

2.14 Utilities and Service Systems

This section of the EIR evaluates potential significant impacts on utilities and service systems resulting from implementation of the proposed Newland Sierra Project (project). The utilities and services analyzed in this section are water supply, wastewater/sewer service, and solid waste. The analysis in the following sub-sections are based on information provided by local service providers, findings from approved planning documents, and technical reports related to the provision of such utilities and service systems, including the following:

- Water Supply Assessment prepared by HDR, Inc. (Appendix S of this EIR)
- Water Conservation Demand Study for the Newland Sierra Specific Plan and EIR prepared by GSI Water Solutions, Inc. (Appendix T of this EIR)
- Master Plan of Water for the Newland Sierra Project prepared by Dexter Wilson Engineering, Inc. (Appendix U of this EIR)
- Several planning documents included as Appendix V of this EIR:
 - Vallecitos Water District 2015 Urban Water Management Plan (EIR, Appendix V-1)
 - San Diego County Water Authority Final 2015 Urban Water Management Plan (EIR, Appendix V-2)
 - Metropolitan Water District 2015 Urban Water Management Plan (EIR, Appendix V-3)
 - San Diego County Water Authority Water Shortage and Drought Response Plan (EIR, Appendix V-4)
 - San Diego County Water Authority Drought Response Conservation Program Ordinance (EIR, Appendix V-5)
 - San Diego County Water Authority 2015 Annual Report: Beyond Drought – Reliable Water in an Era of Change (EIR, Appendix V-6)
 - Department of Water Resources Memorandum: State Water Project Delivery Capability Report 2015 (EIR, Appendix V-7)
 - San Diego County Water Authority Final 2013 Regional Water Facilities Optimization and Master Plan Update (EIR, Appendix V-8)
- Master Plan of Sewer for the Newland Sierra Project prepared by Dexter Wilson Engineering, Inc. (Appendix W of this EIR)
- Newland Sierra Off-Site Water and Sewer Study prepared by Robert Scholl, P.E. and Eileen Koonce (Appendix X of this EIR)

Comments in response to the Notice of Preparation include water supply concerns with regard to the sufficiency of water supplies, drought conditions, potential impacts to Vallecitos Water District facilities, water offsets, climate change, and the sufficiency of both the project's Water Supply Assessment and the Vallecitos Water District's Urban Water Management Plan (UWMP). These comments are addressed in this section. The letters received in response to the Notice of Preparation are included in Appendix A of this EIR.

2.14.1 Water Supply and Service

2.14.1.1 Introduction

The County of San Diego (County) must determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to the demand associated with the existing and other planned future land use uses within the Vallecitos Water District potable water service area. If the County determines that water supplies will not be sufficient, the County must include that determination in its findings for the project (Water Code section 10911(c)).

This section is based on regional and local water demand and supply information from the Metropolitan Water District of Southern California (MWD), the San Diego County Water Authority (Water Authority), and the Vallecitos Water District. In addition, other experts that provided data used or referenced in this section include (a) HDR, an engineering/architectural firm specializing in water resources management, (b) Dexter Wilson Engineering Inc. (Dexter Wilson), a water, wastewater, and recycled water engineering firm, and (c) GSI Water Solutions Inc. (GSI), a water resources firm with expertise in hydrogeology, hydrology, engineering, and environmental science. State and local laws and regulations are the sources for the water conservation regulatory standards referenced in this section.

HDR prepared the project's Water Supply Assessment (WSA) for the Vallecitos Water District. The WSA, found in Appendix S of this EIR, analyzes water demand and supply associated with the proposed project and other development in the Vallecitos Water District's potable water service area. The WSA also relies on estimated water savings that can be achieved by implementing current water conservation regulatory measures for indoor and outdoor water uses within the proposed project.

GSI evaluated current water conservation regulatory measures for indoor and outdoor water uses within the proposed project for Vallecitos Water District's WSA. GSI's technical memorandum titled, Water Conservation Demand Study for the Newland Sierra Specific Plan and EIR prepared in December 2016 (GSI Report), is found in Appendix T of this EIR. The required water conservation standards consist of a series of state and local green building and irrigation

requirements that reduce indoor and outdoor water uses significantly compared to past requirements. The project applicant has committed to implement these water conservation standards into the design of the new residences, buildings, and other infrastructure that would be constructed as the proposed project is developed.

In addition, this analysis has used regional and local water demand and supply information from three sources. First, the analysis used data from Vallecitos Water District's 2015 UWMP.¹ Second, this analysis used data from the Water Authority's 2015 UWMP and MWD's 2015 UWMP because the Vallecitos Water District is a member agency of the Water Authority, and its supplies, for the most part, are purchased from the Water Authority. The Water Authority, in turn, purchases a portion of its water supply from the MWD. The three UWMPs are included in Appendix V of this EIR.

This analysis also relies on data for identifying the existing and proposed water facilities needed to serve the proposed project from Dexter Wilson Engineering's Master Plan for Water. The Master Plan of Water is found in Appendix U of this EIR.

Further, the Water Authority manages demand during times of limited supply through its approved Water Shortage and Drought Response Plan and a Model Drought Response Ordinance, both of which are included in Appendix V of this EIR. The Water Authority also prepares annual water supply reports to provide updated information on development of local and imported water supplies. The most recent report is titled, "Beyond Drought: Reliable Water in an Era of Change," and found in Appendix V of this EIR.

Also included in EIR Appendix V is the Water Authority's Regional Water Facilities Optimization and Master Plan Update, which represents its roadmap for the infrastructure needed for a planning horizon through 2035. This plan is designed to assure the Water Authority's mission to deliver a safe and reliable water supply to its member agencies in a cost-effective manner.

2.14.1.2 Existing Conditions

Numerous factors affect water demand and sources of supply to meet demand. Primary factors include climate/weather and drought response, climate change, area demographics, population, economic conditions, and environmental and regulatory constraints. Each factor is described below.

¹ The Urban Water Management Planning Act (Water Code Sections 10610–10656) requires that every urban water supplier that provides water to 3,000 or more customers, or that provides more than 3,000 acre-feet of water annually ensure the appropriate level of reliability to meet the needs of its customers during normal, dry, and multiple dry years. The Act describes the contents of the UWMP and how urban water suppliers should adopt and implement the plans. Plan updates are required every 5 years, and updates maintain the urban water suppliers eligibility for state grants.

Climate and Drought Response

The Vallecitos Water District service area is situated in a semi-arid coastal environment characterized by mild temperatures throughout the year. Prolonged rainstorms are rare, with more than 80 percent of the region's rainfall occurring between December and March. The area typically receives approximately 15 inches of rainfall annually, with monthly mean temperatures ranging between 55°F during the winter and 75°F during the summer (VWD 2015a).

Variations in weather patterns affect regional short-term water requirements, causing reductions in water use during wet cycles and demand spikes during hot, dry periods. However, since a regional drought began gripping the southwest in 2002, only 5 water years (year ending September 30) have experienced above-average rainfall locally: 2003, 2005, 2010, 2011, and 2015. Temperatures also have been above average for the past few years, with new record warm years attained in 2014 and 2015 for the coastal region of Southern California, which includes the Water Authority's service area. Water use typically has increased in accordance with the prevailing warmer, drier weather patterns. However, recent patterns show a divergence from the past, as drought restrictions statewide contributed to a year-over-year water use decrease in fiscal years 2015 and 2016 (SDCWA 2016b).

Regionally, over the past decade, California's water supplies have been limited due to increased environmental restrictions due to litigation affecting the State Water Project and the Central Valley Project operations (to protect listed fish species), coupled with two significant droughts: one from 2007–2011 and the other from 2012–2016 (SDCWA 2016b). Further, the American Southwest has been in the midst of a prolonged drought that began in the early 2000s and that has affected Colorado River water supply availability to the MWD (SDCWA 2016b).

Drought conditions can adversely affect and reduce water supplies. However, agency drought responses, summarized below, have culminated in planning and actions taken by the state Department of Water Resources (DWR), the MWD, the Water Authority, and its member agencies (including Vallecitos). Based on the Water Authority's analysis, such actions, addressed below, were effective in managing severe multi-year droughts.

California has been in two significant droughts since 2007, compounding the reductions in supply availability due to State Water Project and Central Valley Project pumping restrictions. Statewide runoff to surface water reservoirs has been below average every water year from 2007 through 2015, with the exception of 2011. The 2011 water year was a very wet year that brought relief from the 2007–2011 drought, with above average precipitation and snowpack that filled key surface water reservoirs across California.

During the 2007–2011 drought management period, the Water Authority first implemented its Water Shortage and Drought Response Plan, which included a stage I voluntary supply

management and ultimately a stage III mandatory supply cutback. During this period, MWD allocated supplies to its member agencies, including the Water Authority, under its Water Supply Allocation Plan. MWD approved this plan in 2008, and the plan manages MWD's member agencies' demands and helps keep significant water in storage for immediate future years, if supply deficiencies continue. MWD's actual cutback level to its member agencies was 13 percent, which was reduced to a regional cutback level of 8 percent due to the supply reliability investments made by the Water Authority and member agencies. As supply conditions improved into the spring of 2011 and storage levels began to rise, MWD terminated water allocations to its member agencies. Thereafter, the Water Authority discontinued allocation to its member agencies and deactivated its Water Shortage and Drought Response Plan in April 2011.

In response to the second drought that began in 2012, in January 2014, Governor Edmund G. Brown proclaimed a state of emergency throughout California, calling for increased conservation across the state. In February 2014, the Water Authority activated its Water Shortage and Drought Response Plan for a second time since its adoption in 2006, and notified its member agencies (including the Vallecitos Water District) of a voluntary drought watch under its Model Drought Ordinance. At that time, the Water Authority recognized that voluntary measures to reduce water use would be instrumental in helping preserve critical water reserves, should dry conditions continue (SDCWA 2016b).

In April 2014, in response to continued drought conditions, Governor Brown directed that the State Water Resources Board (State Board) adopt an emergency regulation calling for increased statewide water conservation. In July 2014, the State Board adopted such regulations for urban water conservation aimed at reducing outdoor water use in water agency service areas. Also in July 2014, the Water Authority increased the regional drought response to a level II drought alert, and implemented a stage II supply enhancement under the Water Shortage and Drought Response Plan (SDCWA 2016b).

In the spring of 2015, dry conditions continued. In April 2015, Governor Brown issued an order directing the State Board to impose restrictions on urban suppliers to achieve a statewide reduction in potable urban water use of 25 percent. Following this direction, in May 2015, the State Board issued additional requirements to its emergency regulation, including mandatory water-use reductions that ranged from 12 to 36 percent for Water Authority member agencies with an aggregate water conservation target of 20 percent (SDCWA 2016b). Vallecitos Water District's mandated reduction was 24 percent from its 2013 demands (VWD 2015a).

Also in May 2015, MWD's Board called for a 15 percent cutback in fiscal year 2016 deliveries in its service area. In response, in May 2015, the Water Authority declared a mandatory supply cutback, approved member agency municipal and industrial and transitional special agricultural water rates, and required its member agencies to restrict irrigation of ornamental landscapes and

turf with potable water to no more than 2 days per week. The result of such efforts was that the San Diego region effectively reduced its potable water use by 21 percent from June 2015 through February 2016, outperforming the State Board's aggregate regional target of 20 percent during the initial phase of unprecedented state water-use mandates (SDCWA 2016b). Similarly, in response to the State Board's regulations, the Vallecitos Water District achieved a 25.2 percent reduction in water demand compared to its 2013 demands (VWD 2015a).

In November 2015, Governor Brown issued an order extending the urban water use restriction until October 31, 2016, and directing the State Board to consider modifying its restrictions. In February 2016, the State Board extended the emergency regulation through October 2016, and provided for adjustments to conservation standards for significant investments in new, local, drought-resilient sources of potable water supply (SDCWA 2016b).

In March 2016, the State Board certified that supplies from the Carlsbad Desalination Plant were drought-resilient, lowering the range of Water Authority member agency conservation standards to between 8 and 28 percent, with the regional aggregate water conservation target reduced from 20 percent to about 13 percent (SDCWA 2016b). Also in March 2016, the State Board lowered Vallecitos Water District's mandated water conservation target from 24 to 16 percent due to Vallecitos' direct connection to the Carlsbad Desalination Plant and the addition of desalinated water to the Water Authority's regional supplies, which the Vallecitos Water District also receives to supplement and diversify its water supplies (VWD 2015a).

In the winter of late 2015/early 2016, the state's water supply conditions improved somewhat, with an El Niño weather pattern bringing rain and snow to California. In March 2016, the Water Authority modified its shortage management actions and rescinded its July 2014 notification of a regional stage II drought alert (SDCWA 2016b). In May 2016, MWD rescinded its member agency allocations effective May 10, 2016. In May 2016, the Water Authority modified its shortage management actions to end member agency allocations effective May 26, 2016, and established a drought awareness effort. Also in May 2016, the State Board modified its emergency regulation from a mandated conservation standard to a self-certification approach, effective June 1, 2016 through January 2017.

During this time frame, the Water Authority conducted a fiscal year 2016 analysis of water supply allocation from MWD, combined with member agency dry-year local supplies and other diversified supplies from the Water Authority, and compared those supplies to its 2014 water demands. The analysis showed that a projected shortage of less than 1 percent for the region, which demonstrated that the planning and actions taken by the Water Authority and its member agencies were effective in managing severe multi-year droughts (SDCWA 2016b).

The winter of late 2016/early 2017 has improved California's water supply outlook as winter storms continue to fill reservoirs and increase the snowpack. In January 2017, the Water Authority declared an end to drought conditions in the region due to record-setting winter precipitation in the Northern Sierra — coupled with regional investments in supply reliability, heavy local rainfall, and a significant snowpack in the upper Colorado River basin. The Water Authority Board also called on Governor Brown and the State Water Resources Control Board to rescind the statewide emergency water-use regulation for areas of California that are no longer in drought conditions.

The Water Authority water supply forecast improved significantly in 2017 with wet winter conditions, including a series of record setting storms across California in January and February that benefited both statewide and local water supplies. As of mid-February, San Diego's rainfall measurement station at Lindbergh Field had recorded 137 percent of average rainfall since the start of the water year on October 1. More importantly, the water content of snow statewide was more than 180 percent of average. Meanwhile, mid-February snowpack levels in the upper basin of the Colorado River were at 159 percent of average (SDCWA 2017).

According to the Water Authority, the Water Authority and its 24 member agencies have all the water necessary to meet the needs of the San Diego region because the region's ratepayers have invested approximately \$3.5 billion over the past three decades to increase regional water supply reliability — including seawater desalination, additional water storage capacity, and upgraded conveyance systems. (*Ibid.*) Local retail water agencies in the region also have made — and are in the process of making — major investments in local drought resilient supplies such as water recycling, potable reuse, and desalination projects that further increase regional self-reliance. (*Ibid.*)

In addition, the San Diego region has continued to embrace water-use efficiency since the state's mandatory water-saving targets effectively ended for the region in May 2016. Regional water use from June 2016 through January 2017 was 18 percent below 2013 levels. Even before the state emergency water-use mandates, per capita water use in the San Diego region had decreased nearly 40 percent between 1990 and 2015. (*Ibid.*)

At the same time, the Water Authority committed to continuing its long-running efforts to promote water-use efficiency as a way of life in San Diego County through its "Live WaterSmart" campaign. For decades, the Water Authority and its member agencies (including the Vallecitos Water District) have promoted long-term water-use efficiency through education and outreach efforts such as home water-use checkups and rebate programs, and the Water Authority launched its "Live WaterSmart" campaign in July 2016 to provide the public with resources for living a water-efficient lifestyle no matter the weather. (*Ibid.*)

In April 2017, due to wet conditions, the Department of Water Resources increased the State Water Project allocation to 85 percent of collective delivery request (DWR 2017). DWR's approval considered several factors including existing storage in SWP conservation reservoirs, SWP operational constraints such as the conditions of the recent Biological Opinions for delta smelt and salmonids and the longfin smelt incidental take permit, and 2017 contractor demands. DWR may revise allocations further if warranted by the year's developing hydrologic and water supply conditions.

On April 7, 2017, pursuant to Executive Order B-40-17, following unprecedented water conservation and plentiful winter rain and snow, Governor Brown ended the drought state of emergency in most of California (save Fresno, Kings, Tulare, and Tuolumne counties). Pursuant to this Executive Order, Governor Brown lifted the drought emergency and rescinded two emergency proclamations from January and April 2014, and four drought-related Executive Orders issued in 2014 and 2015. In addition, this Executive Order builds on previous actions taken by the Governor to continue water conservation and prohibitions on wasteful water practices, such as watering during or after rainfall, hosing off sidewalks, watering lawns in a manner that causes runoff, and irrigating ornamental turf on public streets.

Potential Climate Change Effects on Water Supplies and Demands

The Water Authority recognizes the challenges that climate change poses to the San Diego region and is committed to proactively addressing climate change issues (SDCWA 2016b). In addition, DWR and MWD have been committed to addressing the challenges of climate change for well over a decade.

California Department of Water Resources

DWR has long been committed to understanding the nature and magnitude of potential climate change effects on statewide water supplies, and particularly the operations of the SWP and the Bay Delta. In the California Water Plan Update 2005, DWR presented its first-ever assessment of potential climate change impacts in a California Water Plan. Volume 1, Chapter 4 of the plan, titled Preparing for an Uncertain Future, listed the potential impacts of global climate change based on more than a decade of scientific studies on the subject. In a subsequent report titled, Using Future Climate Projections to Support Water Resources Decision Making in California (April 2009) (Climate Projections Report), the Climate Action Team concluded that climate change already had been observed. Specifically, in the 100 years preceding that study, air temperatures had risen approximately 1°F, and there had been a documented greater variance in precipitation, with greater extremes in both flooding and droughts. The California Water Plan Update 2009 further evaluated probable effects of climate change on statewide water supplies, including decreases in snowpack, greater extremes in flooding and droughts, increased sea level

rise, and increased water demand. Four years later, the California Water Plan Update 2013, finalized in October 2014, provided up-to-date information on climate change effects on California's water resources and water systems. The 2013 update identified and recommended statewide regional climate adaptation strategies and investment in a diverse set of actions that would reduce the risk and consequences posed by climate change.

Climate change also poses several issues related to the availability and reliability of imported SWP water supplies. Reduction of snowpack patterns (the source of the SWP's water supply in Lake Oroville) and changes in hydrologic patterns, sea level, rainfall intensity, and statewide water demands are all possible should climate change prove to be increasing over time. In compliance with a litigation settlement agreement, commencing in 2003 and every 2 years thereafter, the DWR has prepared and delivered a report to all State Water Project contractors (including the Water Authority), all city and county planning departments, and regional and metropolitan planning organizations. The biennial report, which accurately sets forth, under a range of hydrologic conditions, the then existing and projected overall delivery capability of the State Water Project facilities and the allocation of that capacity to each contractor. The DWR's Delivery Reliability Report is intended to assist State Water Project contractors in assessing the delivery reliability of the State Water Project component of their overall water supplies. The stability and reliability of State Water Project water deliveries can be threatened by physical factors affecting facilities or water quality anywhere in the State Water Project system. The Delta is particularly vulnerable, and climate change has the potential to simultaneously affect availability of source water, ability to convey water, and users' demands for water.

For example, the State Water Project Final Delivery Reliability Report 2011 (2011 SWP Delivery Reliability Report), updated estimates of the then current (2011) and future (2031) SWP delivery reliability and incorporated regulatory requirements for the State Water Project and the federal Central Valley Project operations in accordance with U.S. Fish and Wildlife Service and National Marine Fisheries Service biological opinions. Estimates of future SWP reliability in that report reflected potential climate change effects on the State's water resources, particularly the State Water Project's ability to deliver water.

The State Water Project Final Delivery Reliability Report 2013 (2013 SWP Delivery Reliability Report) continued DWR's efforts to assess the effects on the State Water Project from climate change, including decreased water availability with reduced snowpack, increased SWP water demands, and sea level rise (DWR 2013). The updated 2013 report presented estimates of the State Water Project's delivery reliability for the then existing (2013) and future conditions (2033), and these estimates reflected hydrologic changes that could result from climate change (DWR 2013).

Further, DWR's final State Water Project Delivery Capability Report 2015 (2015 SWP Delivery Capability Report) provides updated estimates of the current (2015) and future (2035) State Water Project delivery capability and incorporates regulatory requirements for the State Water Project and Central Valley Project operations in accordance with U.S. Fish and Wildlife Service and National Marine Fisheries Service biological opinions. Estimates of future capability also reflect potential impacts of climate change and sea level rise. Refer to Appendix V of this EIR for DWR's 2015 SWP Delivery Capability Report.

Metropolitan Water District

MWD has evaluated climate change effects relative to California's water resources, and has stated climate change may prove to be the most significant challenge to water supply reliability for southern California (MWD 2015). According to MWD, it remains uncertain as to how the climate is changing in California; however, the potential outcomes of a changing climate will affect both supplies and demands. The vast majority of global circulation models show increasing air temperatures in MWD's service area and in both northern California and Colorado River watersheds. In these watersheds, the reduced snowpack that will result from warmer temperatures will lead to the loss of the natural water management that snowpack provides. Warmer temperatures in southern California will affect water demands by increasing the water requirements for plant life and landscapes, and also increase evaporation rates in storage reservoirs. Reduced precipitation also will affect the natural recharge of groundwater and surface water resources.

According to MWD, the past 10 years have given Southern California a glimpse into climate change challenges. Local rainfall has been sharply below normal, and imported supply watersheds have already experienced the range of higher temperatures and reduced snowpack that is being foreseen by climate change scientists. Although uncertainties remain regarding the exact timing, magnitude, and regional impacts of these temperature and precipitation changes, researchers have identified several areas of concern for California's water resources. These include:

- Reduction in Sierra Nevada snowpack;
- Reduction in runoff and river flow in the Colorado River basin;
- Increased intensity and frequency of extreme weather events; and
- Rising sea levels resulting in:
 - Impacts to coastal groundwater basins due to seawater intrusion;
 - Increased risk of damage from storms, high-tide events, and the erosion of levees; and
 - Potential pumping cutbacks on the SWP and Central Valley Project due to increased salinity.

