1 Introduction and Overview

Vallecitos Water District (VWD) is a public agency responsible for supplying water, wastewater collection, and recycled water service to a 45-square mile area within northern San Diego County that includes the City of San Marcos, parts of the cities of Vista, Carlsbad, Escondido, and unincorporated areas within the County of San Diego. Its service area includes the State Highway 78 corridor and is bordered by Interstate 15 on its eastern boundary.

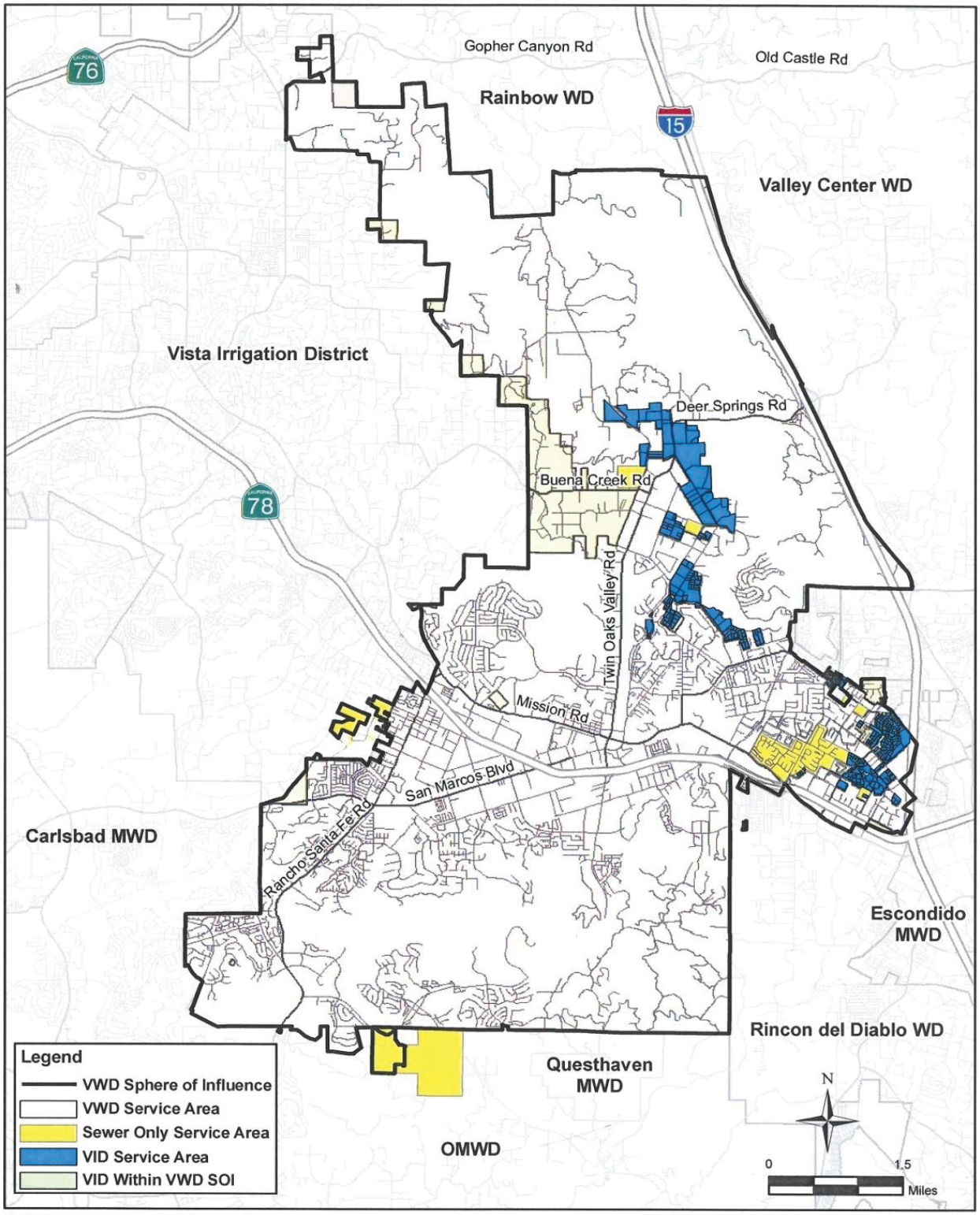
Figure 1-1 illustrates VWD's location and service boundary.

