the daily needs of nearby residents.	No	Partial	No
6. Establish a pedestrian and transit-oriented village with an intense, vibrant Town Center to reduce reliance on the automobile and promote walking and the use of bicycles, buses, and regional transit.	No	Yes	Yes
7. Encourage community development in mixed use and compact pedestrian oriented forms to accommodate all income levels and lifestyles.	No	Partial	No
8. Foster a compact form facilitated by "form-based planning," resulting in efficient infrastructure investments and advanced opportunities to provide socially diverse housing.	No	Yes	Yes
9. Retain and recruit a skilled and motivated workforce to ensure economic stability into the future by providing attainable housing opportunities. Promote jobs that match the skills of existing and future residents through provision of housing opportunities and choices and by providing an opportunity for the City to attract a university or related uses by dedication of land for such purposes.	No	Yes	Partial
10. Promote synergistic uses and graceful transitions within the SPA and between the SPA and neighborhoods of adjacent SPAs to balance activities, services, and facilities. Integrate Village 8 West with existing Otay Ranch development, including connectivity to the Greenbelt.	No	Yes	Yes
11. Implement the goals, objectives and policies of the Chula Vista General Plan, the Otay Ranch General Development Plan, the Chula Vista Greenbelt Master Plan, and the Otay Valley Regional Park Concept Plan.	No	Partial	Partial
12. Encourage the interactivity of a wide range of people, promote community diversity, and enrich the human experience by providing a broad variety of public spaces and housing types and styles that appeal to all ages, incomes, and lifestyles.	No	Partial	Partial
13. Establish a plan that is fiscally responsible and viable with consideration of existing and anticipated economic conditions.	No	Yes	Yes

No Project (No Build) Alternative

This alternative would not attain any of the 13 objectives of the project because no SPA Plan or TM would be adopted and no development would occur. Therefore, the No Project (No Build) Alternative would not accomplish any of the following:

- Create a recognizable place, develop design standards;
- Encourage an orderly growth pattern;
- Design neighborhoods with compact and multi-dimensional land use patterns;
- Create a town center;
- Establish a pedestrian-oriented village;
- Encourage community development in mixed use and compact pedestrian oriented forms;
- Retain and recruit a skilled and motivated workforce to ensure economic stability into the future by providing attainable housing opportunities;
- Foster a compact form facilitated by form-based planning;
- Promote transitions with and between SPAs;
- Implement the goals of the General Plan and GDP; or
- Establish a plan that is fiscally responsible and viable with consideration of existing and anticipated economic conditions.

Reduced Project Alternative #1

This alternative would attain nine of the 13 objectives of the project and would partially attain the remaining four objectives. The Reduced Project Alternative #1 would meet Objective 1 because it would create a recognizable place. It would meet Objectives 2 and 3 because it would develop design standards and encourage an orderly growth pattern. This alternative would meet Objectives 4 and 6 because it would design neighborhoods with compact and multi-dimensional land use patterns and establish a pedestrian-oriented village. It would meet Objective 9 because it would retain and recruit a skilled and motivated workforce to ensure economic stability into the future by providing attainable housing opportunities. This alternative would foster a compact form facilitated by form-based planning and promote transitions with and between SPA plan areas; therefore, it would meet Objectives 8 and 10. The Reduced Project Alternative #1 would meet Objective 13 because it would establish a plan that is fiscally responsible and viable with consideration of existing and anticipated economic conditions.

The Reduced Project Alternative #1 would create a town center, but under this alternative the Town Center would include only limited residential and commercial uses. The Town Center would not be appropriately scaled in comparison to town centers in neighboring villages, or to serve the daily needs of residents in Village 8 West as well as surrounding development. This alternative would only partially encourage community development in mixed use and compact pedestrian oriented forms because mixed-use development would be limited to Planning Areas F and J. The remaining town center area would not include mixed-use residential development. This alternative would partially implement the goals of the General Plan and GDP because it would provide similar land uses, but not to the extent planned for in the GDP and General Plan. The Reduced Project Alternative would provide a range of housing types and styles; however, choices would be limited compared to the proposed project. Additionally, the number of mixed-used residential units that would have the potential to provide affordable housing would be reduced by approximately 60 percent. Therefore, the Reduced Project Alternative #1 would only partially meet Objectives 5, 7, 11, and 12.

Reduced Project Alternative #2

This alternative would attain seven of the 13 objectives of the project, would partially attain four objectives, and would not attain 2 objectives. The Reduced Project Alternative #2 would create a recognizable place and would therefore meet Objective 1. This alternative would meet Objectives 2 and 3 because it would develop design standards and encourage an orderly growth pattern. It would meet Objective 6 because it would establish a pedestrian-oriented village. This alternative would meet Objectives 8 and 10 because it would foster a compact form facilitated by form-based planning and promote transitions with and between SPA plan areas. This alternative would establish a plan that is fiscally responsible and viable with consideration of existing and anticipated economic conditions and would therefore meet Objective 13.

The Reduced Project Alternative #2 would protect and enhance the natural environment, but would not design compact neighborhoods with a mix of land uses. This alternative would partially implement the goals of the General Plan and GDP because it would provide similar land uses, but not to the extent planned for in the GDP and General Plan. The Reduced Project Alternative would provide range of housing types and styles; however, choices would be limited compared to the proposed project. Additionally, no mixed-used residential units, which have potential provide affordable housing, would be developed under this alternative. Therefore, the Reduced Project Alternative #1 would only partially meet Objectives 4, 9, 11, and 12.

The Reduced Project Alternative would not meet Objective #5 because the Town Center would not include any residential use, and less commercial uses. The Town Center would not be appropriately scaled in comparison to town centers in neighboring villages, or to serve the daily needs of residents in Village 8 West as well as surrounding development. This alternative would not meet Objective #7 because no mixed-use development is proposed.