Other important issues of concern due to global climate change include:

- Effects on local supplies such as groundwater;
- Changes in urban and agricultural demand levels and patterns;
- Impacts to human health from water-borne pathogens and water quality degradation;
- Declines in ecosystem health and function; and
- Alterations to power generation and pumping regimes.

As shown above, MWD — a major steward of the region’s water supply resources — has been committed to facing the challenge of climate change for well over a decade. MWD’s Integrated Water Resources Plan 2015 Update sets forth the adaptation actions that MWD has taken to increase the proportion of the region’s water resources, and to make them more resilient to projected climate change effects. For example, MWD continues to emphasize water conservation as a baseline adaptation action to reduce overall water demands, along with the development of local supply sources, such as water recycling, sustainable groundwater recovery, desalination, carryover storage, and banking programs. In addition, on the Colorado River, management actions and programs have been identified to increase resiliency to climate change. As for the State Water Project, the water system improvements identified in the California WaterFix can vastly improve the resiliency of that water supply. MWD’s 2015 report continues to refine adaptive management strategies to ensure water supply reliability (MWD 2015).

San Diego County Water Authority

The Water Authority has provided a climate change and sustainability management strategy since 2008. Most recently, in Section 2.4.4 of its 2015 UWMP, the Water Authority acknowledged that although definitive projections are still forthcoming with regard to the evaluation of potential climate change impacts on water demand, notable advances in climate modeling had occurred since the Water Authority’s issuance of its 2010 UWMP. The Water Authority used and referenced the work currently available from national and international research, which contain a wide spectrum of possible outcomes based on numerous climate forcing scenarios run through an assortment of “General Circulation Models.” However, the Water Authority also noted an absence of research consensus, and, therefore, adopted a qualitative evaluation approach that used a manageable number of climate change scenarios to develop a range of potential demands. Accordingly, the Water Authority’s 2015 UWMP evaluated five climate change scenarios using regional-average projections of changes in precipitation and temperature for two future climate change projection periods (2040 to 2060 and 2080 to 2099) (SDCWA 2016b). Section 10 of the 2015 UWMP also included a scenario planning process that addressed adapting to potential supply and demand impacts due to climate change (SDCWA 2016b).

In general, the Water Authority found that all projections indicated increases in average temperatures in the future, and various projections indicated increases or decreases in average precipitation. No dramatic shifts in seasonal patterns of precipitation and average maximum daily temperature for the San Diego region were observed under any of the five scenarios. However, on average, annual amounts of precipitation tend to be more concentrated in the winter, with lesser proportions of total annual precipitation occurring in the spring and fall (SDCWA 2016b).

The Water Authority's 2015 UWMP addressed the 2040–2060 and 2080–2099 climate projection periods. Under the 2040–2060 climate projection period, all of the Water Authority's climate change scenarios resulted in higher estimates of total water use above the baseline normal weather demands. The average climate change impact on water demands ranged from negligible under the cool/wet scenario to an approximate 9 percent increase in the warm/dry scenario under one of the four climate scenarios. Under the 2080–2099 climate projection period, average projected impacts on water demands range from a 2 percent decrease in demands relative to historical normal weather conditions to about a 16 percent increase under the warm/dry scenario.

The above results suggest before considering further water conservation and demand management measures beyond those that were already in place prior to 2015, the water demand impacts associated with the forecasted trend toward warmer and drier climate conditions may occur on a time frame well beyond the 2015 UWMP planning horizon. Thus, for purposes of this EIR, it is considered speculative to undertake further analysis at this time, or to draw impact conclusions because definitive projections are still forthcoming with regard to the timing and magnitude of climate change-initiated variations in temperature and precipitation patterns. As discussed later in this EIR, recent and ongoing changes in water conservation technologies, water conservation regulations, and indoor (plumbing) and outdoor (landscape) systems design are providing opportunities to continue a recent ongoing trend of reducing per-capita demands in new and existing communities alike.

Vallecitos Water District Service Area Demographics/Population

Vallecitos Water District is located in northern San Diego County, bounded by the Olivenhain Municipal Water District to the south, Carlsbad Municipal Water District to the west, Vista Irrigation District to the northwest, Rainbow Municipal Water District to the north, Valley Center Municipal Water District to the northeast, Rincon MWD to the east, and city of Escondido to the southeast. Vallecitos Water District's service area includes corridors on two major freeways. Interstate 15 stretches along Vallecitos Water District's eastern boundary and State Route 78 transverses through the middle of its service area.

Of Vallecitos Water District's 27,517 acres, approximately 8,845 are currently residential and represent the majority of Vallecitos' water demands. Most of this is single-family homes, although recent development is trending more toward multi-family residential. Vallecitos Water District's residential population has risen steadily over the past four decades. According to the San Diego Association of Governments (SANDAG) forecast, Vallecitos' water service population will continue to increase from 93,897 in 2015 to 118,690 by the year 2035.

Economic Conditions

During an economic recession, there is a major downturn in development and a subsequent slowing of the projected demand in water. Projections in adopted UWMPs do not attempt to forecast recessions or reductions in water demand due to such economic conditions. Instead, such conditions are accounted for over the course of the lengthy planning horizon of UWMPs, and the fact that UWMPs must be updated every 5 years in accordance with the California Urban Water Management Planning Act. Therefore, this EIR does not speculate about existing or future downturns in economic conditions affecting the San Diego region.

Environmental and Regulatory Constraints

Water supplies in California are based in part around the Sacramento-San Joaquin Delta (Delta). Water from northern California surface waters and snowmelt traverses to and through the Delta to Central Valley urban and agricultural users and to southern California through aqueducts, dams, and other water-conveyance facilities. The Delta also provides important habitat for fish species listed as threatened or endangered under either the federal Endangered Species Act or the California Endangered Species Act, or both. Several resource agencies have taken action to protect these species.

Regulatory requirements based on biological opinions issued by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service are particularly important to the coordinated operations of the State Water Project and the Central Valley Project.² These regulatory requirements arose from litigation, which is summarized in the Water Authority's 2015 UWMP, Section 6 (Environmental Considerations) (SDCWA 2016b).

² The California Department of Fish and Wildlife issued consistency determinations for the federal biological opinions under Section 2080.1 of the California Fish and Game Code. The consistency determinations stated that the biological opinions were consistent with the California Endangered Species Act. The consistency determinations allowed incidental take of species listed under both the federal Endangered Species Act and the California Endangered Species Act to occur during State Water Project and Central Valley Project operations without requiring DWR or the U.S. Bureau of Reclamation to obtain separate state-issued Incidental Take Permits.

As stated above, DWR's most recent 2015 Delivery Capability Report updates estimates of the current (2015) and future (2035) State Water Project delivery capability and incorporates regulatory requirements for State Water Project and Central Valley Project operations in accordance with U.S. Fish and Wildlife Service and National Marine Fisheries Service biological opinions. Estimates of future capability also reflect potential impacts of climate change and sea level rise (DWR State Water Project Delivery Capability Report, EIR, Appendix V).

Regional and Local Water Supply

Since its formation in 1955, Vallecitos Water District had received 100 percent of its potable water supply from the Water Authority. Commencing in 2012, Vallecitos has executed two water purchase agreements that have significantly expanded its water supply portfolio and operational flexibility (VWD 2015a).

First, Vallecitos committed to purchase at least 3,500 acre-feet per year (afy) (1,140 million gallons per year) of desalinated water from the Water Authority. According to Vallecitos, this supplemental water source provides Vallecitos with a drought-proof potable water supply that also can serve Vallecitos during an emergency outage of the Water Authority aqueduct system (VWD 2015a, p. 6-4; see also <http://www.sdcwa.org/nation%E2%80%99s-largest-seawater-desalination-plant-marks-one-year-anniversary>, last accessed December 15, 2016).

Second, Vallecitos has contractually committed to have the Olivenhain Municipal Water District use its unused capacity in its treatment plant to treat at least 2,762 afy (or 900 million gallons per year) of Water Authority-provided water from the Olivenhain reservoir. According to the Vallecitos Water District, this supplemental water source benefits both Vallecitos and Olivenhain, but because the source of the Water Authority-provided water is imported water from the Colorado River and the State Water Project, it is not considered to have the same level of reliability and drought resilience as the desalinated water from the Carlsbad Desalination Plant (VWD 2015a, pp. 6-4-6-5). The Water Authority currently purchases approximately half of its water from MWD. The Vallecitos Water District is one of 24 member agencies of the Water Authority, and the Water Authority is a member agency of the MWD. MWD develops, stores, and distributes water to Southern California from two primary sources: (a) water from the Delta in northern California via the State Water Project, and (b) water from the Colorado River via the Central Valley Project.

After experiencing severe shortages from MWD during the 1987–1992 drought, the Water Authority began aggressively pursuing actions to diversify the San Diego region's water supply sources. In summary, as discussed further below, this diversity in supply includes: (a) water transfer supplies from the Water Authority's Water Conservation and Transfer Agreement with the Imperial Irrigation District, an agricultural water district in Imperial County, in 1998,

(b) conserved water supplies from two canal lining projects as part of the Water Authority's Quantification Settlement Agreement (i.e., All-American Canal and Coachella Canal lining projects), and (c) desalination supplies from the Carlsbad Desalination Plant (SDCWA 2016b).

Below is a description the relationships between MWD and its member agencies, and the Water Authority and its member agencies because those relationships define and establish the water supplies available to the Vallecitos Water District.

Metropolitan Water District

MWD supplies water to approximately 19 million people covering a 5,200-square mile service area that includes portions of Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego counties (SDCWA 2016b). The Water Authority is one of MWD's 26 member agencies. Supply and demand projections for MWD are included in its 2015 Urban Water Management Plan (UWMP) (MWD 2016).

As stated above, MWD obtains its water from two sources. The first 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, which is operated by the U.S. Bureau of Reclamation. The second source is from Northern California, which supplies water through a series of dams, aqueducts, pipelines, and other facilities known as the State Water Project, which is operated by DWR (MWD 2015).

MWD's 2015 UWMP provides a comprehensive summary of MWD's demand and supply outlook through 2040. Specifically, MWD's 2015 UWMP describes and evaluates sources of water supply, efficient uses of water, demand management measures, implementation strategies and schedules, and other relevant information and programs. The plan is updated every 5 years to reflect changes in water demand and supply projections. According to the updated 2015 plan, MWD has supply capabilities sufficient to meet expected demands from 2020 through 2040 under single-dry and multiple dry-year conditions, as well as average year conditions (MWD 2016, Executive Summary).

The 2015 UWMP does not explicitly discuss specific activities undertaken – that is the role of MWD's *Integrated Water Resources Plan* (IRP) (MWD 2015). The 2015 IRP represents MWD's comprehensive resource planning process and serves as its blueprint for long-term water reliability, including key supply development and water use efficiency goals. The MWD IRP, which is updated approximately every 5 years, was first adopted in 1996.

MWD's 2015 IRP identifies developments in imported and local water supplies and in water conservation (MWD 2015). For imported supplies, MWD looks to make investments in additional partnerships and initiatives to maximize Colorado River aqueduct deliveries in dry

years. MWD also is looking to make ecologically sound infrastructure investments in the State Water Project so that the water system can capture sufficient supplies to help meet average-year demands and to refill MWD's storage network in above-average and wet years (MWD 2015). Lowering regional residential demand by 20 percent by the year 2020 (compared to a baseline established in 2009), reducing water use from outdoor landscaping, and advancing additional local supplies are among the planned actions to keep supply and demand in balance (MWD 2015).

MWD's IRP identifies a mix of resources (imported and local) to provide 100 percent reliability for full-service demand through the attainment of regional targets set for conservation, local supply, State Water Project supply, Colorado River supply, groundwater banking, and water transfers through the year 2040 (MWD 2015).

MWD's Water Surplus and Drought Management Plan, developed in 1999, outlines policies that guide water surplus and shortage management and establish a basis for addressing shortages in an equitable and efficient manner (MWD 1999). MWD's Long Term Conservation Plan, prepared in August 2011, guides MWD's investments and communication strategy for reducing regional water demands (MWD 2011).

San Diego County Water Authority

The Water Authority's service area covers approximately 951,000 acres and encompasses the western one-third of San Diego County. The Water Authority has 24 member agencies, 15 of which provide water to unincorporated areas of the County. The Water Authority is responsible for ensuring a safe and reliable water supply to support the region's economy and quality of life for more than 3 million residents.

The Water Authority currently imports approximately half of the water used in the San Diego region from MWD via the Colorado River and the State Water Project through a system of pipes, aqueducts, and associated facilities. In 1991, MWD provided approximately 95 percent of the San Diego region's water supply (VWD 2016b, Fig. 6.1). In addition, the Water Authority has invested heavily in promoting water conservation. This effort has helped drive down per capita water use in the San Diego region by 39 percent compared to 1990, and 32 percent since 2007. Regional potable water use in 2015 was 21 percent lower than it was in 1990, despite adding 800,000 people to the County's population (SDCWA 2015, p. 107). Thus, over the past two decades, as discussed further below, the Water Authority has successfully increased its water supply reliability through supply diversification and conservation efforts (SDCWA 2015, p. 107).

Regional population forecasts play an important role in meeting projected water demand. For instance, both MWD and the Water Authority provide water 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 the County. MWD and the Water Authority 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 (SDCWA 2016b).

The Water Authority's 2015 UWMP water supply reliability section summarizes the total projected water supplies and demands over the next 25 years in 5-year increments (2020–2040) under normal, single-dry, and multiple drywater years within the Water Authority's service area (which includes Vallecitos Water District) (SDCWA 2016b).

In summary, the Water Authority's results from its reliability assessment demonstrates that, even with very conservative assumptions regarding the availability of dry year supplies from MWD, the San Diego region's existing and projected water resource mix is increasingly drought-resilient and satisfies projected member agency demands in normal water years, but shortages still occur during a single-dry year by 2035 (23,907 afy), and during a multiple dry year beginning in 2028 (29,314 afy) (SDCWA 2016b). These shortages would be eliminated should MWD supplies approach the supply levels projected in MWD's 2015 UWMP single-dry-year and multiple-dry-year supply capabilities (SDCWA 2016b). Further, the Water Authority will address the projected shortages by:

- a) implementing extraordinary conservation measures, achieved through voluntary and mandatory water-use restrictions that were used during the 2012–2016 drought period as explained in Section 11.2.3 of the Water Authority's 2015 UWMP;
- b) implementing its carryover storage program, which includes (i) in-region surface storage of approximately 100,000 acre-feet at San Vicente Reservoir, secured as part of the San Vicente Dam Raise project completed in 2014, with the carryover pool of 100,000 acre-feet full by June 2016, and (ii) out-of-region permanent groundwater storage allocation of a total of 70,000 acre-feet in water banks located in Kern County;
- c) if necessary, securing dry-year water transfers, which the Water Authority successfully acquired and utilized during the 2007–2011 shortage management period as described in Section 11.2.4 of the Water Authority's 2015 UWMP (SDCWA 2016b).

As stated above, the Water Authority has applied very conservative assumptions regarding the availability of dry year supplies from MWD. For instance, the Water Authority has assumed that: (i) MWD is limited to 1.4 million acre-feet of supplies due to dry conditions and increased reductions in deliveries from the State Water Project (no Delta improvements) and/or a reduction in Colorado River deliveries; and (ii) the Water Authority receives its

preferential right based on MWD's current method of calculating such rights. These assumptions are highly conservative because:

- a) MWD's 2015 UWMP's single dry-year and multiple dry-year supply capability projection do not report a shortage (MWD 2016, Tables 2-4, 2-5);
- b) California is in the process of modernizing the Delta's water conveyance system in compliance with the federal ESA through a Section 7 consultation process and the state ESA via a Fish and Game Code Section 2081(b) incidental take permit as part of the California WaterFix proposed project, which is currently under environmental review (SDCWA 2016b); and
- c) the Water Authority is in litigation with MWD challenging how MWD calculates member agency preferential rights and this litigation could result in significantly increased water supplies to the Water Authority (VWD 2016b).

The Water Authority's 2015 Annual Report titled, *Beyond Drought: Reliable Water in an Era of Change*, states that the Water Authority has diversified its supply sources to ensure water reliability in drought years when supplies from MWD may be limited (SDCWA 2015). This diversification includes independent water transfers from the Colorado River, working with the member agencies to increase conservation, increasing the use of recycled water, and using local groundwater (SDCWA 2015). The report also states that the Water Authority's most significant accomplishment of the year was proving the value of the region's long-term strategy to develop a diversified water portfolio. In a year of serious drought, the Water Authority and its member agencies had not only enough water to meet demands, but they had enough to start storing water behind the raised San Vicente Dam, which was completed in 2014 (SDCWA 2015).

As part of that diversified portfolio, the Carlsbad Desalination Plant began commercial operations in December 2015. The plant includes the largest, most technologically advanced and energy-efficient seawater desalination plant in the nation; a 10-mile pipeline to connect with the Water Authority's regional distribution system; and approximately \$80 million in upgrades to Water Authority facilities for distributing desalinated water throughout the San Diego region. The plant will provide a highly reliable drought-resilient local potable water supply of up to 56,000 acre-feet per year for the region, available in both normal and dry year conditions. Of the total plant production, the Water Authority provided the opportunity for its member agencies to enter into contracts to purchase desalinated water. Beginning in July 2016, Vallecitos Water District has committed to purchase 3,500 acre-feet of desalinated water annually from the Water Authority. The 3,500 afy of desalinated water represents approximately 25 percent of Vallecitos' current water demand (VWD 2016b).

In summary, water agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water supply, such as court rulings regarding listed fish species, State Board water quality restrictions, and recent drought conditions. Challenges such as these will always be present. Nonetheless, the regional water supply agencies, MWD and the Water Authority, contemplate sufficient, reliable supplies to serve existing and projected future demand.

Further, for long-term planning purposes, water supplies and facilities are added on an incremental basis and ahead of need. It would be economically unsound to immediately, or in the short term, acquire all the facilities and water supplies needed for the next 20 to 25 years. This would unfairly burden existing customers with costs that should be borne by future customers. There are numerous ongoing efforts to produce an adequate and reliable supply of good quality water for the San Diego region. Water consumers expect that their needs will continue to be met with a high degree of reliability and quality of service.

To that end, MWD's and the Water Authority's overall reliability goal is to deliver an adequate, reliable, and high quality water supply for their customers, even during dry periods or severe droughts (refer to SDCWA 2015 UWMP; MWD 2015 UWMP). Based on conservative water supply and demand assumptions contained in the MWD's and the Water Authority's 2015 UWMPs for a long-term planning horizon over the next 25 years, in combination with conservation of non-essential demand during certain dry years, MWD and the Water Authority have determined that implementing their related and coordinated water plans will successfully achieve this goal.

Vallecitos Water District

Vallecitos Water District is a retail water district that serves a 45-square-mile potable water service area, as illustrated in Figure 2.14-1, Water Service Area. The proposed project is located within Vallecitos' potable water service area.

Vallecitos has approximately 22,000 water meters that delivered 4,349 million gallons of potable water in 2015 (or 13,346 afy). Currently, Vallecitos delivers water through 373 miles of pipeline and operates 9 pump stations and 19 potable water storage reservoirs ranging in size from 350,000 gallons to 40 million gallons. Vallecitos' total operational storage capacity is 120.6 million gallons. The water service area is approximately 60 percent built-out. In addition, Vallecitos anticipates additional development throughout the next 20-year time horizon.

The Vallecitos Water District also provides wastewater collection services within its wastewater service area (Figure 2.14-2, Wastewater Service Area) and produces approximately 6.5 million gallons per day of wastewater (VWD 2015a). In 1958, an improvement district was formed to

finance the construction of a wastewater collection system. A second improvement district was formed that same year to finance construction of a wastewater treatment plant, which was completed in 1961. This treatment plant, now known as the Meadowlark Water Reclamation Facility, was retrofitted in the early 1980's with upgraded treatment technologies and a wastewater treatment and recycled water production capacity of up to 2 million gallons per day (VWD 2015a). This plant was upgraded from a capacity of 2 million gallons per day to 5 million gallons per day in 2005.

As of this writing, the Vallecitos Water District serves a 23-square-mile sewer service area that is currently much smaller in size than Vallecitos' water service area. This sewer service area can be expanded to the same size as Vallecitos' water service area through annexation of the additional parcels.

Vallecitos Recycled Water

The Vallecitos Water District produces up to 5 million gallons per day of recycled water at the Meadowlark Water Reclamation Facility and maintains the 54-million-gallon Mahr Reservoir for recycled water storage. However, Vallecitos does not maintain a recycled water service area within its sphere of influence. All of the recycled water produced is sold to the Carlsbad Municipal Water District and the Olivenhain Municipal Water District.

The Carlsbad Municipal Water District originally contracted for up to 2 million gallons per day during peak summer months, and in 2003, increased that amount to 3 million gallons per day. As part of that agreement, Vallecitos also provides the Carlsbad Municipal Water District with 32 million gallons of recycled water storage in the Mahr Reservoir.

Also in 2003, the Olivenhain Municipal Water District contracted for up to 1.5 million gallons per day of recycled water and 16 million gallons of recycled water storage in the Mahr Reservoir. Excess recycled water is disposed of through a failsafe pipeline that connects to the ocean outfall at the Encina Water Pollution Control Facility.

The project does not propose the use of recycled water because the Vallecitos Water District does not currently provide any recycled water service within its sphere of influence. Additionally, Vallecitos does not currently own a recycled water distribution system (VWD 2015a). As stated, wastewater in Vallecitos' service territory is directed to the Meadowlark Reclamation Facility where up to 74 percent of that water is converted into recycled water and then distributed to the neighboring districts of Carlsbad Municipal Water District and Olivenhain Municipal Water District and used for irrigation.

The Vallecitos Water District is presently evaluating whether to begin extending recycled water service to portions of its service territory, with its focus on the downtown area of San Marcos.

Vallecitos presently has no plans to extend recycled water service to the northern portions of its territory, including the community of Twin Oaks or the proposed project.