VWD is a member agency of the San Diego County Water Authority (SDCWA) and currently imports or purchases 100 percent of its potable water supply from SDCWA and, more recently, the Claude "Bud" Lewis Desalination Plant in the City of Carlsbad (via SDCWA). Through their SDCWA contract, VWD also pays for raw water treatment at Olivenhain Municipal Water District's (OMWD) David C. McCollom Water Treatment Plant. VWD serves potable water to a current population of 105,741 people, as well as commercial, light industrial, institutional, construction, landscape irrigation, and agricultural customers. VWD also provides wastewater collection services to a 23-square mile area within its water service boundary, as illustrated in Figure 1-2, that serves approximately 88,000 people, as well as commercial, light industrial, institutional, construction, landscape irrigation and agricultural customers.

Over the years, VWD has continued to make great strides to secure a sustainable and reliable water supply for the future. Since 2005, VWD added an additional 40-million-gallon potable water storage reservoir to assist in emergencies and peak demand management. VWD also increased the recycled water capacity at its Meadowlark Water Reclamation Facility from 2.25 million gallons per day (MGD) to 5.0 MGD. VWD has added potable water supply reliability through the purchase of approximately 3,500 acre-feet (AF) per year, or 1,140 million gallons (MG) per year, of desalinated seawater from the Claude "Bud" Lewis Carlsbad Desalination Plant, and through the purchase of approximately 2,750 AF per year (AFY), or 896 MG per year, from the OMWD David C. McCollom Water Treatment Plant. And finally, VWD has implemented aggressive water conservation outreach efforts, which have lowered the overall demand for imported water into the region.