10.5 Environmentally Superior Alternative

The No Project (No Build) Alternative would be the environmentally superior alternative, as it would entirely avoid the project's significant and unavoidable impacts associated with aesthetics (direct and cumulative), air quality (direct and cumulative), noise (short-term direct), archaeological resources and human remains (cumulative), potential effects of climate change (direct and cumulative), agricultural resources (direct and cumulative), water supply (direct and cumulative), wastewater treatment capacity (cumulative), recycled water (cumulative), and energy (direct and cumulative). However, as the No Project (No Build) Alternative is determined to be environmentally superior, another environmentally superior alternative must be identified among the remaining alternatives.

The Reduced Project Alternative #2 is identified as the environmentally superior alternative as it would reduce traffic (direct and cumulative), air quality (direct and cumulative), noise (direct and cumulative), biological resources (direct), public services (direct), water quality (direct), and public utilities (direct and cumulative) impacts. Mitigation measures 5.3-7 through 5.3-16 and 5.3-18 through 5.3-20 identified for potential traffic impacts would not be required under this alternative and mitigation measure 5.5-3 would not be required for excessive noise impacts to residences in Planning Areas B, C, F, G, H1, H2, J, and L because no residences are proposed in these areas. However, as with the Reduced Project Alternative #1, this alternative would not avoid any of the project's significant and unavoidable impacts associated with aesthetics (cumulative), air quality (direct and cumulative), noise (short-term direct), archaeological resources and human remains (cumulative), potential effects of climate change (direct and cumulative), agricultural resources (direct and cumulative), water supply (direct and cumulative),

wastewater treatment capacity (cumulative), recycled water (cumulative), and energy (direct and cumulative). This alternative would reduce significant VOC emissions by approximately 57 percent and energy use by approximately 65 percent. Table 10-5 provides a generalized summary comparison of the project and the three project alternatives.

Table 10-5 Summary of Alternative Impacts Compared to Proposed Project

	Proposed Project		Alternatives to the Proposed Project		
Issue Areas	**Without Mitigation**	**With Mitigation**	**No Project (No Build)**	**Reduced Project Alternative #1 – 1,167 Dwelling Units**	**Reduced Project Alternative #2 – 672 Dwelling Units**
5.1 Land Use and Planning					
Land Use Compatibility	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Conflicts with Land Use Plans, Policies, & Regulations	LS	LS	▲	▲	▲
Cumulative	NCC	NCC	▲	▲	▲
Conflicts with HCPs or NCCPs	PS	LS	—	—	—
Cumulative	NCC	NCC	—	—	—
5.2 Aesthetics/Landform Alteration					
Scenic Vistas	LS	LS	o	—	—
Cumulative	CC	SU	o	—	—
Scenic Resources	PS	LS	o	—	—
Cumulative	CC	SU	o	—	—
Visual Character or Quality	PS	SU	o	—	—
Cumulative	CC	SU	o	—	—
Lighting and Glare	PS	LS	o	—	—
Cumulative	CC	LCC	o	—	—
Landform Alteration	PS	LS	o	—	—
Cumulative	CC	LCC	o	—	—
Consistency with Visual Character Policies	LS	LS	—	—	—
Cumulative	NCC	NCC	—	—	—
5.3 Transportation and Traffic					
Traffic and Level of Service Standards	S	LS	▲	▼	▼
Cumulative	CC	LCC	▲	▼	▼
Congestion Management	S	LS	▲	▼	▼
Cumulative	CC	LCC	▲	▼	▼
Air Traffic Patterns	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Road Safety	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Emergency Access	LS	LS	▲	—	—
Cumulative	NCC	NCC	▲	—	—
Consistency with Transportation Policies	LS	LS	▲	—	—
Cumulative	NCC	NCC	—	—	—

Table 10-5 Summary of Alternative Impacts Compared to Proposed Project (continued)

Issue Areas	Proposed Project		Alternatives to the Proposed Project		
	Without Mitigation	With Mitigation	No Project (No Build)	Reduced Project Alternative #1 – 1,167 Dwelling Units	Reduced Project Alternative #2 – 672 Dwelling Units
5.4 Air Quality					
Air Quality Violations	S	SU	o	▼	▼
Cumulative	CC	SU	o	▼	▼
Sensitive Receptors	PS	LS	o	▼	▼
Cumulative	NCC	NCC	o	—	—
Objectionable Odors	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Air Quality Plans	S	SU	o	▼	▼
Cumulative	CC	SU	o	▼	▼
Consistency with Air Quality Policies	LS	LS	—	—	—
Cumulative	NCC	NCC	—	—	—
5.5 Noise					
Excessive Noise Levels	S	LS	o	▼	▼
Cumulative	CC	LCC	o	▼	▼
Excessive Groundborne Vibration	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Permanent Increase in Ambient Noise Levels	LS	LS	o	—	—
Cumulative	CC	LCC	o	—	—
Temporary Increase in Ambient Noise Levels	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Aircraft Noise	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Consistency with Noise Policies	LS	LS	—	—	—
Cumulative	NCC	NCC	—	—	—
5.6 Biological Resources					
Sensitive Plant and Wildlife Species	S	LS	o	—	▼
Cumulative	CC	LCC	o	—	—
Riparian Habitat and Other Sensitive Natural Communities	S	LS	o	—	▼
Cumulative	CC	LCC	o	—	—
Federally Protected Wetlands	S	LS	o	—	▼
Cumulative	CC	LCC	o	—	—
Wildlife Movement Corridors and Nursery Sites	LS	LS	o	—	—
Cumulative	CC	LCC	o	—	—
Local Policies, Ordinances, HCP and NCCP	PS	LS	o	—	▼
Cumulative	NCC	NCC	o	—	—
5.7 Cultural Resources					
Historical Resources	LS	LS	o	—	—
Cumulative	CC	LCC	o	—	—
Archaeological Resources	PS	LS	o	—	▼
Cumulative	CC	SU	o	—	▼

Table 10-5 Summary of Alternative Impacts Compared to Proposed Project (continued)

