

Appendix H - Reduced Delta Reliance

Valley Water manages an integrated water resources system to provide safe and clean water, flood protection, and stewardship of streams on behalf of Santa Clara County's ("County") nearly two million residents and 13 water retailers. Water supplies include local surface water and groundwater, imported water, and recycled water. Water conservation is also an important part of the of the water supply mix, which helps reduce water demands and improve reliability during droughts. Valley Water is also the Groundwater Sustainability Agency (GSA) for the Santa Clara and Llagas Subbasins, which are both identified as high priority basins by the Department of Water Resources (DWR). Valley Water sustainably manages its local groundwater basins to support beneficial use by water retailers, private well users, and the environment.

Since the 1930s, Valley Water's water supply strategy has been to maximize the conjunctive management of surface water and groundwater supplies to enhance water supply reliability and avoid land subsidence. Local groundwater resources make up the foundation of the County's water supply but need to be augmented by Valley Water's comprehensive water management activities to reliably meet the needs of county residents, businesses, agriculture, and the environment. These activities include managed recharge of imported and local supplies and in-lieu groundwater recharge through the provision of treated surface water and raw water, acquisition of supplemental water supplies, and water conservation and recycling.

Imported water diverted from the Delta watershed is an important component of Valley Water's current water supply portfolio, accounting for approximately 50% of its annual water supply on average. Imported supplies received from the State Water Project (SWP) and Central Valley Project (CVP) are either sent to one of Valley Water's three drinking water treatment plants, used for managed groundwater recharge, or stored in local and State reservoirs for use in subsequent years. Valley Water also stores some of its imported water in the Semitropic Groundwater Bank in the Central Valley for withdrawal during dry periods. Valley Water's retail water agencies do not control the amount of Delta watershed water they receive from Valley Water and the interconnected nature of the groundwater basins and blended use of sources in Valley Water infrastructure like reservoirs and pipelines make it infeasible to quantify imported water use at the retailer level.

Valley Water, Not Its Retailers, Manages How Imported and Local Water Supplies Are Utilized

Valley Water's retail water agencies do not control the amount of Delta watershed water that they receive from Valley Water, and Valley Water's use of blended local and imported water sources and "conjunctive use" approach to managing its surface water and groundwater supplies make it infeasible to quantify imported water use at the retailer level.

Instead, Valley Water's retailers rely on Valley Water to maintain sustainable water supplies, including managed groundwater recharge and in-lieu groundwater recharge (e.g., treated surface water deliveries, demand management programs, etc.) The interconnected nature of the groundwater basins and blended use of sources in Valley Water infrastructure like reservoirs and pipelines make it infeasible to quantify the blend of local and imported

supplies at the retailer level. The system and operations are designed to integrate and work at a regional level.

Furthermore, depending on groundwater conditions and other drivers, Valley Water has some flexibility in adjusting its treated water pricing so as to promote the most effective use of available water resources. So, in addition to managing regional surface water and groundwater supplies through operational activities, Valley Water also uses pricing mechanisms to incentivize retailers as to how local and imported water supplies are used in the County. Together, these approaches support the balanced use of groundwater and surface water to maintain sustainable water supplies and avoid undesirable groundwater basin effects.

In addition, Valley Water manages most of the water conservation programs for the County with the support of retailers through water rates and cost share agreements.

As such, Valley Water believes that its quantification of the use of imported and local water supplies in the County and its showing of reduced reliance on the Delta watershed should apply to all of the local retail water agencies that it serves.

Short Term Impact of Valley Water’s Largest Reservoir Being Maintained at Deadpool During Dam Retrofit Project (expected completion around 2030)

In 2020 the Dam Safety Division of the Federal Energy Regulatory Commission ordered that Valley Water’s largest reservoir, Anderson Reservoir, capable of holding over 89,000 acre-feet (AF) of water supplies (both local and imported water) be drained to deadpool until it is seismically retrofitted. This is a ten-plus year project estimated to cost approximately \$700 million. Because Valley Water does not have Anderson Reservoir for the next 10 years to store local rainfall and runoff as a source for treated water and managed groundwater recharge, Valley Water will, especially if drought conditions persist, need to *temporarily supplement its local water supplies with additional (i.e., more than normal) imported water supplies* during this period to meet its treated water contract obligations and keep its local groundwater basins from becoming severely depleted.

