3.7 Utilities and Service Systems

This section provides a project-level analysis of the potential impacts on utilities and public services that would result from implementation of the proposed Project. The utilities and services evaluated in this section are water supply, wastewater/sewer service, storm drainage, and gas and electric.

The Overview of Water Service is provided as **Appendix C-17** and the Water Supply Assessment and Verification (WSA&V) Report is provided as **Appendix C-18** to this EIR. The Residential Water Conservation Plan for the proposed Project is provided as **Appendix VI** to the Resort Village Specific Plan.

The Otay Ranch Resort Village Overview of Sewer Service (Overview of Sewer Service) addresses wastewater/sewer service for the proposed Project. A copy of the Overview of Sewer Service is provided as **Appendix C-16** to this EIR.

The Otay Ranch Resort Village Drainage Study (Drainage Study) is provided as **Appendix C-13** to this EIR; and the Otay Ranch Resort Village Storm Water Management Plan (Storm Water Management Plan), which addresses the proposed Project's storm drainage system, is provided as **Appendix C-14** to this EIR.

The Otay Ranch PEIR, certified in 1993, provided a program-level analysis of the existing conditions and potential impacts related to public services, facilities, and utilities (i.e., water supply, wastewater/sewer services, and electricity and gas) for the entire Otay Ranch area, including the Project site. The Otay Ranch PEIR concluded that the potential impacts to such services and facilities could be reduced to a less-than-significant level with the identified mitigation measures. This EIR tiers from the previously certified Otay Ranch PEIR, and concentrates on the issues specific to the proposed Project. The certified PEIR prepared for the Otay SRP evaluated development of the entire Otay Ranch community, including the Project site. As such, this EIR, in some instances, relies on the analysis contained in the PEIR. However, where the proposed Project differs substantively from what was analyzed in the previously certified PEIR, or where the existing conditions have significantly changed, additional analysis is provided in this EIR to ensure all potential significant impacts are adequately analyzed and applicable mitigation measures are included.

3.7.1 Existing Conditions

3.7.1.1 Water Supply

Water service is not currently provided to the Project site and the site is not yet within the service area of the Otay Water District (OWD). OWD is a member agency of the San Diego County Water Authority (SDCWA). SDCWA, in turn, is a member agency of the Metropolitan Water District (MWD), which provides access to imported water supplies from the Colorado River Aqueduct (CRA) and from northern California via the State Water Project (SWP). If approved by the County, the proposed Project would apply through LAFCO to annex into OWD, SDCWA, and MWD to obtain water service.

At this time, OWD has included the proposed Project's water demands in its 2010 Urban Water Management Plan (UWMP), as well as its subsequent 2015 UWMP, has existing facilities in the vicinity of the Project site, and has current jurisdictional boundaries that abut the Project site. The existing OWD facilities in the Project vicinity include the 980 Pressure Zone (980 Zone), which is within OWD's Central Area System.

Both MWD and SDCWA provide water supplies to their member agencies to meet projected water demand based on regional population forecasts. SANDAG is responsible for providing and updating land use planning and demographic forecasts for San Diego County. MWD and SDCWA update their water demand and supply estimates based on the most recent SANDAG forecasts approximately every 5 years to coincide with preparation of their respective UWMPs.

In accordance with Senate Bills 610 and 221 (discussed below), OWD prepared the WSA&V Report for the proposed Project. The report was approved by OWD on May 7, 2014. According to OWD, the "WSA&V Report demonstrates and documents 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 and multiple dry years to meet the projected demand of the proposed Resort project and the existing and other planned development projects to be served by the Otay WD [Water District]" (**Appendix C-18**).

Planning for Future Water Supply

The California Urban Water Management Planning Act (UWMP Act; California Water Code sections 10610-10656) requires that each urban water supplier providing water for municipal purposes, either to more than 3,000 customers or more than 3,000 acre-feet of water annually, must prepare, adopt, and update an UWMP at least once every 5 years on or before December 31, in years ending in 5 and 0. This applies to MWD, SDCWA, and its 24 member agencies, including OWD. The intent of an UWMP is to present information on water supply, water usage/demand, recycled water, and water use efficiency programs in a respective water district's service area. A UWMP also serves as a valuable resource for planners and policy makers over a 25-year time frame.

The UWMP process ensures that water supplies are being planned to meet future growth. UWMPs are developed to manage the uncertainties and variability of multiple supply sources and demands over the long term. Water agencies and districts update their demand and supply estimates based on the most recent SANDAG forecast approximately every 5 years to coincide with preparation of their UWMPs. The most current supply and demand projections are contained in the 2015~~0~~ UWMPs of MWD, SDCWA, and OWD, which were published after the public release of this EIR. Therefore, this analysis relies upon the 2010 UWMPs. The 2015 UWMP has been reviewed and does not change the findings of this analysis. SDCWA member districts rely on the UWMPs and SDCWA's Integrated Regional Water Management (IRWM) program to coordinate water resource management efforts throughout the County.

Normal-year, single-dry-year, and multiple-dry-year UWMP supply and demand assessments are intended to describe the water supply reliability and vulnerability to seasonal or climatic conditions. Normal water years are considered to be years that experience average rainfall for the

respective district. Single-dry water years are considered 1-year drought events. Multiple-dry water years refer to a series of below average rainfall for particular areas. Projections for multiple-dry years are made in 5-year increments. In their 2010 UWMPs, MWD, SDCWA, and all 24 SDCWA member agencies, including OWD, determined that adequate water supplies would be available to serve existing and projected water uses within their respective service areas under normal-year, single-dry-year, and multiple-dry-year conditions through year 2035.

Metropolitan Water District

MWD supplies water to approximately 18.7 million people in a 5,200-square-mile service area that includes portions of Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego counties. SDCWA is one of MWD's 26 member agencies. Supply and demand projection information for MWD is included in its 2010 Regional UWMP (MWD 2010a). MWD's long-term strategy for a sustainable water supply is outlined in its Integrated Water Resources Plan (MWD 2010b), which identifies a mix of resources (imported and local) that will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, SWP supplies, Colorado River supplies, groundwater banking, and water transfers through the year 2030.

MWD gets its water from two sources. The first source is the Colorado River, which is connected to MWD's six-county service area through a 242-mile aqueduct. The aqueduct system is known as the Central Valley Project (CVP). The CVP is operated by U.S. Bureau of Reclamation. The second source is water from northern California, which supplies water through a series of dams, aqueducts, pipelines, and other facilities known as the State Water Project (SWP). The SWP is operated by the California Department of Water Resources (DWR). From the CRA, MWD is apportioned 550,000 acre-feet of water per year (AFY). Despite this low apportionment, MWD was able to transport up to 1.2 million acre-feet (MAF) through the CRA in past years by relying on unused apportionments from Arizona, Nevada, and California agricultural agencies. However, MWD's firm water supply from the CRA is only 550,000 acre-feet, which is the number planning agencies must rely on for development. To supplement this supply, MWD also has several existing programs and programs being developed in cooperation with other agencies.

From the SWP, MWD is contractually entitled to receive 1,911,000 acre-feet of water; however, the level of SWP supply development, state and federal environmental regulations, and other factors have restricted and, in some cases, reduced the actual amount of available SWP water. As a result of these and other limitations, MWD estimates that actual SWP supplies will be 0.6 MAF in a dry year and 411,000 acre-feet during critically dry years.

As mentioned above, MWD adopted its 2010 Regional UWMP in November 2010, which is an update to its prior 2005 Regional UWMP. In its 2010 UWMP, MWD evaluated water supply reliability, over a 20-year period, for average, single-dry, and multiple-dry 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. The water reliability analysis identified current supplies and supplies under development to meet projected demands. MWD's reliability assessment showed that MWD can maintain reliable water supplies to meet projected demands

through the year 2035. MWD also identified buffer supplies, including other SWP groundwater storage and transfers, which could serve to supply additional water needs.

San Diego County Water Authority

The SDCWA service area covers approximately 951,000 acres and encompasses the western one-third of San Diego County. SDCWA has 24 member agencies, 15 of which provide water to unincorporated areas of San Diego County. Historically, SDCWA has relied on imported water supplies purchased from MWD to meet the needs of its member agencies; however, in response to recent droughts, SDCWA has begun investing in projects to diversify its water supply sources such that it is not as dependent on MWD for future water purchases.

SDCWA is responsible for ensuring a safe and reliable water supply to support the region's $190 billion economy and the quality of life for 3.1 million residents. Because of the County's semi-arid climate and limited local water supplies, SDCWA imports about 46 percent of the water used in the San Diego region from MWD as of 2013 (SDCWA 2013). Most of this water is obtained from the Colorado River and the SWP through a system of pipes, aqueducts, and associated facilities. SDCWA has determined that the best way to ensure a reliable water supply for the future is to diversify its water supply portfolio. Diversification includes water that originates locally, such as recycled water and desalinated water. The SDCWA Regional Water Facilities Master Plan (SDCWA 2002) serves as the roadmap for identifying a diverse mix of water supply sources and implementing the associated facilities and projects needed through 2030 to ensure a safe and reliable supply. The Water Authority adopted an update of the Regional Water Facilities Master Plan on March 27, 2014.

