Valley Water

November 2022

CVPIA Water Management Plan 2022

Santa Clara Valley Water District

CVPIA Water Management Plan 2022

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TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

TABLE OF CONTENTS

LIST OF ATTACHMENTS

SECTION 1. DESCRIPTION OF THE DISTRICT

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A. HISTORY

1. Formation of the District

Date District formed:	1929	**Date of first Reclamation contract**:	1977
Original size (acres):	224,000	**Current year**:	2020

Santa Clara Valley Water District (Valley Water) was formed in 1929 as the Santa Clara Valley Water Conservation District in response to groundwater overdraft and land subsidence. In 1954, Valley Water annexed the Central Santa Clara Valley Water District. In 1968, it merged with the countywide flood control district to form one agency to manage the water supply and flood programs for most of the county. The Gavilan Water District in southern Santa Clara County was annexed in 1987 and since then Valley Water has provided services for the entire county (Figure 1). Today, Valley Water provides wholesale water supply, groundwater management, flood protection, and stream stewardship to all of Santa Clara County.

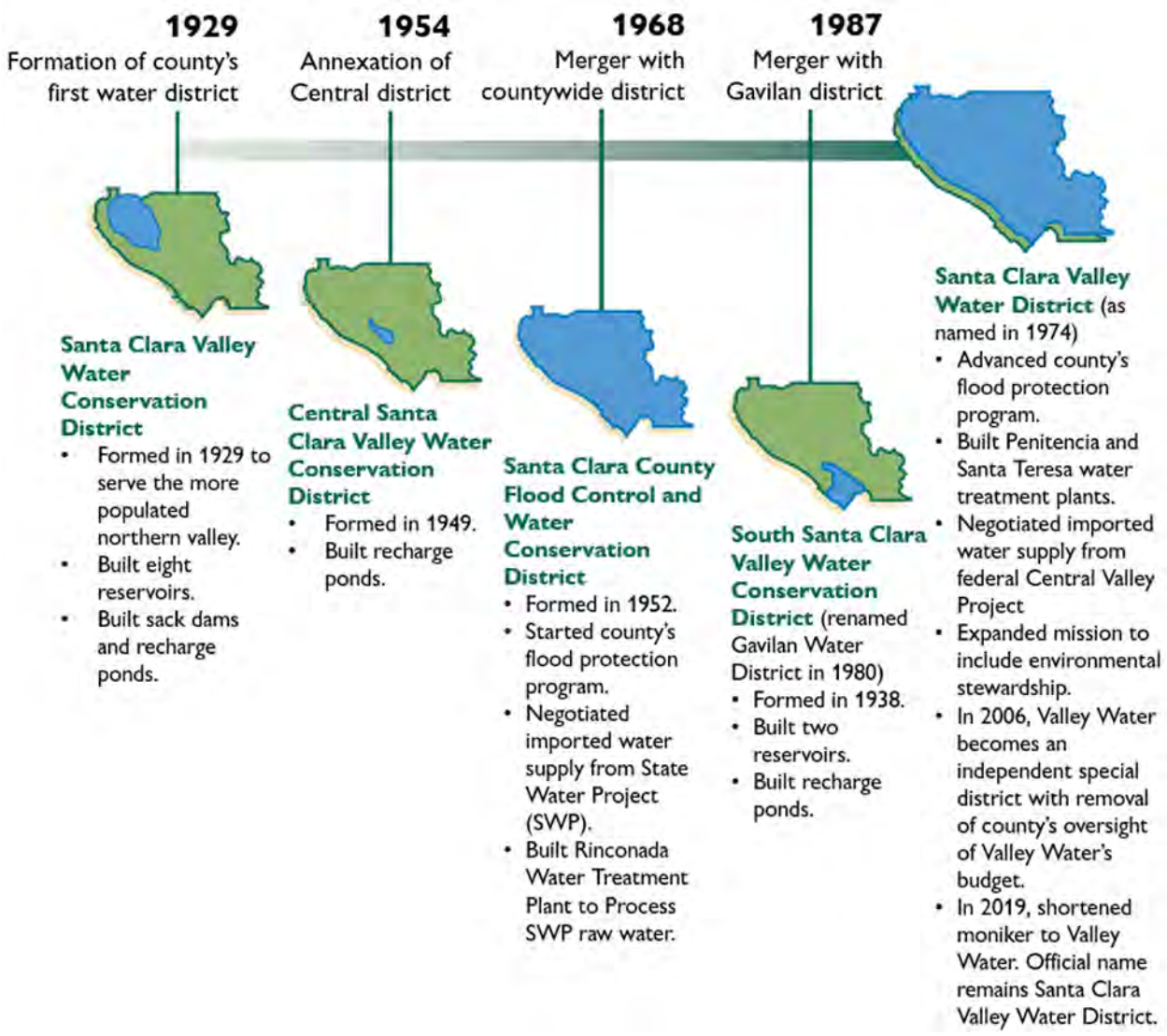

Figure 1-1. Evolution of Santa Clara Valley Water District

SECTION 1 – DESCRIPTION OF THE DISTRICT

2. Current Size, Population, and Irrigated Acres

2020	
Size (acres):	834,000
Population Served (urban connections):	1.9 million
Irrigated Acres:	20,002

3. Water Supplies Received

Water supply sources within Santa Clara County include water imported via state and federal water projects, local surface water, groundwater, water purchased by retailers directly from the San Francisco Public Utilities Commission (SFPUC), and recycled water. The water supplies received by Valley Water in 2020 are provided in the following table.

Table 1-1. Water Supplies Received in Current Year in Acre-Feet (AF)

Water Source	2020
Federal urban water (Tbl 1)	82,771
Federal agricultural water (Tbl 1)	
State water (Tbl 1)	*
Local surface water (Tbl 1)	57,889
Prior Year carryover	24,685
Upslope drain water (Tbl 1)	
District groundwater (Tbl 2)	
Banked water (Tbl 1)	16,800
Transferred water (Tbl 1)	15,305
Recycled water (Tbl 3)	293
Other – From SFPUC via Intertie	85
Total	**197,828**

*Table A Allocation of 20,000 AF was put into carryover storage for use in later years.