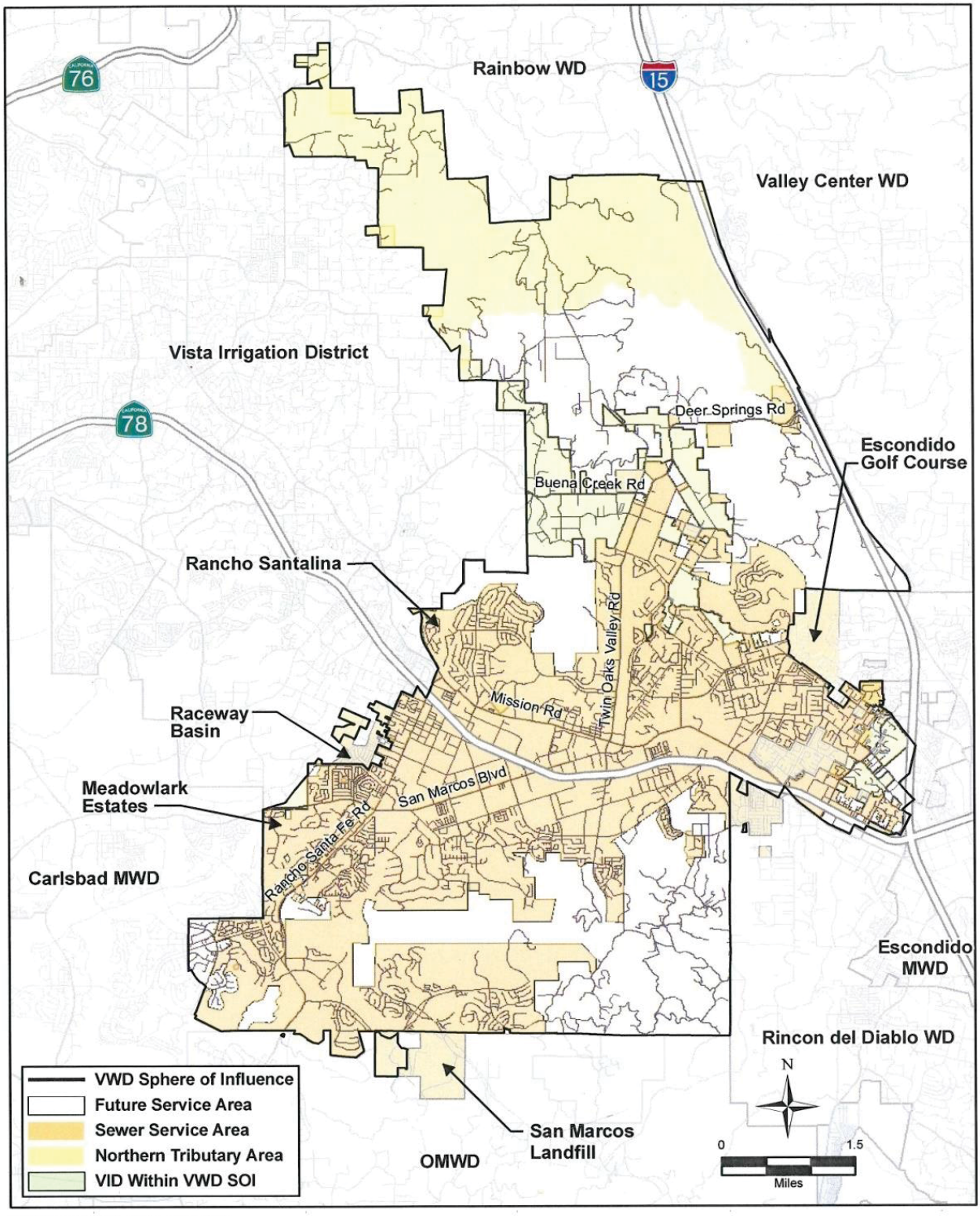
VWD has prepared this 2020 Urban Water Management Plan (UWMP) in accordance with the Urban Water Management Planning Act (California Water Code [CWC] §10610 through 10656). This document covers water loss auditing as dictated by CWC §10608.34, and compliance with Senate Bill (SB) X7-7 as dictated by CWC §10608.16 through §10608.28.

This section will provide an overview of the regulatory process of this UWMP and will provide background information regarding VWD and its service area.



SOURCE: LAFCO SOI - Affirmed 08-06-2007
VWD GIS Data - 07-17-2008, provided by District

WATER SERVICE AREA
FIGURE 1-1



SOURCE: LAFCO SOI - Affirmed 08-06-2007
VWD GIS Data - 07-17-2008, provided by District

WASTEWATER SERVICE AREA
FIGURE 1-2

1.1 Regulatory Overview

The VWD is an independent special district governed by five representatives voted into office by the local citizens within its service boundary. The long-term mission of the District is to meet the needs of its service area effectively and efficiently within the expressed and implied powers provided by law, as stated in its adopted Mission Statement, below.

"The mission of Vallecitos Water District is to serve as water and wastewater specialists, providing exceptional and sustainable services. The District will continue to provide exceptional and sustainable services by:

- Proactively, innovatively, and continuously improving the quality and efficiency of our operations and service;
- Supporting and retaining highly trained staff that is knowledgeable, engaged, team oriented and responsive to the community and other agencies;
- Providing support for the good of the region to remain a respected and active industry partner; and
- Providing continuous outreach and education to our customers on issues and topics that impact the services we provide and our role as water and wastewater specialists."

The following regulations apply to this 2020 UWMP and have dictated its preparation.

1.1.1 California Urban Water Management Planning Act

UWMPs are prepared by California's urban water suppliers to support their long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands. The California Urban Water Management Planning Act (Act) requires every urban water supplier that provides water for municipal services to more than 3,000 connections or is supplying more than 3,000 AF of water annually to assess the reliability of its water sources over a 20-year planning horizon, considering normal and dry years. This assessment is to be included in the supplier's UWMP, which is to be prepared and adopted every 5 years and submitted to the Department of Water Resources (DWR). VWD complied with the Act in 2005, 2010, and 2015 with the adoptions of its 2005 UWMP, 2010 UWMP, and 2015 UWMP, respectively.