More broadly, the Vallecitos Water District is actively involved in planning for the use of recycled water in the near future as part of its membership in the North County Water Reuse Coalition and its participation in a regional recycled water facilities plan that investigates expanding recycled water use within the north San Diego County area. The objective is to regionalize existing and planned recycled water systems to further maximize the use of recycled water in the north San Diego County area, and to pursue U.S. Bureau of Reclamation grant funds for this regionalization effort (VWD 2015a).

The Vallecitos Water District and other North County water agencies may determine that potable reuse (indirect or direct) may be the best long-term strategy related to the water reuse capability of their water treatment facilities. In such case, Vallecitos and other North County water agencies may shift their focus away from providing or expanding recycled water services and toward developing potable water reuse infrastructure, including potentially restructuring treatment facilities and building new reservoirs. Potable reuse infrastructure and facilities would be funded through Vallecitos' and other water agencies' water capacity/capital facility fees and service charges.

Currently, where it is made available to projects, existing state regulations limit the use of recycled water to common areas, parkways, medians, and parks due to the concern about cross-connections as between potable and non-potable uses. However, recent state legislation, Assembly Bill 2282, passed in 2014, directs the Building Standards Commission to develop plumbing code requirements for indoor and outdoor recycled water as part of the 2019 California Building Code cycle. As this code development process is underway now, it remains to be seen how it will ultimately be applied to new construction. AB 2282, however, is clear about when these new code requirements would apply, adding Section 17921.5(c)(2) to the Health and Safety Code to read:

When developing the application provisions for the mandatory building standards, the department (Department of Housing and Community Development) shall limit the mandate to install recycled water systems within residential buildings and building site landscaped areas to only those areas within a local jurisdiction that have feasible and cost-efficient access to a water recycling facility, or that have been identified by the local jurisdiction within a planned service area for the provision of recycled water for which a specific implementation timeline has been identified by the public water system in its most recent urban water management plan.

Further, although the project does not propose the use of recycled water, the proposed project includes a project design feature (PDF-26) which requires that single family homes be-plumbed

for grey water systems, subject to the County's permitting requirements for grey water systems. In the same fundamental way that recycled water serves as a form of water reuse, grey water use in the project may as well.

Vallecitos 2015 UWMP

On June 15, 2016, the Vallecitos Water District's Board of Directors approved Resolution No. 1494 adopting the 2015 UWMP. Prior to its adoption, Vallecitos coordinated preparation of its UWMP with other agencies that are served by Vallecitos. In accordance with law, Vallecitos sent its 60-day notice to the agencies with land use jurisdiction within the Vallecitos service area in March 2016 (e.g., cities of Vista, San Marcos, Carlsbad, Escondido, and the County). The notice was sent to advise the agencies that the UWMP was under review and would be revised based on updated land use information, demand projections, and new legislation. It also notified the agencies that Vallecitos would hold a public hearing on June 1, 2016, to receive comments and answer questions regarding the 2015 UWMP. Notice of the public hearing was published in the newspaper for two consecutive weeks prior to the hearing. The Vallecitos Board held the public hearing on the draft 2015 UWMP in June, and the Board adopted the final 2015 UWMP at its regularly-scheduled noticed public meeting on June 25, 2016. Pursuant to Water Code Section 10621, the Vallecitos Water District filed the 2015 UWMP with the DWR, the California State Library, and the land use agencies, including the County, on June 22, 2016. It also made the final 2015 UWMP available on its website and main offices in San Marcos. Please refer to Section 10 of the Vallecitos 2015 UWMP for more information regarding its adoption and submittal. The 2015 UWMP is now final and beyond legal challenge under Water Code Section 10650.

As required by law, Vallecitos' 2015 UWMP included projected water supplies required to meet future demands through 2035 (VWD 2015a). In accordance with Water Code Section 10910(c)(2), information from Vallecitos' 2015 UWMP was used to prepare the project's WSA (VWD 2015b). Vallecitos' projected demands also are included in the Water Authority's 2015 UWMP, which takes into account approved land uses and local General Plan growth projections in developing future water supplies for the San Diego region (SDCWA 2016b). As a member agency of the Water Authority, Vallecitos uses the Water Authority's 2015 UWMP as its basis for determining the availability of future water supplies because Vallecitos purchases its potable water supply from the Water Authority.

Chapter 7 of the Vallecitos Water District's 2015 UWMP provides a water supply reliability assessment. The reliability water supply and demand assessment compares the Vallecitos Water District's total projected water usage with its projected water supply, in five-year increments, for 20 years (2015-2035). Though Vallecitos is guided by a 2014 draft water, wastewater, and recycled water master plan (draft 2014 master plan), it is both a draft plan and dependent on the water supply capabilities of the Water Authority.

Based on the Water Authority's 2015 UWMP, the Water Authority has the capability to meet all future demands of its member agencies (including Vallecitos) through 2035 in normal water years, but shortages would occur during a single-dry year by 2035 and during a multiple dry-year beginning in 2028 (SDCWA 2016b). These shortages, according to the Water Authority, would be eliminated by two projections, namely: (a) MWD meeting its supply levels projected in MWD's 2015 UWMP single-dry and multiple dry-year capabilities (SDCWA 2016b), and/or (b) the Water Authority addressing such projected shortages by implementing extraordinary conservation measures achieved through voluntary and mandatory water-use restrictions, implementing carryover storage programs, and securing dry-year water transfers (SDCWA 2016b; VWD 2015a). In addition, the Vallecitos Water District has improved its overall reliability, particularly during projected dry years through its contract for an annual desalinated water supply through the Water Authority from the Carlsbad Desalination Plant and the use of recycled water (VWD 2015a).

Tables 7.2 through 7.4 of Vallecitos' 2015 UWMP provide normal year, single dry-year, and multiple dry-year supply and demand projections for the Vallecitos potable water service area through 2035. The Vallecitos Water District's projected future water demands were generated from Vallecitos' draft 2014 master plan (VWD 2015a). If Vallecitos' future demand projections do not occur (or do not occur at the rate projected or by the years projected), the three tables in the 2015 UWMP (Tables 7.2-7.4) will be adjusted by Vallecitos in the next update to the 2015 UWMP. If, however, Vallecitos' future demand projections occur, the three tables in the 2015 UWMP (Tables 7.2-7.4) reflect shortfalls when forecasted supply is compared to projected demand. The text in Vallecitos' 2015 UWMP provides that the identified shortfalls, ranging from approximately 24 percent to 36 percent, will be mitigated through implementation of water demand-reduction actions and conservation measures described in Section 8 (Water Shortage Contingency Planning) and Section 9 (Demand Management Measures) of the plan. In addition, the Vallecitos Water District "continues to work closely with the [Water Authority] for future water supply planning" and based on the information provided by the Water Authority, "the water supply available to [Vallecitos] is considered to be reliable" (VWD 2015a).

As stated above, the Vallecitos Water District's existing and projected water supply within its potable water service area is largely derived from supplies purchased through the Water Authority. The Water Authority has demonstrated that, even with very conservative assumptions regarding the availability of dry year supplies from MWD, the San Diego region's existing and projected water resource mix is increasingly drought-resilient and that the Water Authority's identified shortages can be mitigated through extraordinary conservation measures, achieved through voluntary and mandatory water-use restrictions during drought periods, and if necessary, carryover supplies, groundwater banking, and dry-year transfers.

Vallecitos Water District Master Plan and Capital Improvement Program

The Vallecitos Water District developed a master plan and capital improvement program, the elements of which are periodically updated, typically every 5 years. The master plan and related capital improvement program evaluate the capacity of Vallecitos' existing water and sewer systems and specifies improvements necessary to serve existing and future customers. Vallecitos produced a Water, Wastewater, and Recycled Water Master Plan in 2008 (2008 Master Plan) to analyze existing and future land uses, as well as current water demands and trends. The 2008 Master Plan was the subject of environmental review in November 2010.

This Master Plan is currently being updated (draft 2014 master plan), and data and results from the draft 2014 master plan were used in Vallecitos' 2015 UWMP. Through use of Vallecitos' geographic information systems (GIS) and hydraulic modeling, the draft 2014 master plan evaluates the capacity of Vallecitos' existing water and sewer systems and specifies improvements necessary to serve existing and future customers. Phasing of these improvements is based on regional population projections and known plans for development within Vallecitos' sphere of influence.

The related capital improvement program is developed to guide Vallecitos in timely and cost-effective investments that contribute to the sustainability of its infrastructure and the reliability of service to its customers. Capital improvement program projects are prioritized according to how quickly they are needed. Phase 1 (2015–2020) and Phase 2 (2021–2025) projects represent high priority projects. Lower priority projects are identified as Phase 3 through 4 projects that would be phased over time (2026–2035). Phase 5 projects represent long-term projects to be constructed as Vallecitos' service area approaches build-out. The draft 2014 master plan identified 13 potable water pipeline projects totaling approximately 57,400 linear feet, seven potable water pump station projects that will increase Vallecitos' pumping capacity by 36,750 gallons per minute, and 10 storage projects that will increase Vallecitos' total potable water storage capacity by 42.73 million gallons.

Vallecitos Water District's Existing Water System

The proposed project is within the Vallecitos Water District's potable water service boundary. There are currently numerous, existing water facilities within and around the proposed project Site (VWD 2015a). A number of major facilities within the area were constructed as part of Assessment District 75-1 (Appendix U). The major water facilities are described below by water service zone and based on the Dexter Wilson Master Plan of Water (EIR, Appendix U). Also see Figure 2.14-3, Existing Water Facilities.

Twin Oaks 1028 Zone

The Vallecitos Number 10 turnout for the Water Authority aqueduct is located just west of Twin Oaks Valley Road and provides Vallecitos Water District with a capacity of 43,465 afy (38.8 mgd). This aqueduct connection allows the adjacent Twin Oaks 1028 Zone tanks to be filled by gravity. There is a 33 million gallon tank and 40 million gallon tank in this zone. The Twin Oaks 1028 Zone would not provide direct service to any of the developed areas within the proposed project Site.

North 1228 Zone

The North 1228 Zone consists of a 1.3-million-gallon tank just north of the project that was constructed as part of Assessment District 75-1. The North 1228 tank is supplied by the Coggan 1608 Zone via the North Pressure Reducing Station, which has an outlet hydraulic gradeline setting of 1,243 feet. This tank was recently abandoned, such that the limited connections in this zone can be served directly from the pressure-reducing station. There are some existing 8-inch-diameter through 12-inch-diameter water lines that have been constructed in the North 1228 Zone.

Deer Springs 1235 Zone

The Deer Springs 1235 Zone is formed by the Deer Springs Pump Station and Deer Springs Water Storage Tank. The Deer Springs Pump Station is located along the south side of Deer Springs Road and supplied by the Twin Oaks 1028 Zone. This pump station has a firm capacity of 1,200 gallons per minute (gpm). The Deer Springs Water Storage Tank is located southeast of the proposed project, with a capacity of 0.6 million gallons. This tank does not have current capacity to serve existing system demands, including emergency and fire flow storage requirements, and Vallecitos has identified the need for construction of additional storage in this zone.

Coggan 1608 Zone

The Coggan 1608 Zone facilities are located within the proposed project. Such facilities in this zone were constructed as part of Assessment District 75-1. The Coggan tank has a capacity of 1.3 million gallons and provides service to a few customers west and north of the proposed project. The Coggan Pump Station is located near the Twin Oaks 1028 Zone tanks, and pumps water from the 1028 Zone to the Coggan tank. This pump station has three pumps, each with a rated capacity of 2,000 gpm. There are numerous 1608 Zone transmission and distribution lines within the proposed project.

2.14.1.3 Regulatory Setting

Numerous federal, state, regional, and local adopted plans and regulations governing water supply are pertinent to the proposed project. These plans and regulations are described below.

Federal

Safe Drinking Water Act

The Safe Drinking Water Act (42 U.S.C. Section 300F et seq.) grants the U.S. Environmental Protection Agency the authority to set drinking water standards. Drinking water standards apply to public water systems, which includes the Vallecitos Water District system. There are two categories of drinking water standards: (a) the National Primary Drinking Water Regulations; and (b) the National Secondary Drinking Water Regulations. The National Primary Drinking Water Regulations are legally enforceable standards that apply to public water systems, and protect drinking water quality by limiting the levels of specific contaminants that can adversely affect public health and are known or anticipated to occur in water. The National Secondary Drinking Water Regulations are non-mandatory guidelines for certain substances that do not present a risk to public health.

Water Resources Development Act

The Water Resources Development Act (passed December 2016) includes short-term provisions that will “sunset” after 5 years. These provisions increase pumping operations in the Sacramento-San Joaquin River Delta at the highest levels allowed under biological opinions issued by state and federal wildlife agencies under the Endangered Species Acts unless the pertinent agencies show that the increased pumping would cause additional adverse effects on listed fish (smelt and salmonid) species beyond the range of effects anticipated in those opinions, using the best scientific and commercial data available. The biological opinions have been subject to years of litigation between farming interests, urban water districts, fishing associations, and environmental groups, with the current versions being upheld by the Ninth Circuit Court of Appeals. The new law's long-term provisions include significant funding authorizations that also should result in more water availability throughout California. These funding authorizations include long-term water infrastructure projects such as storage and groundwater projects; water recycling, reuse, conservation projects; and design and construction of desalination projects. The additional funds will help supplement California's water bond.

State

Safe Drinking Water Act

The State Safe Drinking Water Act (Health & Safety Code Sections 116270 et seq.) builds on and strengthens the federal Act. The State Act authorizes the State's Department of Public Health to protect the public from contaminants in drinking water by establishing maximum contaminant levels that are at least as stringent as those developed by the U.S. Environmental Protection Agency under the federal act.

Water Conservation Act of 2009

The Water Conservation Act (SBX7-7; Water Code Section 10608) requires that all water suppliers increase water use efficiency. This legislation sets an overall goal of reducing per capita urban water use, compared to 2009 use, by 20 percent by December 31, 2020. The State was required to make incremental progress towards this goal by reducing per capita water use by at least 10 percent on or before December 31, 2015. Each urban retail water supplier was required to develop urban water use targets and an interim urban water use target by July 1, 2011.

Agricultural water suppliers also are required to implement efficient water management practices including adoption of agricultural management plans by December 31, 2012, and updated plans by December 31, 2015, and every 5 years thereafter. Effective 2013, agricultural water suppliers not in compliance with these planning requirements became ineligible for state water grants or loans.

Water Supply Assessments and Written Verifications

State legislation has improved the link between water supply and land use planning. Senate Bill (SB) 610 (Water Code Section 10910 et seq.) requires the preparation of a water supply assessment for projects within cities and counties that propose any of the following:

- Residential developments of more than 500 dwelling units;
- Shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- Commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- Hotels, motels, or both, having more than 500 rooms;
- Industrial, manufacturing, or processing plants, or industrial parks planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;

- Mixed-use projects that include one or more of the projects specified in Water Code Section 10912, subdivision (a); or
- Projects that would demand an amount of water equivalent to or greater than the amount of water required by a 500-dwelling-unit project.

SB 610 provides that when environmental review of certain development projects is required, the public water system that is to serve the development must complete a water supply assessment. The water supply assessment evaluates water supplies that are or will be available in normal, single-dry, and multiple-dry years during a 20-year planning horizon, and determines whether such supplies can meet existing and planned future demands, including the demand associated with a proposed project.

Water Code Section 10910(g), specifies the time frame for preparing and submitting a WSA. Specifically, the "governing body" of each public water system must "approve" the WSA at a regular or special meeting and must submit the WSA to the lead agency not later than 90 days from the date on which the request was received. (Water Code Section 10910(g)(1).) In addition, Water Code Section 10910(g)(3) further states that if the water supplier fails to submit the WSA, the lead agency may seek a writ of mandamus to compel the water supplier to comply. (Water Code Section 10910, subd. (g)(3).)

After the water supplier provides the WSA to the lead agency, the law requires the lead agency to include the WSA in any CEQA environmental documents, namely the EIR the lead agency prepares for the project. (Water Code Section 10911, subd. (b).) Section 10911 further provides the lead agency "may include in any environmental document an evaluation of any information included in" the WSA. (Water Code Section 10911, subd. (c).) Further, the lead agency "shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project." (*Ibid.*)

The WSA's role in the EIR process is akin to that of other informational documents concerning potential environmental impacts, such as traffic or air quality. Like those other documents, the WSA is an advisory and informational document. (See *California Water Impact Network v. Newhall County Water District* (2008) 161 Cal.App.4th 1464.) As such, the SB 610 law makes clear that the lead agency evaluates the information included in the WSA and makes the final determination on the sufficiency of a project's water supply, not the urban water supplier. In addition, the lead agency's evaluation of the WSA necessarily vests in the lead agency the authority to consider, assess, and examine the quality of the information in the WSA. The lead

agency also may in evaluating the WSA accept or disagree with the urban water supplier's analysis or may request additional information from the supplier. (*Ibid.*)

Senate Bill (SB) 221 (Government Code Sections 66455.3 and 66473.7) requires that a city, county, or local agency include a condition to any tentative subdivision map that a sufficient water supply must be available to serve the subdivision. The term "sufficient water supply" is defined as the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year planning horizon that would meet the subdivision project's estimated water demand, and the demand from existing and planned future water uses (including agricultural and industrial uses) within the specified service area.

Urban water suppliers can use their most recent UWMP in completing SB 610 water supply assessments and subsequent SB 221 water verifications (DWR 2015).

Urban Water Management Planning Act

In 1983, the State Legislature enacted the Urban Water Management Planning Act (California Water Code Sections 10610–10656), which requires specified urban water suppliers within the state to prepare a UWMP and update it every 5 years. State and local agencies and the public frequently use such plans to determine if agencies are planning adequately to reliably meet water demand in various service areas. As such, the plans serve as an important element in documenting water supply availability and reliability for compliance with state laws, including SB 610 and SB 221 (discussed above), which link water supply sufficiency to large land-use development project approvals. Urban water suppliers also must prepare such plans, pursuant to the Urban Water Management Planning Act, to be eligible for state funding and drought assistance.

The UWMPs provide information on water usage, water supply sources, and water reliability planning. They also may provide implementation schedules to meet projected demands over a planning horizon, a description of opportunities for new development of desalinated water, groundwater information (where groundwater is identified as an existing or planned water source), a description of water quality over the planning horizon, and identification of water management tools that maximize local resources and minimize imported water supplies. An UWMP's water supply analysis includes a water supply reliability assessment, water shortage contingency plan, and development of a plan in case of an interruption in water supply.

Delta Plan

Water supplies in California are based largely around the Sacramento-San Joaquin Delta (Delta). Water from northern California surface waters and snowmelt travels to and through the Delta to Central Valley urban and agricultural users and to southern California through aqueducts, dams, and other infrastructure. The Sacramento-San Joaquin Delta Reform Act (Water Code Sections

85000 et seq.) established the Delta Stewardship Council (Delta Council) with the primary goal of developing and implementing an enforceable, long-term management plan for the Delta (Delta Plan). The Delta Plan's coequal goals of providing a more reliable water supply for California while restoring the Delta ecosystem are the foundation of all state water management policies.

As required by statute, the Delta Plan adopts a science-based adaptive management strategy to manage decision making in the face of uncertainty (Water Code Section 85308(f)). The law requires that the Delta Plan be updated every 5 years, and each update is intended to build on an evolving base of knowledge, direct near- and mid-term actions, and preserve and protect longer-term opportunities.

The Delta Council adopted the Delta Plan in May 2013. Litigation is still pending at the Court of Appeal level over the adequacy of this plan.

California Water Plan

Water Code Sections 10004 through 10013 describe the components and characteristics of the California Water Plan. The plan addresses the coordinated control, protection, conservation, development, and utilization of the State's water resources. Updated every 5 years, the most recent water plan is the *California Water Plan Update 2013*, released in October 2014.

California Water Recycling Standards

The California Legislature has developed state requirements for the production, discharge, distribution, and use of recycled water. These requirements are contained in the California Code of Regulations, Title 22, Division 4, Chapter 3, Reclamation Criteria, Sections 60301 through 60475, and Title 17. The California Department of Public Health administers the state recycling water standards.

California Green Building Standards Code

The California Green Building Standards Code, commonly referred to as the CALGreen Code, is set forth in California Code of Regulations, Title 24, Part 11, and establishes voluntary and mandatory standards pertaining to the planning and design of sustainable site development and water conservation, among other issues. Under the CALGreen Code, all water closets (i.e., flush toilets) are limited to 1.28 gallons per flush, and urinals are limited to 0.5 gallon per flush. In addition, maximum flow rates for faucets are established as follows: 2 gpm at 80 pounds per square inch for showerheads; 1.5 gpm at 60 pounds per square inch for residential lavatory faucets; and 1.8 gpm at 60 pounds per square inch for kitchen faucets.

California Groundwater Legislation

In September 2014, Governor Edmund G. Brown, Jr. signed three companion bills (Senate Bill 1168, Assembly Bill 1739, and Assembly Bill 1319), resulting in the enactment of the Sustainable Groundwater Management Act. The Act applies to groundwater basins in California and provides a comprehensive groundwater sustainability management program. The Act is inapplicable to adjudicated groundwater basins (except for annual reporting) and low and very low priority basins, although the new law encourages such basins to adopt groundwater sustainability plans. It also exempts high and medium priority groundwater basins if the local agency can demonstrate that the basin is already sustainably managed pursuant to current management or operation activities.

The new law, effective January 31, 2015, requires the DWR to prioritize groundwater basins as either high or medium priority, and to adopt regulations authorizing local “groundwater sustainability agencies” to prepare and adopt “groundwater sustainability plans.” Those basins that are subject to overdraft conditions must adopt a groundwater sustainability plan by January 31, 2020, and those basins that are not in overdraft must be managed by a groundwater sustainability plan by January 31, 2022. If a local agency has not formed a groundwater sustainability agency by June 30, 2017, the State Water Board may designate the basin as probationary, adopt an interim sustainability plan, and impose cost recovery.

The groundwater sustainability plans can require, among other things, groundwater well registration, measurement of groundwater extractions, and the filing of annual reports; it also can impose well spacing requirements, extraction limits, and extraction allocations. The completed groundwater sustainability plan must be submitted to DWR for review, and DWR must evaluate the plan within 2 years of its submission and issue a plan assessment, including recommended corrective actions.