In June 2011, SDCWA adopted its 2010 UWMP, updating the previously adopted 2005 UWMP. The 2015 UWMP was adopted after this EIR was released for public review, therefore this analysis relies upon the 2010 UWMP. The 2015 UWMP has been reviewed and does not change the findings of this analysis Sections 4, 5, and 6 of SDCWA's 2010 UWMP contain documentation of SDCWA's existing and planned water supplies, including MWD supplies (imported Colorado River water and SWP water), SDCWA supplies, and local member agency supplies (surface water reservoirs, water recycling, groundwater, and groundwater recovery). Section 9 of SDCWA's 2010 UWMP evaluates water supply reliability in average, single-dry, and multiple-dry years. Based on SDCWA's water supply reliability assessment, SDCWA concluded that water supplies would be sufficient through 2035.

SDCWA also has a Water Shortage and Drought Response Plan (SDCWA 2006). This plan provides its member agencies with a series of potential actions when faced with a shortage of imported water supplies due to prolonged drought conditions. Such actions help to avoid or minimize impacts of shortages and ensure an equitable allocation of supplies throughout the San Diego region. The Drought Management Plan was put into effect in 2007 and was deactivated in April 2011. However, due to drought conditions, the SDCWA region initially announced a Level 1 Drought Watch condition that called for voluntary water conservation efforts. In July 2014, the SDCWA's Board of Directors declared a Drought Alert condition calling for mandatory water conservation measures. Retail water agencies throughout the county, including OWD, also have adopted mandatory water-use restrictions and they are preparing for the potential for a fourth

consecutive dry year (http://www.sdcwa.org/countywide-water-use-decreases-29-percent-december, last accessed Feb. 5, 2015). To increase public awareness and promote conservation, the County Water Authority and many of its member agencies, including Otay Water District, have implemented water conservation rebate programs and sustained public education campaigns with homeowners, businesses, and retailers like Home Depot and Lowes, to further increase conservation levels. In response to the need to conserve water, water usage in the San Diego region decreased by 29 percent in December 2014 compared to the same month a year earlier. The effort highlights the region's long-term commitment to water conservation, particularly during drought conditions.

SDCWA's most recent planning documents, the 2010 UWMP (SDCWA 2011) and 2009-2010 Annual Report (SDCWA 2010a), ended the period of mandatory water supply reductions by securing a 45- to 75-year water conservation and transfer agreement with Imperial Irrigation District and separate 110-year agreements to receive water conserved by constructing and lining parts of the All-American and Coachella canals in Imperial Valley. In 2010, these agreements brought approximately 145,000 acre-feet of water to San Diego County. By 2021, these agreements will provide the region with 280,000 acre-feet of water annually.

Otay Water District

OWD provides water services to southern El Cajon, La Mesa, Rancho San Diego, Jamul, Spring Valley, Bonita, eastern Chula Vista, and Otay Mesa. OWD covers 80,320 acres, and has approximately 47,000 water service connections, 709 miles of pipelines, 24 pump stations, and 40 reservoirs with a total storage capacity of 226 million gallons. OWD provides 90 percent of its water service to residential land uses, and 10 percent to commercial and industrial uses. Average annual consumption for OWD is approximately 36,970 acre-feet. SDCWA is OWD's primary potable water source and delivered about 30,363 acre-feet to OWD in 2011 (SDCWA 2012a). OWD operates the Ralph W. Chapman Water Recycling Facility, which produces over 1 million gallons per day; and purchases 6 million gallons per day of recycled water from the City of San Diego South Bay Water Reclamation Plant. The OWD's recycled water is used to irrigate golf courses, parks, and open space in eastern Chula Vista (OWD 2012).

On June 1, 2011, OWD's Board of Directors adopted its updated 2010 UWMP. The 2015 UWMP was adopted after this EIR was released for public review, therefore this analysis relies upon the 2010 UWMP. The 2015 UWMP has been reviewed and does not change the findings of this analysis. Sections 2, 3, and 4 of the 2010 UWMP provide an overview of OWD's service area, its current water supply sources, supply reliability, water demands, measures to reduce water demand, and planned water supply projects and programs. Section 5 of the 2010 UWMP contains OWD's water service reliability assessment. This section states that the level of reliability is based on the documentation in the UWMPs prepared by MWD and SDCWA and that these agencies have determined they will be able to meet potable water demands through 2035, during normal and dry year conditions. According to the 2010 UWMP, OWD currently relies on MWD and SDCWA for its potable supply, and OWD has worked with these agencies to prepare consistent demand projections for OWD's service area.

To obtain water service from OWD, the requirements outlined in Section 27 of OWD's Codes of Ordinances must be met. These include the requirement that all water fixtures and appliances installed, including the ones in the following list, must be high efficiency:

- Toilets and Urinals
- Faucets
- Showerheads
- Clothes Washers
- Dishwashers

Landscape Requirements:

- Only smart irrigation controllers may be installed; and
- Only low-water use plants may be used in non-recreational landscapes.

Additional Requirements:

- Installed smart irrigation controllers shall be programmed/scheduled according to the manufacturer's instructions and/or site specific conditions based on soil type, plant type, weather and/or reference evapotranspiration data; and
- Two irrigation schedules shall be prepared, one for the initial establishment period, one for the established landscape.

Existing OWD 980 Zone Facilities

The proposed Project would be served by the 980 Zone within OWD's Central Service Area. The 980 Zone accesses water from the SDCWA aqueduct by Otay Flow Control Facilities Numbers 10 and 12, which fill 624 Pressure Zone reservoirs. Water is then distributed within the 624 Zone and pumped to the 711 and 980 Zone storage and distribution systems. There are two pump stations in the 980 Zone: the 980-1 and 908-2 pump stations.

There are currently two pump stations in the 980 Zone. There also are two existing reservoirs in the 980 Zone, both located at the same site north of Rolling Hills Ranch, which provide a total storage capacity of 10 million gallons. Major 980 Zone pipelines in the vicinity of the Project site are all located west of the Project and include transmission lines in Hunte Parkway and Otay Lakes Road. The 24-inch transmission line in Otay Lakes Road extends to just east of Hunte Parkway.

Water Supply Challenges

As discussed in the various 2010 UWMPs, multiple events have occurred that have the potential to affect and reduce southern California's water supply. The Colorado River has experienced drought conditions. Additionally, the SWP in northern California experienced consecutive year drought conditions, which substantially depleted storage in reservoirs throughout the SWP system, including San Diego County. In 2014, Governor Jerry Brown declared a Drought State of Emergency. In response, DWR provided a summary of current drought conditions, snowpack levels, and storage provided in key reservoirs throughout the state in January 2014. The DWR document also established that the SWP allocation of water will be severely reduced if dry

conditions persist, and the latest SWP allocation, as of January 15, 2015, is set at 15 percent of most SWP contractors' requests for SWP Table A water. On May 5, 2015 the SWRCB issued emergency water conservation regulations which delineate the percentages of conservation required compared to 2013 use as well as other water use restrictions. The conservation percentages were determined based on per capita water demand. Further discussion of drought conditions and water supply is included in **Appendix C-18** of this EIR.

In addition to extreme drought conditions, in August 2007, a U.S. District Court decision was issued to protect the endangered Delta smelt (fish). This federal court ruling set operational limits on pumping in the Sacramento-San Joaquin Bay Delta from December 2007 to June 2008 to protect the Delta smelt. Since the SDCWA and its member agencies import water from MWD, their water supply was impacted by this federal court ruling. On June 4, 2009, the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) issued a biological opinion intended to protect spring- and winter-run Chinook salmon, Central Valley steelhead, green sturgeon, and Southern Resident killer whales. This action placed additional restrictions on SWP operations. Despite ongoing litigation over these water restrictions, DWR's 2013 Final SWP Delivery Reliability Report incorporates the regulatory water restrictions for the SWP and CVP operations in accordance with the USFWS and NMFS biological opinions.

In November 2009, the state Legislature passed a package of bills that established in state policy the co-equal goals of water supply reliability and environmental restoration in the Delta. The bills also provided a governance structure for the Delta and required preparation of a Delta Plan to guide the process of achieving the co-equal goals and outline a plan to restore listed species. As a result, the Final Delta Plan was unanimously adopted by the Delta Stewardship Council on May 16, 2013, and its 14 regulatory policies were approved by the Office of Administrative Law. The Delta Plan became effective with enforceable regulations on September 1, 2013. In addition, the legislation authorized the preparation of the Bay Delta Conservation Plan process, which is intended to further facilitate the co-equal goals of enhanced water reliability and restoration of the Delta.

Global climate change also creates uncertainties that may significantly affect California's water resources over the long-term. Since 2008, the SDCWA's plan has included its Climate Change and Sustainability Program, which advocates for improved modeling to provide precipitation data on a local and regional scale, encourages focused scientific research on climate change to identify the impacts on the region's water supply, and partners with other water utilities to incorporate the impacts of climate change on water supply planning and the development of decision support tools.

In summary, water agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water supply conditions, such as court rulings regarding listed fish species and the recent drought impacting the western states. Circumstances such as these will likely always present challenges to water supply planning for the state. However, the regional water supply agencies, MWD and SDCWA, along with OWD have adapted effectively to the changing circumstances with careful planning and the implementation of reliable long-term solutions that ensure sufficient, reliable supplies to meet the demands of both existing users and planned future growth.

Existing Regulatory Setting

Urban Water Management Planning Act

In 1983, the Legislature enacted the UWMP Act (California Water Code sections 10610 through 10656), which requires every urban water supplier that provides water to 3,000 or more customers, or more than 3,000 acre-feet of water annually, to make every effort to ensure the appropriate level of reliability in its water service to meet the needs of its customers during normal, dry, and multiple-dry years. The UWMP is required for a water supplier to be eligible for the State Department of Water Resources' (DWR) grants, loans, and drought assistance. The UWMP provides information on water use, water resources, recycled water, water quality, reliability planning, demand management measures, best management practices, and water shortage contingency planning for a specified service area or territory.