DWR's 2020 UWMP Guidebook for Urban Water Suppliers served as a blueprint during the preparation of this 2020 UWMP.

Significant amendments to the UWMP Act in preparation of the 2020 UWMP include the following:

- 2020 UWMP submittal date change to July 1, 2021.
- The multi-year dry year water reliability planning was modified to include a period equivalent to a drought lasting at least 5 years.
- Assessment of seismic risk to water system facilities or reference to recent multi-hazard mitigation plans.

- Specific requirements for a Water Shortage Contingency Plan (WSCP), including preparation and adoption of a stand-alone document that can be updated more frequently than every 5 years.
- Coordination of groundwater supplies and groundwater sustainability plans.
- Inclusion of a lay description for fundamental sections of the UWMP.

The UWMP Act of 1983, as amended, and the Water Conservation Act of 2009 are included in Appendix A.

1.1.2 Senate Bill 7 of the Seventh Extraordinary Session of 2009

The state Legislature passed SB X7-7, referred to as SB7, on November 10, 2009, which became effective February 3, 2010. This law seeks to achieve a 20 percent statewide reduction in urban per capita water use in California by December 31, 2020. The law requires each urban retail water supplier to develop urban water use targets to help meet the 20 percent goal by 2020, an interim water reduction target by 2015, and incorporate this information into the 2010, 2015 and 2020 UWMPs.

Urban water providers such as VWD must include in their 2020 plans the following information: (1) baseline daily per capita water use; (2) urban water use target; (3) interim water use target; and (4) compliance daily per capita water use, including technical basis and supporting data for those determinations.

A Regional Alliance allows individual urban retail water suppliers to combine their individual targets into a regional target. An urban retail water supplier is required to meet either their own or the regional water conservation target to comply with SB7. VWD has entered a Regional Alliance with OMWD, Rincon del Diablo Municipal Water District (Rincon MWD), and San Dieguito Water District (SDWD). A copy of the "Cooperative Agreement to Establish and Carry Out a Regional Alliance in Accordance with Part 2.55 of the California Water Code" is included in Appendix B.

1.1.3 Senate Bills 610 and 221

CWC §10910 through 10914 and Government Code §65867.5, 66455.3 and 66473.7 (commonly referred to as SB 610 and SB 221) amended state law to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires that the water purveyor of the public water system prepare a water supply assessment to be included in the environmental documentation of large proposed projects including residential developments of more than 500 dwelling units, shopping centers with more than 500,000 square feet, commercial/office projects over 250,000 square feet, and industrial buildings larger than 650,000 square feet of floor area. SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies are available for certain large residential subdivisions (greater than 500 dwelling units) of property prior to approval of the tentative map.

VWD has used documentation from the Metropolitan Water District of Southern California (MWD) and SDCWA in preparing the water supply assessments and written verifications required under state law in producing this UWMP.

1.2 Changes since the 2015 Urban Water Management Plan

For the 2020 UWMP, the CWC added additional reporting requirements from the 2015 UWMP, including the following:

- Formally preparing and adopting a WSCP
- Evaluating water reliability over a period of 5 consecutive dry years
- Preparation of a Drought Risk Assessment
- Addressing seismic risks
- Reporting energy intensity

While not required by the CWC or amendments to the UWMP Act, this UWMP also addresses information to demonstrate compliance with implementation of California Code of Regulations, Title 23, Policy WR P1: Reduced Reliance on the Delta through Improved Regional Water Reliance in the Delta Plan. The District's documentation for reduced reliance on the Delta is in Appendix F.

1.3 Executive Summary

VWD has prepared this 2020 UWMP in accordance and compliance with the UWMP Act. VWD's 2020 UWMP serves as the long-term planning document that will help to ensure a reliable water supply for the region. This Executive Summary satisfies the requirement of CWC Section 10630.5 to include a simple lay description of information necessary to provide a general understanding of the plan, including a description of VWD's reliable water supply, challenges ahead, and strategies for managing reliability risks.