Proposition 1, California’s most recent \$7.5 billion water bond, was placed on the November 2014 ballot, passed by a wide margin by California voters, and created the 2014 Water Quality, Supply, and Infrastructure Act. This new law provides financial support for the recently passed Sustainable Groundwater Management Act and implements the three objectives of the California Water Action Plan: reliable water supplies, restoration of important species and habitat, and water infrastructure.

The Sustainable Groundwater Management Act requires a city or county planning agency, before adopting or substantially amending a general plan, to consider groundwater sustainability plans or other related plans or programs. As applied to the Vallecitos Water District service area, however, this new law is inapplicable because Vallecitos does not pump groundwater, nor use it as a local water supply source (VWD 2015a). Further, groundwater is not included in Vallecitos’

existing or projected water supply program (VWD 2015a), and the proposed project does not propose to pump groundwater as a supply source to meet the project's water demand.

Local

County of San Diego General Plan

The County's General Plan Land Use Element contains a Community Facilities and Infrastructure section that addresses plans and policies regarding public utilities. The General Plan Conservation and Open Space Element also includes policies pertaining to water resources. Applicable General Plan policies are listed below (County of San Diego 2011):

- **Policy LU-12, Infrastructure and Services Supporting Development.** Adequate and sustainable infrastructure, public facilities, and essential services that meet community needs and are provided concurrent with growth and development.
- **Policy LU-12.1, Concurrency of Infrastructure and Services with Development.** Require the provision of infrastructure, facilities, and services needed by new development prior to that development, either directly or through fees. Where appropriate, the construction of infrastructure and facilities may be phased to coincide with project phasing.
- **Policy LU-12.4, Planning for Compatibility.** Plan and site infrastructure for public utilities and public facilities in a manner compatible with community character, minimize visual and environmental impacts, and whenever feasible, locate any facilities and supporting infrastructure outside preserve areas. Require context sensitive Mobility Element road design that is compatible with community character and minimizes visual and environmental impacts; for Mobility Element roads identified in Table M-4, an LOS D or better may not be achieved.
- **Policy LU-13.1, Adequacy of Water Supply.** Coordinate water infrastructure planning with land use planning to maintain an acceptable availability of a high quality sustainable water supply. Ensure that new development includes both indoor and outdoor water conservation measures to reduce demand.
- **Policy LU-13.2, Commitment of Water Supply.** Require new development to identify adequate water resources, in accordance with State law, to support the development prior to approval.
- **Policy COS-4.1, Water Conservation.** Require development to reduce the waste of potable water through use of efficient technologies and conservation efforts that minimize the County's dependence on imported water and conserve groundwater resources.

- **Policy COS-4.2, Drought-Efficient Landscaping.** Require efficient irrigation systems and in new development encourage the use of native plant species and non-invasive drought tolerant/low water use plants in landscaping.

2.14.1.4 Water Supply Analysis of Project Effects and Significance Determination

Guidelines for the Determination of Significance

The County's Guidelines for Determining Significance do not include significance thresholds or guidance for determining significance for impacts to utilities and service systems. Therefore, for purposes of this EIR, Appendix G of the CEQA Guidelines will apply to the direct, indirect, and cumulative impact analyses. A water supply significant impact would result if the project would:

- Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Not have sufficient water supplies available to serve the project from existing entitlements and resources, or need new or expanded entitlements.

New or Expanded Water Facilities

Due to the range of on-site topography, the project falls within four Vallecitos water service zones (1208 Zone, 1228 Zone, 1235 Zone, and 1608 Zone); a new 1475 Zone is planned via pressure-reducing stations off the Coggan 1608 Zone system. Computer modeling was applied to portions of the project where development is expected (1235 Zone, 1608 Zone, and 1475 Zone). Two computer models were created, one for the 1235 Deer Springs Zone and one for the 1608 and 1475 Zones combined. Each model is further discussed below. Figure 2.14-4 shows the location of the proposed project water facilities (EIR, Appendix U).

Twin Oaks 1028 Zone

The Vallecitos Water District recently completed construction of 33-million-gallon and 40-million-gallon reservoirs in the Twin Oaks 1028 Zone. These reservoirs are located off Site to the east of the project. The Number 10 turnout that supplies the Twin Oaks 1028 Zone has a capacity of 38.8 mgd. Improvements in this zone would not be required to be constructed by the proposed project, but the project would share in the cost of storage facilities through the payment of capacity fees (EIR, Appendix U).

North 1228 Zone

Approximately 349 acres within the project are within the North 1228 Zone, but all of this property is proposed to be dedicated open space (western and northern portions of the project).

Since the project is not proposing any development in this zone, no water facility improvements would be proposed. The water demands associated with the open space are included in the Coggan 1608 Zone water storage requirements (EIR, Appendix U).

Deer Springs 1235 Zone

The Vallecitos Water District Master Plan identifies capital improvement program projects to provide additional storage in the Deer Springs 1235 Zone, and construction of a new transmission line between the Deer Springs Pump Station (off Site) and the proposed 1235 Zone tank (on Site). Vallecitos upgraded the Deer Springs Pump Station to a capacity of 1,200 gpm. Construction of other facilities would be required in the 1235 Zone prior to or concurrent with development of the proposed project, as described below.

The existing Deer Springs tank has a capacity of 0.6 million gallons, and the Vallecitos Water District has determined it is undersized to serve existing development in this zone. Vallecitos' Master Plan identifies Deer Springs Reservoir No. 2 (proposed on-site water tank) as a 1 million gallon tank (Capital Improvement Project R-4, included in the 2008 Water, Wastewater, and Recycled Water Master Plan Program EIR, State Clearinghouse No. 2010071073) to meet storage deficits in the 1235 Zone and 1549 Zone, and to allow the existing Deer Springs tank to be abandoned. The project's Master Plan of Water (EIR, Appendix U, Table 3-3) identifies the need for a 1.76-million-gallon tank to serve the proposed project. Although the final sizing of this tank would be determined by Vallecitos, for purposes of the project's Water Master Plan, a 2-million-gallon tank has been assumed for the purposes of this EIR. This tank is proposed to be located within the project, and have a low water line of 1,235 feet and a high water line of 1,267 feet to match the existing tank (EIR, Appendix U). Construction of this tank must be completed prior to occupancy of any development within this zone (EIR, Appendix U).

There is an existing 10-inch-diameter water line constructed in 1961 that conveys water from the Deer Springs Pump Station to the Deer Springs tank. The Vallecitos Master Plan identified the need for a replacement 12-inch-diameter water line (Capital Improvement Project P-56, included in the 2008 Water, Wastewater, and Recycled Water Master Plan Program EIR, State Clearinghouse No. 2010071073). This pipeline project must be completed prior to or concurrent with development in this zone (EIR, Appendix U).

The 1235 Zone was modeled as one zone. To provide redundancy, Dexter Wilson has recommended that the zone be supplied by both the proposed Deer Springs 1235 Zone tank and the normally closed 1475/1235 Zone pressure reducing station (EIR, Appendix U). The hydraulic analysis used in the Master Plan of Water assumed that the 1235 Zone tank is half full, with a hydraulic grade line of 1,251 feet, and the normally closed pressure-reducing valve is set to open when the hydraulic grade line in the system drops below 1,220 feet. The hydraulic model shows

that 8-inch-diameter through 16-inch-diameter water lines can adequately supply the project during maximum day demand and peak-hour demand scenarios from the tank only. To adequately supply the project during maximum day demand plus fire flow scenarios, the normally closed 1475/1235 Zone pressure-reducing valve must be open to allow the 1475 Zone to supplement supply to the 1235 Zone (EIR, Appendix U).

Coggan 1608/Proposed 1475 Zones

The existing 1608 Coggan Pump Station has a firm capacity of 4,000 gpm and is not anticipated to require upgrades to serve ultimate development. Water from the pump station to the 1608 Coggan Reservoir is conveyed through 16-inch-diameter and 18-inch-diameter pipelines. These pipelines would not require upsizing to accommodate ultimate development, but portions may be re-aligned during construction of the proposed project. The existing 1608 Coggan Reservoir has a capacity of 1.3 million gallons, but the Vallecitos Master Plan recommends replacement of this tank with a 6-million-gallon tank (Coggan No. 2 Tank). A future Coggan No. 3 Tank also is shown in Vallecitos' Master Plan within the open space portion of the project.

Based on the information contained in the project's Master Plan of Water, the total capacity required for project is 5.43 million gallons (EIR, Appendix U). With the existing 1.3-million-gallon tank, the proposed project would need to construct an additional 4.13 million gallons of storage to meet the project's needs. This tank would need to be oversized to meet Vallecitos Master Plan requirements. The Coggan No. 2 Tank would be located at the same site as the existing 1608 tank, and have a low water line of 1,608 feet and a high water line of 1,648 feet. The Vallecitos Master Plan identifies a 6-million-gallon tank at this site that would allow the existing tank to be abandoned and the new tank to provide service to future development. This tank is identified as a District Capital Improvement project (Project R-5, included in the 2008 Water, Wastewater, and Recycled Water Master Plan Program EIR, State Clearinghouse No. 2010071073), and construction must be concurrent with development of the proposed project. It is not anticipated that construction of the future 6.1-million-gallon Coggan No. 3 Tank (District Capital Improvement Program Project R-11, included in the 2008 Water, Wastewater, and Recycled Water Master Plan Program EIR, State Clearinghouse No. 2010071073) would be required concurrent with development of the proposed project, but additional land may be needed from the project for this future site, as shown in Figure 2.14-4 (EIR, Appendix U).

The 1475 Zone would be formed by pressure reducing off the 1608 Zone. Two pressure-reducing stations are proposed to provide redundancy. Each pressure-reducing station typically has one small (2-inch or 3-inch) and one larger (6-inch or 8-inch) pressure-reducing valve to accommodate the full range of anticipated demands. The final determination of valve sizing and setpoints is generally made prior to initiation of the final engineering plans for a project. Dexter

Wilson has recommended that the piping in the 1475 Zone range from 8 inches in diameter to 12 inches in diameter (EIR, Appendix U).

The 1608 and 1475 Zones are modeled as one system. The model assumes the 1608 Zone tank is half full with a hydraulic grade line of 1,628 feet. The 1475 Zone models both pressure-reducing stations with an output hydraulic grade line of 1,475 feet. The model demonstrates that the zones can be adequately supplied during maximum day demand plus fire flow conditions with 8-inch-diameter through 16-inch-diameter water lines (EIR, Appendix U).

Based on the above technical analysis, the proposed project would be required to install the potable water system infrastructure described in Chapter 1, Project Description, of this EIR and the project's Master Plan of Water (EIR, Appendix U). Installation of the proposed potable water system, including water tank construction, would occur in conjunction with project development. All such improvements are designed in accordance with County requirements, including the Fire Code. Such improvements would be constructed to the satisfaction of County departments and all Vallecitos Water District and County Fire Department standards.

Potential significant environmental impacts associated with such construction include air quality, traffic, biological resources, cultural resources, noise, hydrology, water quality, and other impacts as identified and analyzed in Chapter 2 of this EIR. None of those sections identified construction or operation of the project's new or expanded water facilities as resulting in significant impacts apart from those already analyzed in this EIR. For example, construction of new or expanded water facilities would require limited amounts of grading and ground disturbance that are already considered in assessing project impacts. Further, to the extent any new or expanded water facilities create noise effects, the project must comply with the County's Noise Ordinance. In addition, pipeline construction would require trenching, also as part of the grading stages of the proposed project, which have been assessed in this EIR. Therefore, the proposed project's construction impacts associated with installation of the project's new or expanded water facilities would be **less than significant**.

The proposed project would increase overall water demand compared to existing undeveloped conditions. However, the project would be required to construct the water facility improvements necessary to provide water service to the project, in accordance with County General Plan requirements and conditions, and Vallecitos Water District and County Fire Department design requirements. In addition, water lines would be sized to accommodate total domestic and fire flows. Further, project water infrastructure requirements would be designed in accordance with Vallecitos requirements. Thus, the project's operational impacts on Vallecitos' existing water system, infrastructure, and capacity would be **less than significant**.

Sufficiency of Water Supplies

Introduction

This analysis identifies the proposed project's potential impacts on water supply. The purpose of the analysis is to determine if sufficient regional and local water supplies are available to serve the project and the existing and other planned development within the Vallecitos Water District's service area. As stated, the analysis is based on the regional UWMPs completed by the MWD and the Water Authority, the local 2015 UWMP completed by the Vallecitos Water District, HDR's SB 610 Water Supply Assessment, GSI's Water Conservation Demand Study, the County General Plan water supply policies, and other adopted regional reports from MWD and the Water Authority (EIR, Appendices S, T, U, V).

HDR's SB 610 Water Supply Assessment presents water supply and demand data specific to the project and provides information and analysis regarding water supply sufficiency. As stated above, the role of the Water Supply Assessment in the CEQA process, however, is akin to that of other informational documents provided by experts and agencies concerning potential environmental impacts. Ultimately, the County, acting as lead agency under CEQA, makes the final determination, based on the entire record, whether water supplies will be sufficient to serve the project, in addition to existing and other planned future uses within the Vallecitos Water District potable water service area (Water Code Section 10911(b)-(c)). Further, the County, as lead agency, retains its discretion and expertise in land use and water supply issues to make this ultimate supply sufficiency determination and that final decision is properly made only if the County certifies the EIR and approves the project.³

Water Conservation Regulatory Compliance Measures

Dating back to 2006, state laws have been enacted that affect the types and implementation of various ongoing water conservation and water use reduction requirements. These laws include:

- a) the state's 2013 California Building Standards Code effective January 2014 and updated in July 2015, which includes the 2013 version of the state's green building standards (CALGreen);
- b) the state's landscape irrigation efficiency standards included in DWR's adopted Model Water Efficient Landscape Ordinance that are implemented by local agencies adopting the ordinance or its equivalent, and

³ For further information regarding the purpose and use of an SB 610 water supply assessment, please refer to Water Code Sections 19010–19012 and the Second District Court of Appeal decision in *California Water Impact Network v. Newhall County Water District* (2008) 161 Cal.App.4th 1464.

- c) local programs by the County and the Water Authority that implement these laws and promote water conservation at the local level.

For further information regarding these water conservation regulatory measures, please refer to GSI's Water Conservation Demand Study for the project (EIR, Appendix T).

Vallecitos Water Shortage Contingency Planning

The Urban Water Management Planning Act requires water agencies to incorporate water shortage contingency planning, and this planning is to focus on the allocation of water supplies and the management of water use during drought periods or a water emergency, such as water supply interruptions (Water Code Section 10632). The Vallecitos Water District's 2015 UWMP describes Vallecitos' policies and ordinances to address water shortages (Ordinances 162 and 195).⁴

The project, if approved, must comply with the Vallecitos Water District's water shortage contingency planning, ordinances, and regulations. The project also must comply with other contingency planning, demand management measures, and extraordinary conservation measures, achieved through voluntary and mandatory drought-driven requirements, that are imposed by the State Board, MWD, and the Water Authority. In short, Vallecitos' measures do not operate in a vacuum.

For example, Vallecitos Ordinances Nos. 162 (rescinded) and 198 are patterned after the conservation actions of the Water Authority, and establish four levels of response with corresponding actions to be implemented during drought periods or emergency conditions, with increasing restrictions on water use in response to extended droughts and decreasing water supplies. The four levels taken from Ordinance 198 are summarized below.

Level 1 Drought Watch. Vallecitos will increase public outreach and take action to encourage voluntary conservation practices to reduce water use by up to 10 percent.

Level 2 Drought Alert. Vallecitos will implement mandatory conservation practices to reduce water use by up to 20 percent.

⁴ As explained more thoroughly below, in July 2016, the Vallecitos Water District voted to rescind the mandatory drought restrictions under its "Level 2 Drought Alert" and move to voluntary conservation measures under its "Level 1 Drought Watch," thereby ending restrictions on outdoor watering. The Board also expressed its desire to sustain water conservation as a permanent way of life and adopted a new ordinance (Ordinance 198) permanently prohibiting designated wasteful water practices.

Level 3 Drought Critical. Vallecitos will implement mandatory conservation practices to reduce water use by up to 30 percent. With minor exceptions, no new potable water service will be allowed during a Level 3 Drought alert.

Level 4 Drought Emergency. Vallecitos will implement mandatory conservation practices to require a water demand reduction of greater than 30 percent. Additional conservation practices include prohibited landscape irrigation and other outdoor watering for residential and commercial uses, excluding commercial growers or nurseries.

As stated above, Ordinance 198 also includes a list of water waste prohibitions to make water conservation a permanent way of life within the Vallecitos service area.

In addition, the Vallecitos Water District's Ordinance 195 was implemented in response to Governor Brown's Executive Order B-29-15, which directed that the State Board adopt new regulations and mandated a 24 percent reduction in urban potable water use from Vallecitos' 2013 demands. In March 2016, the State Board reduced Vallecitos' water conservation target to 16 percent due to Vallecitos' direct connection to the Carlsbad Desalination Plant and the addition of desalinated water to the Water Authority's regional supply, which Vallecitos also receives annually. Since this mandate, through May 1, 2016, Vallecitos has surpassed its mandated conservation target by achieving a 25.6 percent reduction in water usage within its service area. Thus, Vallecitos repealed Ordinance 195 in July 2016.

The above 25.6 percent reduction in water use demonstrates that Vallecitos' customers can respond to calls for water conservation (i) whether as part of a long-term commitment to water efficiency during times of adequate supply availability, or (ii) when extraordinary water conservation measures are required, through voluntary or mandatory conservation measures as experienced during a recent drought (2012–2016).

Until July 6, 2016, Vallecitos was operating under its "Level 2 Drought Alert," which called for implementing mandatory conservation practices to reduce water use by up to 20 percent. On July 6, 2016, however, Vallecitos repealed the mandatory drought restrictions under "Level 2," and moved to voluntary conservation measures under its "Level 1 Drought Watch." However, the Vallecitos Board expressed their desire to sustain permanent water conservation measures, and adopted a new ordinance (Ordinance 198) that prohibits wasteful water practices, such as:

- Prohibiting water from leaving property by runoff to adjacent properties, roadways, streets, or gutters due to excessive irrigation and/or uncontrollable leaks
- Prohibiting watering between the hours before 10:00 a.m. and after 6:00 p.m.
- Prohibiting watering within 48 hours of a measurable rain event

- Prohibiting washing down any paved areas (sidewalks, driveways, parking areas, etc.) unless needed to alleviate immediate safety and sanitation hazards
- Not using a shut-off nozzle when washing cars
- Not using non-recirculating ornamental fountains or cascading fountains
- Not fixing leaks within 48 hours of discovery

The Vallecitos Water District action was taken in response to the State Board terminating water use reduction mandates and allowing water agencies to set their own water use targets based upon their specific supply conditions. Recognizing persistent yet less severe drought conditions throughout California, the newly adopted emergency regulation, which was in effect through January 2017, mandates that urban water suppliers act to ensure at least a 3-year supply of water to their customers under drought conditions.

In response, the Water Authority determined that the Vallecitos Water District has sufficient water supplies for its customers, even if drought conditions continue for the next 3 years. In other words, Vallecitos will not be subject to state-mandated water-use reductions through January 2017. This is due largely to its customers who saved approximately 25 percent since June 2015 and the fact that Vallecitos receives a portion of its water directly from the Carlsbad Desalination Plant, which is a local, drought-resilient supply.

Vallecitos Water Conservation Best Management Practices

The project, if approved, also must comply with Vallecitos Water District's Best Management Practices (BMPs). The BMPs are a framework for Vallecitos' water conservation program, which has become a vital part of Vallecitos' overall reliability strategy. Vallecitos' strategy is similar to the Water Authority's regional strategy, which has projected that conservation will account for 17 percent of the San Diego region's overall water diversification program by 2020.

Vallecitos started its water conservation program in 1975, which was expanded significantly during the drought of 1976-77. At the program's inception, Vallecitos' efforts steered toward a long-term public information program and active cooperation with regional water conservation programs of the Water Authority. Though the drought ended, many of the programs that emerged during that time remained focused on switching from an "emergency situation" agenda to a long-term public information effort aimed at outreach in wise water management (VWD 2016b).

Through additional staffing, Vallecitos' framework of a long-term conservation program continued to serve as a backdrop for the next major drought in 1987-1992. With the additional staff and a clear understanding of the importance of conservation, Vallecitos aggressively revamped its conservation program and developed a variety of innovative and effective

approaches to demand management. Vallecitos reaffirmed its commitment to conservation and became one of the original signatories to the “Memorandum of Understanding Regarding Urban Water Conservation” in September 1991. The California Urban Water Conservation Council, of which the Vallecitos Water District is a long-time member, was established from the Memorandum of Understanding, as well as the urban water conservation BMPs, which are aimed at reducing California’s long-term urban water demands.

Since becoming a signatory to the Memorandum of Understanding, Vallecitos has made implementation of the BMPs for water conservation the cornerstone of its conservation programs, and a key element in its water resource management strategy. As a member of the Water Authority, Vallecitos also benefits from regional programs performed on behalf of its member agencies. The District actively participates in countywide and regional conservation programs at the Water Authority and MWD (VWD 2016b).

The Vallecitos Water District’s BMPs are described further below. More detailed data and information are presented in the project’s SB 610 Water Supply Assessment (EIR, Appendix S) and Vallecitos’ 2015 UWMP (EIR, Appendix V).

Vallecitos Water District Water Conservation Best Management Practices

Operations BMPs. Vallecitos’ operational BMPs include such practices as water waste prohibitions, water loss control, metering, retail conservation pricing, and staffing. Please refer to Vallecitos’ SB 610 Water Supply Assessment for a description of each of the operational BMPs.

Education Programs BMPs. This practice was established to educate students of all ages and to promote water-savings practices at a young age to develop life-long water conservation habits. A program is in place for various activities at different student levels from kindergarten through college.

Public Outreach for Residential Water Use Efficiency. This practice uses public information programs as an effective tool to inform customers about the need for water conservation and ways to conserve, and to influence customer behavior to conserve.