Senate Bills 610 and 221

Senate Bill 610, codified in the California Water Code beginning with Section 10910, requires the preparation of a water supply assessment (WSA) for projects that propose to construct 500 or more residential units or the water-use equivalent. Senate Bill 610 stipulates that when environmental review of certain large development projects is required, the water agency that is to serve the development must complete a WSA to evaluate water supplies that are or will be available during normal, single-dry, and multiple-dry years over a 20-year projection to meet existing and planned future demands, including the demand associated with a proposed project.

Senate Bill 221, codified in the California Water Code beginning with Section 10910, requires that the legislative body of a city or county, which is empowered to approve, disapprove, or conditionally approve a subdivision map, must condition such approval upon proof of a sufficient water supply. The term "sufficient water supply" is defined in Senate Bill 221 as the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection that would meet the projected demand associated with the proposed subdivision. The definition also includes the requirement that sufficient water supplies encompass not only the proposed subdivision, but also existing and planned future uses, including agricultural and industrial uses.

3.7.1.2 *Wastewater*

This subsection describes the existing conditions associated with the Chula Vista sewer system and the County DPW-administered sewer system (San Diego County Sanitation District). Sewer service is not currently provided to the Project site; however, Chula Vista provides sewer service in the vicinity of the proposed Project.

This subsection is based on the Otay Ranch Resort Village Overview of Sewer Service (Overview of Sewer Service) provided as **Appendix C-16** to this EIR. The phasing and financing of wastewater facilities is also addressed in the Otay Ranch Resort Village Public Facility Financing Plan (see **Appendix III** of the Resort Village Specific Plan).

Regional Sewer Facilities

The City of San Diego ~~Metropolitan Wastewater Department (Metro)~~Public Utilities Department manages the Metropolitan Waste Water System (Metro) and provides regional wastewater treatment and disposal services for the City of San Diego and 15 other cities and sanitation districts. ~~Metro~~ The Public Utilities Department has a service area of 450 square miles, stretching from the City of Del Mar to the north, the communities of Alpine and Lakeside to the east, and the U.S./Mexico international border to the south. This includes wastewater generated from Chula Vista. ~~Metro~~ The Public Utilities Department owns and operates the Point Loma Wastewater Treatment Plant, which has a current RWQCB-approved treatment capacity of 240 mgd. During 2010, the treatment plant operated at a daily average effluent flow rate of 153 mgd (City of San Diego 2010). Improvements are planned to increase the wastewater treatment capacity of ~~Metro~~ the Public Utilities Department to nearly 340 mgd to serve an estimated population of 2.9 million in year 2050.

The South Bay Water Reclamation Plant (SBWRP) is located at the intersection of Dairy Mart and Monument Roads in the Tijuana River Valley. The plant relieves the South Metro Sewer Interceptor System and provides local wastewater treatment services and reclaimed water to the South Bay. The plant opened in May 2002 and has a wastewater treatment capacity of 15 million gallons a day.

Once incoming wastewater is treated to a secondary treatment level, effluent can either be discharged into the ocean though the South Bay Ocean Outfall (SBOO) or moved on to tertiary treatment for reclaimed water applications. Located near Imperial Beach, the SBOO discharges treated wastewater from the International Wastewater Treatment Plant to the Pacific Ocean. The South Bay Ocean Outfall extends approximately 3.5 miles offshore and discharges effluent in approximately 100 feet of water.

Existing County DPW Sewer Treatment Capacity

The former Spring Valley Sanitation District was consolidated, along with other County sanitation districts, into the San Diego County Sanitation District (SDCSD). The SDCSD provides sewer service to approximately 35,000 customers within unincorporated San Diego County. It owns and operates approximately 432 miles of pipeline, 8,300 manholes, 10 lift stations/pressurized mains, and 3 wastewater treatment plants. The SDCSD has a joint powers agreement with the City of San Diego for treatment and disposal of sewage. The capacity rights of the Spring Valley Sanitation District and other County sanitation districts have been consolidated and placed under the control of the SDCSD.

Existing Chula Vista Sewer Facilities

As shown in **Figure 3.7-2,** the major Chula Vista sewer facility located in the vicinity of the Project site is the Salt Creek Interceptor. The Salt Creek Interceptor has been sized to accommodate the ultimate development in the facility's designated service area, which includes the proposed Project, as confirmed in the March 2015 technical memorandum, included as Appendix C-~~30~~28 to this EIR. The Salt Creek Interceptor ranges from a 15-inch line to a 48-inch line and conveys flow

to the City of San Diego's ~~Metro~~ Public Utilities Department sewer system. The upstream end of the Salt Creek Interceptor is located along Salt Creek, approximately one mile west of the Project site.

3.7.1.3 *Storm Drainage*

All runoff from the Project site currently drains under Otay Lakes Road via 23 existing culverts, and discharges to Lower Otay ~~Lake~~Reservoir. Thirteen existing culverts are undersized for existing drainage conditions and require upgrades to prevent roadway overtopping during a 100-year storm event.

3.7.1.4 *Gas and Electric*

Electric and natural gas service is necessary for residential and commercial developments. Electricity is used to provide power for lighting and many appliances in homes and business, and natural gas is typically used for heating, fireplaces, and other appliances. San Diego Gas and Electric (SDG&E) would be the natural gas and electric service provider for the Project. The Project site is currently undeveloped and there is no on-site natural gas or electrical infrastructure currently serving or extending into the Project area. Urban development to the west of the Project site, west of Otay Reservoir, has existing electric and natural gas infrastructure and service. Much of the surrounding areas to the north, east, and south of the Project site are undeveloped and do not have electric or gas infrastructure or service.

3.7.2 Analysis of Project Effects and Significance Determination

3.7.2.1 *Water Supply*

Guidelines for the Determination of Significance

For the purposes of this EIR, a significant water supply impact will occur if the Project:

- Requires or results in the construction or expansion of water supply, storage, or treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Has insufficient water supplies available to serve the project from existing entitlements and resources so that new or expanded entitlements are needed.

Rationale for Selection of Guidelines

The significance guidelines for water supply are based on Appendix G of the CEQA Guidelines.

Analysis

As stated previously, the 2010 UWMPs for OWD, SDCWA, and MWD were updated in 2015, after this EIR was released for public review. This section has not been updated to reflect this, however, the 2015 UWMP has been reviewed and does not change the findings of this analysis.

The proposed Project would receive water service by expanding OWD's existing 980 Zone water system. **Figure 3.7-1** illustrates the existing and proposed water facilities on-site or in the vicinity of the Project site. The sizing and timing of all on-site and off-site water facilities for the Project site would be identified in a Subarea Master Plan (SAMP) to be reviewed and approved by OWD. The ~~Subarea Master Plan~~SAMP would be prepared for the proposed Project and submitted to OWD for approval prior to approval of final engineering plans.

Pursuant to OWD's Capital Improvement Program, improvements to the existing 980 Zone water system are necessary before the Project site can receive water service. Such improvements would include construction of a new reservoir and extension of transmission lines. OWD would first construct a reservoir, known as the 980-4 Reservoir, within the Project site that would have a maximum capacity of 5 million gallons. The existing 24-inch transmission line in Otay Lakes Road is proposed to be extended as a 20-inch transmission line from just east of Hunte Parkway to the main project entry (Strada Piazza), ultimately connecting to the proposed 980-4 Reservoir. Additional improvements associated with the proposed Project would include construction of on-site pipelines for homes and other structures to connect to 980 Zone facilities. All other facilities would be sized for the proposed Project to meet OWD looping criteria and pressure requirements.

As noted above, construction of these water facilities is planned pursuant to the OWD Capital Improvement Program, and the potential environmental impacts of the construction and operation of such facilities were analyzed in the certified Final Program EIR (SCH No. 2008101127) for OWD's Water Resources Master Plan, dated July 20, 2009 (OWD 2009). The certified EIR is incorporated by reference in this EIR and available for review upon request to OWD, 2554 Sweetwater Springs Boulevard, Spring Valley, CA 91978-2004.

The analyses performed for the OWD PEIR was conducted at a program level of detail and identified the potential impacts and mitigation measures associated with the proposed 980-4 Reservoir to biological resources, cultural resources, and paleontological resources. The proposed on-site water reservoir and water lines would be constructed within areas proposed for grading as part of the proposed Project's tentative maps, or in existing or proposed road rights-of-way. Impacts associated with grading (such as cultural, biological, paleontology, geology and soils, etc.) and project implementation (such as noise and air quality) have been identified throughout this EIR; therefore, construction of such facilities would not have any additional impacts beyond those identified in this EIR. Based on the above, impacts related to the construction of the water supply lines and storage facilities are considered ***less than significant***.

Regarding the supply of water, OWD and SDCWA have included the anticipated supply and demand requirements for the proposed Project in their water supply and demand projections detailed in their 2010 UWMPs. Demand requirements are detailed on Page 12 of the OW UWMP and in Table 2-2 on Page 2-6 of the SDCWA UWMP. However, the Project site is not currently within the OWD service area. Therefore, prior to the provision of water service to the Project site, approval by LAFCO of annexation of the Project site to OWD would be required. LAFCO also would need to approve an update of the OWD sphere of influence and include the Project site within the OWD sphere before annexation. In addition, a Municipal Service Review would be required as part of the sphere update/annexation request.