1.3.1 Background

VWD is a public agency responsible for supplying water, wastewater collection, and recycled water service to a 27,517-acre area within northern San Diego County that includes the City of San Marcos, parts of the cities of Vista, Carlsbad, Escondido, and unincorporated areas within the County of San Diego. VWD serves potable water to a current population of 105,741 people, as well as commercial, light industrial, institutional, construction, landscape irrigation, and agricultural customers in its service area. The mission of VWD is to serve as water and wastewater specialists, providing exceptional and sustainable services.

Significant amendments to the UWMP Act in preparation of the 2020 UWMP include modifications to multi-year dry year water reliability planning drought periods; addition of seismic risk assessments or reference to recent multi-hazard mitigation plans; specific requirements for the preparation and adoption of a WSCP; coordination of groundwater supplies and Groundwater Sustainability Plans; and inclusion of a lay description for fundamental sections of the UWMP, satisfied by this Executive Summary.

For the 2020 UWMP, the Water Code has added additional reporting requirements from the 2015 UWMP, including formally preparing and adopting a WSCP; evaluating water

reliability over a period of five consecutive dry years; preparation of a DRA; addressing seismic risks; and reporting energy intensity.

1.3.2 Plan Preparation

The Act requires urban water suppliers to file plans with the California DWR describing and evaluating reasonable and practical efficient water uses, reclamation, and conservation activities. As required by law, the VWD's UWMP includes projected water supplies required to meet future demands.

VWD is an urban water supplier that provides water for municipal purposes to more than 3,000 customers and supplies more than 3,000 AF of water annually. VWD is a member of the OMWD, Rincon MWD, and SDWD. This 2020 UWMP was prepared as an individual UWMP by VWD in coordination with the other agencies in the Regional Alliance and its wholesale provider SDCWA. To adequately demonstrate regional water supply reliability through the next 25 years, this UWMP quantifies the regional mix of existing and projected local and imported supplies necessary to meet future demands within VWD's service area.

1.3.3 System Description

The population within VWD's service area was approximately 105,741 people in 2020 and is projected to increase to roughly 127,195 people by 2045. Approximately 32 percent of VWD's service area is currently residential and represents the majority of VWD's water demands. Most of this is single-family homes, although recent development is trending more toward multi-family residential. In 2020, VWD provided an average of 12.1 MGD of potable water for residential, commercial, light industrial, institutional, construction, landscape irrigation, and agricultural uses. The water service area is approximately 65 percent built-out, with additional development anticipated throughout the timeline of the UWMP.

VWD has over 20,600 sewer service connections and conveys an average 7.5 MGD of wastewater to the Encina Water Pollution Control Facility (EWPCF) or Meadowlark Water Reclamation Facility (MRF) for treatment. Although VWD's sewer service area can be expanded to the same size as VWD's water service area, the rural area between VWD's sewer and service area boundaries is likely to remain on septic systems. It is not likely that VWD's wastewater infrastructure will be expanded to this area in the future.

Climate conditions within VWD's service area represent a semi-arid coastal desert environment, which is characteristically Mediterranean with mild temperatures throughout the year. Prolonged rainstorms are rare. More than 80 percent of the region's rainfall occurs between December and March.

1.3.4 System Water Use

In 2020, total water demand in VWD's service area was 4,835 MG. By 2045, VWD's total water demands are projected to reach 8,055 MG. Current and projected water use in VWD is divided into primary categories of single-family residential, multi-family residential, commercial, industrial, institutional, governmental, landscape, and agriculture. There are also secondary categories of water use, including fire line water use, construction water, water exchanges, and other unmetered and unbilled uses. Future water use projections

were generated in the 2018 Water, Wastewater and Recycled Water Master Plan through the planning horizon year 2035 and coordinated with SDCWA projections. The system water use projections include lower income residential demands, which accounted for 4.5 percent of overall water demands in 2020.