Seven of Valley Water's retail customers have treated water contracts, and therefore directly receive Central Valley Project (CVP) supplies from Valley Water. Those retailers are listed in the table below.

Table 1-2. Retail Customers Receiving Central Valley Project (CVP) Supplies

Valley Water Retailer	Sources of Supply	Service Area
California Water Service Company	Treated water, Groundwater	Los Altos, Los Altos Hills, Mountain View, Sunnyvale
City of Milpitas	Treated water, SFPUC water, Recycled water	Milpitas
City of Mountain View	Treated water, SFPUC water, Groundwater, Recycled water	Mountain View
San Jose Municipal Water	Treated water, SFPUC water, Groundwater, Recycled water	San Jose

Valley Water Retailer	Sources of Supply	Service Area
San Jose Water Company	Treated water, Groundwater, Local surface water, Recycled water	Campbell, Cupertino, Los Gatos, Monte Sereno, San Jose, Saratoga
City of Santa Clara	Treated water, SFPUC water, Groundwater, Recycled water	Santa Clara
City of Sunnyvale	Treated water, SFPUC water, Groundwater, Recycled water	Sunnyvale

4. Annual Entitlement Under Each Right and/or Contract

On average, imported water provides 50% of the water supply for Santa Clara County, with about 40% conveyed via the CVP and State Water Project (SWP) and the remaining 10% supplied by the SFPUC's Hetch-Hetchy system to Valley Water's retailers directly. Valley Water maintains long-term contracts with the federal government and the state of California to ensure reliable supply. Both CVP and SWP supplies are imported via the San Francisco Bay Delta.

4.1. Central Valley Project

In 1977, Valley Water entered into a contract with the United States Bureau of Reclamation (Reclamation) for a maximum of 152,500 acre-feet per year (AFY) from the San Felipe Division of the CVP. The first deliveries occurred in 1987. During the period between 1987 and 1991, drought conditions and regulatory restrictions impacted deliveries of CVP water. During this period, deliveries averaged 72,000 AFY, and were as low as 48,375 AFY in 1991. After the drought, Reclamation established an Interim Municipal &Industrial (M&I) Water Shortage Policy, which provided some protection to CVP M&I contractors. In addition, a Water Reallocation Agreement was executed in 1997 by Valley Water, Reclamation, and certain agricultural districts who are members of the San Luis & Delta-Mendota Water Authority, which provided additional protections to Valley Water's M&I water supplies from the CVP. Valley Water's average CVP water allocation for M&I and agricultural purposes was approximately 100,000 AFY from 2011 to 2020. In June 2021, Valley Water's CVP water service contract was converted into a repayment contract under Section 4011 of the Water Infrastructure Improvements for the Nation Act (WIIN Act).

4.2. State Water Project

Valley Water contracted with the SWP in 1961 for a maximum of 100,000 AFY. Deliveries began in 1965 through the South Bay Aqueduct (SBA). Since 1991, regulatory conditions have reduced SWP deliveries. Valley Water's average SWP water allocation was approximately 48,000 AFY from 2011 to 2020.

Table 1-3. Annual entitlement under each right and/or contract

Source	Contract Maximum (AF)	Annual Use (AF)		Contract No.
		M&I	Irrigation	
CVP	152,500	Up to 152,500*	Up to 33,100	7-07-20-W0023AB-P
CVP (partial assignment)	6,260		Up to 6,260 annually, but limited to 25% of total allocated supply	14-06-200-3365AB-IR5-P
SWP	100,000	Up to 100,000		N/A

*Valley Water's CVP Contract provides that the entire amount may be used for M&I, but pursuant to the 1997 "Water Reallocation Agreement among the United States, Santa Clara Valley Water District, and the San Luis & Delta-Mendota Water Authority" only 130,000 AF is provided for M&I reliability under Reclamation's Interim M&I Water Shortage Policy. Further, the total amount delivered to Valley Water for both M&I and Irrigation purposes is limited to 152,500 AF.

In 1999, Valley Water entered into an agreement with Mercy Springs Water District (Mercy Springs), Westlands Water District, and Pajaro Valley Water Management Agency for the partial assignment of 6,260 AFY of Mercy Springs' CVP water for irrigation, municipal and industrial uses. In 2019, Pajaro Valley Water Management Agency withdrew from the agreement and in June 2020, the agreement was converted into a repayment contract under Section 4011 of the Water Infrastructure Improvements for the Nation Act (WIIN Act). Valley Water receives approximately 25% of the water made available under this contract.

5. Anticipated Land-Use Changes

Land use in Santa Clara County is anticipated to remain fairly stable. Currently, about half of the land area is open space (52%). Agriculture accounts for 25% of the land area, followed by residential land use (15%). The remaining area consists of commercial, industrial, and institutional use (7%) and transportation and utility use (1%). Urbanization has replaced the orchards of the north county over the past several decades, while agriculture remains an important part of the south county area.

Santa Clara County currently has a population of nearly 2 million. According to the Plan Bay Area projections in 2017 by Association of Bay Area Governments, Santa Clara County's population is expected to increase by about 36% between 2020 and 2045, up to nearly 2.7 million in 2045. Total jobs are projected to increase an estimated 21% in the same period. While this growth will result in new development, most new construction is anticipated to be infill within existing urban centers with continued moderate urbanization in the south county. The projected increase in population and job growth will increase demand for water. It is forecasted that the county-wide demand (including accounting for conservation programs) will be 345,000 AF by 2045, representing a 13% increase from current (2020) water use of 306,000 AF.