The proposed Project's total estimated average potable water demand is 1,418,918 gallons per day, or approximately 1,590 acre-feet per year as shown in **Table 3.7-2**. The proposed Project also includes a Residential Water Conservation Plan included as **Appendix VI** of the Resort Village Specific Plan, which identifies strategies to reduce outdoor water use by 30 percent on single-family lots. When implemented, this has the effect of reducing the amount of potable water used by single-family residential units by 78 gallons per day per unit, which would reduce the project's overall consumption by 146,718 gallons per day, or approximately 164 acre-feet per year.

Implementation of the Residential Water Conservation Plan would reduce total average water consumption to 1,272,200 gallons per day, or about 1,425 acre-feet per year.~~.~~ The design criteria used to determine the projected water demands are described in the Overview of Water Service in **Appendix C-17** to this EIR. To determine whether an adequate water supply is available to meet these projected demands, OWD prepared a WSA&V report, which concluded that there would be an adequate water supply in normal, single dry and multiple dry years (**Appendix C-18**).

As stated above, OWD relies on SDCWA for its potable water supply. SDCWA, in turn, relies primarily on MWD for its supply; however, it has increased its water supply diversification and reduced its reliance on MWD from 95% of SDCWA's water supply in 1991, to 46% in 2013, and projects a further reduction to 30% by 2020 (SDCWA 2012b). The OWD 2010 UWMP assessed the water supply sources, water supply reliability, water demands, measures to reduce water demand, and planned water supply projects and programs within the OWD service area (OWD 2011). Because OWD receives all of its supply from SDCWA, the OWD 2010 UWMP is based on documentation contained in the 2010 UWMP prepared by SDCWA, as well as the documentation in the 2010 Regional UWMP prepared by MWD.

The water supply and demand forecasts for the San Diego region included in both the MWD and SDCWA UWMPs were based on demographic data from the SANDAG 2030 Regional growth forecasts. **Table 3.7-3** shows SDCWA's estimates of water supply and demand through year 2035 under average/normal water supply conditions. **Table 3.7-4** shows SDCWA's estimates of water supply and demand through year 2035 under single dry water year supply conditions; and **Table 3.7-5** estimates water supply and demand through year 2035 under multiple dry water year supply conditions. To fully quantify SDCWA water service supply and demands, lands with current or expected future applications for annexation were included in the SDCWA demand forecast, which included the proposed Project in those water demand forecasts.

In its 2010 UWMP, MWD evaluated water supply reliability over a 25-year period for average, single-dry, and multiple-dry years (see **Tables 3.7-6** and **3.7-7**). To complete its most recent water supply reliability assessment, MWD developed estimates of total retail demands for the region, factoring in the effects of conservation. After estimating demands, the water reliability analysis identified current supplies and new supplies under development to meet projected demands. MWD's reliability assessment showed that MWD can maintain reliable water supplies to meet projected demands through year 2035. MWD also identified buffer supplies, including other SWP groundwater storage and transfers, which could serve to supply additional water needs.

SDCWA's 2010 UWMP evaluation of water supply reliability in average, single-dry, and multiple-dry years concluded that, if water supplies are developed as planned, no water shortages

are anticipated within the SDCWA service area under average, single-dry, or multiple-dry years through year 2035. The SDCWA 2010 UWMP also disclosed that SDCWA is at risk for water shortages should supplies identified by MWD not be developed as planned. To address this risk, the SDCWA 2008 Strategic Plan and 2008 Business Plan provides clear direction to continue to increase the reliability of the water supply to meet the San Diego region's demands and to ensure cost effective, environmentally sensitive, and safe delivery of those supplies. Since adoption of its previous (year 2005) UWMP, SDCWA has adopted policies and programs in the areas of supply reliability, system infrastructure, finance, and outreach to help accomplish its mission to provide a safe and reliable water supply to its member agencies. SDCWA's long-term commitment also involves diversifying the region's water supply 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.

SDCWA's supplies include the Quantification Settlement Agreement (QSA) for the Colorado River, which was completed in October 2003. This agreement provides California the means to implement water transfers and supply programs for the state's 4.4 million-acre-foot basic annual apportionment of Colorado River water. SDCWA is a party to the QSA. For further information regarding the QSA, see SDCWA's website page, Quantification Settlement Agreement for the Colorado River (SDCWA 2010b). On January 14, 2010, the Sacramento Superior Court ruled that a portion of the agreements related to the QSA violated the state Constitution. SDCWA disagreed with the ruling and appealed the decision. The filing of the appeal resulted in a stay of the Superior Court ruling, allowing water from the QSA transfers to continue to flow into San Diego County. In December 2011, the Third District Court of Appeal reversed the trial court ruling, finding that the QSA did not violate the state Constitution and others laws, but the Court of Appeal sent the matter back to the trial court on whether the environmental impacts under CEQA were properly assessed. In July 2013, the Sacramento Superior Court affirmed the CEQA compliance and rejected all remaining challenges to the QSA. Several parties have appealed the Superior Court decision, and the remaining issue is now pending appeal in the Third District Court of Appeal.

The QSA was challenged in additional federal court litigation by the Imperial Irrigation District. The federal District Court (Judge Anthony Battaglia) ruled that the Secretary of the Interior did not violate either the National Environmental Policy Act or the Clean Air Act in approving the QSA. An appeal followed. In May 2014, the U.S. Court of Appeals for the Ninth Circuit rejected the appeal, upholding the ruling of the district court. According to SDCWA, the Ninth Circuit's ruling strengthens a key component of water supply for SDCWA. According to SDCWA, by 2021, the QSA water transfers will supply 280,000 acre-feet per year to San Diego County, enough to meet about one-third of the region's water demands.

In addition, DWR's Final 2009 Delivery Reliability Report and the Final 2013 Delivery Reliability Report and Technical Addendum update estimates of the current (2013) and future (2033) SWP delivery reliability and incorporates regulatory requirements restricting SWP and CVP operations in accordance with USFWS and NMFS biological opinions. In addition, DWR's Final 2009 and 2013 Delivery Reliability Reports reflect potential impacts of climate change and sea level rise.

The water restrictions reflected in the 2009 Final Delivery Reliability Report are addressed in the 2010 UWMPs prepared by MWD, SDCWA, and OWD. In addition, the proposed Project's water

demands are included in the SDCWA and OWD 2010 and 2015 UWMPs, just as those demands were part of SDCWA's and OWD's 2005 UWMPs. Based on the above, it was determined that an adequate water supply is available to meet the demands of the proposed Project in addition to other projected water uses from OWD's existing entitlements and water resources. ~~An offset program has been established that would likely be required as part of the Project annexation process to ensure that no new or expanded entitlements from SDCWA or MWD are needed to supply water to meet the demands of the water district.~~ Thus, impacts related to the sufficiency of the Project's water supply are considered ***less than significant***.

3.7.2.2 *Wastewater*

Guidelines for the Determination of Significance

For the purposes of this EIR, a significant wastewater impact will occur if the proposed project does the following:

- Requires or results in the construction or expansion of wastewater collection or treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Exceeds wastewater treatment requirements of the applicable RWQCB; or
- Results in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Rationale for Selection of Guidelines

The significance guidelines for wastewater services are based on Appendix G of the CEQA Guidelines.

Analysis

- Would the proposed project require or result in the construction or expansion of wastewater collection or treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

SDCSD and Salt Creek Interceptor

The Project is proposing to obtain sewer service from the SDCSD through a transportation agreement with the City of Chula Vista whereby the flow would be transported via the Salt Creek Interceptor and ultimately treated and disposed by ~~Metro~~the City of San Diego's Public Utilities Department. Since the initial drafting of the Draft EIR, a sewerage transportation agreement between the City of Chula Vista and County has been executed for the use of the Salt Creek Sewer Interceptor to transport sewerage for treatment by the City of San Diego Metropolitan Sewerage System. The County would be the owner/operator of the Project's sanitation system. This section

analyzes the proposed Project's use of the Salt Creek Interceptor in providing sewer service to the Project site.

Based on the sewage generation factors presented in the Overview of Sewer Service, and the proposed development plans for the Project site, the total projected average sewage flow for the proposed Project is 0.51 mgd, as shown in **Table 3.7-8**. Using the generation rate of 1.93 mgd from the San Diego County Standards for Sewer Construction and the peaking chart in the Overview of Sewer Service, the proposed Project's peak dry-weather flow is estimated at 0.98 mgd.

To convey flows from the Project site to the Salt Creek Interceptor, three on-site permanent sewage lift stations would be constructed, dual force mains would be installed, and off-site improvements would be required. These facilities would convey flows to the Salt Creek Interceptor where Otay Lakes Road intersects with Salt Creek. These on-site facilities are Lift Stations 1, 2, and 3. The recommended location of these stations is shown in **Figure 3.7-2**. The three on-site lift stations would be operated and maintained by the SDCSD.

Lift Station 1 would be sized with capacity for the entire Project site. The northwestern portion of the proposed Project would flow to Lift Station 1 by gravity, the central and southwestern portions of the proposed Project would flow to Lift Station 2 by gravity, and the central and eastern portions of the proposed Project would flow to Lift Station 3 by gravity. Lift Stations 2 and 3 would convey flows, primarily by dual force mains, to Lift Station 1. The required capacity of Lift Station 1 is 1,000 gallons per minute (gpm) to accommodate peak gravity flows plus flows from Lift Stations 2 and 3 (capacities of 825 gpm and 300 gpm, respectively). From Lift Station 1, sewage flows would be conveyed through a 10-inch dual force main to a 15-inch gravity line along Otay Lakes Road, which would connect to the Salt Creek Interceptor.