Commercial, Industrial, and Institutional Incentives. This practice includes a rebate program that offers such customers financial incentives to migrate to water-efficient equipment. This may include pre-rinse spray valves, ultra-low flush toilets, single-load high-efficiency washers, and weather-based irrigation controllers.

Landscape Irrigation Efficiency. This practice helps irrigators meet the goal of achieving a higher level of water use efficiency consistent with the actual irrigation needs of the plant

materials. This reduces overall demands for water, reduces demands during the peak summer months, and results in healthy and vibrant landscapes.

Implementation of these BMPs also will assist Vallecitos in meeting the state requirement to achieve a 20 percent reduction in urban per-capita water use by 2020 in accordance with Water Code Section 10608.16 (SB X7-7). Vallecitos has calculated the 2020 target (80 percent of baseline per capita usage) at 159.4 gallons per-capita per-day. For the fiscal year ending 2015, Vallecitos has calculated the actual per capita daily water use at 117 gallons per-capita per-day, which is already less than the 2020 target (159.4 gallons per-capita per-day). The water demand management measures in Section 9 of Vallecitos' 2015 UWMP presents Vallecitos' plan to maintain conservation to ensure that the demands do not increase, even if drought alert levels are decreased and water awareness wanes.

In sum, Vallecitos' contingency planning and water demand management measures, as set forth in Section 8 and 9 of its 2015 UWMP, demonstrate that Vallecitos can and will achieve water savings/reductions of between 20 and 25 percent minimum. In addition, these measures do not account for project-related conservation measures discussed below.

Project Design Features

As a result of the water conservation regulatory laws and regulations and technological advances in the water fixture industry, homes constructed today are using dramatically less water than homes built a few years ago. For example, according to a report by the California Homebuilding Foundation, a new three-bedroom single-family home in California with four occupants uses 38 percent less indoor water than a similar-sized home built in 2005, and more than 50 percent less water than a non-retrofitted home built in 1980 (California Homebuilding Foundation 2010). This is primarily due to mandated restrictions in residential toilets (flushing volumes), shower and faucet rates, clothes washer volumes, leak reductions, and other devices (e.g., baths and dishwashers) (Water Research Foundation 2016).

Against this backdrop, and recognizing California's water challenges and drought conditions, the project applicant has proposed water conservation design features to make the project a water-efficient community.

Indoor water conservation features include high-efficiency clothes washers and dishwashers, water-efficient toilets, faucets, and showerheads.

Outdoor water conservation features would include low-water-use landscaping in residential and non-residential landscapes, prohibitions of turf grass in residential front yards and within the street rights-of-way, and prohibitions on outdoor water use in dedicated open space (1,209 acres) and non-irrigated fuel modification areas (272.2 acres). The project also requires all single family homes to be

plumbed for grey water systems, if feasible, to capture domestic water for reuse as outdoor landscaping irrigation.⁵

Impact Analysis

Construction Impacts

During project construction, a short-term water impact would occur, primarily in association with dust control, concrete mixing, cleaning of equipment, and other related construction activities. These construction activities would occur incrementally through project build-out and be temporary. The amount of water used during construction would vary depending on the conditions of the soil, weather, size of the area worked, and Site-specific operations, but it is not expected to be substantial. The project applicant would provide water through a construction-metered connection from existing lines adjacent to the project, and water tankers would deliver water for dust control to the development areas throughout project construction as needed. Thus, the project construction phase would have an adequate supply of water available, and potential construction-related water supply impacts would be **less than significant**.

Operation Impacts

The proposed project would increase overall demand for potable water. As stated above, the project applicant would be required to construct and fund the potable infrastructure necessary to connect to Vallecitos' existing system in order to accommodate project demand, in accordance with Vallecitos Water District's fees, charges, ordinances, rules, and regulations. Further, as explained below, since the proposed project has yet to be adopted by the County as it is still undergoing environmental review, the Vallecitos Water District nonetheless accounted for, and projected, water usage on the subject Site using the most current 2011 General Plan land uses, shown in Table 2.14-1, Projected Water Demand (2011 General Plan/2015 UWMP). After applying Vallecitos' recently approved water duty (i.e., water demand) factors (discussed below) to such land uses, these General Plan land uses generate a total projected water demand of 1,825 afy or 1,629,220 gallons per day (gpd). For planning purposes, this total demand also was accounted for in Vallecitos' draft 2014 master plan, and the 2015 UWMPs for Vallecitos, the Water Authority, and MWD.

⁵ The project's proposed grey water systems could reduce sewage flow by 70 percent and could include installation of in-ground collection tanks as a certified grey water treatment system. However, as is the case with the project's Water Supply Assessment demand calculations, the project's Water Conservation Demand Study calculations of irrigation water demands assume that potable water supplies will be necessary for all residential landscape irrigation. If, at a future time, the County has permitting mechanisms in place to allow activation of the plumbed grey water systems, then irrigation water demands could be lower than assumed in the demand calculations presented in both the project's SB 610 Water Supply Assessment and the project's Water Conservation Demand Study prepared by GSI (EIR, Appendices S and T).

Vallecitos Water District Water Demand Factors

The subject property's projected water demand is based on the Vallecitos Water District's water demand factors derived from its draft 2014 master plan. Vallecitos' water demand factors were presented to the Vallecitos Board in a public workshop on July 15, 2016, and Board-approved on September 21, 2016.⁶

These water demand factors describe the average daily usage of water in units of gallons per day per acre (gpd/acre) and reflect different values corresponding to specific types of land uses within the Vallecitos service area (e.g., residential, commercial, industrial, institutional, landscape, and agriculture). To arrive at the water demand factors reported in its draft 2014 master plan presentation, Vallecitos followed several steps.

- Vallecitos first obtained approved land use coverage and zoning maps from all land use agencies served by Vallecitos, including the County.
- Using its system database, Vallecitos assigned all parcels in its service area with their approved land uses and unit water demands.
- Vallecitos then validated its new water demand factors for the various land uses in its service area by referencing several sources, including: (i) actual metered water deliveries from all Vallecitos water meter accounts from July 2008 through June 2014, excluding water use through fire lines, construction meters, water exchanges, and other unbilled end deliveries such as fire hydrant testing or system flushing, (ii) readings from installed sewer flow meters, (iii) comparisons of water meter and sewer flow meter data, and (iv) comparisons to water demand factors used in previous master plans (EIR, Appendix S [HDR WSA, Appendix B]).
- Vallecitos also included all agency-approved development projects up to June 30, 2014.

Based on the above analysis and a comparison of water demand factors from 2008 and 2014, Vallecitos noted very few changes. Specifically, Vallecitos found that its residential water demand factors slightly increased from 2008 to 2014, and its agricultural and industrial water demand factors slightly decreased during that same period, as did its agricultural sewer duty factors (EIR, Appendix S [HDR WSA, Appendix B]).

Vallecitos' water demand factors are considered conservative because they do not account for the reductions in per-capita and acreage-based rates of water use by the project under existing

⁶ The Vallecitos Water District public workshop presentation of its draft 2014 master plan water demand factors is shown in Appendix B of the project's Water Supply Assessment prepared by HDR (EIR, Appendix S).

state and local water conservation regulatory requirements (Personal communication with Steve Neilsen, Dexter Wilson, and Robert Scholl, Vallecitos Water District, December 2016).

Table 2.14-2 reflects the project's water demand estimate, without conservation, for the Specific Plan development, which is based on the designated land uses and Vallecitos' water demand factors for water use. In addition, a detailed breakdown of this estimate is included in Appendix A to the project's SB 610 Water Supply Assessment prepared by HDR (see EIR, Appendix S).

Project Water Demands – Four Methodologies

The project's forecasted water demand was derived from four methodologies. Each is described below.

First, Vallecitos' draft 2014 master plan water demand factors and its 2015 UWMP use the subject property's adopted 2011 General Plan land use designations to calculate a projected total water demand. The existing County General Plan land use designations for the subject property allow approximately 99 single-family residential dwelling units and 2,008,116 square feet of commercial/office space. The total water demand generated by these land uses, which is shown in Table 2.14-1, is 1,825 afy (or 1,629,220 gpd). This demand does not account for the reductions in water usage due to state and local water conservation requirements (EIR, Appendix S [HDR WSA] and Appendix T [GSI analysis]).

Second, Vallecitos completed a Water Supply Assessment for the project. As shown in Tables 2.14-2 and 2.14-3, projected total water demand for the project's Specific Plan development is 1,624 afy (or 1,450,160 gpd). This demand also does not account for the reductions in water usage due to state and local water conservation requirements (EIR, Appendix S [HDR WSA] and Appendix T [GSI Report]).

Third, the Water Supply Assessment also used and referenced the GSI's Water Conservation Demand Study, which evaluated water conservation requirements. Citing the GSI Water Conservation Demand Study, the Water Supply Assessment found that such measures would reduce total demand at the project to 1,196 afy (or 1,068,220). This demand, arising from implementation of required conservation measures, is shown in Table 2.14-4. It represents a 26 percent reduction from the estimated 1,624 afy (or 1,450,160 gpd) project demand. (EIR, Appendix S [HDR WSA]). This demand also represents a 35 percent reduction in water use compared with the 2011 General Plan water demand (1,825 afy or 1,629,220 gpd) that Vallecitos planned for in its draft 2014 master plan and 2015 UWMP (EIR, Appendix S [HDR WSA]).

Fourth, the GSI Report calculated the water savings achieved by implementing current state and local indoor and outdoor water conservation requirements within the project's Specific Plan and under a separate setting that involves taking "land use deductions," within which

outdoor water uses are eliminated for open space and non-irrigated fuel modification zones (EIR, Appendix T [GSI Report]), resulting in no water demands for open space and non-irrigated fuel modification zones and a corresponding removal of 326 afy (or 291,240 gpd) from the project's water demand estimates.

Under this fourth methodology, as shown on Table 2.14-5, the resulting total water demand would be 870 afy (or 776,980 gpd), when coupled with regulatory conservation measures (EIR, Appendix T [GSI Report]). This reduced water demand represents a 46 percent reduction in water use compared with the Water Supply Assessment estimate, and a 52 percent reduction in water use compared with Vallecitos' draft 2014 master plan and 2015 UWMP (see also EIR, Appendix T [GSI Report]).

The Water Demand to be Used for the Project

Relying on the above analysis, by requiring implementation of regulatory water conservation measures and the removal of irrigation from open space and non-irrigated fuel modification zones, the project's total water demand would be 870 afy (GSI Report, Table 20) or 776,980 gpd (GSI, Table 19). This total demand would reduce water usage by 754 afy (or 673,180 gpd) compared with the Water Supply Assessment and by 955 afy (or 852,220 gpd) compared with the County's 2011 General Plan and Vallecitos' draft 2014 master plan and 2015 UWMP.

Based on the above analysis, the County has determined that, with the current water conservation requirements applicable to the project and the "land use deductions" made enforceable by mitigation imposed by the County, the total water demand to be used for the proposed project is 870 afy (or 776,980 gpd). This water demand is 46 percent lower than the demand estimate presented in the Water Supply Assessment, and 52 percent lower than the demand estimate used in the County's 2011 General Plan, and Vallecitos' draft 2014 master plan and 2015 UWMP.

Project Water Demands and Supplies

Given the 2011 General Plan land use designations (e.g., residential, commercial, and office professional), the property is planned to result in a water demand of 1,825 afy (or 1,629,220 gpd) (see also EIR, Appendix S [HDR WSA]). This projected demand was included in Vallecitos' draft 2014 master plan and the 2015 UWMPs for Vallecitos, the Water Authority, and MWD.

However, the project's Water Supply Assessment provided an estimate of the proposed Specific Plan development as resulting in a total water demand of (i) 1,624 afy (Table 2.14-3) without conservation, and (ii) 1,196 afy (or 1,068,220) with conservation. Specifically, the GSI Water Conservation Demand Study estimates that incorporation of the CalGreen Building Code standards, the state's Model Water Efficient Landscape Ordinance, and the project's prohibition on turf planting in front yards of residences and in street rights-of-way would reduce the

estimated water demand of 1,624 afy by at least 26 percent to 1,196 afy. This represents an approximately 35 percent reduction in demand from the 2011 General Plan (1,825 afy or 1,629,220) that is currently planned for in Vallecitos' draft 2014 master plan, its 2015 UWMP, and the UWMPs of the Water Authority and MWD.

In addition, the GSI Water Conservation Demand Study incorporates a "land use deduction" in water demand by eliminating water use in open space and non-irrigated fuel modification zones. This represents the project's total water demand to be used by the County for EIR purposes because it incorporates the combined effect of the latest water conservation requirements and the "land use deduction" to further decrease the project's water demand to 870 afy (or 776,980 gpd), which represents a 52 percent reduction from the estimate used in the 2011 General Plan (1,825 afy or 1,629,220).

Conservation is an important component of Vallecitos' water supply plan to meet future demands, fulfilling as much as 13,080 acre-feet (approximately 35.7 percent of the demand requirements) to meet 2020 demands in the third year under multi-dry year conditions. The conservation requirements would then lessen in that same setting over time from 2025 through 2035 to a range of (i) 11,174 afy (approximately 29 percent of the demand requirements) in 2025, (ii) 9,910 afy (approximately 24.9 percent) in 2030, and (iii) 11,144 afy (approximately 26.2 percent) in 2035.

As stated above, the Vallecitos Water District's SB 610 Water Supply Assessment states that under the project's Specific Plan development, the project – with conservation and without land use deductions – is estimated to have a total water demand of 1,196 afy (or 1,068,220 gpd), which represents a 35 percent reduction in water use compared with the 2011 General Plan land uses for the property.

In addition, as stated above, the County's water demand for the project is less than shown in the Water Supply Assessment. The County has determined that, with the current water conservation requirements applicable to the project and the "land use deductions" made enforceable by mitigation imposed by the County, the total water demand to be used for the proposed project is 870 afy (or 776,980 gpd). This water demand is 46 percent lower than the demand estimate presented in the Water Supply Assessment, and 52 percent lower than the demand estimate used in the County's 2011 General Plan, and Vallecitos' draft 2014 master plan and 2015 UWMP.

Tables 2.14-6, 2.14-7, and 2.14-8 provide forecasted water supply and demand during normal year, dry-year, and multiple-dry years from 2020 through 2035. The information reflected on each table is derived from the Vallecitos Water District's SB 610 Water Supply Assessment and its 2015 UWMP, which, in turn, rely on supply and reliability data from the regional water agencies (the Water Authority and MWD). Each table also reflects conservation requirements,

including the required percent reduction in demand needed to balance the supply and demand projections shown therein. In addition, each table includes two important inquiries: (i) whether the reduction in each year for the hydrological conditions (normal, dry, multiple dry) is 35 percent or less than planned, and (ii) whether the reduction is 52 percent or less than planned.

These percent reduction inquiries (35 percent and 52 percent) are used for two reasons.

First, under the Water Supply Assessment, the project's demand – with conservation and without land use deductions – is 1,196 afy (or 1,068,220 gpd), which is 35 percent lower than the demand estimate for the property's land uses shown in the 2011 General Plan.

Second, under the GSI Report, the project's demand – with conservation *and* the “land use deduction” – is 870 afy (or 776,980 gpd), which is 52 percent lower than the demand estimate used in the County's 2011 General Plan and the Vallecitos 2015 UWMP.

Each table shows that the County and Vallecitos can feasibly achieve the 35 and 52 percent reductions in water demand through the identified water conservation requirements and the “land use deduction.” Thus, Vallecitos and the regional water agencies have adequate supplies to meet Vallecitos service area demands during the average/normal, single-dry, and multiple-dry years through the 20-year planning period reflected in the local and regional UWMPs.⁷

Further, Vallecitos continues to make programmed investments in both its operations and water capacity in the future as needed. At the same time, the Water Authority and the retail agencies in San Diego (including Vallecitos) benefit from regularly issued annual water reports and the five-year updates to UWMPs, which allow the Water Authority and the retail water agencies in the San Diego region to regularly monitor supplies, demands, and the reliability of those supplies annually.⁸

Based on the above analysis, the project's operational water supply impacts would be **less than significant**.

The I-15 interchange improvements, which constitute an off-site mitigation measure for the project, will not cause significant impacts on utilities and service systems, as they will not require or result in new water facilities or expansion of existing facilities. The Caltrans interchange improvements may require relocation of utilities. During final design, Caltrans can and should ensure any required utilities relocations are evaluate as part of the NEPA/CEQA process and implemented. In addition, during final design, Caltrans can and

⁷ The three UWMPs are included in Appendix V of this EIR.

⁸ The Water Authority's most recent 2015 annual report titled, *Beyond Drought: Reliable Water in an Era of Change*, is found in Appendix V of this EIR.

should ensure standard transportation management techniques for the project to minimize construction-related delays and inconvenience to the traveling public are implemented.

2.14.1.5 *Water Supply Consistency with Applicable Plans, Policies, and Ordinances*

Consistent with Goal LU-12 of the County's General Plan, the proposed project would provide adequate and sustainable infrastructure, public facilities, and essential services to meet Community needs, and would provide them concurrent with growth and Site development. The project would extend appropriately sized water infrastructure and facilities to the project's proposed Specific Plan neighborhoods commensurate with the grading and construction of those neighborhoods. Consistent with Policy LU-12.1 of the County's General Plan, the proposed project requires the provision of necessary water infrastructure and facilities prior to Site development, either directly or through the payment of capacity fees. The Specific Plan ensures that necessary water infrastructure and public facilities would be provided prior to development, or phased to coincide with other construction. Please see Specific Plan, Section 4.5, Public Facilities/Infrastructure (Appendix C).

Consistent with Policy LU-12.4 of the County's General Plan, the proposed project's water infrastructure and facilities would be compatible with Community character, and, in some cases, be an extension of existing water facilities. This extension of water facilities would only serve the project Site and was determined not to contribute to any growth inducement potential caused by the proposed project (Chapter 1, Project Description). Installation of the proposed water infrastructure and facilities, including water tank construction, would occur in conjunction with project development and not impact adjacent land uses. In addition, all such improvements would be designed to the satisfaction of County departments (including the Fire Department) and the Vallecitos Water District. Where possible, the project's internal streets were designed to parallel topography and were guided by on-site drainage patterns. All new wet and dry utility lines would be undergrounded to minimize visual impacts.

Consistent with Policy LU-13.1 of the County's General Plan, water supply would be established through the expansion/extension of existing supply pipelines and tanks located within and adjacent to the project (Vallecitos Water District's planned projects described above are included in the 2008 Water, Wastewater, and Recycled Water Master Plan Program EIR, State Clearinghouse No. 2010071073). The applicant has worked closely with the Vallecitos Water District to determine the ultimate sizes and locations of water facilities. The detailed sizing, layout, and design of the water facilities necessary to serve the project would occur as part of the construction permitting process. As project design features, the project would include indoor and outdoor water conservation measures in excess of state and County requirements, including the requirement to pre-plumb single-family residences for grey water systems to the extent feasible.

Consistent with Policy LU-13.2 of the County's General Plan, prior to approval, the proposed project requires the identification of adequate water resources, in accordance with state law. The Vallecitos Water District would provide the project's water service because the Site is within Vallecitos' potable water service area. The Vallecitos Water District's SB 610 Water Supply Assessment finds that, with development of the water resources identified, there will be sufficient water supplies over a 20-year planning horizon to meet the projected demand of the project and the existing and other planned land uses within Vallecitos' service area. As project design features, the project will pre-plumb single-family residences for grey water systems, if feasible, which collectively would reduce the project's water demand projection below the water demands shown in the project's Water Supply Assessment. However, at this time, due to permit uncertainties, the project does not take a water demand deduction for the proposed pre-plumbing of single-family residences for grey water systems. However, the County will require the project to implement the other identified project design features as well as the indoor and outdoor water conservation requirements set forth in the GSI Report (EIR, Appendix T), and prohibit installation of irrigation in any of the project's dedicated open space (approximately 1,209 acres) and non-irrigated fuel modification zones (approximately 272.2 acres), and thereby reduce the project's estimated water demand to 870 afy (or 776,980 gpd).

Consistent with Policies COS-4.1 and COS-14.2 of the County's General Plan, the proposed project would reduce potable water waste through the use of efficient technologies and conservation efforts that minimize the County's dependence on imported water, including a plant palette composed predominantly of low-water-use, drought-tolerant plants; water-efficient irrigation systems with use of drip irrigation and weather-based "smart" irrigation controllers that adjust the irrigation schedule in response to rain events; prohibitions on planting turf in the front yard areas of private residences; restricting backyard and side yard turf to "warm season" turf varieties only; installation of low-water-use fixtures in all new construction as required by Title 24 (i.e., the California Green Building Standards Code (CalGreen)); and provisions in the project's Specific Plan to install pre-plumbing for grey water systems in the project's single-family homes, to the extent feasible. Collectively, the project's proposed indoor and outdoor water conservation measures exceed the latest requirements imposed by the state and the County, including California Title 24, the County's Water Conservation in Landscape Ordinance, and the County's Water Efficient Landscape Design Manual.

The project would not pump or use any groundwater, and, thus, it would have no impact on groundwater resources. The project's aggressive indoor and outdoor water conservation measures that meet or exceed state and local requirements, plus the potential to pre-plumb for grey water systems, if feasible, further the goal of minimizing the County's dependence on imported water, and indirectly benefit the goal of conserving groundwater resources.

2.14.1.6 Cumulative Impact Analysis

The proposed project would involve an increase in demand for water supplies. Past, present, and reasonably foreseeable future projects also could result in potential water supply impacts, and incrementally increase the long-term demand for water service, similar to the proposed project. However, all past, present, and future projects in the surrounding area would be required to contribute fees, as applicable, to reduce and minimize potential cumulative water supply impacts, and any new water facilities would undergo separate environmental review and require compliance with all applicable County and Vallecitos Water District water-supply ordinances, laws, and regulations. Each applicant also must fund the costs of the water-related infrastructure needed to serve a particular site.