Issue Areas	Proposed Project		Alternatives to the Proposed Project		
	Without Mitigation	With Mitigation	No Project (No Build)	Reduced Project Alternative #1 – 1,167 Dwelling Units	Reduced Project Alternative #2 – 672 Dwelling Units
Human Remains	PS	LS	o	—	▼
Cumulative	CC	SU	o	—	▼
Paleontological Resources	PS	LS	o	—	▼
Cumulative	CC	LCC	o	—	▼
Consistency with Cultural Resource Policies	LS	LS	—	—	—
Cumulative	NCC	NCC	—	—	—
5.8 Geology and Soils					
Exposure to Seismic Related Hazards	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Soil Erosion or Topsoil Loss	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Soil Stability	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Expansive Soils	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Consistency with Geotechnical Policies	LS	LS	—	—	—
Cumulative	NCC	NCC	—	—	—
Waste Water Disposal Systems	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
5.9 Public Services					
Fire and Emergency Medical Services					
Fire and Emergency Medical Facilities	LS	LS	o	—	—
Fire Protection Service Standard	PS	LS	o	▼	▼
Consistency with Fire and Emergency Medical Service Policies	PS	LS	o	▼	▼
Cumulative	CC	LCC	o	—	—
Police Services					
Police Service Facilities	LS	LS	o	—	—
Police Service Standard	PS	LS	o	▼	▼
Consistency with Police Service Policies	PS	LS	o	▼	▼
Cumulative	CC	LCC	o	—	—
Schools					
School Facilities	PS	LS	o	—	—
Schools Siting	PS	LS	o	—	—
Consistency with School Policies	LS	LS	—	—	—
Cumulative	CC	LCC	o	—	—
Libraries					
Library Facilities	LS	LS	o	—	—
Library Service Standard	PS	LS	o	▼	▼
Consistency with Library Policies	LS	LS	—	—	—
Cumulative	CC	LCC	o	—	—

Table 10-5 Summary of Alternative Impacts Compared to Proposed Project (continued)

Issue Areas	Proposed Project		Alternatives to the Proposed Project		
	Without Mitigation	With Mitigation	No Project (No Build)	Reduced Project Alternative #1 – 1,167 Dwelling Units	Reduced Project Alternative #2 – 672 Dwelling Units
Parks, Recreation, Open Space, and Trails					
Deterioration of Facilities	PS	LS	o	—	—
New Recreational Facilities	LS	LS	o	—	—
Parks and Recreation Standard	PS	LS	▲	—	—
Consistency with Park Policies	LS	LS	▲	▲	▲
Cumulative	CC	LCC	▲	▲	▲
5.10 Global Climate Change					
Compliance with AB 32	LS	LS	o	—	—
Cumulative	CC	LCC	o	—	—
Potential Effects of Global Climate Change	PS	SU	o	▼	▼
Cumulative	CC	SU	o	▼	▼
5.11 Hydrology and Water Quality					
Water Quality Standards	PS	LS	o	▼	▼
Cumulative	NCC	NCC	o	—	—
Groundwater Supplies and Recharge	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Erosion or Siltation	PS	LS	o	▼	▼
Cumulative	NCC	NCC	o	—	—
Surface Runoff	PS	LS	o	▼	▼
Cumulative	NCC	NCC	o	—	—
Exceed Drainage Capacity	PS	LS	o	▼	▼
Cumulative	NCC	NCC	o	—	—
Degradation of Water Quality	PS	LS	o	▼	▼
Cumulative	NCC	NCC	o	—	—
100-Year Flood Hazards	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Consistency with Water Quality Policies	LS	LS	—	—	—
Cumulative	NCC	NCC	—	—	—
Flooding	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Inundation	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
5.12 Agricultural Resources					
Direct Conversion of Agricultural Resources	PS	SU	o	—	—
Cumulative	CC	SU	o	—	—
Land Use Zoning Conflicts	PS	LS	o	—	—
Cumulative	CC	SU	o	—	—
Consistency with Agricultural Resource Policies	LS	LS	—	—	—
Cumulative	NCC	NCC	—	—	—

Table 10-5 Summary of Alternative Impacts Compared to Proposed Project (continued)

Issue Areas	Proposed Project		Alternatives to the Proposed Project		
	Without Mitigation	With Mitigation	No Project (No Build)	Reduced Project Alternative #1 – 1,167 Dwelling Units	Reduced Project Alternative #2 – 672 Dwelling Units
5.13 Hazards and Hazardous Materials					
Routine Use and Accidental Release of Hazardous Materials	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Hazards to Schools	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Existing Hazardous Materials Sites	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Airport Hazards	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Emergency Response and Evacuation Plans	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Wildland Fires	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Consistency with Hazard Policies	PS	LS	—	—	—
Cumulative	NCC	NCC	—	—	—
Historic Use of Pesticides	PS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
5.14 Housing/Population					
Displacement of Housing and People	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Consistency with Housing and Population Policies	LS	LS	▲	—	—
Cumulative	NCC	NCC	—	—	—
5.15 Public Utilities					
Water					
New Water Treatment Facilities	LS	LS	o	—	—
Long-Term Water Supply and Entitlements	PS	SU	o	—	—
Compliance with City-wide Supply Thresholds	PS	LS	o	▼	▼
Consistency with Water Supply Policies	LS	LS	—	—	—
Cumulative	CC	SU	o	—	—
Wastewater					
Adequate Wastewater Facilities	PS	LS	o	▼	▼
New Wastewater Treatment Facilities	PS	SU	o	—	—
Consistency with City Engineering Standards	LS	LS	o	—	—
Consistency with Wastewater Policies	LS	LS	—	—	—
Cumulative	CC	SU	o	—	—
Solid Waste					
Sufficient Landfill Capacity	LS	LS	o	—	—
Solid Waste Regulations	LS	LS	o	—	—
Consistency with Solid Waste Policies	LS	LS	—	—	—
Cumulative	NCC	NCC	o	—	—

Table 10-5 Summary of Alternative Impacts Compared to Proposed Project (continued)

Issue Areas	Proposed Project		Alternatives to the Proposed Project		
	Without Mitigation	With Mitigation	No Project (No Build)	Reduced Project Alternative #1 – 1,167 Dwelling Units	Reduced Project Alternative #2 – 672 Dwelling Units
Recycled Water					
New Recycled Water Facilities	PS	LS	o	▼	▼
Consistency with Recycled Water Policies	LS	LS	—	—	—
Cumulative	CC	SU	o	▼	▼
Energy					
Energy Resources	S	SU	o	▼	▼
Wasteful Use of Energy	LS	LS	o	—	—
Consistency with Energy Policies	LS	LS	—	—	—
Cumulative	CC	SU	o	▼	▼
5.16 Mineral Resources					
Mineral Resource Availability	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Mineral Resource Recovery Sites	LS	LS	o	—	—
Cumulative	NCC	NCC	o	—	—
Consistency with Mineral Resources Policies	LS	LS	—	—	—
Cumulative	NCC	NCC	—	—	—