H.1 Regional Self Reliance

Water supplies that contribute to regional self-reliance are shown in Table C-3. Consistent development and funding of these supplies has resulted in reduced reliance on the percentage of water supplies imported from the Delta watershed as compared to overall water use in the County. Valley Water, with the financial support of all its retailers as reflected in its water rates, has made significant investments in demand management and developing local supplies to reduce Santa Clara County’s reliance on the Delta watershed and increase regional self-reliance. These investments include:

- Conservation and demand management
- Recycled and purified water
- Stormwater capture
- Dam improvements/seismic retrofits to lift storage restrictions on local reservoirs
- Regional collaborations to increase self-reliance

Conservation and Demand Management

Valley Water has made significant investments to manage demands for water and continues to be a leader in water conservation in the region.

Valley Water manages most of Santa Clara County's water conservation programs with the support of retailers. Retailers support the conservation programs through water rates, outreach, cost share agreements, and grants. Over time, Valley Water has implemented nearly 20 different ongoing water conservation programs that use a mix of incentives and rebates, free device installation, one-on-one home visits, site surveys, and education to reduce water use countywide (See Chapter 9 for a detailed description). Water savings from these programs are tracked on a countywide basis, not at the retailer level.

Collectively, Santa Clara County reduced water use by approximately 75,000 AF in 2020 as compared to 1992 through Valley Water's conservation and stormwater capture programs. In 2019, Valley Water updated its Water Supply Master Plan 2040 (WSMP), which includes a range of water conservation programs as well as stormwater capture/recharge programs that are designed to achieve a goal of increasing these savings to 110,000 AF per year (AFY) by 2040. In 2021, Valley Water will update its Water Conservation Strategic Plan to identify new or improved strategies to reach and expand long-term savings goals as well as future Water Use Objectives required by Assembly Bill 1668 and Senate Bill 606.

With the financial support of its retailers, Valley Water is able to engage in regional campaigns with wide-reaching impact. From 2012 to 2020 alone, Valley Water spent \$47 million on water conservation programs. Regional investments in conservation and demand management programs benefit the entire region. These programs help to increase regional water supply reliability and reduce demands for imported water supplies.

Recycled and Purified Water

Valley Water actively promotes the use of recycled and purified water. Over the past decade, Valley Water has advanced water reuse in the County by leading water reuse planning efforts, developing wholesale recycled water programs, and constructing new infrastructure. In 2020, recycled water was about 5 percent (17,000 AFY) of the County's water supply that is distributed for non-potable uses.

Valley Water constructed the Silicon Valley Advanced Water Purification Center (SVAWPC) as a nationally-recognized pilot facility to develop purified water. The SVAWPC can produce up to 8 million gallons of purified water per day. Purified water is blended with tertiary treated water to create high quality recycled water that can be used by a wide variety of customers. Since March 2014, the SVAWPC has demonstrated the effectiveness of advanced treatment technologies (microfiltration, reverse osmosis, and advanced oxidation) to produce purified water and has set the stage for Valley Water to begin a potable reuse program. Potable reuse will involve using advanced purified water to augment groundwater or surface water supplies.

Valley Water is currently working with the cities of Palo Alto and Mountain View on additional recycled water options within those cities. In December 2019, Valley Water executed an agreement with the cities of Palo Alto and Mountain View that defined cost-sharing and supply commitments related to future water reuse. The agreement includes a minimum commitment of approximately 11,000 AFY of wastewater effluent provided to

Valley Water for purified water production at a future regional Advanced Water Purification Facility. With this agreement, Valley Water is working on a location for a regional Advanced Water Purification Facility at the SVAWPC, to produce up to 11,000 AFY of potable reuse supply by 2028 to replenish groundwater.