The cumulative study area for water supply falls within the Vallecitos Water District's potable water service boundary. The proposed project, along with any other large cumulative projects within Vallecitos' potable service area boundary, would be required to provide availability and commitment letters demonstrating sufficient water resources and access to available water facilities prior to building permit issuance. Cumulative projects that would be considered a water demand project and require water service availability confirmation include: (a) University District Specific Plan (2,600 units of multi-family residential, 800 units of student housing, hotel use (400 rooms), 638,000 sf of general office, 300,000 sf of medical office, 1,000,000 sf of commercial/mixed-use, 30,000 sf of civic/Community use), (b) Main Street Plaza (mixed-use development in Creek District Specific Plan (66,450 sf commercial, 428 apartments, 53,700 sf multi-use), and (c) San Marcos Creek Specific Plan (mixed-use development consisting of 1,265,000 sf of retail, 589,000 sf of office and 2,300 dwelling units). In addition, adherence to regulations would ensure that cumulative projects would not result in a demand for water that exceeds existing entitlements and resources, or any new or expanded water-related infrastructure would be funded by the respective applicant. Therefore, cumulative impacts associated with adequate water service and supplies would be **less than significant**.

2.14.1.7 Significance of Water Supply Impacts Prior to Mitigation

Based on the above analysis, Project and cumulative water service and supply impacts would be **less than significant**.

2.14.1.8 Mitigation Measures

Project and cumulative water service and supply impacts would be less than significant; and, thus, no mitigation measures are required. However, to ensure water supply impacts remain less than significant, this EIR recommends the following measures:

- M-UT-1** Prior to the issuance of building permits that allow construction, the project applicant of any subdivision map, or its designee, shall fund, or pay fair-share fees

toward, all new or expanded water facilities and infrastructure shown in the project's Master Plan of Water (January 30, 2017).

- M-UT-2** The project applicant or its designee shall be prohibited from installing irrigation in any of the project's dedicated open space (approximately 1,209 acres) and non-irrigated fuel modification zones (approximately 272.2 acres) within the project.
- M-UT-3** Pursuant to CEQA Guidelines Section 15091(a)(2), the Vallecitos Water District's 2014 water demand factors are within the responsibility and jurisdiction of the District, and those water demand factors can and should be revised to remove the allocation of any water usage assigned to dedicated open space and non-irrigated fuel modification zones within its service area unless it is shown to be needed for health or safety concerns, which is not the case for the Newland Sierra Specific Plan project that is the subject of this EIR.
- M-UT-4** Prior to recordation of a final map, a "written verification" and supporting documents from the water supplier indicating the availability of a "sufficient water supply" as required by Section 66473.7 of the Subdivision Map Act (Senate Bill 221) shall be provided to the satisfaction of County departments.

While the final configuration and design of the Caltrans interchange improvements are not known at this time, such improvements are not expected to affect utilities and service systems. However, to ensure potential impacts remain less than significant, this EIR recommends the following measure:

- M-UT-5** Pursuant to California Public Resources Code Section 21081(a)(2), in coordination with the I-15 interchange improvement project, which is within the responsibility and jurisdiction of Caltrans, Caltrans can and should ensure any required utilities relocation(s) are coordinated with the appropriate utility provider, including any design considerations. In addition, Caltrans can and should require standard transportation management techniques to minimize construction-related delays and inconvenience to the traveling public due to the I-15 interchange improvements.

2.14.1.9 Conclusion

Based on the above analysis, impacts related to the provision of water supply and service to the project would be **less than significant**.

2.14.2 Wastewater

2.14.2.1 Introduction

Vallecitos Water District prepared the Final Technical Memorandum summarizing the findings of its Newland Sierra Off-Site Water and Sewer Study (EIR, Appendix X). Other expert data used or referenced in this section was provided by Dexter Wilson Engineering Inc. (Dexter Wilson) in its Master Plan of Sewer for the Newland Sierra Project (EIR, Appendix W).

2.14.2.2 Existing Conditions

The Vallecitos Water District serves a 23-square-mile sewer service area. Wastewater collected from the sewer service area is conveyed to either the Encina Water Pollution Control Facility (EWPCF) or the Meadowlark Water Recycling Facility (MRF) for treatment. MRF is essentially a scalping plant that extracts water for production of recycled water. Wastewater that is not rerouted to the MRF flows directly to the EWPCF in the City of Carlsbad for both liquids and solids treatment. The MRF does not treat for solids; instead, solids are pumped from the MRF to the EWPCF for treatment. Expansion of the MRF was completed in 2008, increasing its recycled water production capacity to 5 mgd. The Carlsbad Municipal Water District and Olivenhain Municipal Water District purchase 4.5 mgd for non-potable purposes, such as landscape irrigation. Although Vallecitos produces up to 5 mgd of recycled water at the MRF, it does not maintain a recycled water service area within its sphere of influence. All of the recycled water produced is sold to the Carlsbad Municipal Water District and Olivenhain Municipal Water District. Excess recycled water is disposed of through a pipeline that connects to the ocean outfall at the EWPCF (Appendix W).

Existing Wastewater System

Many of the existing residences to the west and south of the project Site are served by septic sewer systems. There is an existing 8-inch-diameter gravity sewer line adjacent to Sarver Lane to the south of the project Site. This line conveys flow south in Twin Oaks Valley Road. The gravity sewer line generally follows Twin Oaks Valley Road to the south and increases in size before eventually crossing State Route 78. From this location, a gravity sewer interceptor conveys sewage westerly to Lift Station Number 1 near the intersection of San Marcos Boulevard and Pacific Street. From this location, the Vallecitos Water District has the option of pumping flow through Lift Station Number 1 to its MRF, or sewage can flow by gravity through the Vallecitos land outfall to the EWPCF (EIR, Appendix W).

2.14.2.3 Regulatory Setting

Federal

Federal Water Pollution Control Act of 1972 (Clean Water Act)

The principal federal law regulating water quality in the United States is the 1972 Federal Water Pollution Control Act, also known as the Clean Water Act. The fundamental purpose of the Clean Water Act is the protection of designated beneficial uses of water resources. The Clean Water Act establishes a system of water quality standards, discharge limitations, and permits; it requires states to adopt water quality standards to protect public health and welfare, enhance the quality of water, and serve the other purposes of the Clean Water Act. The Clean Water Act was amended in 1987 to include urban and stormwater runoff, which required many cities to obtain a National Pollutant Discharge Elimination System (NPDES) permit for stormwater conveyance system discharges. Section 402(p) of the Clean Water Act prohibits discharges of pollutants contained in stormwater runoff, except in compliance with an NPDES permit, as more fully described below.

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers regulates discharges of dredged or fill material into waters of the United States, requiring issuance of a Section 404 permit. Under Section 401 of the Clean Water Act, a state water quality certification must be obtained whenever an application for a federal permit for discharge of pollutants into waters of the United States is submitted, such as a Section 404 permit. The Section 401 certification requires that any activity affecting waters of the United States be in compliance with all applicable water quality standards, limitations, and restrictions.

National Pollutant Discharge Elimination System

The 1987 amendments to the Clean Water Act required many cities to obtain an NPDES permit for stormwater conveyance system discharges. Section 402(p) of the Clean Water Act prohibits discharges of pollutants contained in stormwater runoff, except in compliance with an NPDES permit.

State

State Water Resources Control Board

On May 2, 2006, the SWRCB adopted a General Waste Discharge Requirement (Order No. 2006-0003) for all publicly owned sanitary sewer collection systems in California with more than 1 mile of sewer pipe. The order provides a consistent statewide approach to reducing sanitary sewer overflows by requiring public sewer system operators to take all feasible steps to

control the volume of waste discharged into the system, to prevent sanitary sewer waste from entering the storm sewer system, and to develop a Sewer System Management Plan. The General Waste Discharge Requirement also requires that storm sewer overflows be reported to the SWRCB using an online reporting system.

California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) is the principal state law enacted to establish requirements for adequate planning, implementation, management, and enforcement of water quality controls. Porter-Cologne, which became Division 7 of the California Water Code, established a regulatory program to protect water quality and beneficial uses of all state waters, outlined the responsibilities and authorities of the nine Regional Water Quality Control Boards (RWQCBs), and established the SWRCB. For the San Diego Hydrologic Region, water quality is regulated by the San Diego RWQCB, Region 9 of the SWRCB. Each RWQCB is directed to create a water quality control plan, to include three main components: beneficial uses that are to be protected, water quality objectives that protect those uses, and an implementation plan to accomplish those objectives.

Local

County of San Diego General Plan

The County's General Plan Land Use Element contains a Community Facilities and Infrastructure section that addresses plans and policies regarding public utilities. Select applicable General Plan goal and policies are listed below (County of San Diego 2011):

- **Goal LU-14, Adequate Wastewater Facilities.** Adequate wastewater disposal that addresses potential hazards to human health and the environment.
 - **Policy LU-14.2, Wastewater Disposal.** Require that development provide for the adequate disposal of wastewater concurrent with the development and that the infrastructure is designed and sized appropriately to meet reasonably expected demands.
 - **Policy LU-14.3, Wastewater Treatment Facilities.** Require wastewater treatment facilities serving more than one private property owner to be operated and maintained by a public agency. Coordinate the planning and design of such facilities with the appropriate agency to be consistent with applicable sewer master plans.
 - **Policy LU-14.4, Sewer Facilities.** Prohibit sewer facilities that would induce unplanned growth. Require sewer systems to be planned, developed, and sized to serve the land use pattern and densities depicted on the Land Use Map. Sewer

systems and services shall not be extended beyond either Village boundaries or extant Urban Limit Lines, whichever is more restrictive, except:

- When necessary for public health, safety, or welfare;
- When within existing sewer district boundaries;
- When necessary for a conservation subdivision adjacent to existing sewer facilities; or
- Where specifically allowed in the Community Plan.

2.14.2.4 Wastewater Analysis of Project Effects and Determination as to Significance

Guidelines for the Determination of Significance

The County's Guidelines for Determining Significance do not include significance thresholds or guidance for determining significance for impacts to utilities and service systems. Therefore, for the purpose of this EIR, Appendix G of the CEQA Guidelines applies to the direct, indirect, and cumulative impact analyses. A wastewater significant impact would result if the project would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Exceed Wastewater Treatment Requirements

A small portion of the project Site is already within the Vallecitos Water District sewer service boundary. For the remainder of the project Site, annexation to Vallecitos Water District's Sewer Improvement Districts 5 and 6 is proposed for sewer service. The projected average daily flow for the project that would flow by gravity to the south is 0.54 mgd, and the projected peak wet-weather flow is 1.57 mgd (see Table 2.14-2). Implementation of the project would result in an increase in wastewater treatment demand compared to existing conditions. Wastewater would be routed to MRF and/or EWPCF for treatment. MRF is essentially a "scalping plant" that extracts water for use as recycled water. Wastewater that is not rerouted to MRF would flow directly to the EWPCF in the City of Carlsbad for both liquids and solids treatment. MRF does not treat solids; instead, solids are pumped from MRF to the EWPCF for treatment.

Encina Water Pollution Control Facility

The EWPCF has provisions to incrementally increase capacity by adding two 8-million-gallon basins to an existing 8-million-gallon basin, for a maximum storage capacity of 24 million gallons. Based on current projections, additional storage is not anticipated to be needed before 2025 (VWD 2010). The Vallecitos Water District's Unit I capacity rights, as set forth in the 1998 Revised Basic Agreement, included 7.54 mgd of liquids treatment capacity and 7.54 mgd of solids treatment capacity. The recently completed Phase V Expansion of the EWPCF was primarily solids driven. With that expansion, Vallecitos Water District maintained its 7.54 mgd of liquids treatment capacity, and increased its solids treatment capacity to 10.47 mgd (VWD 2010).

Meadowlark Water Recycling Facility

Vallecitos Water District owns and operates the MRF. The MRF treats wastewater to meet recycled water standards in accordance with California Title 22 requirements and under the provisions of Waste Discharge Permit R9-2007-00186 issued by the RWQCB for Region 9. The treatment process includes tertiary treatment with disinfection. A majority of the existing flows that MRF treats are diversions via Lift Station 1 along San Marcos Boulevard and Rancho Santa Fe Road, and via Lake San Marcos Lift Station along Rancho Santa Fe Road. Ultimately, the southern portions of Vallecitos Water District will build out and contribute additional wastewater flows to the MRF, reducing the diversion from the EWPCF basin via Lift Station 1 (VWD 2010).

The MRF was upgraded to a capacity of 5 mgd in 2005, with a peak wet-weather capacity of 8 mgd. It is anticipated that at build out of the MRF, approximately 3.5 mgd and 1.5 mgd of source wastewater will come from the San Elijo area (including flows from the Questhaven Lift Station) and the Lake San Marcos Lift Station, respectively, requiring little to no "make-up" wastewater during dry-weather conditions from Lift Station 1. The plant does not have solids treatment capability. Solids are pumped from the MRF through a sludge pipeline to the land outfall, and subsequently treated at the EWPCF. Therefore, Vallecitos Water District requires a higher capacity of solids treatment than liquid treatment at EWPCF. When combined with the 7.54 mgd treatment capacity of the EWCPF, Vallecitos Water District currently has a total liquids treatment capacity of 12.54 mgd (VWD 2010).

Therefore, Vallecitos Water District has the capacity to treat the projected average daily flow (0.54 mgd) and the projected peak wet-weather flow anticipated to be generated by the proposed project (1.57 mgd). The project would be required to comply with numerous federal, state, and local regulations that would reduce the potential for the project to exceed the wastewater treatment requirements of the RWQCB. These include the federal Water Pollution Control Act, which regulates discharges of pollutants into waters of the United States; the California Water

Code, which controls almost all considerations of water and its use; Porter-Cologne, which controls polluted discharges into state waters; and the County Department of Environmental Health, which sets standards to regulate septic tank discharges.

The proposed project would not exceed wastewater treatment requirements of the RWCQCB, and impacts would be **less than significant**.

Wastewater

There are existing sewer facilities in the vicinity of the project Site, but off-site sewer conveyance facility improvements would be necessary to serve the project.

On-Site Sewer Facilities

The on-site sewer system would consist of gravity sewer lines that collect flow and convey it south to Deer Spring Road. Figure 2.14-5 shows the proposed on-site sewer system improvements for the project. Sewer lines would typically be located in street rights-of-way, but there are two locations where on-site easements would be dedicated to Vallecitos Water District to maintain gravity flow.

A hydraulic analysis was conducted to determine sewer line sizes. Slopes were assumed based on a review of the project's Tentative Map. These slopes and the associated sewer line sizing would be verified as engineering progresses on the project and actual pipe slopes become known. The analysis demonstrates that sewage can be conveyed from the project Site using 8-inch-diameter through 12-inch-diameter sewer lines (EIR, Appendix W).

Off-Site Sewer Facilities

Vallecitos Water District has performed an analysis of off-site sewer facility requirements that evaluates the impact of flows from the project Site on the existing and proposed sewer collection system (EIR, Appendix X). The analysis also evaluated the impact of the project to the EWPCF and the MRF. It was determined by Vallecitos Water District that the following off-site sewer main replacements beginning at Deer Springs Road and Sarver Land and continuing through Twin Oaks Valley Road south to Richmar Avenue would be required:

- 931 feet of 8-inch-diameter main must be replaced with 12-inch-diameter pipe
- 11,067 feet of 8-inch-diameter main must be replaced with 15-inch-diameter pipe
- 4,616 feet of 8-inch-diameter main must be replaced with 18-inch-diameter pipe
- 32 feet of 10-inch-diameter main must be replaced with 18-inch-diameter pipe
- 2,419 feet of 12-inch-diameter main must be replaced with 18-inch-diameter pipe

Construction and operational impacts associated with the proposed sewer facilities as a result of the proposed project have been analyzed throughout this EIR (including Section 2.3, Air Quality; Section 2.10, Noise; and Section 3.2, Hydrology and Water Quality), and the proposed project would not require construction of any additional wastewater treatment services, other than what is described above. Final design criteria and specifications for all sewage facilities would comply with all applicable County and Vallecitos Water District requirements and policies, and would be subject to review and approval by Vallecitos Water District, the County Director of Public Works, and appropriate regulatory agencies. Therefore, impacts would be **less than significant**.

Determination by Wastewater Treatment Provider

As required by the County, projects must obtain a commitment letter from the wastewater service provider prior to final map approval or building permit issuance to ensure that there is existing capacity to service the needs of the project. As previously stated, a small portion of the project Site is already within the Vallecitos Water District sewer service boundary, and the remainder of the development areas would require annexation to Vallecitos Water District Sewer Improvement Districts 5 and 6 for sewer service. According to the Vallecitos Water District Project Facility Availability dated November 7, 2016, the Vallecitos Water District does not have adequate capacity to service the future needs of the proposed project based solely on Vallecitos Water District's capital facility plans. However, as demonstrated by the Vallecitos Water District Offsite Water and Sewer Study (included as Appendix X to this EIR), specific improvements required to serve the project have been identified but are not contained in the capital facility plans; construction of these facilities would ensure the Vallecitos Water District could provide service to the proposed project and the impacts resulting from the construction of these facilities have been disclosed throughout this EIR. Impacts would be **less than significant** and no mitigation would be required.

The I-15 interchange improvements, which constitute an off-site mitigation measure for the project, will not cause significant impacts on utilities and service systems, as they will not require or result in new wastewater facilities or expansion of existing facilities. The Caltrans interchange improvements may require relocation of utilities. During final design, Caltrans can and should ensure any required utilities relocations are evaluate as part of the NEPA/CEQA process and implemented. In addition, during final design, Caltrans can and should ensure standard transportation management techniques for the project to minimize construction-related delays and inconvenience to the traveling public are implemented.

2.14.2.5 Wastewater Consistency with Applicable Plans, Policies, and Ordinances

Consistent with Goal LU-14 of the County's General Plan, the proposed project would provide adequate wastewater disposal that addresses potential hazards to human health and the environment. The project's Sewer Master Plan would ensure the proper sizing of wastewater facilities (EIR, Appendix W). Vallecitos Water District would treat wastewater from the Site. The project applicant would work with Vallecitos Water District to ensure that sufficient and appropriately sized facilities on- and off-site as described above are constructed concurrent with the development of the project that would convey and treat all sewage flows from the project Site.

Consistent with Policy LU-14.2 of the County's General Plan, the project's Sewer Master Plan (EIR, Appendix W). The County and Vallecitos Water District would require that sewer systems are installed and made operational concurrent with development of the project. The County further requires that extension of the sewer system occur prior to issuance of a Certificate of Occupancy for a given residential unit or non-residential building to be connected to a sewer system.

Consistent with Policy LU-14.3 of the County's General Plan, the project proposes no on-site wastewater treatment facilities. Vallecitos Water District would treat all project-generated wastewater. The applicant has coordinated with Vallecitos Water District and has ensured that adequate treatment capacity is available.

Consistent with Policy LU-14.4 of the County's General Plan, the project would require its sewer systems to be planned, developed, and sized to serve the project's land use pattern, densities, and demand. Also, the project's sewer systems and services would not be extended beyond the more restrictive of the following: Village boundaries or extant Urban Limit Lines, unless when necessary for public health, safety, or welfare; within existing sewer district boundaries; as necessary for a conservation subdivision adjacent to existing sewer facilities; or specifically allowed in the Community Plan. The project's sewer facilities would accommodate project-related growth; however, expansion of the sewer system itself would not induce unplanned growth. The sewer system would be planned, developed, and sized to serve the project's proposed land uses. The project would propose a General Plan Amendment to change land use designations to accommodate the extension of the project's sewer systems and services.

2.14.2.6 Cumulative Impact Analysis

Wastewater Treatment

Other cumulative projects within the Vallecitos Water District service area could result in a cumulative increase in demand for wastewater service facilities. All new facilities proposed or necessitated by cumulative projects would be subject to applicable CEQA review, and projects

would be required to comply with the County Grading Ordinance and other applicable laws and regulations protecting environmental resources. All cumulative projects, similar to the proposed project, would be required to pay fees to reduce potential impacts. In addition, as required by the County, projects must obtain a commitment letter from the wastewater service provider prior to final map approval or building permit issuance to ensure that there is existing capacity to service the needs of the project. In addition, adherence to the above laws and regulations would ensure that neither the proposed project nor other cumulative projects would result in a demand for wastewater treatment services that exceeds existing entitlements and resources for wastewater services, and impacts would be **less than significant**.

2.14.2.7 Significance of Wastewater Impacts Prior to Mitigation

Direct and cumulative project wastewater impacts would be **less than significant**.

2.14.2.8 Mitigation Measures

This EIR has determined that the wastewater impacts would be less than significant. Thus, no mitigation measures are required.

2.14.2.9 Conclusion

As shown above, project and cumulative wastewater impacts would be less than significant, and no mitigation measures would be required.

2.14.3 Solid Waste

2.14.3.1 Introduction

This section of the EIR evaluates the proposed project's potential significant impacts on solid waste within the County. The analysis is based on information provided by local service providers, approved planning documents, and other reports and studies related to the provision of solid waste.

2.14.3.2 Existing Conditions

Solid waste management has been recognized as an important regional issue in the County because of limited landfill capacity, urban encroachment, and environmental concerns. In addition potential facility expansions and replacement sites are limited by environmental regulations and the increased cost of developing and operating waste management facilities. Historically, the primary method of disposing of solid waste has been through landfills. Since the early 1990s, there has been a growing emphasis to reduce the amount of solid waste being disposed of in landfills through integration of recycling and source reduction. There are seven

active landfills in the San Diego region that serve incorporated and unincorporated areas. The landfills currently operating in the County for public use are either privately owned and operated or are owned and operated by a local jurisdiction (County of San Diego 2011).

There are two permitted active landfills in the County with remaining capacity: Otay Landfill in Chula Vista and Sycamore Landfill in Santee. The project Site is currently undeveloped and does not use any active landfill.

According to the County's General Plan, there is sufficient landfill space for 30 years considering current landfill expansions and proposed new landfills. However, there is insufficient infrastructure to support the traffic flow to and from the landfills, resulting in daily and annual permitted tonnage restrictions. Current plans for expansion of existing landfills and new landfills would add 179 million tons of capacity (County of San Diego 2011). The San Diego County Integrated Waste Management Plan Siting Element analysis (2005) determined that if the County would recycle at a rate of 75 percent, which complies with state mandates for integrated solid waste management, compared to the current 50 percent, there would be no need for additional landfills in the County (County of San Diego 2011).