The County of San Diego does not have established detailed design standards for lift stations. On recent projects, the County has used City of San Diego Guidelines for lift stations as a reference. Some of the pertinent criteria from the City of San Diego 2013~~04~~ Sewer Design Guide are as follows:

- Dual force mains are required.
- Redundant pumping units are required.
- Pumping units shall be sized for peak wet weather gravity flow plus pumped flow of upstream lift stations, if any.
- Redundant power source such as diesel generator is required.
- Stations to include SCADA system to remotely notify County staff of station status and alarms.
- Overflow storage equivalent to 6 hours of peak influent gravity flow is required. Two hours is standard, but the City of San Diego requires 6 hours where maximum protection from spillage is required.
- Odor control system, Bioxide or equal, is required.

- Pump stations are to include adequate access and turn-around space for large vehicles.

Operation of pump stations and pipelines would be conducted in accordance with the County of San Diego Sewer System Management Plan (County of San Diego 2010d). This would include compliance with the Sewer System Management Plan's requirements for routine cleaning of the wastewater system to avoid retention of solids that could result in release of hydrogen sulfide gas. The pump stations would be sited, constructed, and operated to the satisfaction of the County Department of Public Works to avoid odor and noise impacts.

As noted above, each lift station would be required to have sufficient 6-hour peak flow storage. For lift station 1, this would require an overflow volume of approximately ~~50,000~~285,000 gallons. Lift station 2 would be required to have overflow storage for approximately ~~150,000~~235,000 gallons, and lift station 3 would be required to have storage for 85,000 gallons. As stated in **Appendix C-16**, lift stations 1 and 2 overflow storage volumes include capacity for both gravity and pump flows. It should be noted that, while lift station 1 would ultimately pump all flows and as such have the largest capacity, in terms of overflow storage, only the amount of gravity flows is considered. As such, lift station 2 has the largest overflow storage because it has the greatest amount of gravity flows. The project lift stations have been sized accordingly to accommodate the required overflow storage.

Off-site facilities include the 10-inch force and 15-inch gravity lines in Otay Lakes Road. These lines would be constructed within the existing or planned ROW for Otay Lakes Road. The impacts of constructing the road have been analyzed throughout this EIR. No further off-site improvements are required, including any upsizing of pipes in the Salt Creek Interceptor, as further described ~~in Section 3.7.5.2~~below.

Based on the above analysis, the provision of sewer service to the Project site through the Salt Creek Interceptor would be ***less than significant*** because all impacts would occur in existing disturbed areas within or immediately adjacent to existing rights-of-way; and such impacts are considered temporary, as the impacted areas would be restored to match pre-existing conditions following installation of the sewer pipelines. Specific construction and operational impacts related to biological resources, air quality, noise, and cultural resources are addressed in those EIR chapters, respectively.

- Would the proposed Project exceed wastewater treatment requirements of the applicable RWQCB?

As stated above, the design criteria used to determine the Project's proposed wastewater flow are in accordance with the San Diego County Code of Regulatory Ordinances, Section 94.1.001, et seq., which adopts the California Plumbing Code, to meet and comply with all federal and state policies regarding the regulation of wastewater discharges and treatment, including all applicable federal and state laws required by the Clean Water Act of 1977 and subsequent amendments and general pretreatment regulations. The sewer facilities in each of the options described above also would be designed in accordance with County standards to include redundant pumping units, standby power, odor control, overflow storage, and telemetry. In addition, as discussed in Section 3.2, Hydrology and Water Quality, the proposed Project would be in compliance with all NPDES

discharge criteria and permitting requirements. Therefore, impacts related to this issue are considered to be ***less than significant***.

- Would the proposed Project result in a determination by the wastewater treatment provider that serves or may serve the Project that it has inadequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

San Diego County Sanitation District

The SDCSD combined the wastewater treatment capacity from several smaller wastewater agencies serving the unincorporated area. The SDCSD currently has sufficient treatment capacity for the proposed .51 mgd of wastewater generated by the proposed Project. In addition, a Service Availability Letter for the Project has been provided by SDCSD. Therefore, the proposed Project's impact on committed or future wastewater treatment capacity would be ***less than significant***.

Salt Creek Interceptor

Sewer service via the Salt Creek Interceptor has been selected for the proposed Project. In all previous planning studies prepared for the Salt Creek Interceptor, flows from the proposed Project have been included in the sizing of the Salt Creek Interceptor. The November 1994 Salt Creek Basin Study estimated that 2,253 equivalent dwelling units (EDUs) from Village 13 (i.e., the proposed Project) would convey flows to the Salt Creek Interceptor. Currently, the proposed Project involves a total of 2,196 EDUs (based on City of Chula Vista criteria). Flows from the Project site are not expected to impact the capacity of the Salt Creek Interceptor because the capacity of the downstream portions of the Salt Creek Interceptor was increased during final design and the development projections from upstream areas have decreased. In particular, the Salt Creek Interceptor was sized with capacity for Otay Ranch Villages 13, 14, and 15, and Planning Area 16. Since preparation of the Salt Creek Basin Study, all or portions of Villages 14, 15, and Planning Area 16 are set aside for conservation purposes.

Sewer flows conveyed to the Salt Creek Interceptor would require an agreement between the County of San Diego and City of Chula Vista. LAFCO performed a Municipal Service Review for Southern San Diego County Sewer Service in 2004. Determination 4.2 of that report concluded, "[t]he City of Chula Vista, Otay WD, and Spring Valley SD should pursue strategies for cost avoidance when planning for extension of services to the Otay Ranch [Villages] 13 and 14." In addition, LAFCO conducted the Municipal Service Review and Sphere of Influence Update: County Sanitation District (2007), which concluded that the proposed Project was outside the sphere of influence of SVSD, and could most efficiently be provided sewer service by Chula Vista via the Salt Creek Interceptor, subject to a cost and feasibility analysis and a sphere review. As proposed, the project would remain in the County and be served by the SDCSD through a flow transfer agreement that would allow flows from the project to be conveyed to the Salt Creek Interceptor.

During 2010, the City of San Diego's Public Utilities Department~~Metro~~ treatment plants operated at a daily average effluent flow rate of 180 mgd. Improvements are planned to increase the wastewater treatment capacity of ~~Metro~~ the City of San Diego Public Utilities Department to

nearly 340 mgd to serve an estimated population of 2.9 million in year 2050 (County of San Diego 2011b).

3.7.2.3 *Storm Drainage*

Guidelines for the Determination of Significance

For the purposes of this EIR, a significant storm drainage impact will occur if the proposed project does the following:

- Requires or results in the construction or expansion of storm drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Rationale for Selection of Guideline

The significance guideline for storm drainage is based on Appendix G of the CEQA Guidelines.

Analysis

Development of the proposed Project would require improvements to the current drainage system. These improvements are shown in **Figures 3.2-3A - 3C** and discussed in Section 3.2, Hydrology and Water Quality, and are summarized below.

All runoff from the Project site currently drains under Otay Lakes Road via 24 existing culverts, and discharges to Lower Otay ~~Lake~~Reservoir. No development exists in off-site areas that drain through the Project site. The existing culverts require upgrades to prevent roadway overtopping during a 100-year storm event.

The proposed Project would upgrade the existing culverts, resulting in 14 improved culverts under Otay Lakes Road, which would accommodate 100-year storm event peak flows so that overtopping of the roadway is eliminated.

Prior to reaching the culverts, storm water runoff would be conveyed through the Project site via separate storm drain systems for large contributing areas. In the large contributing areas, dual storm drain systems would be implemented to separate the natural runoff from the undeveloped areas of the Project site from runoff from the developed areas of the Project site. Thus, most of the natural runoff from the undeveloped areas would continue to drain directly to Lower Otay ~~Lake~~ Reservoir and would not mix with runoff from the developed areas until after the runoff from the developed areas has been treated.

All runoff from the developed areas of the Project site would also drain to Lower Otay ~~Lake~~ Reservoir via an internal storm drain system; however, the runoff from the developed areas would drain through water quality inserts at each of the Project's drain inlets and water quality basins (see **Figures 3.2-3A - 3C**) to ensure flows receive treatment before discharging from the Project site into Lower Otay ~~Lake~~ Reservoir via the Otay Lakes Road culverts. To avoid duplication of

storm drain piping in small contributing areas, the natural runoff from the undeveloped areas would combine with the treated flows after the inlet inserts and would be directed to one of the seven water quality basins.

As presented in **Table 3.2-1**, development of the Project site would internally divert the drainage areas discharging into the culverts located under Otay Lakes Road. In addition, minor alterations to the drainage pattern may result from development of the Project site through the conversion of natural surfaces to impervious surfaces and through activities such as grading, excavation, and construction activities. However, the proposed Project would not result in a change in the overall drainage area draining into Lower Otay ~~Lake~~Reservoir. In addition, no detention basins would be required for the development because the capacity of Lower Otay ~~Lake~~ Reservoir is sufficient to store and convey the estimated 606.0 cfs 100-year peak flow post-development increase.