Valley Water is completing a Countywide Water Reuse Master Plan (CoRe Plan) in 2021 to identify feasible opportunities to expand water reuse, improve water supply reliability, and increase regional self-reliance. The CoRe Plan outlines Valley Water's opportunities and strategies toward achieving up to 24,000 AFY for potable water reuse. Potable reuse would be managed by Valley Water to either augment groundwater or treated surface water. In both instances, it will be blended with several other sources before being used by retailers making it infeasible to determine the proportion of potable recycled water going to each retailer compared to water supplies imported through the Delta.

Stormwater Capture

Valley Water managed recharge program includes capturing local runoff in reservoirs and releasing it to groundwater recharge facilities or drinking water treatment plants. Through its WSMP, Valley Water plans to increase local stormwater runoff capture to increase natural groundwater recharge as part of its 'ensure sustainability strategy.' Valley Water's stormwater projects for next 20 years include:

- **Green Infrastructure.** As part of its conservation program, Valley Water initiated a rebate program to incentivize the installation of rain barrels and cisterns, and the construction of rain gardens in residential and commercial landscapes.
- **Flood-Managed Aquifer Recharge (Flood-MAR).** Valley Water is working on a preliminary feasibility study to evaluate the potential for capturing and recharging stormwater on open space, a process referred to as Flood-MAR. The feasibility study will help identify potential areas where Flood-MAR projects could be implemented within Santa Clara County, evaluate potential program participation incentives, and assess the potential water supply benefit of Flood-MAR. The preliminary feasibility study is scheduled to be completed in 2022, with the goal of identifying a subsequent pilot program.
- **Centralized Stormwater Capture Projects.** Valley Water plans to develop two centralized stormwater capture projects in northern Santa Clara County. Centralized stormwater capture projects capture stormwater from multiple parcels for recharge in a single location and/or are municipal projects, including "green streets" projects. The Santa Clara Basin Storm Water Resources Plan completed in December 2018 identified potential projects throughout northern Santa Clara County. These projects would likely be partnerships with other jurisdictions and require outside funding. Regional investments in stormwater capture programs benefit the entire region.

These programs help to increase regional water supply reliability and reduce demands for imported water supplies. Water supplies developed through these stormwater capture programs are tracked on a countywide basis, not at the retailer level.

Dam Improvements/Seismic Retrofits to Lift Storage Restrictions on Local Reservoirs

Valley Water manages 10 dams and surface water reservoirs with a total storage capacity of about 166,000 acre-feet. Currently, five of Valley Water's 10 reservoirs are operating under various levels of restricted capacity due to seismic stability concerns. These are Almaden, Anderson, Calero, Coyote, and Guadalupe reservoirs. Future average use of local surface water supply is projected to increase over the planning horizon as Valley Water's dams are seismically retrofitted, allowing operating capacity restrictions to be lifted. The seismic retrofit of most these reservoirs (except Coyote) is expected to be completed by 2035 which will allow them to be operated at their full capacity.

Regional Collaborations to Increase Self-Reliance

Valley Water has partnered with seven water agencies in the Bay Area (Alameda County Water District, Bay Area Water Supply and Conservation Agency, Contra Costa Water District, East Bay Municipal Utility District, Marin Municipal Water District, San Francisco Public Utilities Commission, and Zone 7 Water Agency) to investigate opportunities for regional collaboration. The purpose of this planning effort, known as Bay Area Regional Reliability (BARR), is to identify projects and processes to enhance water supply reliability across the region, leverage existing infrastructure investments, facilitate water transfers during critical shortages, and improve climate change resiliency. Projects to be considered include interagency interties and pipelines; treatment plant improvements and expansion; groundwater management and recharge; potable reuse; desalination; and water transfers. While no specific capacity or supply has been identified, this program may result in the addition of future supplies that would benefit Santa Clara County and increase the region's self-reliance. For example, pursuant to this program, and because Anderson Reservoir has been drained to deadpool, Valley Water and Contra Costa Water District are actively exploring mutually beneficial water transfer, exchange and storage projects and agreements.