▲ Alternative is likely to result in greater impacts to issue when compared to project.
— Alternative is likely to result in a similar impacts to issue when compared to project.
▼ Alternative is likely to result in less impacts to issue when compared to project, however, impacts would still be significant before and/or after mitigation.
o No impact would occur as a result of the Alternative.
CC = Cumulatively Considerable
LCC = Project would contribute to a cumulative impact, but contribution would less than Cumulatively Considerable
LS = Less Than Significant Impact
NCC = Not Cumulatively Considerable (A cumulatively considerable impact would not occur)
PS = Potentially Significant
S = Significant Impact
SU = Significant and Unavoidable Impact

Chapter 11 References Cited

Advanced Geotechnical Solutions, Inc. 2010. Revised Geotechnical Investigation, Village 8 West, Otay Ranch, Chula Vista, CA. October 22.

Advanced Geotechnical Solutions, Inc. 2013. Personal communication with Jeff Chaney, Geotechnical Engineer, Vice President. Comments dated January 24, 2013.

Atkins. 2013. Otay Ranch Village 8 West Sectional Planning Area Project Final Air Quality Technical Report. May.

Atkins. 2013. Otay Ranch Village 8 West Sectional Planning Area Project Final Noise Technical Report. May.

Aviation Safety Network. 2011. Mexico Air Safety Profile. Accessed March 31, 2011, available at http://aviation-safety.net/database/country/country.php?id=XA

Brian F. Smith & Associates (BFSA). 1996a. *Site Record Form for CA-SDI-14176.* On file, South Coastal Information Center, San Diego State University, California.

Brian F. Smith & Associates (BFSA). 1996b. *Site Record Form for CA-SDI-14235*. On file, South Coastal Information Center, San Diego State University, California.

Brian F. Smith & Associates (BFSA). 1996c. *Site Record Form for CA-SDI-14236*. On file, South Coastal Information Center, San Diego State University, California.

Brian F. Smith & Associates (BFSA). 1996d. *Site Record Form for P-37-014531*. On file, South Coastal Information Center, San Diego State University, California.

Brian F. Smith & Associates (BFSA). 1996e. *Site Record Form for P-37-014532*. On file, South Coastal Information Center, San Diego State University, California.

Brian F. Smith & Associates (BFSA). 1996f. *Site Record Form for P-37-014533*. On file, South Coastal Information Center, San Diego State University, California.

California Air Resources Board (CARB). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

California Air Resources Board (CARB). 2004. 2004 Revision to the California State Implementation Plan for Carbon Monoxide. July 22.

California Air Resources Board (CARB). 2005. Air Quality and Land Use Handbook: A Community Health Perspective. April.

California Air Resources Board. 2006. *Final Regulation Order – Requirements to Reduce Idling Emissions from New and In-Use Trucks, Beginning in 2008*. October 16.

California Air Resources Board (CARB). 2006. EMFAC2007 Computer Model, Version 2.3, November 1.

California Air Resources Board (CARB). 2007. URBEMIS2007 Computer Model, Version 9.2.

California Air Resources Board (CARB). 2008. Climate Change Scoping Plan: A Framework for Change. December.

California Air Resources Board (CARB). 2010a. Ambient Air Quality Standards. Revised September 8, 2010. Accessed on February 3, 2011, available at www.arb.ca.gov/research/aaqs/aaqs2.pdf

California Air Resources Board (CARB). 2010b. Gaseous Criteria Pollutants. December 10. Accessed June 3, 2011, available at www.arb.ca.gov/aaqm/criteria.htm

California Air Resources Board (CARB). 2010c. Senate Bill 375 – Regional Targets. Accessed October 29, 2010, available at www.arb.ca.gov/cc/sb375/sb375.htm

California Air Resources Board (CARB). 2012. Ambient Air Quality Data Statistics – Top 4 Measurements and Days Above the Standard. Accessed May 16, 2012, available at www.arb.ca.gov/adam

California Air Resources Board (CARB). 2011. 2011 Area Designations for State Ambient Air Quality Standards – Ozone, PM_{10}, $PM_{2.5}$, Carbon Monoxide, Nitrogen Dioxide, Lead, Sulfur Dioxide, Sulfates, Hydrogen Sulfide, Visibility Reducing Particulates. September. Accessed February 16, 2012, available at www.arb.ca.gov/desig/adm/adm.htm

California Energy Commission (CEC). 2009. The Future is Now: An Update on Climate Change Science Impacts and Response Options for California. May.

California Energy Commission. 2010. Fuels and Transportation Division. Accessed March 7, 2011, available at www.energy.ca.gov/transportation/index.html

California Energy Commission. 2012. 2008 Building Energy Efficiency Standards. Accessed May 22, 2012, available at www.energy.ca.gov/title24/2008standards/

California Environmental Protection Agency (CalEPA). 2003. Air Toxics Hot Spots Program Risk Assessment Guidelines – The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. August.

California Department of Conservation. 2008. *Farmland Mapping and Monitoring Program – San Diego County Important Farmland 2006, Sheet 1 of 2*. August.

California Department of Transportation (Caltrans). 1989. CALINE 4 – A Dispersion Model for Predicting Air Pollutant Concentrations Near Roadways. Version 1.32. June 1989.

California Department of Transportation (Caltrans). 1997. *Transportation Project-Level Carbon Monoxide Protocol*. Revised December 1997.

California Department of Transportation (Caltrans). 1998. *Technical Noise Supplement – A Technical Supplement to the Traffic Noise Analysis Protocol.* October.

California Department of Transportation (Caltrans). 2002. *Transportation Related Earthborne Vibrations (TAV-02-01-R9201)*. February 20.