Construction of these storm drain improvements would have the potential to create environmental impacts. However, construction of such facilities has been analyzed as part of the development footprint of the proposed Project and the environmental impacts of such construction have been analyzed throughout this EIR, including Section 3.2 – Hydrology and Water Quality, Section 2.3 – Biological Resources, Section 2.7 – Noise, and Section 2.4 – Cultural Resources. Therefore, impacts related to construction of the storm drain facilities would not have any additional impacts beyond those identified in other chapters of this EIR. Impacts and mitigation related to this construction are therefore not re-identified in this chapter.

3.7.2.4 *Gas and Electric*

Guidelines for the Determination of Significance

For the purposes of this EIR, a significant impact to gas and electric services will occur if the proposed project does the following:

- Would require or result in the construction of new gas and electric facilities or the expansion of existing facilities, the construction of which would cause significant environmental effects.

Rationale for Selection of Guideline

This guideline was selected to focus the analysis on potential physical impacts from expanded gas and electric infrastructure necessary to serve the Project and is based on Appendix G of the CEQA Guidelines.

Analysis

To provide gas and electrical service to the Project development, it would be necessary to extend new facilities into the Project site. The infrastructure required to provide electrical service would consist of four 5-inch and two 4-inch underground electrical conduits that would be located within planned sidewalks or within other utility rights-of-way. Also required for electrical service would be electric vaults, switches, fuse cabinets, and transformers. Some of these necessary components

would be aboveground features and located behind sidewalks, as is typical in residential developments. Similarly, natural gas pipelines would also be located within planned roadways, sidewalks, or utility rights-of-way. Provision of natural gas would require a 4-inch pipeline throughout the Project development area. Gas and electrical services for the Project would connect into existing service infrastructure at the intersection of Otay Lakes Road and Lake Crest Drive approximately 4,500 feet west of the westernmost project entrance. No new substation is anticipated to be needed for the Project and no other service infrastructure outside of areas designated on Project development plans for grading and construction would be impacted by extension of gas and electrical infrastructure.

The placement of the infrastructure in areas already planned for disturbance, either for Project street rights-of-way or for installation of other utilities such as water and sewer pipelines or telecommunication lines, would avoid environmental impacts specific to the provision of electric and gas service. The planned Project rights-of-way and roadway alignments have been analyzed for potential environmental effects in this EIR and any impacts, such as biological resources, cultural resources, etc., are discussed in the appropriate topic section. The placement of electric and natural gas infrastructure within these areas analyzed and planned for disturbance would not result in any additional environmental effects than what has been described in other chapters of this EIR.

3.7.3 Cumulative Impact Analysis

3.7.3.1 *Water Supply*

The geographic scope for cumulative water supply impacts is the service area of the SDCWA. As described above, the 2010 UWMPs prepared by SDCWA and MWD were based on SANDAG forecasts that incorporated population projections for the projects in the area, including the proposed Project, in their water planning estimates. The SDCWA 2010 UWMP provided water demand forecasts based on the projected population growth in the area and, based on its water supply reliability assessment, concluded that if water supplies are developed as planned, no water shortages are anticipated within the SDCWA service area under average, single-dry, and multiple-dry years through 2035. The SDCWA 2010 UWMP also addressed additional storage and desalination programs being pursued by SDCWA to further supplement supplies, and to address the potential risk of water shortages. The OWD 2010 UWMP conducted a similar water demand and supply assessment within its service area. OWD's assessment also included the proposed Project's water demand. As discussed above, the 2015 UWMP for each water agency was released after this document was released for public review. While this analysis was not updated to include the 2015 UWMPs, the documents were reviewed and do not change the determinations of the analysis.

As discussed above and shown in **Tables 3.7-3, 3.7-4**, and **3.7-5**, an adequate water supply from SDCWA has been identified for its member agencies, including OWD, and the proposed Project would not require expansion of existing facilities other than the extension of water service and installation of the on-site water reservoir. Therefore, the Project is not anticipated to contribute to a cumulatively considerable impact on water supply. However, as stated in the second to last paragraph of Chapter 3.7.2.1 above, the proposed Project would be required to participate in the

acquisition and development of alternative water supply project(s) to offset the proposed Project's potable water demand, as a condition of annexation to the Otay Water District.

Any potential cumulative impact related to construction of new water lines and facilities has been addressed in other Chapters of this EIR (2.2, 2.3, 2.4, and 2.7) and no additional impacts or mitigation measures have been identified in this chapter.

3.7.3.2 *Wastewater*

The geographic scope of cumulative wastewater transportation impacts is the Salt Creek Interceptor basin. This includes the Project site, the southern third of the Otay Valley Parcel of Otay Ranch in the City of Chula Vista, and Villages 14 and 15 and Planning Area 16 in the Proctor Valley and San Ysidro Mountains parcels of Otay Ranch.

In October 2010, the City of Chula Vista hired PBS&J to evaluate the capacity of the Salt Creek Interceptor in the cumulative buildout development scenario, including Villages 13, 14, and 15, and Planning Area 16. In this ultimate buildout scenario, the PBS&J study predicts that two sections of the interceptor will be over capacity in the cumulative condition. One section is approximately 3,200 feet of 18-inch line in Creekside Drive, just south of Otay Lakes Road. The other section is approximately 1,500 feet of 24-inch line along Salt Creek adjacent to Village 10. These pipe lengths include piping that has adequate capacity, but surcharges as a result of downstream system deficiencies.

As described in the Overview of Sewer Services, the Salt Creek Interceptor was sized for development of Villages 13, 14, and 15, as well as Planning Area 16. Village 15 was acquired for conservation purposes and no future development is expected to occur on that site that would contribute flows to the Salt Creek Interceptor. In addition, the Salt Creek Basin Study anticipated much higher flows from the Project site due to the larger Resort component (800 hotel rooms) and the golf course, compared to the proposed project. The identified deficiencies in the PBS&J study are the result of overly conservative development assumptions. As such, **Table 3.7-9** shows the reduction in anticipated sewage flows in the Salt Creek Basin compared to what was assumed by the PBS&J study. As shown, the Otay Ranch Resort Village project EDUs are approximately 0.6 mgd less than what was projected in the PBS&J study, and the total anticipated reduction for all of these villages is 0.864 mgd.

Table 3.7-9 summarizes the impact that these reduced flows will have on the deficient pipe sections identified in the October 2010 PBS&J study. As shown, the Salt Creek Interceptor is anticipated to have adequate capacity to serve the Otay Ranch Resort Village property and other cumulative projects. The one section of pipeline shown to be over capacity is based on a conservative assumption where 5,786 EDUs from the future University and Village 10 site will connect to the system. This section of improvement is eliminated based on where the flows from the University and Village 10 are currently proposed to be connected. Therefore, the proposed Project would not add to any cumulatively significant regional wastewater transportation system impact.

The geographic scope for cumulative wastewater treatment impacts is the SDCSD, which combined the wastewater treatment capacity from several smaller wastewater agencies serving the unincorporated area. County DPW would be the approval authority for any development in the SDCSD area. SDCSD has capacity in Metro for the project. All flows would go through the existing Metro Interceptor Pipeline at the Pt. Loma Metro plant, which currently uses only 153 mgd of its 240 mgd capacity. Therefore, ***the proposed Project would not add to any cumulatively significant regional wastewater system treatment impact***.

3.7.3.3 *Storm Drainage*

Improvements to the drainage system for the proposed Project would occur within the Project's drainage basin and would not affect drainage at a cumulative level. The cumulative effect of construction that would impact environmental resources has been analyzed throughout this EIR. Other projects in the area would also be required to construct drainage improvements in compliance with the environmental reviews that were conducted for the individual impacts of each project.

Similar to the direct analysis conducted above in Chapter 3.7.3.2, any potential cumulative impact related to construction of new storm drainage improvements has been addressed in other Chapters of this EIR (2.2, 2.3, 2.4, 2.7 and 3.2) and no additional impacts or mitigation measures have been identified in this chapter.

3.7.3.4 *Gas and Electric*

As shown in **Table 1.0-6~~7~~**, there are more than 45 cumulative projects occurring in the Project area. Many of these projects are residential, commercial, or industrial and would require gas and electric services. Though the environmental impacts specific to the provision of gas or electrical service to each of the projects is not known, it is typical that, similar to the proposed Project, the required infrastructure is placed within public or utility rights-of-way, which would be disturbed by other project construction activities. As described above, the provision of gas and electric service to the Project would not create new or additional environmental impacts beyond those that are identified in other Chapters of this EIR (2.2, 2.3, 2.4, and 2.7). Similarly, any potential cumulative impacts related to construction of new gas and electrical facilities has been addressed in other Chapters of this EIR (2.2, 2.3, 2.4, and 2.7) and no additional impacts or mitigation measures have been identified in this chapter.

3.7.4 Significance of Impacts Prior to Mitigation

As discussed in sections 3.7.1.3 and 3.7.3, above, the proposed Project would not result in any direct or cumulatively significant impacts to utilities and service systems.

3.7.5 Mitigation

As discussed above, implementation of the proposed Project would not result in any significant impacts to utilities and service systems. Therefore, no mitigation is required.

3.7.6 Conclusion

As discussed above, the proposed Project would have no significant direct, indirect, or cumulative impacts to water supply, wastewater, storm drainage, and gas and electricity usage. Therefore, implementation of the proposed Project ***would not result in any significant impacts*** to utilities and service systems.