Valley Water is also an active participant in the Bay Area and Pajaro River Watershed Integrated Regional Water Management (IRWM) programs. To date, Valley Water has received \$86.3 million in IRWM grant funding awards to support various water resource management projects, including water recycling, water conservation, flood protection, and dam seismic retrofits.

H.2 Showing of Reduced Reliance on the Delta Watershed

Valley Water has used the example methodology set forth in Appendix C of the 2020 Urban Water Management Plan Guidebook to demonstrate its reduced reliance on the Delta watershed.

As indicated in Tables C-2 and C-3, based on its past and ongoing efforts to increase regionally developed water supplies, planned water supply projects including expansion of water recycling, and long-term water conservation savings recommended in the WSMP, Valley Water estimates that it and the County in general have reduced, and will continue to reduce, their reliance on imported water supplies diverted from the Delta watershed from the 2010 baseline year through 2040, in consistence with the Delta Plan and regulation WR P1. Tables C-2 and C-3 show estimated changes in Valley Water's Delta watershed supply from 2010 through 2045. *Compared to baseline, the projected percentage decrease of Delta watershed supply in Valley Water's portfolio ranges from 5.1% (2015) to 13.8% (2040).*

Data for the 2010 and 2015 time periods were developed using averages over the ten-year periods (2005-2014 and 2010-2019, respectively). Data for 2020 uses actual 2020 data. Annual demand and supply data were collected from Valley Water's Protection and Augmentation of Water Supplies (PAWS) reports that are published annually. Actual numbers from the relevant years were not used since supplies and demands are highly dependent on annual hydrology. Averaging values over a longer period allows sometimes extreme annual variation to be smoothed out to a value that is more indicative of conditions of that time.

All demand and supply data for 2025, 2030, 2035, 2040, and 2045 is from water supply modeling conducted for this effort. The WSMP has a time horizon of 2040; therefore, no new projects are included in the 2040 to 2045 timeframe.

All data for water conservation comes from Valley Water's Water Savings Model, which tracks water conservation savings since 1992.

DRAFT

Table C-2: Calculation of Service Area Water Demands Without Water Use Efficiency

Total Service Area Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	355,000	315,000	306,000	330,000	325,000	330,000	335,000	345,000
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline	-	13,000	28,000	40,000	53,000	58,000	62,000	62,000
Service Area Water Demands without Water Use Efficiency Accounted For	355,000	328,000	334,000	370,000	378,000	388,000	397,000	407,000

Table C-3: Calculation of Supplies Contributing to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Use Efficiency	-	13,000	28,000	40,000	53,000	58,000	62,000	62,000
Water Recycling	17,000	18,000	17,000	16,000	19,000	22,000	26,000	28,000
Stormwater Capture and Use							1,000	1,000
Advanced Water Technologies (purified water for potable use)	-	-	-	-	7,000	7,000	7,000	7,000

Service Area Water Demands without Water Use Efficiency Accounted For	355,000	328,000	334,000	370,000	378,000	388,000	397,000	407,000
---	---------	---------	---------	---------	---------	---------	---------	---------

Change in Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Supplies from the Delta Watershed	228,000	194,000	185,000	185,000	190,000	195,000	200,000	205,000
Change in Water Supplies from the Delta Watershed		(34,000)	(43,000)	(43,000)	(38,000)	(33,000)	(28,000)	(23,000)

Percent Change in Supplies from the Delta Watershed (As a Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Percent of Water Supplies from the Delta Watershed	64.2%	59.1%	55.4%	50.0%	50.3%	50.3%	50.4%	50.4%
Change in Percent of Water Supplies from the Delta Watershed		-5.1%	-8.8%	-14.2%	-14.0%	-14.0%	-13.8%	-13.9%