California Department of Water Resources (DWR). 2011. Best Available Map (BAM) Viewer. Accessed October 15, 2011, available at http://gis.bam.water.ca.gov/bam

California Division of Mines and Geology. 1999. Fault Rupture Hazard Zones in California: Special Publication 42.

California Division of Mines and Geology, California Geologic Survey (CGS). 1997, Guidelines for evaluating and mitigating seismic hazards in California: Department of Conservation, special publication 117, 74 p.

California Indoor Air Quality. 2011. VOC Questions. Accessed May 31, 2011, available at www.cal-iaq.org/vocs/voc-questions

California Integrated Waste Management Board. 2009. *2008 California Integrated Waste Management Board, A Year of Progress.*

CalRecycle. 2010. *Active Landfills Profiles for Otay Landfill (37-AA-0010).* Accessed September 22, 2010, available at www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=37&FACID=37-AA-0010

Centre City Development Corporation. 2006. Final Environmental Impact Report for the Proposed San Diego Downtown Community Plan, Centre City Planned District Ordinance, and 10th Amendment to the Redevelopment Plan for the Centre City Redevelopment Project. March.

Chula Vista Elementary School District. 2010. Chula Vista Elementary School District website, About Us. Accessed August 13, 2010, available at www.cvesd.org/DISTRICT/Pages/welcome.aspx

Chula Vista Elementary School District. 2012. New Schools to Begin Construction Soon. Accessed May 22, 2012, available at http://chulavistaesd.wordpress.com/2012/02/22/district-seeks-input-on-new-school-name/

Chula Vista Fire Department. 2012. Fire Prevention Division Initial Review – Village 9 EIR. October 9.

Chula Vista Public Library (CVPL). 2011. Chula Vista Public Library Strategic Facilities Plan. March 2011.

City of Anderson. 2008. The Vineyards at Anderson Draft Environmental Impact Report. February.

City of Chula Vista. 2001a. Energy Strategy and Action Plan.

City of Chula Vista. 2001b. Guidelines for Traffic Impact Studies in the City of Chula Vista. February.

City of Chula Vista. 2002a. *Chula Vista Police Beats.* July 23. Accessed August 13, 2010, available at www.chulavistaca.gov/City_Services/Public_Safety/Police_Department/PDFs/beats.pdf

City of Chula Vista. 2002b. *City of Chula Vista Parks and Recreation Master Plan.* November 12.

City of Chula Vista. 2003a. City of Chula Vista MSCP Subarea Plan. February.

City of Chula Vista. 2003b. City of Chula Vista Greenbelt Master Plan. September 16.

City of Chula Vista. 2005a. *Chula Vista Vision 2020 General Plan.* December 13.

City of Chula Vista. 2005b. *Chula Vista Vision 2020 General Plan Update Final Environmental Impact Report.* December.

City of Chula Vista. 2005c. *City of Chula Vista Wastewater Master Plan.* May.

City of Chula Vista. 2005d. Greenhouse Gas Emissions Inventory. September 18.

City of Chula Vista. 2006. *Housing Element of the General Plan.* October 24.

City of Chula Vista. 2007. *City of Chula Vista Urban Core Specific Plan, City Council Ordinance No. 3070*. Prepared by RRM Design Group. April.

City of Chula Vista. 2008a. Declaration of Covenants of Operation of the Otay Ranch Pit/Rock Mountain Mine. Document #2008-0639472. December 16.

City of Chula Vista 2008b. Greenhouse Gas Emissions Inventory. September 18.

City of Chula Vista. 2009a. *Growth Management Oversight Commission (GMOC) 2009 GMOC Annual Report.* March 5.

City of Chula Vista. 2009b. *Otay Ranch Eastern Urban Center (EUC) Section Planning Area (SPA) Plan Final Second Tier Environmental Impact Report (EIR 07-01).* September.

City of Chula Vista. 2010a. *Proposed Budget 2010-2011.* Accessed August 11, 2010, available at www.chulavistaca.gov/City_Services/Administrative_Services/Finance/Budget_Analysis/PDF/FY2011ProposedBudget.pdf

City of Chula Vista. 2010b. *Growth Management Oversight Commission (GMOC) 2010 Annual Report.* April 1.

City of Chula Vista. 2010c. City of Chula Vista Public Library website. Accessed August 13, 2010, available at www.chulavistaca.gov/City_Services/Community_Services/Library/About/about.asp

City of Chula Vista. 2010d. 2010 Greenhouse Gas Emissions Inventory.

City of Chula Vista. 2011a. Otay Valley Quarry Reclamation Plan Amendment Draft Environmental Impact Report (EIR 11-01). March.

City of Chula Vista. 2011b. *Growth Management Oversight Commission (GMOC) 2011 GMOC Annual Report.* April.

City of Chula Vista. 2011c. Chula Vista Public Library Strategic Facilities Plan. April.

City of Chula Vista. 2011. City of Chula Vista Development Storm Water Manual. January.

City of Chula Vista. 2012a. Chula Vista Municipal Code. Current through Ordinance 3225, passed February 14, 2012.

City of Chula Vista. 2012b. Proposed Budget FY 2012-13. Accessed May 24, 2012, available at www.chulavistaca.gov/city_services/administrative_services/city_clerk/PDFs/FY2013ProposedBudget.pdf

City of Chula Vista. 2012c. Public Library website. Accessed July 9, 2012, available at http://www.chulavistaca.gov/City_Services/Community_Services/Library/LocationsHours/default.asp

City of Chula Vista. 2012d. Personal communication with Joe Gamble, Landscape Planner. Comments dated June 25, 2012.

City of Chula Vista. 2012e. Personal communication with Brendan Reed. Comments dated September 13, 2012.

City of Chula Vista. 2012f. *Growth Management Oversight Commission (GMOC) 2012 GMOC Annual Report.* June 7.

City of Chula Vista Fire Department. 2012. Fire Department website, Station Locations and Apparatus. Accessed January 30, 2013, available at www.chulavistaca.gov/City_Services/Public_Safety/Fire_Department/Stations/Default.asp

City of Chula Vista. 2013. Supplemental Environmental Impact Report for the Otay Land Company General Plan Amendment and Otay Ranch General Development Plan Amendment (SEIR 09-01). Prepared by RECON Environmental, Inc.