6. Cropping Patterns (Agricultural Only)

Table 1-4. List of current crops (crops with 5% or less of total acreage are combined in the 'Other' category)

Original Plan 2002		Previous Plan 2015		Current Plan 2020*	
Crop Name	**Acres**	**Crop Name**	**Acres**	**Crop Name**	**Acres**
Cherries	1,016	Cherries	502	Cherries	953
Corn (Sweet)	900	Corn (Sweet)	1,534	Corn (Sweet)	1,041
Grapes	1,000	Grapes	1,538	Grapes	1,726
Peppers	2,420	Peppers	2,004	Peppers	1,669
Mixed Row	1,158	Other Field Crops	4,820	Hay	3,011
Tomatoes	958	Tomatoes	1,881	Tomatoes	1,631
Lettuce	2,024	Lettuce	2,532	Lettuce	2,105
Ornamental	928	Ornamental	0	Spinach	966
Other (<5%)	7,407	Other (<5%)	2,439	Other (<5%)	6,900
Total	**17,811**	**Total**	**17,250**	**Total**	**20,002**

*2020 data are from Santa Clara County Crop Report.

7. Major Irrigation Methods (By Acreage – Agricultural Only)

Original Plan 2002		Previous Plan 2015		Current Plan 2020*	
Irrigation Method	**Acres**	**Irrigation Method**	**Acres**	**Irrigation Method**	**Acres**
Trickle/Drip	7,434	Drip/Micro	8,774	Drip/Micro	11,555
Level Basin	873	Drip	2,690	Drip	1,631
Sprinkler	8,193	Sprinkler/Drip	4,323	Sprinkler/Drip	3,011
Other	120	Sprinkler	1,463	Sprinkler	3,805
Total	**16,620**	**Total**	**17,250**	**Total**	**20,002**

*2020 data are from Santa Clara County Crop Report.

B. LOCATION AND FACILITIES

See Attachment A for maps showing water supply distribution to and within Valley Water.

1. Incoming Flow Locations and Measurement Methods – CVP Water Only

Location Name	Physical Location	Type of Measurement Device	Accuracy
Bifurcation	10021 Pacheco Pass Highway Hollister, CA 95023	Transit Time Ultrasonic Clamp On	5% or better

2. Agricultural Distribution System

and

3. Urban Distribution System

Valley Water's conveyance systems serve both agricultural and urban communities through groundwater recharge and water treatment. Figure 2 illustrates the location of Valley Water's water conveyance, treatment, and distribution systems discussed below.

Conveyance systems generally refer to raw water transportation infrastructure used to import water to the county and transport water from local reservoirs to treatment plants or recharge facilities. Distribution systems generally refer to the pipelines used to transport water from Valley Water's water treatment plants to the retail water companies that sell water directly to the public.

Valley Water has one distribution system that delivers both M&I and Agricultural supplies.

Conveyance Method	Miles
AC Pipe	8.1
Steel Pipe	41.9
Pre-stressed concrete and steel pipe	78.4
Cast Iron Pipe	0.0
Lined Canal between reservoirs	4.4
Tunnel	5.9
Total	**138.7**

Treated water pipelines that distribute water from the treatment plants to retail water companies include the following:

- **Rinconada Water Treatment Plant**
  - West Pipeline
  - Campbell Distributary
  - Santa Clara Distributary
  - Mountain View Distributary
  - Sunnyvale Distributary

- **Santa Teresa Water Treatment Plant**
  - Snell Pipeline
- **Penitencia Water Treatment Plant**
  - East Pipeline
  - Milpitas Pipeline
  - Parallel East Pipeline

Raw water pipelines include the following:

- Santa Clara Conduit
- Cross Valley Pipeline
- Calero Pipeline
- Almaden Valley Pipeline
- Central Pipeline
- Stevens Creek Pipeline

Figure 1-2. Water Supply Distribution System

4. Storage Facilities (Regulating Reservoirs)

Valley Water manages 10 local reservoirs, which capture local runoff and/or are used to store imported water. The total unrestricted storage capacity of these reservoirs is 166,140 AF. Water is stored at these sites for later conveyance to groundwater recharge facilities or to treatment plants based on demand. Temporary dam safety operating restrictions placed on Almaden, Anderson, Calero, Coyote, and Guadalupe reservoirs for seismic risk management have reduced total surface storage capacity by nearly two-thirds.

Reservoir	Reservoir Capacity (AF)	Restricted Capacity (AF)
Almaden	1,555	1,443
Anderson	89,278	3,050*
Calero	9,738	4,414
Chesbro	7,967	7,967
Coyote	22,541	11,843
Guadalupe	3,320	2,134
Lexington	18,534	18,534
Stevens Creek	3,056	3,056
Uvas	9,688	9,688
Vasona	463	463
Total	**166,140**	**62,592**

*Anderson Reservoir is currently drained to dead pool for seismic retrofit.

5. Description of the Agricultural Spill Recovery System and Outflow Points.

Not applicable

6. Agricultural Delivery System Operation (check all that apply)

Agricultural water deliveries are on demand, whether water users pump groundwater as necessary, divert water from a raw water pipeline, or use recycled water. Surface water agricultural deliveries may be restricted subject to the needs of drinking water treatment plants during times of shortage. However, these agricultural customers may still pump groundwater as needed.

7. Restrictions on Water Source(s)

Restriction	Cause of Restriction	Effect on Operations
Land subsidence	Over-pumping of groundwater	Manage recharge operations and encourage retailers to reduce their groundwater pumping.
Contract limitations	Drought and environmental conditions (water quality, fish migration, and habitat).	Rely on stored water, encourage cities to adopt mandatory water conservation measures/rationing, purchase additional supplies, and develop an integrated water resource plan.
Low point in San Luis Reservoir	Drought and environmental conditions (water quality, fish migration and habitat).	Rely on locally stored water, if available, possible emergency water conservation measures or rationing, raw water delivery via the SBA, and reoperation of treatment plants as much as possible to minimize impacts.