2.14.3.3 Regulatory Setting

State

California Department of Resources Recycling and Recovery

The California Department of Resources Recycling and Recovery (CalRecycle) is the state's leading authority on recycling, waste reduction, and product reuse. CalRecycle plays an important role in the stewardship of California's resources, and promotes innovation in technology to encourage economic and environmental sustainability. CalRecycle brings together the state's recycling and waste management programs for the promotion of environmental stewardship. Mandated responsibilities of CalRecycle are to reduce waste, promote the management of all materials to their highest and best use, and protect public health and safety and the environment (CalRecycle 2014).

California Integrated Waste Management Act of 1989 – Assembly Bill 939

Assembly Bill (AB) 939, California's Integrated Waste Management Act, mandated that 50 percent of solid waste be diverted by 2000 through source reduction, recycling, and composting. AB 939 also established a goal for all California counties to provide at least 15 years of ongoing landfill capacity. This requires each region to prepare a source reduction and recycling element to be submitted to CalRecycle, which administers programs formerly managed by the state's Integrated Waste Management Board and Division of Recycling.

California Solid Waste Reuse and Recycling Access Act of 1991 – Assembly Bill 1327

AB 1327, which was established in 1991, required CalRecycle to develop a model ordinance for the adoption of recyclable materials in development projects. Local agencies were then required to adopt the model, or an ordinance of their own, governing adequate areas for collection and loading of recyclable materials in development projects.

Disposal Measurement System Act of 2008 – Senate Bill 1016

SB 1016 maintains the 50 percent diversion rate requirement established by AB 939, and also established revised calculations for those entities that did not meet the 50 percent diversion rate. SB 1016 also established a per-capita disposal measurement system to make the process of goal measurement, as established by AB 939, simpler, timelier, and more accurate. The new disposal-based indicator—the per-capita disposal rate—uses only two factors: a jurisdiction’s population (or in some cases employment) and its disposal rate as reported by disposal facilities.

Solid Waste Diversion – Assembly Bill 341

Effective July 1, 2012, AB 341 requires that commercial enterprises that generate 4 cubic yards or more of solid waste weekly participate in recycling programs. This requirement also includes multiple-family housing complexes of five units or more, regardless of the amount of solid waste generated each week. The purpose of this requirement is to reduce greenhouse gas emissions by diverting commercial solid waste to recycling, and to expand recycling opportunities in California. As part of implementing AB 341, the California Legislature set an ambitious goal of 75 percent recycling, composting, or source reduction of solid waste by 2020. The law calls for the state and CalRecycle to take a statewide approach to decreasing California’s reliance on landfills. CalRecycle is actively working to develop and implement programs to achieve the 75 percent target.

Local

County of San Diego Solid Waste Local Enforcement Agency

The County’s Solid Waste Local Enforcement Agency, under the Department of Environmental Health, is responsible for ensuring the proper operation and closure of solid waste facilities and disposal sites in the County, excluding the City of San Diego. The Local Enforcement Agency also provides solid waste inspection and permitting services to the various jurisdictions within the County, including the regulation of storage and transportation of solid wastes (County of San Diego 2016).

San Diego County Integrated Waste Management Plan

The County's Integrated Waste Management Plan fulfills one of the requirements of the Integrated Waste Management Act. The County Integrated Waste Management Plan consists of a Countywide Siting Element, a Countywide Summary Plan, and three elements from each jurisdiction: (1) a Source Reduction and Recycling Element, which analyzes the local waste stream to determine where to focus diversion efforts and presents diversion programs and funding; (2) a Household Hazardous Waste Element, which includes programs to encourage safe management of household toxics waste and provides a framework for recycling, treatment, and proper disposal, as well as addressing funding; and (3) a Non-Disposal Facility Element, which lists existing and planned facilities (County of San Diego 2005).

County of San Diego General Plan

The County's General Plan Land Use Element contains a Community Facilities and Infrastructure section that addresses plans and policies regarding public utilities. The applicable General Plan policy related to solid waste is as follows (County of San Diego 2011):

- **Policy LU-16.2: Integrity of Waste Management Facilities.** Avoid encroachment of incompatible land uses upon solid waste facilities in order to minimize or avoid potential conflicts.

2.14.3.4 Solid Waste Analysis of Project Effects and Determination as to Significance

Guidelines for the Determination of Significance

The County's Guidelines for Determining Significance do not include significance thresholds or guidance for determining significance for impacts to utilities and service systems. Therefore, for the purpose of this EIR, Appendix G of the CEQA Guidelines applies to the direct, indirect, and cumulative impact analyses. A solid waste significant impact would not result if the project were to:

- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Comply with federal, state, and local statutes and regulations related to solid waste.

Analysis

The proposed project would generate approximately 1,919 tons of solid waste per year. However, as part of implementing AB 341, the California Legislature set an ambitious goal of 75 percent recycling, composting, or source reduction of solid waste by 2020. The law calls for the

state and CalRecycle to take a statewide approach to decreasing California's reliance on landfills. CalRecycle is actively working to develop and implement programs to achieve the 75 percent target. Therefore, taking into consideration the 75 percent diversion rate by 2020, the proposed project is expected to contribute approximately 480 tons per year to landfills in the County.

Solid waste would primarily be transferred to the Otay Landfill, which has a maximum permitted capacity of 61,154,000 cubic yards and a remaining capacity of 24,514,904 cubic yards (CalRecycle 2015a). The current permit (37-AA-0010) anticipates that Otay Landfill would be in operation until 2028, based on current waste generation rates. At closure of the Otay Landfill, the Sycamore Canyon landfill would be used and would also have sufficient capacity to serve the proposed project, with a maximum permitted capacity of 71,233,171 cubic yards and a remaining capacity of 39,608,998 cubic yards (CalRecycle 2016b). Sycamore Canyon Landfill is scheduled to cease operation and close in December 2042 (CalRecycle 2016b). Additionally, solid waste generated from part of North San Diego County is also hauled to El Sobrante Landfill located in the City of Corona in Riverside County. El Sobrante Landfill has an estimated remaining capacity of 145,530,000 tons with a projected cease operation date of January 2045 (CalRecycle 2017).

It is anticipated that the County will continue to look for suitable sites for future landfills. Although the proposed project would increase demand for solid waste collection, and increase the quantity of solid waste hauled to existing landfills, adequate landfill capacity is currently available and would continue to be available in the future for the solid waste disposal needs of the proposed project.

The proposed project also would be required to comply with all applicable federal, state, and local statutes and regulations related to solid waste and recycling. Furthermore, the County's General Plan goals and policies related to solid waste disposal would ensure compliance with all applicable laws and regulations. Therefore, impacts associated with solid waste disposal capacity and compliance with federal, state, and local statutes would be **less than significant**.

The I-15 interchange improvements, which constitute an off-site mitigation measure for the project, will not cause significant impacts on utilities and service systems, as they will not be served by a landfill with insufficient permitted capacity to treat the amount of solid waste expected to be generated by the improvements; thus, no analysis of potential impacts is necessary. Nonetheless, Caltrans can and should ensure all applicable federal, state, and local statutes and regulations related to solid waste and recycling are followed.

2.14.3.5 Solid Waste Consistency with Applicable Plans, Policies, and Ordinances

Consistent with Policy LU-16.2 of the County's General Plan, the proposed project does not propose encroachment of incompatible land uses upon solid waste facilities.

2.14.3.6 Cumulative Impact Analysis

The proposed project, in combination with other cumulative projects, would increase the amount of solid waste being transferred to landfills within the County. The current permit (37-AA-0010) anticipates that Otay Landfill would be in operation until 2028, based on current waste generation rates. At closure of the Otay Landfill, the Sycamore Canyon Landfill would be used and would also have sufficient capacity to serve cumulative projects, with a maximum permitted capacity of 71,233,171 cubic yards and a remaining capacity of 39,608,998 cubic yards. Sycamore Canyon Landfill is scheduled to cease operation and close in December 2042 (CalRecycle 2015b). El Sobrante Landfill has an estimated remaining capacity of 145,530,000 tons with an projected cease operation date of January 2045 (CalRecycle 2017).

In July 2012, AB 341 went into effect. AB 341 sets a goal of 75 percent of solid waste generated statewide to be source reduced, recycled, or composted by 2020. This would require all cumulative projects to meet a 75 percent diversion rate by 2020. Although the proposed project's direct impact of approximately 480 tons per year would not be a significant impact, the regional need for increased landfill capacity would be a significant cumulative impact that may require construction of new landfills in the County. Although the proposed project and cumulative projects would result in an increase in the amount of solid waste sent to landfills, compliance with state and local waste diversion requirements would contribute to the longevity of existing and proposed landfills that would serve the projects and ensure that cumulative impacts are **less than significant**.

2.14.3.7 Significance of Solid Waste Impacts Prior to Mitigation

Impacts to solid waste would be less than significant.

2.14.3.8 Mitigation Measures

Impacts to solid waste would be less than significant and no mitigation measures are required.

2.14.3.9 Conclusion

Impacts to solid waste would be less than significant.

Table 2.14-1
Projected Water Demand (2011 General Plan/2015 UWMP)

Land Use	Study Area (acres)	2014 Unit Water Demand (gallons per day per acre)	Estimated Total Water Demand (gallons per day)
Rural Lands (RL-20)	1,907.8	800	1,526,240
Semi-Rural Residential (SR-10)	19.6	800	15,680
General Commercial	4.6	1,500	6,900
Office Professional	53.6	1,500	80,400
Total	1,985.6		1,629,220
Total (AFY)			1,825

Source: EIR, Appendix S (HDR WSA, with table revised to reflect County evaluation and independent review).

Table 2.14-2
Newland Sierra Water Demand Estimate

Neighborhood	Land Use	Acres	Dwelling Units	Density (du/ac)	Water Duty Factor (gpd/ac)	Average Water Demand (gpd)
<i>Twin Oaks 1028 Zone</i>						
–	Open Space	195.7	–	–	200	39,140
–	Backbone Roads	4.5	–	–	200	900
<i>Twin Oaks 1028 Zone Subtotal</i>		200.2	–	–	–	40,040
<i>North 1228 Zone</i>						
–	Open Space	349	–	–	200	69,800
<i>North 1228 Zone Subtotal</i>		349	–	–	200	69,800
<i>Deer Springs 1235 Zone</i>						
Town Center	Commercial	7.4	–	–	1,500	11,100
	School	3.6	–	–	1,000	3,600
	Park	5.7	–	–	1,500	8,550
	Multi-Family	7.2	95	13.2	4,500	32,400
Valley	Multi-Family	23.8	316	13.3	4,500	107,100
	Single-Family	32	189	5.9	2,500	80,000
	Park	12.3	–	–	1,500	18,450
–	Backbone Roads	9	–	–	200	1,800
–	Fuel Modification – Irrigated	32.4	–	–	1,500	48,600
–	Fuel Modification – Non Irrigated	60.5	–	–	200	12,100
<i>Deer Springs 1235 Zone Subtotal</i>		193.9	600	–	–	323,700
<i>Proposed 1475 Zone</i>						
Terraces	Multi-Family	28.4	446	15.7	5,000	142,000
	Water Tank	1.3	–	–	1,000	1,300
Hillside	Single-Family	36.5	241	6.6	2,500	91,250
	Park	2.3	–	–	1,500	3,450
Mesa	Multi-Family	6.1	60	9.8	2,800	17,080

Table 2.14-2
Newland Sierra Water Demand Estimate

Neighborhood	Land Use	Acres	Dwelling Units	Density (du/ac)	Water Duty Factor (gpd/ac)	Average Water Demand (gpd)
Lower Knoll	Single-Family	53.6	265	4.9	2,500	134,000
	Park	4.1	–	–	1,500	6,150
	Multi-Family	4.8	29	6.3	2,500	12,000
	Single-Family	44.5	203	4.6	2,500	111,250
	Park	8.9	–	–	1,500	13,350
–	Backbone Roads	15.8	–	–	200	3,160
–	Fuel Modification – Irrigated	72.4	–	–	1,500	108,600
–	Fuel Modification – Non Irrigated	147.8	–	–	200	29,560
–	Open Space	200.9	–	–	200	40,180
<i>Proposed 1475 Zone Subtotal</i>		627.4	1,244	–	–	713,330
<i>Coggan 1608 Zone</i>						
Upper Knoll	Single-Family	26.1	140	5.3	2,500	65,250
	Park	0.6	–	–	1,500	900
Summit	Multi-Family	14.9	49	3.4	1,800	26,820
	Single-Family	35.4	102	2.9	1,800	63,720
	Water Tank	2.9	–	–	1,000	2,900
	Park	2.0	–	–	1,500	3,000
–	Backbone Roads	4.7	–	–	200	940
–	Fuel Modification – Irrigated	26.2	–	–	1,500	39,300
–	Fuel Modification – Non Irrigated	38.9	–	–	200	7,780
–	Open Space	463.4	–	---	200	92,680
<i>Coggan 1608 Zone Subtotal</i>		615.1	291	–	–	303,290
Total		1,985.6	2,135	–	–	1,450,160
Total (AFY)						1,624

Source: Water Master Plan, Appendix U

Table 2.14-3
Summary of Projected Water Demand (WSA)

Land Use	Study Area (acres)	2014 Unit Water Demand (gpd/acre) ¹	Estimated Total Water Demand (gpd)
Single Family (2-4 du/ac) ²	35.4	1,800	63,720
Single Family (4-8 du/ac) ²	192.7	2,500	481,750
Multi-Family (2-4 du/ac) ²	14.9	1,800	26,820
Multi-Family (4-8 du/ac) ²	4.8	2,500	12,000
Multi-Family (8-12 du/ac) ²	6.1	2,800	17,080
Multi-Family (12-15 du/ac) ²	31.0	4,500	139,500

Table 2.14-3
Summary of Projected Water Demand (WSA)

Land Use	Study Area (acres)	2014 Unit Water Demand (gpd/acre) ¹	Estimated Total Water Demand (gpd)
Multi-Family (15-20 du/ac) ²	28.4	5,000	142,000
Parks	35.9	1,500	53,850
Commercial	7.4	1,500	11,100
School	3.6	1,000	3,600
Open Space	1,209.0	200	241,800
Backbone Roads	34.0	200	6,800
Fuel Modification – Irrigated	131.0	1,500	196,500
Fuel Modification –Non-Irrigated	247.2	200	49,440
Public Facilities	4.2	1,000	4,200
Total	1,985.6		1,450,160
Total (AFY)			1,624

Source: EIR, Appendix S (HDR WSA).

¹ As defined in the Vallecitos draft 2014 master plan.

² du/ac = dwelling unit per acre.

Table 2.14-4
Projected Water Demand (GSI Report/with No Land Use Deductions³)

Land Use	Study Area (acres)	Conservation Demand Factor (gpd/acre) ¹	Estimated Total Water Demand (gpd)
Single Family (2-4 du/ac)	35.4	1,255	44,430
Single Family (4-8 du/ac)	192.7	1,670	321,810
Multi-Family (2-4 du/ac)	14.9	1,265	18,850
Multi-Family (4-8 du/ac)	4.8	1,680	8,065
Multi-Family (8-12 du/ac)	6.1	1,755	10,705
Multi-Family (12-15 du/ac)	31.0	1,925	59,675
Multi-Family (15-20 du/ac)	28.4	2,320	65,890
Parks	35.9	1,260	45,235
Commercial	7.4	1,005	7,440
School	3.6	980	3,530
Open Space	1,209.0	200	241,800
Backbone Roads	34.0	380	12,920
Fuel Modification - Irrigated	131.0	1,330	174,230
Fuel Modification - Non-Irrigated	247.2	200	49,440
Public Facilities (Water Tanks)	4.2	1,000	4,200
Total	1,985.6		1,068,220
Total (AFY)			1,196

Source: EIR, Appendix T (GSI Report).

¹ As defined by GSI Water Solutions.

² du/ac = dwelling unit per acre.

³ "No Land Use Deduction" refers to the setting whereby outdoor water uses are not eliminated for Open Space and Fuel Modification — Non-Irrigated (as discussed in Section 5.4 of the GSI Report [EIR, Appendix T]).

Table 2.14-5
Projected Water Demand (GSI Report/with Land Use Deductions³)

Land Use	Study Area (acres)	Conservation Demand Factor (gpd/acre) ¹	Estimated Total Water Demand (gpd)
Single Family (2-4 du/ac)	35.4	1,255	44,430
Single Family (4-8 du/ac)	192.7	1,670	321,810
Multi-Family (2-4 du/ac)	14.9	1,265	18,850
Multi-Family (4-8 du/ac)	4.8	1,680	8,065
Multi-Family (8-12 du/ac)	6.1	1,755	10,705
Multi-Family (12-15 du/ac)	31.0	1,925	59,675
Multi-Family (15-20 du/ac)	28.4	2,320	65,890
Parks	35.9	1,260	45,235
Commercial	7.4	1,005	7,440
School	3.6	980	3,530
Open Space	1,209.0	0	0
Backbone Roads	34.0	380	12,920
Fuel Modification - Irrigated	131.0	1,330	174,230
Fuel Modification - Non-Irrigated	247.2	0	0
Public Facilities (Water Tanks)	4.2	1,000	4,200
Total	1,985.6		776,980
Total (AFY)			870.3

Source: EIR, Appendix T (GSI Report).

¹ As defined by GSI Water Solutions.

² du/ac = dwelling unit per acre.

³ "Land Use Deduction" refers to the elimination of outdoor water uses for Open Space and Fuel Modification — Non-Irrigated (as discussed in Section 5.4 of the GSI Report [EIR, Appendix T]).

Table 2.14-6
Projected Water Supply and Demand During Normal Year (acre-feet)

Description	2020	2025	2030	2035
Supply Totals ¹	21,219	24,586	26,989	28,229
Demand Totals ²	32,666	34,333	35,505	37,841
Conservation Required	11,447	9,747	8,516	9,612
Required Percent Reduction in Demand	35.0%	28.4%	24.0%	25.4%
Is the Required Reduction 35% or Less?	Yes	Yes	Yes	Yes
Is the Required Reduction 52% or Less?	Yes	Yes	Yes	Yes
Estimated Demand with Conservation	21,219	24,586	26,989	28,229
Difference	0	0	0	0

Source: EIR Appendices V and S (Vallecitos Water District 2015 UWMP and HDR WSA, respectively). Table is revised to reflect County evaluation and independent review.

¹ Supply includes future recycled water and potable water supply from storage available. These numbers differ from the Water Authority's 2015 UWMP assessment of supply totals available to VWD, as they include 3,500 AFY of desalinated water supply provided by the Water Authority and they do not include the Water Authority's assumptions for passive and active water conservation.

² Demand includes the recycled water demand as well as the potable and raw water demand.

Table 2.14-7
Projected Water Supply and Demand During Single-Dry Year (acre-feet)

Description	2020	2025	2030	2035
Supply Totals ¹	22,594	26,206	28,723	30,073
Demand Totals	34,984	36,782	38,049	40,588
Conservation Required	12,390	10,576	9,327	10,514
Required Percent Reduction in Demand	35.4%	28.8%	24.5%	25.9%
Is the Required Reduction 35% or Less?	Within 1%	Yes	Yes	Yes
Is the Required Reduction 52% or Less?	Yes	Yes	Yes	Yes
Estimated Demand with Conservation	22,594	26,206	28,723	30,073
Difference	0	0	0	0

Source: EIR Appendices V and S (Vallecitos Water District 2015 UWMP and HDR WSA, respectively). Table is revised to reflect County evaluation and independent review.

1. These numbers differ from the Water Authority's 2015 UWMP assessment of supply totals available to VWD, as they include 3,500 AFY of desalinated water supply provided by the Water Authority and they do not include the Water Authority's assumptions for passive and active water conservation.

Table 2.14-8
Projected Water Supply and Demand During Multiple-Dry Year Period (acre-feet)

Year Supply	Description	2020	2025	2030	2035
First Year Supply	Supply Totals ¹	22,585	26,188	28,692	30,018
	Demand Totals	34,953	36,736	37,991	40,489
	Conservation Required	12,368	10,548	9,299	10,471
	Required Percent Reduction in Demand	35.4%	28.7%	24.5%	25.9%
	Is the Required Reduction 35% or Less?	Within 1%	Yes	Yes	Yes
	Is the Required Reduction 52% or Less?	Yes	Yes	Yes	Yes
Second Year Supply	Supply Totals ¹	22,999	26,673	29,211	30,561
	Demand Totals	35,671	37,491	38,771	41,321
	Conservation Required	12,672	10,818	9,560	10,760
	Required Percent Reduction in Demand	35.5%	28.9%	24.7%	26.0%
	Is the Required Reduction 35% or Less?	Within 1%	Yes	Yes	Yes
	Is the Required Reduction 52% or Less?	Yes	Yes	Yes	Yes
Third Year Supply	Supply Totals ¹	23,604	27,382	29,963	31,353
	Demand Totals	36,684	38,556	39,872	42,496
	Conservation Required²	13,080	11,174	9,910	11,144
	Required Percent Reduction in Demand	35.7%	29.0%	24.9%	26.2%
	Is the Required Reduction 35% or Less?	Within 1%	Yes	Yes	Yes
	Is the Required Reduction 52% or Less?	Yes	Yes	Yes	Yes

Source: EIR Appendices V and S (Vallecitos Water District 2015 UWMP and HDR WSA, respectively). Table is revised to reflect County evaluation and independent review.

1. These numbers differ from the Water Authority's 2015 UWMP assessment of supply totals available to VWD, as they include 3,500 AFY of desalinated water supply provided by the Water Authority and they do not include the Water Authority's assumptions for passive and active water conservation.

2. In the third year, conservation required is 36% (13,088/36,684 AFY) of demand in 2020 and 26% (11,144/42,496 AFY) of demand in 2035.