City of San Diego. 1974. Inundation Map of Upper-Lower Otay Dams. November 19.

City of San Diego. 2010. Construction and Demolition (C&D) Recycling website. Accessed August 16, 2010, available at http://citymaps.sandiego.gov/imf/sites/cdf/index.jsp

City of Santa Ana. 2010. City of Santa Ana Transit Zoning Code (SD 84A and SD 84B) Final Environmental Impact Report (SCH No. 2006071100). Prepared by PBS&J. May.

Clowery-Moreno, Sara and Brian F. Smith. 2008. *An Archaeological Study for the Village 8 Project*. On file, Brian F. Smith & Associates, San Diego, California.

County of San Diego. 2000. Final Environmental Impact Report – Otay Landfill Development and Expansion Plan, Volume 1. Prepared by URS Greiner Woodward Clyde for the Department of Planning and Land Use. February.

County of San Diego. 2005. *San Diego County Integrated Waste Management Plan Countywide Siting Element.* September.

County of San Diego. 2010. *Otay Ranch Preserve.* Accessed July 21, 2010, available at www.co.san-diego.ca.us/parks/openspace/Otay_Ranch.html

County of San Diego. 2010. San Diego County Multi-Jurisdiction Hazard Mitigation Plan, San Diego County, California. July.

County of San Diego, City of Chula Vista, and City of San Diego. 1997. Otay Valley Regional Park Concept Plan.

Dexter Wilson Engineering, Inc. 2010a. *Final Overview of Water Service for Otay Ranch Village 8 West.* November.

Dexter Wilson Engineering, Inc. 2010b. *Final Overview of Sewer Service for Otay Ranch Village 8 West.* November.

Dudek. 2007. *Acoustical Assessment Report – Fanita Project, City of Santee.* August 2007.

Energy Policy and Initiatives Center (EPIC). 2008. University of San Diego School of Law, San Diego County Greenhouse Gas Inventory: An Analysis of Regional Emissions and Strategies to Achieve AB 32 Targets. September 2008.

ERC Environmental and Energy Services Company (ERCE). 1991. *Cultural Resources Inventory and Evaluation of the 22,873-Acre Otay Ranch*. On file, South Coastal Information Center, San Diego State University, San Diego, California.

Federal Aviation Administration. 2010. International Aviation Safety Assessments (IASA) Program. November 2. Accessed March 31, 2011, available at www.faa.gov/about/initiatives/iasa/

Federal Highway Administration. 2004. Traffic Noise Model Version 2.5. February.

Federal Highway Administration. 2008. Roadway Construction Noise Model (RCNM), Version 1.1. December 8.

Federal Transit Administration, Office of Planning and Environment. 2006. *Transit Noise & Vibration Impact Assessment.* May 2006.

Gallegos & Associates. 2009. *Cultural Resource Survey and Test for Otay Ranch Village 8 West, Chula Vista, San Diego County, California*. February. Updated by Noah Archaeological Consulting, June 2010.

Geocon Incorporated. 2011. Phase 1 Environmental Site Assessment, Otay Ranch Village 8 West, Chula Vista, California. March 22.

Gipson, Justin. Deputy Fire Chief/Fire Marshal, Chula Vista Fire Department. Personal communication via email regarding Village 8 West GMOC Compliance, dated November 2, 2011.

Gordon Bricken and Associates. 1996. *Acoustical Analysis Addendum to the Adopted Environmental Impact Report Disneyland Resort, City of Anaheim.* February 1996.

Hale Engineering. 2011a. Preliminary Water Quality Technical Report, Otay Ranch Village 8 West. December 8.

Hale Engineering. 2011b. Preliminary Drainage Study, Otay Ranch Village 8 West. December 8.

Hale Engineering. 2011c. Hydromodification Study for Otay Ranch Village 8 West. August 26.

Hunsaker & Associates. 2011. TM Drainage Study for Otay Ranch Village 9. August 22.

Hunt, Cheryl. 2004. *Site Record Form Update for CA-SDI-12809*. On file, South Coastal Information Center, San Diego State University, California.

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: Synthesis Report, Summary for Policymakers. Contribution of the Working Group contributions to the Fourth Assessment Report: An Assessment of the Intergovernmental Panel on Climate Change. November 2007.

Inter-Noise. 2009. Acoustical Analysis Methodology for Urban Rooftop Playgrounds in New York City. August 23.

Linscott, Law and Greenspan Engineers. 2011. Traffic Impact Analysis [for the] Chula Vista General Plan & General Development Plan Amendment[s] for Otay Land Company. February.

McDonald, Meg, Carol Serr, and Jerry Schaefer. 1993. *Phase II Evaluation of CA-SDI-12809, A Late Prehistoric Habitation Site in the Otay River Valley, San Diego County, California*. On file, South Coastal Information Center, San Diego State University, California.

MSCP Policy Committee and Working Group. 1998. Final Multiple Species Conservation Program (MSCP) Plan. August.

National Energy Center for Sustainable Communities. 2010. *Funded Projects in Progress.* Accessed June 3, 2010, available at www.necsc.us/docs/NECSC_current_projects.pdf

Nielsen, Steve. Dexter Wilson Engineering, Inc. 2012. Personal communication via email regarding the Water Supply Report for Village 8 West. July 19.

Office of Environmental Health Hazard Assessment (OEHHA). 2001. Health Effects of Diesel Exhaust fact sheet. May 21. Accessed in May 2010, available at http://oehha.ca.gov/public_info/facts/pdf/diesel4-02.pdf

Office of the State Fire Marshal. 2011. Residential Fire Sprinkler and California Codes. Accessed March 3, 2011, available at http://osfm.fire.ca.gov/codedevelopment/residentialsprinklerandcacodes.php

Ogden Environmental and Energy Services Company, Inc. 1992. Final Environmental Impact Report Otay Ranch (EIR 90-01). December.

Otay Ranch Joint Planning Project. 2005. Otay Ranch General Development Plan, Otay Subregional Plan. Amended 2005.