VWD is a member of the North San Diego Water Reclamation Coalition (NSDWRC), which is a group of water and wastewater agencies that work together to identify benefits of regionalization of existing and planned recycled water systems to further maximize the use of recycled water. Regionalization of facilities will allow recycled water to play an even more significant role in meeting the future water needs in the north San Diego County area. NSDWRC developed a Regional Recycled Water Facilities Plan, which identified recycled water demands within VWD's service area that could offset potable water use.

1.3.5 SB7 Baselines and Targets

The Water Conservation Act of 2009 (also referred to as SB7) required urban retail water suppliers to develop urban water use targets to help reduce per capita water use by 20 percent by the year 2020. For the 2020 UWMP, VWD is required to compare 2020 per capita water use with the SB7 per capita water use baseline developed for the 2010 UWMP and water use targets that were recalculated in the 2015 UWMP.

VWD's 2015 UWMP showed the per capita water use of 117 gallons per capita per day (gpcd), which meets the 2015 interim target of 179 gpcd. The District's 2020 average per capita water use is 125 gpcd also within the 2020 target of 159 gpcd. As a member of a Regional Alliance, individual urban retail water suppliers are permitted to combine their individual targets into a regional target. An urban water supplier is required to meet either their own or the regional water conservation target to comply with SB7. In addition to VWD achieving its targeted reduction for 2020, the Olivenhain Regional is in compliance with its 2020 demand target.

1.3.6 System Supplies

VWD currently obtains 100 percent of its water supply from the SDCWA either directly or indirectly and anticipates relying on the SDCWA for a large portion of its water supply in the foreseeable future. Local groundwater supplies have historically not been used by VWD due to uncertain quantity and relatively poor quality. Additionally, VWD does not draw water from streams, lakes, or reservoirs for use in its potable water distribution system. In 2012, VWD expanded its water supply portfolio and operational flexibility by executing two water purchase agreements to obtain desalinated seawater from SDCWA and potable water treatment by OMWD from SDCWA-owned Olivenhain Reservoir.

VWD does not currently supply recycled water to its customers. Because VWD does not maintain a recycled water service area within its sphere of influence, all the recycled water produced and treated at EWPCF and MRF is sold to Carlsbad Municipal Water District (CMWD) and OMWD. However, VWD is actively involved in planning for the use of recycled water in the future. NSDWRC's Regional Recycled Water Facilities Plan identified potential future recycled water demands within VWD's sphere of influence. Short-term expansion projects could deliver a portion of this demand to customers as early as 2025, while the remainder could be developed in a more long-term time frame.

In 2020, VWD's net utility energy intensity was approximately 485 kilowatt-hours of energy used per MG of water. This energy intensity represents data from VWD from 2020 for local distribution.

1.3.7 Water Supply Reliability Assessment

The 2020 UWMP presents VWD's water reliability assessments from 2025 through 2045. Consistent with the requirements of the Act, each assessment compares total projected water supply available to VWD over the next 20 years in five-year increments based on three water supply condition scenarios: average/normal water year, single dry water year, and multiple dry water year.

Though VWD is guided by its 2018 Water, Wastewater, and Recycled Water Master Plan to ensure future reliable water supplies, it is dependent on the water supply abilities of its wholesaler, the SDCWA. According to the SDCWA's 2020 UWMP, the SDCWA anticipates meeting all future demands of its member agencies in normal and single dry-year scenarios. However, some level of shortage could potentially be experienced during the multiple dry-year scenarios. The purchase of contracted desalinated seawater supply through SDCWA helps VWD alleviate potential multiple dry-year water shortages. Desalinated water supplies are assumed to be reliable and available even during drought conditions.

The SDCWA reliability assessment reports that adequate water supply is anticipated within the Authority's service area for normal/average and single dry years through 2045. However, supply limitations that arise in multiple dry year scenarios must be addressed through implementation of extraordinary water conservation measures.