8. Proposed Changes or Additions to Facilities and Operations for the Next 5 Years

Valley Water's operations are continually adapted to meet changing regulatory requirements, water supply and water quality conditions, flood risk reduction needs, fishery and environmental concerns, cost control, and stakeholder interests. Changes or additions to facilities or operations proposed for the next five years include:

- **Storage**
  - Seismic retrofit of Anderson and Guadalupe dams
  - Seismic evaluations of Coyote, Chesbro and Uvas dams

- **Transmission**
  - Raw and treated water pipeline inspection and rehabilitation
  - Almaden Valley Pipeline replacement
  - Vasona Pumping Plant Upgrades

- **Water Treatment Plants**
  - Rinconada Reliability Improvement Project: continued construction for the comprehensive upgrade of the Rinconada Water Treatment Plant (WTP) processes to ensure plant reliability for the next 50 years; this will include the addition of fluoridation facilities.
  - Rinconada WTP residuals remediation.
  - Penitencia WTP residuals management.
  - Santa Teresa WTP filter media replacement.
  - WTP electrical improvement.
  - Equipment replacement and renewal at the three WTPs and laboratory as part of Valley Water's 10-year asset management program.
  - Development of a comprehensive 30-year implementation plan to determine the projects needed for repairing or upgrading Valley Water's WTP infrastructure.

- **Recycled Water and Purified Water**
  - Complete development of the Purified Water Program and implement the Countywide Water Reuse Master Plan.
  - Expansion of the recycled water pipeline system in Gilroy to increase usage by approximately 33% or from 2,000 to 3,000 acre-feet per year.

- **Fish and Aquatic Habitat Collaborative Effort (FAHCE)[1]**

  Finalize environmental impact reports, complete water rights change petitions and implement changes in operations and habitat improvements as specified in the FAHCE Fish Habitat Restoration Plan to resolve a water rights complaint initiated in 1996 and implement a Fish Habitat Restoration Plan following a 2003 Settlement Agreement.

[1] FAHCE is a collaborative process to identify actions to balance fish and aquatic habitat needs with Valley Water's water supply operations. The program seeks to improve aquatic spawning and rearing habitat and fish passage for migration to and from the watersheds of the Coyote and Stevens Creeks and Guadalupe River.

C. TOPOGRAPHY AND SOILS

1. Topography of the District and Its Impact on Water Operations and Management

The topography of the Santa Clara Valley consists of three main physiographic features: the Santa Clara Valley, the Santa Cruz Mountains, and the Diablo Range. In order to deliver water from San Luis Reservoir, pumping is required at Pacheco Pumping Plant to get the water over the Diablo Range into Santa Clara County. In order to deliver water to Valley Water's service area, further pumping may be required at Coyote Pumping Plant.

Vegetation in non-urbanized areas of the county is diverse, ranging from redwood forests along the Santa Cruz Mountains to grasslands along the eastern foothills and Diablo Range.

2. District Soil Association Map (Agricultural Only)

See Attachment A, Valley Water Soil Map

3. Agricultural Limitations Resulting from Soil Problems (Agricultural Only)

Soil Problem	Estimated Acres	Effect on Water Operations and Management
N/A	N/A	N/A

D. CLIMATE

1. General Climate of the District Service Area

Santa Clara County has a semi-arid, Mediterranean climate, with warm and dry weather lasting from late spring through early fall. Average annual precipitation ranges from about 15 inches on the valley floor to about 45 inches along the crest of the Santa Cruz Mountains. The average annual precipitation in Santa Clara County was 23.2 inches from 1950-2020, with most precipitation occurring between the months of November and April. The county's temperature is generally moderate. Maximum daily temperatures averaged by month in the County range from 55.7°F to 83.4°F. The average annual evapotranspiration (ETo) is 49.6 inches.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Rainfall (in.)	4.7	4	3.6	1.8	0.6	0.1	0	0.1	0.2	1.1	2.7	4.2	**23.2**
Max. Daily Temp. (°F)	55.7	58.3	61.2	65.6	71.7	78.4	83.4	83.1	80.8	73.8	62.8	55.9	**69.2**
Min. Daily Temp. (°F)	37.9	39.7	40.9	42.8	47.4	52.2	56.6	56.4	54.5	49.2	42.3	37.9	**46.5**
Average ETo (in.)	1.5	1.9	3.5	5	6	6.8	7	6.3	4.8	3.5	1.9	1.4	**49.6**

Notes: Rainfall and temperature from NOAA climate mapping for Santa Clara County. The 2017 plan used Valley Water Station 86 which represents rainfall in City of San Jose. ETo from California Irrigation Management Information System (Archived San Jose Station).

2. Impact of Microclimates on Water Management Within the Service Area

The topographical variations in the county's landscape create variations in weather or microclimates, which reflect in the normal amount of precipitation that is generated by these midlatitude systems. Mean annual precipitation ranges from 53 inches in the Santa Cruz Mountains and 31 inches in the Diablo Range to 14 inches in the Valley Floor.

In general, the predominantly agricultural south county has higher temperatures and receives less rainfall than the urban north county due to the orographic lift. Air temperatures have stayed above 28 °F based off NOAA data for the county since 1950, meaning there are no frost days within Valley Water's service area.

The county doesn't experience excess wind based on the average daily and average daily maximum wind speed for a few stations throughout the county. South County, where majority of the county's agriculture practices are located, is generally calm and less windy than North County. The calm weather results in a relatively consistent water use pattern for agriculture.

Wind Speed	San Jose Airport NOAA Station	Moffett Federal Airfield NOAA Station	South County Airport NOAA Station	Gilroy CIMIS Station
Average Maximum Daily Wind Speed (mph)	41.13	30.29	27.17	20.32
Average Daily Wind Speed (mph)	6.48	5.57	5.82	4.94

The microclimates' effect on water management is reflected in the operations of Valley Water's reservoirs and in potential reductions in water needed for landscaping and irrigation in the mountains.