Otay Land Company, LLC. 2012. Section Planning Area (SPA) Plan for Village 8 West, Otay Ranch, City of Chula Vista, California. Prepared by William Hezmalhalch Architects, Inc. May.

Otay Valley Rock, LLC. 2010. Otay Valley Rock, LLC website. Accessed June 8, 2010, available at www.otayrock.com

Otay Water District. 2010. *What is the Otay Water District?* Accessed August 17, 2010, available at www.otaywater.gov/owd/pages/customerservice/what_is.aspx

Otay Water District. 2010. Water Supply Assessment and Verification Report, Otay Ranch Village 8 West. November.

PBS&J. 2010. *Salt Creek Interceptor Technical Sewer Study for the South Otay Ranch (Village 8 West and Village 9).* November.

PMC. 2013. City of Chula Vista Otay Ranch Village 8 West SPA Plan Draft Public Facilities Finance Plan. May.

Project Clean Water. 2011. Otay Watershed. Accessed November 11, 2011, available at www.projectcleanwater.org/html/ws_otay.html

Rader, Bert and Del James. 1991a. *Site Record Form for CA-SDI-12287*. On file, South Coastal Information Center, San Diego State University, California.

Rader, Bert and Del James. 1991b. *Site Record Form for P-37-015141*. On file, South Coastal Information Center, San Diego State University, California.

RBF Consulting. 2013. Otay Ranch Village 8 West Traffic Impact Analysis Report. March 8.

RECON Environmental, Inc. 2005. Revised Noise Technical Report for Otay Ranch Village Two and Three, Planning Area 18B, & a Portion of Village Four. December 19.

RECON Environmental, Inc. 2012. Global Climate Change Analysis for Otay Ranch, City of Chula Vista, California.

Rosen, Martin D. 1989. *Site Record Form for CA-SDI-12809*. On file, South Coastal Information Center, San Diego State University, California.

San Diego Air Pollution Control District (SDAPCD). 1969. SDAPCD Regulation IV, Rule 51. January 1.

San Diego Air Pollution Control District (SDAPCD). 2001. SDAPCD Regulation IV, Rule 67 – Architectural Coatings. December 12.

San Diego Air Pollution Control District (SDAPCD). 2005. Measures to Reduce Particulate Matter in San Diego County. December.

San Diego Air Pollution Control District (SDAPCD). 2007a. Air Quality is San Diego, 2007 Annual Report.

San Diego Air Pollution Control District (SDAPCD). 2007b. *Eight-Hour Ozone Attainment Plan for San Diego County*. May 2007.

San Diego Air Pollution Control District (SDAPCD). 2009a. *The San Diego Regional Air Quality Strategy Revision.* April.

San Diego Air Pollution Control District (SDAPCD). 2009b. Compliance Advisory – Notice of Adoption of New Rule 55 – Fugitive Dust Control. September 23.

San Diego Air Pollution Control District (SDAPCD). 2010. Nuisance Complaint Program. June 12, 2000. Available at www.sdapcd.org/comply/complaint/complaint_prog.pdf

San Diego Association of Governments (SANDAG). 1994. San Diego Regional Energy Plan. December.

San Diego Association of Governments (SANDAG). 2003. Mobility 2030: The Transportation Plan for the San Diego Region (2030 Regional Transportation Plan). April.

San Diego Association of Governments (SANDAG). 2004. Regional Comprehensive Plan.

San Diego Association of Governments (SANDAG). 2010a. Board of Directors Agenda Item No. 10-02-16, Action Requested – Accept, 2050 Regional Growth Forecast. February 26. Accessed January 14, 2010, available at www.sandag.org/uploads/projectid/projectid_355_10794.pdf

San Diego Association of Governments (SANDAG). 2010b. Greenhouse Gas Reduction Targets Set. Accessed October 29, 2010, available at www.sandag.org/index.asp?newsid=666&fuseaction=news.detail

San Diego Association of Governments (SANDAG). 2011. 2050 Regional Growth Forecast: City of Chula Vista, San Diego Region, San Diego County Unincorporated Area, City of Imperial Beach, and City of National City. October.

San Diego Association of Governments (SANDAG). 2012. Transnet - South Bay BRT. Accessed October 15, 2012, available at http://www.keepsandiegomoving.com/SouthBay-BRT/south-bay-brt-intro.aspx

San Diego County Regional Airport Authority. 2004. Airport Land Use Compatibility Plan, Brown Field, San Diego, California. October 4.

San Diego County Water Authority (SDCWA). 2011. 2010 Urban Water Management Plan. June.

San Diego Gas and Electric (SDGE). 2003. *SDG&E 20-Year Resource Plan Filing.* April 15. Accessed August 17, 2010, available at www.sdge.com/regulatory/resourcePlan.shtml

San Diego Gas and Electric (SDGE). 2009. *Long Term Energy Planning Forum.* February. Accessed August 17, 2010, available at www.sdge.com/documents/aboutus/RegionalEnergyPlan.pdf

San Diego Gas and Electric (SDGE). 2012. Personal communication via email with Joe Zulauf regarding SDG&E Salt Creek Substation. July 11.

San Diego Natural History Museum, Department of PaleoServices. 2010. Technical Report, Paleontological Resource Assessment, Otay Ranch – Parcel B – Village 8 West, City of Chula Vista, San Diego County, California. September 2.

Schaefer, Jerry, Daniel M. Saunders, and Carol Serr. 1994. *Phase II Archaeological Evaluation of Prehistoric Sites CA-SDI-4739, CA-SDI-4741/4742, CA-SDI-4743, CA-SDI-4789/4988, CA-SDI-11367/11368, and CA-SDI-11372 in the Otay River Area, San Diego County, California*. On file, South Coastal Information Center, San Diego State University, California.

Serr, Carol. 1990. Site Record Form for P-37-015008. On file, South Coastal Information Center, San Diego State University, California.

Smith, Brian F. 1996. *Results of an Archaeological Survey at the Otay Valley Parcel of the Otay Ranch*. On file, South Coastal Information Center, San Diego State University, California.