Table 3.7-1
SDG&E Power Content

Energy Source	SDG&E 2012 Power Mix
Renewables	19.2%
- Biomass and Waste	3.9%
- Geothermal	2.4%
- Small Hydroelectric	0.1%
- Solar	3.4%
- Wind	9.4%
Coal	2.3%
Large Hydroelectric	-0.1%
Natural Gas	63.1%
Nuclear	0.9%
Unspecified 1	4.6%
TOTAL	**100%**

Source: SDG&E 2013a

Table 3.7-2
Otay Ranch Resort Village Projected Potable Water Demands

Neighborhood	Land Use Designation	Gross Acres	Quantity, Units	Water Duty Factor	Total Average Water Demand (gpd)
R-1	SF Residential	250.3	796	500 gpd/unit	398,000
R-2	SF Residential	55.9	211	500 gpd/unit	105,500
R-3	SF Residential	90.2	401	500 gpd/unit	200,500
R-4	SF Residential	75.1	263	500 gpd/unit	131,500
R-5	SF Residential	55.7	210	500 gpd/unit	105,000
Mixed-Use	MU Residential	14.1	57	500 gpd/unit	28,500
Mixed-Use	MU Commercial		2 ac/ 20,000 SF	1,785 gpd/ac	2,800
P-1	Park	2.9	---	2,155 gpd/ac[1]	6,250
P-2	Park	1.7	---	2,155 gpd/ac[1]	3,663
P-3	Park	2.3	---	2,155 gpd/ac[1]	4,957
P-4	Park	2.2	---	2,155 gpd/ac	4,741
P-5	Park	10.3	---	2,155 gpd/ac	22,197
P-6	Park	2.4	---	2,155 gpd/ac	5,172
P-7	Park	293	---	2,155 gpd/ac	6,249
P-8	Park	1.3	---	2,155 gpd/ac	2,802
P-9	Park	2.6	---	2,155 gpd/ac	5,603
S-1	School	10.0	---	1,785 gpd/ac	17,850
---	Public Safety	2.1	---	1,785 gpd/ac	3,750
Resort		17.4	---		
	Resort Units		200 units[3]	300 gpd/unit	60,000
	Commercial		2 ac / 20,000 SF	1,785 gpd/ac	3,570
Manufactured OS	Open Space	131.4[2]	---	2,155 gpd/ac	283,167
Preserve	Open Space	1,089.0	---	0	0
Circulation	Open Space	36.0	---	0	0
Total		**1,869.0**	**1,938[1]**		**1,418,918 (1,590 afy)**

Source: Overview of Water Service, Dexter Wilson Engineering, Inc., Sept. 2014
[1] Total residential units
[2] Estimate for permanently irrigated slopes
SF = single-family; MU = mixed-used
gpd = gallons per day; ac = acre; afy = acre-feet/year

Table 3.7-3
Average/Normal Water Year Supply and Demand Assessment (afy)

Supplies	2015	2020	2025	2030	2035
Member Agency Supplies					
Surface Water	48,206	47,940	47,878	47,452	47,289
Water Recycling	38,660	43,728	46,603	48,278	49,998
Groundwater	11,710	11,100	12,100	12,840	12,840
Seawater Desalination	0	56,000	56,000	56,000	56,000
Groundwater Recovery	10,320	15,520	15,520	15,520	15,520
Subtotal	108,396	174,288	178,101	180,180	181,647
SDCWA Supplies					
IID Water Transfer	100,000	190,000	200,000	200,000	200,000
Coachella Canal and All American Canal Lining Projects	80,200	80,200	80,200	80,200	80,200
Supply from MWD	358,189	230,601	259,694	293,239	323,838
Subtotal	538,389	500,801	539,894	537,439	604,038
Total Projected Supplies	**647,285**	**675,089**	**717,619**	**753,619**	**785,685**
Total Estimated Demand*	647,285	675,089	717,619	753,619	785,685
Difference	**0**	**0**	**0**	**0**	**0**

Source: San Diego County Water Authority, 2010 Urban Water Management Plan
* Note: with SBX7-7 conservation
IID = Imperial Irrigation District

Table 3.7-4
Single Dry Water Year Supply and Demand Assessment Five Year Increments (afy)

	2015	2020	2025	2030	2035
SDCWA Supplies					
IID Water Transfer	100,000	190,000	200,000	200,000	200,000
Coachella Canal and All American Canal Lining Projects	80,200	80,200	80,200	80,200	80,200
Seawater Desalination	0	56,000	56,000	56,000	56,000
Subtotal	**180,000**	**326,200**	**336,200**	**336,200**	**336,200**
Member Agency Supplies					
Surface Water	17,932	17,932	17,932	17,932	17,932
Water Recycling	38,660	43,728	46,603	48,278	49,998
Groundwater	9,977	9,977	9,977	9,977	9,977
Groundwater Recovery	10,320	15,520	15,520	15,520	15,520
Subtotal	**76,889**	**87,157**	**90,032**	**91,707**	**93,427**
MWD Supplies	**430,431**	**305,101**	**338,501**	**376,023**	**409,389**
Total Project Supplies	**687,520**	**718,458**	**764,733**	**803,930**	**839,016**
Total Demands with SBX7-7 conservation	687,520	718,458	764,733	803,930	839,016

Source: SDCWA, 2010 Urban Water Management Plan

Table 3.7-5
Multiple Dry Water Year Supply and Demand Assessment (afy)

	2014	2018	2023	2028	2033
Member Agency Supplies	103,907	112,499	188,331	120,486	122,188
Water Authority Supplies	180,200	266,200	336,200	336,200	336,200
SDCWA Allocation (Preferential Rights)	320,456	324,100	328,695	334,532	341,486
Total Estimated Core Supplies w/o Storage Takes	**604,563**	**702,799**	**783,226**	**791,218**	**799,874**
Total Demands w/SBX7-7 Conservation	711,241	740,326	790,177	844,137	882,795
Potential Supply (Shortage) or Surplus (Difference between Supplies and Demand	(106,678)	(37,527)	(6,951)	(52,919)	(82,951)
Utilization Carryover Supplies	30,000	30,000	6,951	40,000	30,000
Total Projected Core Supplies w/Utilization of Carryover Storage	**634,536**	**732,799**	**790,177**	**831,218**	**829,874**
Remaining Potential Surplus Supply or (Shortage) that will be handled through Management Actions	(76,678)	(7,527)	0	(12,919)	(52,921)

Source: SDCWA, 2010 Urban Water Management Plan

Table 3.7-6
Local Supplies (afy)

	2015		2025		2035	
	Average Year	Dry Year	Average Year	Dry Year	Average Year	Dry Year
Local Groundwater						
From Natural Recharge	1,251,000	1,214,000	1,242,000	1,202,000	1,240,000	1,206,000
Replenishment	178,000	172,000	187,000	187,000	191,000	190,000
Local Projects						
Groundwater Recovery	101,000	100,000	114,000	113,000	126,000	125,000
Recycling	264,000	258,000	303,000	299,000	333,000	330,000
Seawater Desalination	0	0	0	0	0	0
Local Runoff Stored	103,000	91,000	102,000	91,000	102,000	91,000
Los Angeles Aqueduct	224,000	63,000	226,000	71,000	230,000	78,000
IID/SDCWA Water Transfer	100,000	100,000	200,000	200,000	200,000	200,000
Coachella & All-American Canal Lining	80,000	80,000	80,000	80,000	80,000	80,000
Total	**2,301,000**	**2,078,000**	**2,454,000**	**2,243,000**	**2,502,000**	**2,300,000**

Source: MWD Regional Urban Water Management Plan (2010)

Table 3.7-7
Multiple Dry Water Year Supply Capability[1] (afy)

	2011	2012	2013
Current Programs			
In-Region Storage	351,000	50,000	17,000
California Aqueduct[2]	582,000	625,000	611,000
Colorado River Aqueduct[3]	998,000	932,000	937,000
Subtotal of Current Programs	***1,931,000***	***1,607,000***	***1,565,000***
Programs In Development			
In-Region Storage	12,000	12,000	12,000
California Aqueduct	23,000	30,000	374,000
Colorado River Aqueduct	176,000	176,000	176,000
Subtotal of Proposed Programs	***211,000***	***218,000***	***562,000***
Maximum MWD Supply Capability	**2,142,000**	**1,825,000**	**2,127,000**

Source: MWD Regional Urban Water Management Plan (2010)
[1] Represents Supply Capacity for resource programs under listed year type.
[2] California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.
[3]Colorado River Aqueduct includes water management programs, IID-SDCWA transfers and canal linings.