E. NATURAL AND CULTURAL RESOURCES

1. Natural Resource Areas Within the Service Area

Santa Clara County is located at the southern end of San Francisco Bay and is located within the Pacific Flyway. The county has an exceptionally diverse inventory of environmental resources including grasslands, oak woodlands, redwood forests, salt marshes, seasonal wetlands, and extensive riparian habitat.

Countywide, water related environmental and recreational resources include more than 700 miles of rivers, streams, creeks, 10 reservoirs, and several recharge facilities which are operated as joint-use recreational facilities. Valley Water owns and manages about 275 miles of streams and all 10 reservoirs, and several reservoirs are also operated as joint-use recreational facilities under agreement with the Santa Clara County. An extensive network of walking and biking trails crisscrosses the county. Parks such as Don Edwards National Wildlife Refuge, Alviso Marina County Park, the Palo Alto Baylands, Shoreline Park, and the Sunnyvale Baylands Park provide access from Santa Clara Valley to the south end of San Francisco Bay.

Endangered or threatened species located within the county include the California Ridgway's Rail, Salt Marsh Harvest Mouse, California Red-Legged Frog, Western Pond Turtle, the Tiger Salamander, and Steelhead Trout.

2. Description of District Management of These Resources in the Past or Present

Valley Water has a Board Policy on water resources stewardship that provides guidance to the management of natural resources in the past and future. Specifically, the policy establishes three goals to protect and enhance ecosystem health:

- Use a science-based, inclusive approach to protect Santa Clara County's watersheds and aquatic ecosystems for current and future generations.
- Sustain ecosystem health while managing local water resources for flood protection and water supply.
- Encourage inclusive, sustainable management of water resources in the Bay-Delta and its watersheds to protect imported water supply.

FAHCE program seeks to improve aquatic spawning and rearing habitat and fish passage for migration to and from the watersheds of the Coyote and Stevens Creeks and Guadalupe River. These actions include:

- Modifications to reservoir operations to provide instream flows
- Restoration measures to improve habitat conditions and provide fish passage
- Monitoring and adaptive management

Environmental and community benefits includes providing flows to improve habitat conditions; resolving water rights concerns; and complying with regulatory requirements. The program is funded through Valley Water's utility fund.

3. Recreational and/or Cultural Resources Areas Within the Service Area

Santa Clara county and its 15 municipalities, along with various private enterprises, offer numerous recreational and cultural resources within Valley Water's boundaries. Information on many of these is readily available on the County and cities' websites.

F. OPERATING RULES AND REGULATIONS

1. Operating Rules and Regulations

Valley Water's rules and regulations are based on the authority granted in the District Act and take the form of ordinances and resolutions adopted by the Board of Directors. These rules and regulations include the following:

- Groundwater rules and regulations are governed by Section 26 of the District Act and Ordinance 70-1, Enacting Rules and Regulations Governing the Recording of Ground Water Production within a Zone of Santa Clara Valley Water District in which a Ground Water Extraction is Levied.
- Surface water rules and regulations are governed by Resolution 70-28 as amended. Valley Water's highest surface water priority is to ensure sufficient supplies to its treatment plants. Raw water is also used for groundwater recharge and agriculture.

See Attachment B for full text of each.

2. Water Allocation Policy (Agricultural Only)

Approximately 97 percent of water used by farmers is independently pumped from groundwater. The groundwater basins that underlie the Santa Clara Valley are not adjudicated, thus individual pumping is not limited. However, the amount of water extraction is influenced by the rate structure in which well users pay a flat rate for each acre-foot of water pumped. Agricultural surface water deliveries are on demand, subject only to the needs of the water treatment plants during times of shortage. Per Valley Water's standard treated water contract, in times of water shortage, Valley Water will reduce the total amount of agricultural water released to others for surface delivery before reducing deliveries of treated water. Because of scarce surface water supplies during the current drought, surface water users, as well as groundwater users, were requested to reduce their use by 15% as compared to 2019 starting the summer of 2021.

3. Official and Actual Lead Times Necessary for Water Orders and Shut-Off (Agricultural Only)

Not applicable. Agricultural surface water is provided on demand, subject to the needs of the treatment plants in times of shortage.

4. Policies Regarding Return Flows (Surface and Subsurface Drainage from Farms) and Outflow (Agricultural Only)

Not applicable. Valley Water does not have any policies regarding return flows and outflow.

5. Policies on Water Transfers by the District and Its Customers

Valley Water has routinely engaged in water transfers and exchanges to help manage water supplies. Water transfers and exchanges have also been identified in Valley Water's Water Supply Master Plan 2040 that was adopted in 2019 as a way to increase water supply reliability while new water supply projects are being designed and constructed. Short-term or spot market water transfers usually involve an agreement to purchase water within a one- to two-year period. Valley Water routinely uses short-term water transfers to increase water supplies in times of shortage.

G. WATER MEASUREMENT, PRICING, AND BILLING

This section provides information on water measurement, pricing, and billing for CVP water delivered by Valley Water to agricultural and domestic customers at turnouts and to retailer distribution systems. Valley Water also measures and bills for other water use, including groundwater, recycled water from the South County Regional Wastewater Authority, and raw water deliveries to non-agricultural customers outside urban distribution systems. In total, Valley Water has 61 active surface water permittees, 48 of which receive CVP water, and 13 are on SBA or divert water off creeks.

Water Supply	No. of Accounts	Percent of Total	Water Quantity (AF)	Percent of Total
Treated Water				
Metered	28	100%	103,400	100%
Un-metered	0	0%	0	0%
Total	**28**	**100%**	**103,400**	**100%**
Raw Surface Water				
Metered	46	75%	2,127	99%
Un-metered	15	25%	29	1%
Total	**61**	**100%**	**2,156**	**100%**
Totals				
Metered	74	83%	105,527	100%
Un-metered	15	17%	29	0%
Total	**89**	**100%**	**105,556**	**100%**

Of the 61 active surface water permittees, 25 are agricultural users, 20 are 100% domestic landscaping, and 16 are Municipal and Industrial (M&I). Eight of these permittees have usage for both agriculture and domestic landscaping (double usage). Of the 23 unmetered accounts reported in the 2017 CVPIA Water Management Plan, Valley Water has since added meters to eight of the accounts. Of the 15 unmetered accounts, 12 are on a shared meter. This means their water is being tracked but there is not a physical meter on their property but on a house next door. Two of the 15 accounts are riparian creek diverters that do not receive CVP water. The remaining account receives water off a percolation pond in Los Gatos, which is not CVP water.