South Coast Air Quality Management District (SCAQMD). 1993. CEQA Air Quality Handbook. April.

South Coast Air Quality Management District (SCAQMD). 2009. Appendix C – Mass Rate Localized Significance Thresholds (LST) Look-Up Tables. Revised October 21, 2009. Accessed June 18, 2010, available at www.aqmd.gov/ceqa/handbook/LST/appC.pdf

South Coast Air Quality Management District (SCAQMD). 2010. Thresholds of Significance. Accessed in May, 2010, available at www.aqmd.gov/ceqa/handbook/lst/lst.html

Spokane Community Oriented Policing Services. *Crime Prevention Through Environmental Design (CPTED).* Accessed September 15, 2010, available at www.spokanecops.org/Article%20-%20CP%20for%20Rental%20Review.pdf

Sweetwater Unified High School District. 2011. Facility Capacities. November 14.

Sweetwater Unified High School District. 2012. Student Transfer Procedures for the School Year 2012-2013. February 21.

United Nations Environmental Programme, Partnership for Clean Fuels and Vehicles. 2010. Middle East, North Africa, and West Asia Lead Matrix. April.

URS. 2012. Otay Land Company Village 8 West Biological Resources Report. October.

U.S. Environmental Protection Agency. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Washington, D.C. March.

U.S. Environmental Protection Agency (EPA). 1997. AP-42, Compilation of Air Pollutant Emission Factors, Section 13.2.6, Abrasive Blasting. November.

U.S. Environmental Protection Agency (EPA). 1999. The Cost and Benefit of the Clean Air Act: 1990-2010, Appendix D—Human Health Effects of Criteria Pollutants. November.

U.S. Environmental Protection Agency (EPA). 2007. U.S. Climate Policy and Actions. Accessed May 25, 2007, available at www.epa.gov/climatechange/policy/index.html

U.S. Environmental Protection Agency (EPA). 2010a. An Introduction to Indoor Air Quality. Updated April 23. Accessed November 3, 2010, available at www.epa.gov/iedweb00/co.html

U.S. Environmental Protection Agency (EPA). 2010b. Climate Change – Health and Environmental Effects. Updated June 10. Accessed July 28, 2010, available at www.epa.gov/climatechange/effects/index.html

U.S. Environmental Protection Agency (EPA). 2011a. Currently Designated Nonattainment Areas for all Criteria Pollutants. April 21. Accessed August 23, 2011, available at www.epa.gov/air/oaqps/greenbk/ancl.html#CALIFORNIA

U.S. Environmental Protection Agency (EPA) 2011b. Draft Inventory of U.S. GHG Emissions and Sinks: 1990-2009. February 15.

Western Regional Climate Center. 2011a. Lower Otay Reservoir, California (045162), Period of Record Monthly Climate Summary. Accessed February 3, 2011, available at www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5162

Western Regional Climate Center. 2011b. Bonita, California (040968), Period of Record Monthly Climate Summary. Accessed February 3, 2011, available at www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca0968

Chapter 12 EIR Preparation

This environmental impact report was prepared by the City of Chula Vista. The City was assisted by Atkins, located at 3570 Carmel Mountain Road, San Diego, California 92130. The following professional staff participated in the preparation of the EIR:

City of Chula Vista

Tom Adler, Senior Civil Engineer
Ed Batchelder, Advance Planning Manager
Marni Borg, Contract Environmental Project Manager
Scott Donaghe, Principal Planner and Project Manager
Stan Donn, Associate Planner
Angela Gaines, Police Community Relations Officer
Joe Gamble, Landscape Planner
Justin Gipson, Fire Marshal
Sandra Hernandez, Associate Engineer
Leilani Hines, Community Development Director
Dave Kaplan, Transportation Engineer
Glen Laube, Associate Planner
Marisa Lundstedt, Principal Planner
Ann Moore, Contract City Attorney
Marilyn Ponseggi, Principal Planner
Steve Power, Principal Planner
Lynnette Tessitore-Lopez, Associate Planner
Kim Vander Bie, Associate Planner
Betty Waznis, Library and Recreation Director
Richard Zumwalt, Associate Planner

Atkins

Diane Sandman, AICP, Project Manager
Sharon Toland, Project Manager

RBF Consulting – Traffic

Dawn Wilson, Project Manager
David Mizell, AICP, PTP, Transportation Planner

URS – Biological Resources
Patrick Mock, Ph.D, Senior Biologist

Gallegos & Associates – Cultural Resources
Dennis R. Gallegos, Project Manager
Monica Guerrero, RPA, Project Archaeologist

Noah Archaeological Consulting – Cultural Resources
Anna C. Noah, Ph.D.

San Diego Natural History Museum, Department of Paleoservices – Paleontological Resources
Thomas A. Deméré, Ph.D., Director
Sarah A. Siren, M.S., Paleontological Field Manager

Advanced Geotechnical Solutions, Inc – Geology
Jeffrey A. Chaney, RCE, RGE, Vice President
Paul De Risi, CEG, Vice President

Hale Engineering – Hydrology and Water Quality
John A. Hayes, P.E.

Geocon Incorporated
Matthew W. Lesh, Project Geologist
Joseph J. Vettel, GE 2401

Dexter Wilson Engineering, Inc. – Water and Sewer
Steve Nielsen, P.E.

Otay Water District – Water Supply Assessment and Verification
Robert Kennedy, P.E., Associate Civil Engineer

Chapter 13 Persons and Organizations Contacted

Public Agencies

Otay Water District
Chula Vista Fire Department

Organizations and Individuals

Jeff O'Connor, Director of Operations, HomeFed Corporation
Bob Penner, Senior Financial Analyst, HomeFed Corporation
Tom Blessent, Land Use Consultant
Johanna Tuite, Associate, Senior Planner, William Hezmalhalch Architects Incorporated
Jorge Becerra, Customer Project Planner, SDG&E
Steve Nielsen, P.E., Dexter Wilson Engineering
Jeff Chaney, Geotechnical Engineer, Vice President, Advanced Geotechnical Solutions, Inc.
Joanne Dramko, AICP, GISP, Project Manager, Helix Environmental Planning, Inc.

This page intentionally left blank.