Single Dry-Year Water Supply and Demand Assessment

Based upon modeling performed by SDCWA, demands are expected to increase slightly in a single dry year. To meet these increased demands, VWD would purchase additional supplies from SDCWA, whose 2020 UWMP anticipates that purchased water would be available to meet these demands. In a single dry water year, supplies and demands would be equal and there would be no surplus or deficit.

Multiple Dry-Year Water Supply and Demand Assessment

Based upon modeling performed by SDCWA and local trends in the Authority's service area, demands are expected to increase slightly from normal in each year of the multiple dry year period. To meet these increased demands, VWD would purchase additional supplies from SDCWA, whose 2020 UWMP anticipates that purchased water would be available to meet these demands. However, because there would be a small potential reliability shortfall in the third year of a multiple dry year period, it is anticipated that SDCWA and its member agencies, including VWD, would increase conservation efforts to reduce demands. In all years of a multiple dry-year scenario, supplies and demands would be equal and there would be no surplus or deficit.

Drought Risk Assessment

The Act requires a water supplier to include in its 2020 UWMP a drought risk assessment (DRA). VWD's DRA assesses a projected drought over the next five-year period from

2021-2025. Near-term drought reliability of the sources of supply utilized by VWD depends on the drought impact and stress on each supply. The SDCWA 2020 UWMP shows a surplus of water supplies for all demand conditions and has determined that actions under the WSCP would not be necessary.

Seismic impacts to VWD's water supplies are evaluated on a regional scale, as seismic events along the San Andreas and San Jacinto fault systems could limit imported supplies. Impacts to VWD would be greatest with a major seismic event on the Elsinore Fault Zone, which has the potential to cut off treated and/or untreated water from Metropolitan Water District of Southern California to SDCWA for one to three months. Damage from a regional earthquake to imported supply is mitigated by major investments in emergency storage made by SDCWA. SDCWA's Emergency Storage Project includes emergency surface water storage (90,100 AF) and new distribution facilities to allow continued water service to its member agencies during a prolonged regional interruption.

1.3.8 Water Shortage Contingency Plan

The WSCP presents VWD's contingency plan to address drought planning, water shortage response levels and actions, and management of water allocations during a declared water emergency. The WSCP has been prepared as a separate plan that can be updated and adopted independent of the UWMP cycle. VWD will conduct an annual water supply and demand assessment and produce an Annual Assessment Report, which will document any anticipated shortage, any triggered shortage response actions, associated compliance and enforcement actions, and communication actions

Shortage response actions included in this WSCP are a mix of prohibitions on end use, consumption reduction methods, supply augmentation, and operational change measures. Customers can select the specific water conservation measures/actions that are most appropriate for their setting; however, customers must abide by water waste prohibitions, water use reductions are mandatory, and monetary penalties may be levied on customers who do not meet reduction goals.

The WSCP also discusses how VWD would respond to a catastrophic event, such as a natural disaster, that results in insufficient water to meet the region's needs or eliminates access to imported water supplies. For increased reliability, VWD subscribes to SDCWA's Integrated Contingency Plan (ICP) and Emergency Storage Program. Both were developed to protect public health and safety and to potentially limit economic damage that could occur from a severe shortage of water supplies. SDCWA's ICP provides information necessary to respond to an emergency that causes severe damage to SDCWA's water distribution system or impedes SDCWA's ability to provide reliable service to its member agencies. Additionally, the SDCWA Water Shortage and Drought Response Plan was developed in conjunction with its member agencies to guide water shortage and drought management activities in the event that the region faces supply shortages due to drought conditions.

1.3.9 Demand Management Measures

During the past few decades, conservation has become a vital part of VWD's overall reliability strategy. VWD's combined effort with SDCWA and its fellow member agencies has yielded increased conservation and water knowledge through education, messaging, and financial incentives for water-efficient devices that benefit the entire region.

VWD's water conservation programs and demand management measures include water waste prevention ordinances; metering; conservation pricing through a tiered water rate structure; public education and outreach; programs to assess and manage distribution system real loss; and residential, commercial and landscape best management practices.

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