Pending its Board approval, Valley Water is planning to make changes to the surface water program in phases. Phase 1 of Valley Water's surface water program will remove 20 100% domestic landscape permittees and require the 8 double usage permittees to only use water for agricultural purposes. If passed, Valley Water would then have 41 active surface water permittees in our program, 25 would be 100% agriculture and 16 would be 100% M&I. Phase 2 of the program would be to update the 1974 Rules and Regulations, and meter the 4 permittees (3 Ag, 1 M&I) that would still be in the program.

1. Agricultural Customers Receiving CVP Water in 2020

A. Number of delivery points (turnouts and connections): **25**

B. Number of delivery points serving more than one farm: **3**

C. Number of measured delivery points (meters and measurement devices): **25**

D. Percentage of water delivered to the contractor that was measured at a delivery point: **100%**

E. Total number of delivery points not billed by quantity: **0 unmetered customers received water in FY2020**

F. Delivery point measurement device table

Measurement Type	Number	Accuracy* (+/- %)	Reading Frequency (Days)	Calibration Frequency (Months)	Maintenance Frequency (Months)
Propeller meter	25	+/- 2%	30	60	12

*Annual maintenance is performed on the meters, and they are replaced every 5 years. Before being installed in the field, the meters are tested to be accurate within +/- 2% of 100%. There is no calibration performed in the field.

2. Urban Customers

A. Total number of connections: **28**

B. Total number of metered connections: **28**

C. Total number of connections not billed by quantity: **0**

D. Percentage of water that was measured at delivery point: **100**

E. Percentage of delivered water that was billed by quantity: **100**

F. Measurement device table

Water Supply	Type of Measurement Method	No. of Accounts	Accuracy (+/- %)	Reading Frequency Days	Accuracy Frequency Verification (Months)	Maintenance Frequency (Months)
Retailers: 8 retailers with 28 metered turnouts	2” mag meter	1	+/- 2%	7	6	6
	10” mag meter	1	+/- 2%	7	6	
	12” mag meter	6	+/- 2%	7	6	
	16” mag meter	4	+/- 2%	7	6	
	18” mag meter	3	+/- 2%	7	6	
	20” mag meter	6	+/- 2%	7	6	
	24” mag meter	3	+/- 2%	7	6	
	30” mag meter	1	+/- 2%	7	6	
	33” mag meter	1	+/- 2%	7	6	
	36” mag meter	2	+/- 2%	7	6	
Total		**28**				

3. Agricultural and Urban Rates

Table 1-5. Adopted Water Charges for Fiscal Year 2019-20

Type of Charge	Agricultural ($/AF)	Non-Agricultural ($/AF)
Basic User / Groundwater Production Charge		
Zone W-2	28.86	1,374.00
Zone W-5	28.86	481.00
Surface Water Master Charge	37.50	37.50
Total Surface Water Charge		
Zone W-2	66.36	1,411.50
Zone W-5	66.36	518.50
Minimum Surface Water Charge		
Zone W-2	21.65	1,030.50
Zone W-5	21.65	360.75
Treated Water		
Contract	N/A	1,474.00
Non-Contract	N/A	1,574.00
Recycled Water		
Gilroy Recycled Water Facility	56.26	461.00

1. Total surface water charge is the sum of the basic user charge (which equals the groundwater production charge) plus the water master charge
2. The minimum surface water charge is 75% of the basic user charge (which equals the groundwater production charge); additional surface water master charges apply
3. The total treated water contract charge is the sum of the basic user charge for Zone W-2 (which equals the groundwater production charge) plus the contract surcharge of $100/AF
4. The total treated water non-contract charge is the sum of the basic user charge for Zone W-2 (which equals the groundwater production charge) plus the non-contract surcharge ($200/AF)

Table 1-6. Annual Charges Collected from Agricultural and Urban Customers FY 2020

Fixed Charges			
Charges ($ by unit)	**Charge units ($/meter size)**	**Units billed during year (by meter size)**	**Total $ collected ($ times units)**
N/A	N/A	N/A	N/A
Volumetric Charges			
Charges ($ by unit)	**Charge units ($/AF)**	**Units billed during year (AF)**	**Total $ collected ($ times units)**
$1,474/AF	$/AF-Treated Water	103,400	$152.622M
Varies by zone	$/AF Surface Water	2,156	$1.199M

See Attachment D, Valley Water Sample Bills.

3.1. Water-use Accounting Procedures

Valley Water maintains records of water usage on computer files, microfiche, and printed files. For the north county, records go back to 1967. For the south county, records extend back to 1987, when Valley Water merged with the Gavilan Water Conservation District. Upon written request, Valley Water will provide a customer with a record of the water use for his/her account. Copies of the current year bills that were provided to one agricultural and one urban customer are included in Attachment D.

H. WATER SHORTAGE ALLOCATION POLICIES

1. Current Year Water Shortage Policies or Shortage Response Plan – Specifying How Reduced Water Supplies Are Allocated

Water supply shortages can occur for a variety of reasons including droughts; loss in ability to capture, divert, store, or utilize local supplies; and/or facility outages. As a wholesale agency, Valley Water does not have direct authority over retail rates and generally does not employ staff to enforce water restrictions. Valley Water in the past does not issue citations, fines, or surcharges to the public regarding water waste, however, in responding to current severe drought, Valley Water adopted an ordinance in May 2022 to enforce water waste restrictions contained in Valley Water resolutions. Valley Water works with cities and retailers that have a direct relationship with water customers to develop ordinances and water use restrictions to prevent water waste and reduce demand during droughts, and water shortage compliance and enforcement actions occur at the retailer level and with city or county enforcement staff or law enforcement. Therefore, Valley Water's water shortage response actions are focused mainly on public education and coordination with municipalities and retailers in the county.