Table 3.7-8
Projected Wastewater Flows

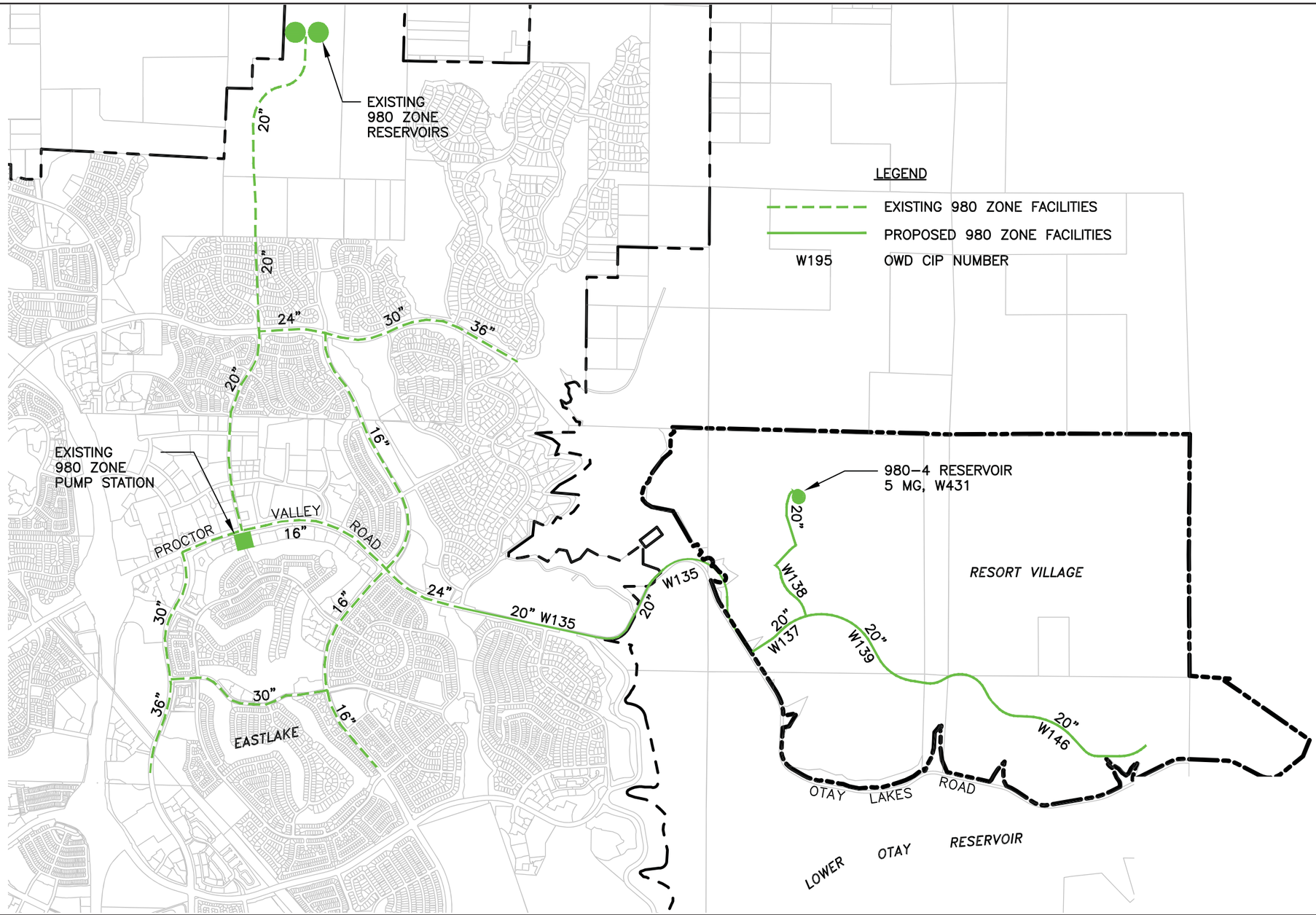
Neighborhood	Land Use Designation	Quantity	Wastewater Generation Factor	Total Average Wastewater Flow GPD	Equivalent Dwelling Units (EDUs)
R-1	SF Residential	796 units	240 gpd/unit	191,040	796
R-2	SF Residential	211 units	240 gpd/unit	50,640	211
R-3	SF Residential	401 units	240 gpd/unit	96,240	401
R-4	SF Residential	263 units	240 gpd/unit	63,120	263
R-5	SF Residential	210 units	240 gpd/unit	50,400	210
Mixed-Use	MU Residential	57 units	240 gpd/unit	13,675	57
Mixed-Use	MU Commercial	1.5 ac	1,500 gpd/ac	2,250	9.4
P-1	Park	2.9 ac	0 gpd/ac[1]	0	0
P-2	Park	1.7 ac	0 gpd/ac[1]	0	0
P-3	Park	2.3 ac	0 gpd/ac[1]	0	0
P-4	Park	2.2 ac	0 gpd/ac[1]	0	0
P-5	Park	10.3 ac	500 gpd/acre	5,150	21.5
P-6	Park	2.4ac	0 gpd/ac[1]	0	0
P-7	Park	2.9 ac	0 gpd/ac[1]	0	0
P-8	Park	1.3ac	0 gpd/ac[1]	0	0
P-9	Park	2.6 ac	0 gpd/ac[1]	0	0
S-1	School	800 students	4.8 gpd/each	3,840	16
PS	Public Safety	2.1 ac	240 gpd/acre	500	2.1
Resort	Resort Units	200 units	144 gpd/unit	28,800	120
Resort	Commercial	1.5 ac	1,500 gpd/acre	2,250	9.4
Total				**507,906**	**2,116**

Source: Overview of Sewer Service, Dexter Wilson (Sept. 2014)

Table 3.7-9
Sewerage Flows Comparison

Village	PBS&J October 2010		Current Proposed		Reduction
	EDUs	Average Flow, mgd	EDUs	Average Flow, mgd	Average Flow, mgd
13 (Resort)	4,166.8	1.104	2,196[1]	0.505	0.599
14[2]	1,884	0.499	1,815.5[2]	0.418	0.081
15	634.6	0.168	0	0	0.168
16[2]	410.8	0.109	404.2[2]	0.093	0.016
TOTAL	**7,096.2**	**1.880**	**4,415.7**	**1.016**	**0.864**

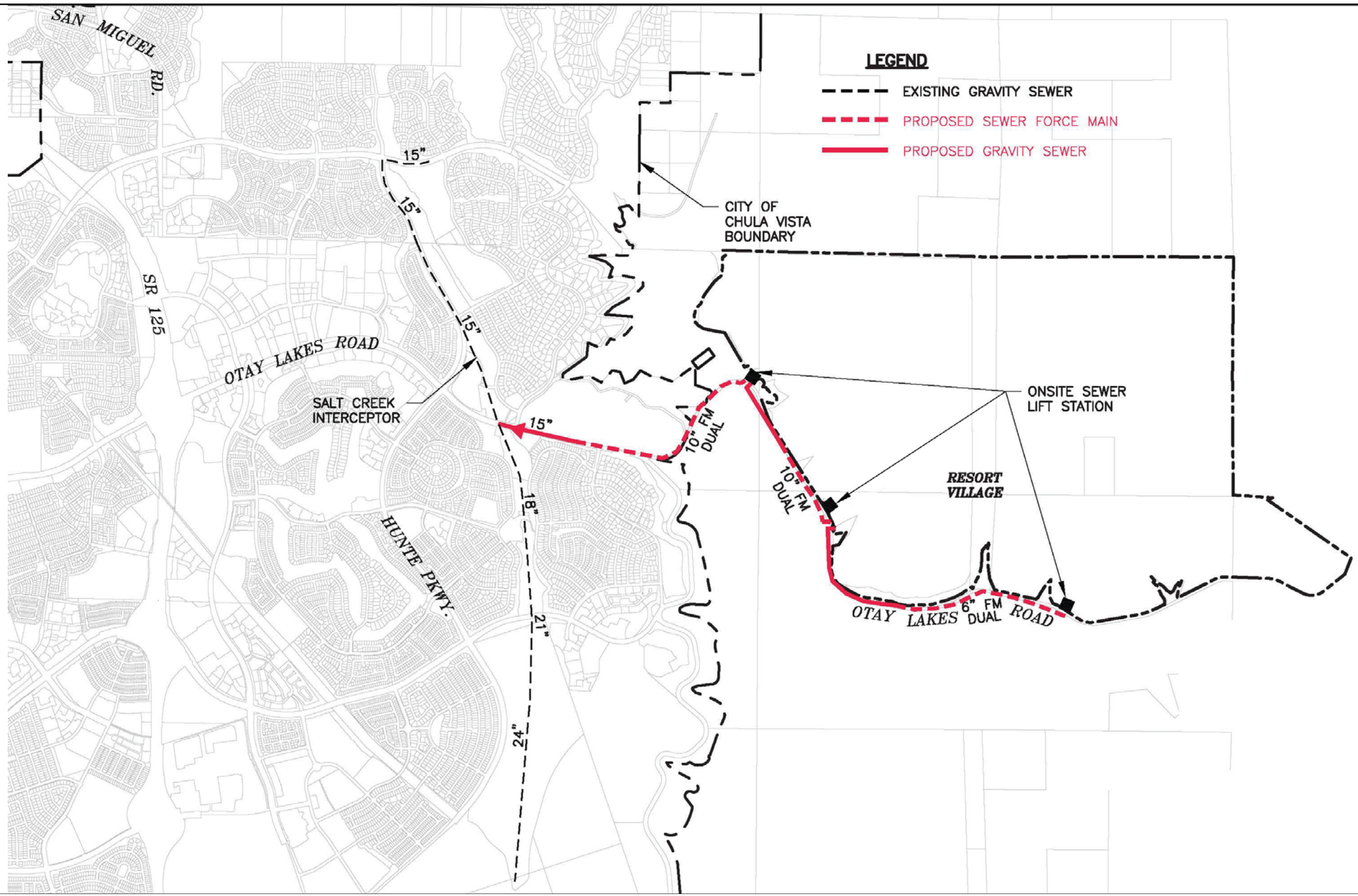
Source: Overview of Sewer Service, Dexter Wilson (Sept. 2014)
[1] From Appendix D.
[2] See Appendix E.



SOURCE: Hunsaker & Assoc.

Not To Scale

Figure 3.7-1
Existing and Proposed Water Facilities



SOURCE: Hunsaker & Assoc.

Not To Scale

Figure 3.7-2
Existing and Proposed Sewerage Facilities