Table 2.14-9
Newland Sierra Projected Sewer Flows

Neighborhood	Land Use	Acres	Dwelling Units	Density (du/ac)	Generation Factor (gpd/ac)	Average Sewage Flow (gpd)
<i>Areas Tributary to South Drainage Area</i>						
Town Center	Commercial	7.4	–	–	1,200	8,880
	School	3.6	–	–	800	2,880
	Park	5.7	–	–	250	1,425
	Multi-Family	7.2	95	13.2	2,500	18,000
<i>Subtotal</i>		23.9	95	–	–	31,185
Valley	Multi-Family	23.8	316	13.3	2,500	59,500
	Single-Family	32	189	5.9	1,300	41,600
	Park	12.3	–	–	250	3,075
<i>Subtotal</i>		68.1	505	–	–	104,175
Terraces	Multi-Family	28.4	446	15.7	3,300	93,720
	Water Tank	1.3	–	–	800	1,040
<i>Subtotal</i>		29.7	446			94,760
Hillside	Single-Family	36.5	241	6.6	1,300	47,450
	Park	2.3	–	–	250	575
<i>Subtotal</i>		38.8	241	–	–	48,025
Mesa	Multi-Family	6.1	60	9.8	2,100	12,810
	Single-Family	53.6	265	4.9	1,300	69,680
	Park	4.1	–	–	250	1,025
<i>Subtotal</i>		63.8	325	–	–	83,515
Lower Knoll	Multi-Family	4.8	29	6.3	1,300	6,240
	Single-Family	44.5	203	4.6	1,300	57,850
	Park	8.9	–	–	250	2,225
<i>Subtotal</i>		58.2	232	–	–	66,315
Upper Knoll	Single-Family	26.1	140	5.3	1,300	33,930
	Park	0.6	–	–	250	150
<i>Subtotal</i>		26.7	140	–	–	34,080
Summit	Multi-Family	14.9	49	3.4	750	11,175
	Single-Family	35.4	102	2.9	750	26,550
	Water Tank	2.9	–	–	800	2,320
	Park	2.0	–	–	250	500
<i>Subtotal</i>		55.2	151	–	–	40,545
–	Backbone Roads	34.0	–	–	0	0
–	Fuel Modification - Irrigated	131.0	–	–	250	32,750
–	Open Space	544.4	–	–	0	0
<i>South Drainage Area Subtotal</i>		1,073.8	2,135	–	–	535,350

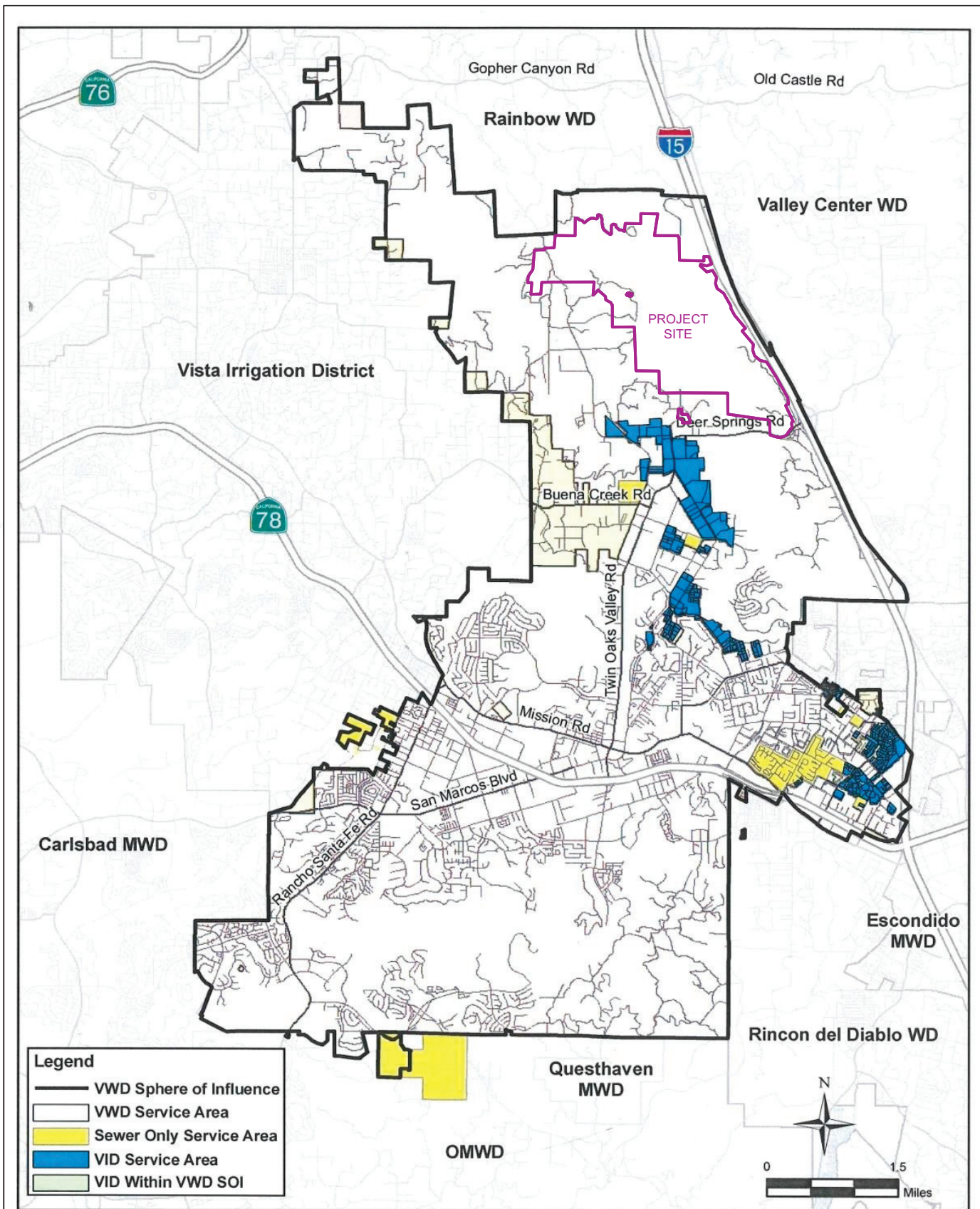
**Table 2.14-9
Newland Sierra Projected Sewer Flows**

Neighborhood	Land Use	Acres	Dwelling Units	Density (du/ac)	Generation Factor (gpd/ac)	Average Sewage Flow (gpd)
<i>Areas Tributary to North Drainage Area</i>						
–	Open Space	911.8	–	–	0	0
<i>North Drainage Area Subtotal</i>		<i>911.8</i>	<i>–</i>	<i>–</i>	<i>0</i>	<i>0</i>
Total		1,985.6	2,135	–	–	535,350

Source: Master Plan of Sewer, Appendix W

du/ac = dwelling units per acre; gpd/ac = gallons per day per acre; mgd = million gallons per day

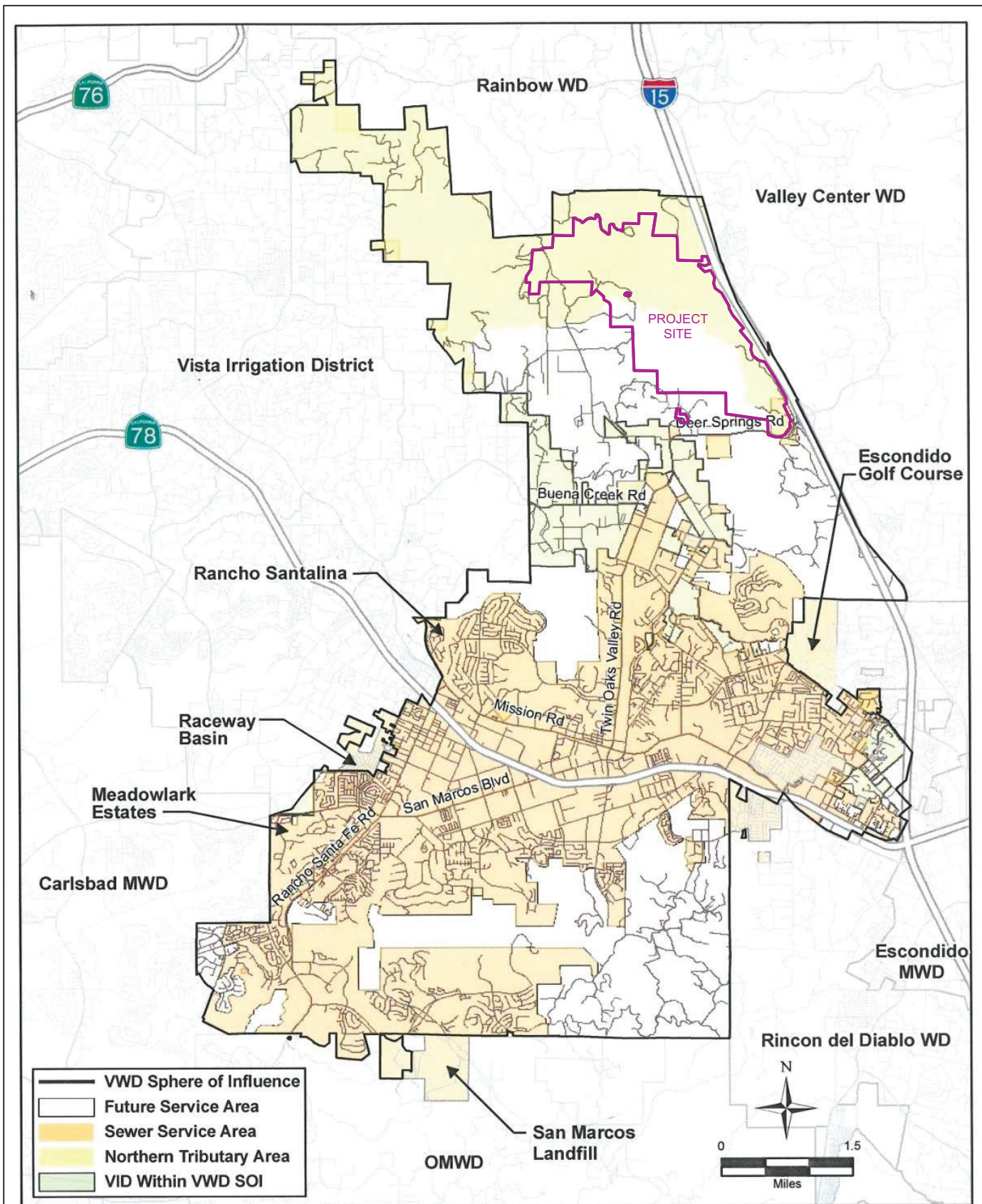
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SOURCE: VALLECITOS WATER DISTRICT 2015

FIGURE 2.14-1
Water Service Area

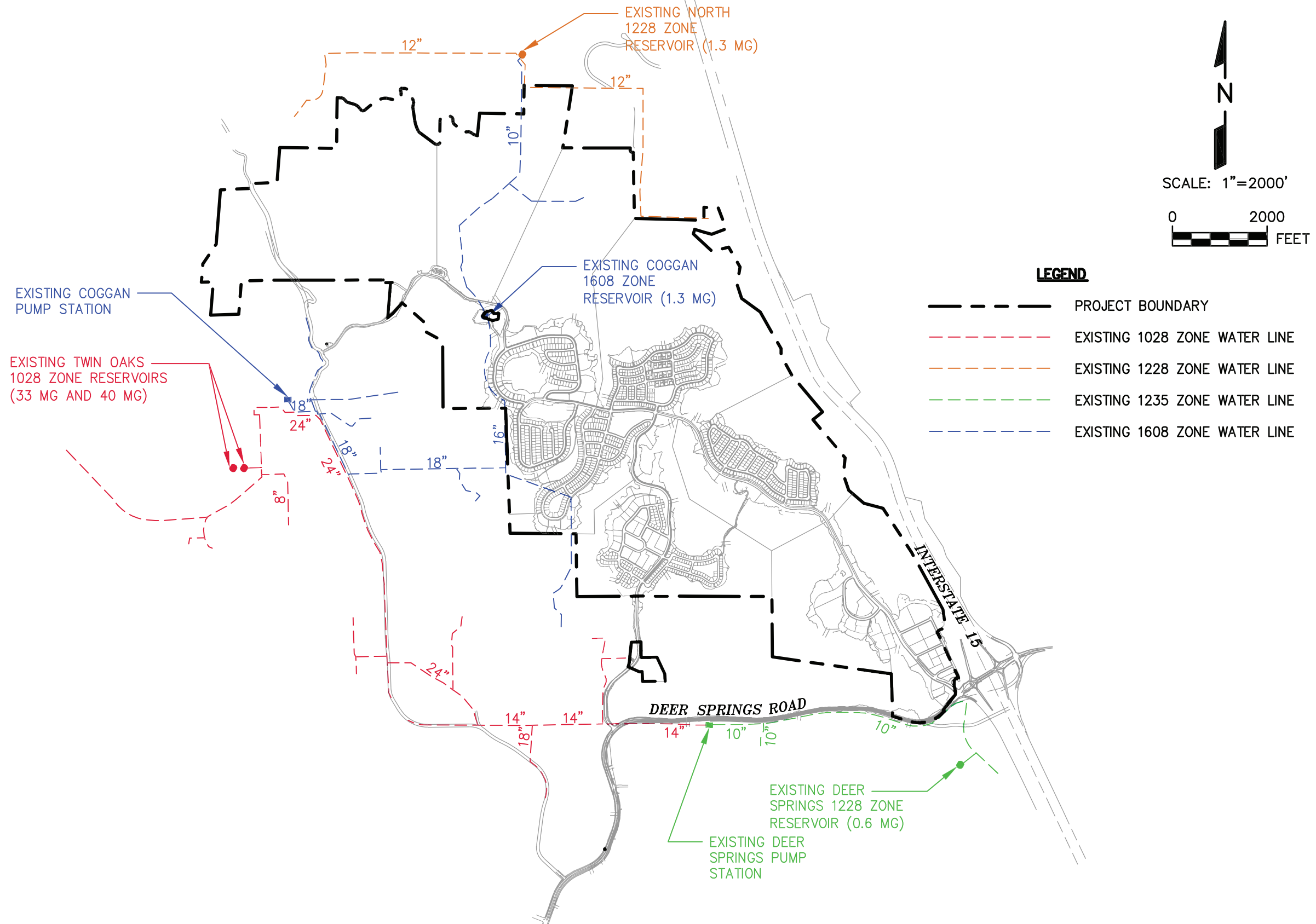
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SOURCE: VALLECITOS WATER DISTRICT 2015

FIGURE 2.14-2
Wastewater Service Area

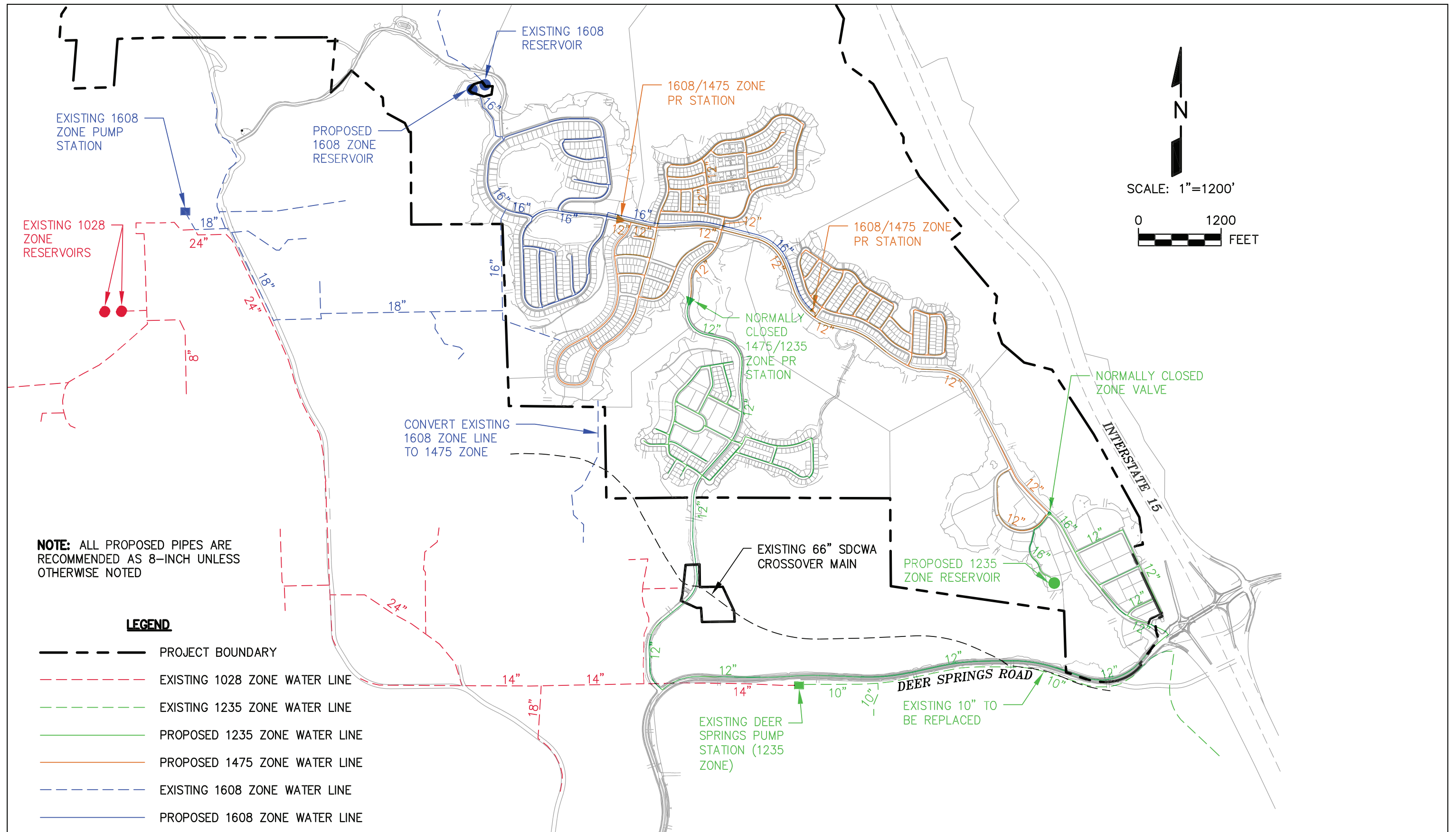
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SOURCE: DEXTER WILSON ENGINEERING, INC. 2016

FIGURE 2.14-3
Existing Water Facilities

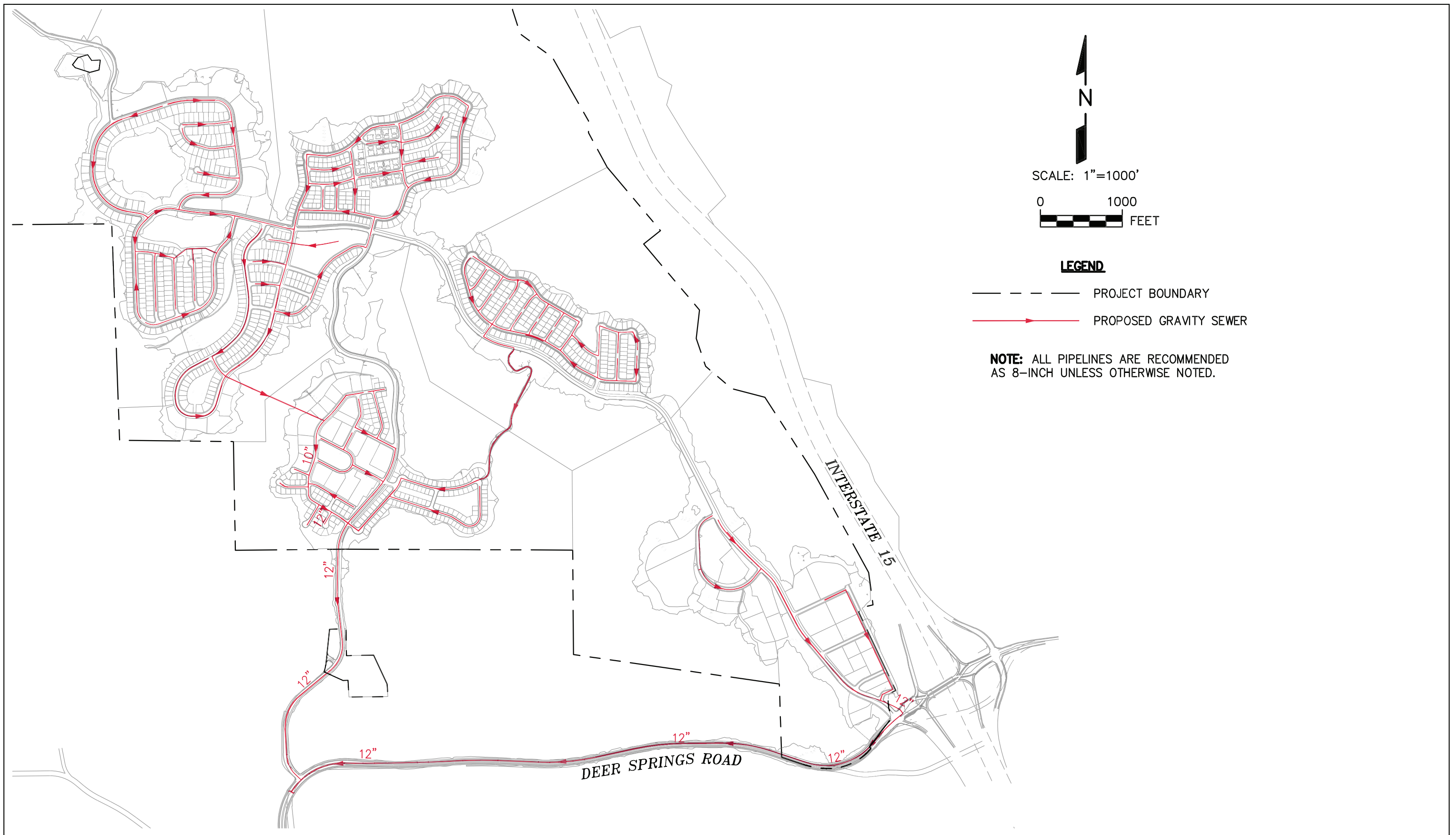
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SOURCE: DEXTER WILSON ENGINEERING, INC. 2016

FIGURE 2.14-4
Recommended Water Facilities

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SOURCE: DEXTER WILSON ENGINEERING, INC. 2016

FIGURE 2.14-5
Proposed Onsite Sewer Facilities

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