During droughts or shortages, Valley Water considers all available tools, including balancing demands for treatment plants and recharge facilities, incentives or requests for retailers to use either groundwater or treated water, use drought budget reserves to pay for response measures to reduce the impact on water rates, and community outreach to maximize the use of available supplies. Valley Water's response actions preceding and during a water supply shortage are described in the table below. Currently, Valley Water is refining our water shortage response via a USBR WaterSmart drought response plan, which is on track to be completed by the end of 2023.

Table 1-7. Water Shortage Contingency Plan from Valley Water 2020 Urban Water Management Plan

Stage	Stage Title	Projected End-of-Year Groundwater Storage	Requested Reduction in Water Use	Actions
Stage 1	Normal	Above 300,000 AF	None	Valley Water continues ongoing outreach strategies aimed toward achieving long-term water conservation targets. Messages in this stage focus on services and rebate programs Valley Water provides to facilitate water use efficiency for residents, agriculture, and business. While other stages are more urgent, successful outcomes in Stage 1 are vital to long-term water supply reliability.

Stage	Stage Title	Projected End-of-Year Groundwater Storage	Requested Reduction in Water Use	Actions
Stage 2	Alert	250,000 to 300,000 AF	0-10% demand reduction	This stage is meant to warn water users that current water use is tapping groundwater reserves. Work begins to coordinate ordinances with the county, cities and retailers to prepare for Stage 3. Additional communication tools are employed to augment Stage 1 efforts, promote immediate behavioral changes, and set the tone for the onset of shortages. Specific implementation plans are developed in preparation of a drought deepening such as identifying supplemental funding to augment budgeted efforts and initiation of discussions with local, state, and federal agencies to call on previously negotiated options, transfers, and exchanges.
Stage 3	Severe	200,000 to 250,000 AF	10-20% demand reduction	Shortage conditions are worsening, requiring close coordination with the county, cities, retailers, large landscapers, and agricultural users to implement ordinances and water use restrictions. Significant behavioral change is requested of water users. The intensity of communication efforts increases with the severity of the shortage. Messages are modified to reflect more dire circumstances. Water supplies are augmented through the implementation of options, transfers, exchanges, and withdrawals from groundwater banks.
Stage 4	Critical	150,000 to 200,000 AF	20-40% demand reduction	This is generally the most severe stage in a multi-year drought. Stage 3 activities are expanded, and Valley Water will encourage the county, cities, and retailers to increase enforcement of their water shortage contingency plans, which could include fines for repeated violations; and all water users to significantly reduce water use.
Stage 5	Emergency	Below 150,000 AF	40 to 50%	Stage 5 is meant to address an immediate crisis such as a major infrastructure failure but may also be needed in exceptional multi-year drought. Water supply may only be available to meet health and safety needs. Valley Water will encourage all water users to significantly reduce water use, activate its Emergency Operations Center, coordinate closely with municipalities and retailers, and provide daily updates on conditions.

SECTION 1 – DESCRIPTION OF THE DISTRICT

Valley Water coordinates with cities in our service area or the county for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558). In addition, Valley Water has statutory and contractual authority to address the wasteful use of water and in May 2022 adopted an ordinance to enforce water waste restrictions contained in Valley Water resolutions.

1.1. Statutory Authority

1.1.1. Water Code Sections 350 and 375 et seq.

Sections 375 *et seq.* and 350 *et seq.* of the Water Code authorize Valley Water, a wholesale urban water supplier and special district, to, upon appropriate factual findings, implement a water conservation program and/or declare a water shortage emergency by resolution or ordinance and adopt and enforce related conservation measures. If appropriate, Valley Water can reduce the amount of treated water it supplies to local retailers and/or impose water reduction measures.

1.1.2. Santa Clara Valley Water District Act

One source of statutory authority that empowers Valley Water to implement or enforce water shortage response actions is its District Act (The Santa Clara Valley Water District Act, Chapter 1405 of Statutes 1951 of the State of California, Water Code Appendix, Chapter 60). Sections 4 and 5 of the District Act grant Valley Water power to conserve waters within its jurisdiction (as well as import and distribute water). Specifically, Section 4(c) of the District Act authorizes Valley Water to:

- provide for the conservation and management of floodwater, stormwater, or recycled water, or other water from any sources within or outside the watershed in which the district is located for beneficial and useful purposes.
- protect, save, store, recycle, distribute, transfer, exchange, manage, and conserve in any manner any of the waters.
- prevent the waste or diminution of the water supply in the district.
- retain, protect ... drainage, stormwater, floodwater, or treated wastewater, or other water from any sources, within or outside the watershed ....
- (District Act, § 4 [Objects and purposes], subd. (c)(3), (4), (5) & (6).)

District Act Section 5, paragraph 5, similarly provides that Valley Water may:

> "... store water in surface or underground reservoirs within or outside of the district ... conserve, reclaim, recycle, distribute, store, and manage water for present and future use within the district; [and] appropriate and acquire water and water rights, and import water into the district and to conserve within or outside the district, water for any purpose useful to the district ...."

Following the 1991 drought, the District Act was amended to allow Valley Water to develop overproduction charges for groundwater pumping. This provision, Section 26.7, allows Valley Water to establish tiered pricing during drought and water shortage conditions to minimize impacts to groundwater basin levels.

SCVWD District Act § 26.7. Levy and collection of groundwater charges; rates; new or adjusted charges; reports; notice; hearing; errors. (C) The rate or rates, as applied to operators who produce groundwater above a specified annual amount, may, except in the case of any person extracting groundwater in compliance with a government-ordered program of cleanup of

hazardous waste contamination, be subject to prescribed, fixed, and uniform increases in proportion to increases by that operator in groundwater production over the production of that operator for a prior base period to be specified by the board, upon a finding by the board that conditions of drought and water shortage require the increases. The increases shall be related directly to the reduction in the affected zone groundwater levels in the same base period.

1.1.3. Statutory Groundwater Sustainability Agency Powers

In addition to the District Act and Water Code §§ 350 and 375 *et seq*., Valley Water is the designated Groundwater Sustainability Agency (GSA) for the Santa Clara and Llagas Subbasins under the Sustainable Groundwater Management Act (SGMA) and has a DWR-approved Alternative to a Groundwater Sustainability Plan (GSP) in place for managing these subbasins. Although Valley Water does not currently restrict groundwater pumping or impose extraction allocations upon owners or operators of groundwater extraction facilities and is not planning to do so, it has the power to do this, if necessary (See Water Code § 10726.4(a)). In February 2018, the Board adopted Resolution 18-04, which describes the fundamental approach to respond to worsening basin conditions, including the steps that Valley Water would take in coordination with stakeholders prior to implementing SGMA authorities to regulate pumping.

1.2. Contractual Authority

In addition to its statutory authority, Valley Water has contractual authority to reduce the amount of potable, treated water it provides to its retail customers. Article C, Section 4(c) of Valley Water's standard-form treated water contract with its retailers provides that, if the Board passes a resolution providing for a reduction in water use by more than 10%, it shall reduce the amount of potable treated water it provides to retailers by this same amount, minus 10%. Thus, if the Board calls for a 30% reduction in water use during a drought, it will reduce treated water supplies to its retailers by 20% (a call for a 20% reduction would result in a 10% reduction in treated water supplies, etc.).

Additionally, under Valley Water's standard-form treated water contract, retailers may purchase "non-contract" water above their monthly purchase commitment when additional supplies are available, with higher price for such "non-contract" water to discourage overuse. Valley Water has the authority to eliminate non-contract water sales altogether if necessary. Although Valley Water's contractual authority relates only to treated water deliveries, not to groundwater extraction, the contracts give Valley Water the ability to adjust treated water pricing to incentivize the use of either treated water or groundwater by its water retailer customers, depending on what best supports local water supply needs and operations.

1.3. Local Ordinances

Water waste prohibitions are described by retailer in Attachment P. Santa Clara County adopted Ordinance NS-640 on February 10, 2015, which prohibits certain water waste practices. This would include prohibiting water waste for groundwater pumpers that are outside the boundaries of the 13 water retailers. Additionally, the State of California has made permanent certain water waste prohibitions and restrictions which would also be applicable to the groundwater pumpers.

I. EVALUATE POLICIES OF REGULATORY AGENCIES AFFECTING THE CONTRACTOR AND IDENTIFY POLICIES THAT INHIBIT GOOD WATER MANAGEMENT

Operation of the SWP and CVP must comply with regulations set by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) under the Endangered Species Act, the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act and by the State Water Resources Control Board (State Water Board) under the Clean Water Act and Porter Cologne Water Quality Control Act. Many of the regulations specify operational ranges, with the specific operational requirements determined based on real time or precedent conditions. These ranges lead to large uncertainties in annual imported water supplies which creates inefficiencies in Valley Water's annual water supply planning.

Valley Water's imported water supplies are becoming less reliable as regulatory and institutional restrictions on the operation of the SWP and CVP increase. Since 1991, regulatory agencies have imposed increasingly more restrictions on operation of the SWP and CVP to protect fish and wildlife and water quality. The fish and wildlife agencies and State Water Resources Control Board are currently discussing even more restrictions on SWP and CVP operations. DWR and Reclamation have reinitiated consultation with the USFWS and NMFS on the long-term operations of the SWP and CVP under the Endangered Species Act. New permits under this process could result in decreased opportunities for the SWP and CVP to export water from the Sacramento-San Joaquin Delta (Delta). The State Water Board is developing and implementing updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) that may introduce new operational restrictions on the SWP and CVP, new flow objectives to the tributaries to the Delta, and revised objectives within the Delta that could also limit future exports. If the restrictions that are being discussed today are imposed in the future, Valley Water's imported supplies could be significantly impacted. The State Water Board also has the ability to administer water rights curtailments in times of drought, as seen in the midst of the current drought. Under a changing climate with potentially longer and more severe dry conditions, these curtailments may increasingly impact Delta exports.

Valley Water participates in various projects and programs, including development of the Delta Conveyance Project, Voluntary Agreements for implementation of Bay-Delta Plan amendments, and the Collaborative Science and Adaptive Management Program, aimed at identifying operational measures, programs, and facilities that would improve federal and state water supplies, quality, and reliability as well as to restore and enhance environmental conditions.

SECTION 2. INVENTORY OF WATER RESOURCES

A. SURFACE WATER SUPPLY

1. Surface Water Supplies in Acre Feet, Imported and Originating Within the Service Area, by Month (Table 1)

See Section 5, Water Inventory Tables, Table 1

2. Amount of Water Delivered to the District by Each of the District Sources for the Last 10 Years

See Section 5, Water Inventory Tables, Table 8.

B. GROUNDWATER SUPPLY

1. Groundwater Extracted by Valley Water and Delivered, by Month (Table 2)

See Section 5, Water Inventory Tables, Table 2

Valley Water does not actively operate any water supply wells and has not pumped and delivered groundwater historically. The Campbell Well Field, which was completed in 2015, allows Valley Water to pump groundwater if necessary, as an emergency backup to its treated surface water system. The three wells are run periodically for maintenance purposes but to date, have never been used to deliver groundwater to customers.

2. Groundwater Subbasins That Underlie the Service Area

The groundwater subbasins in Santa Clara County provide about half of the water used in the county, through pumping by retail water agencies or individual well owners. Valley Water manages two groundwater subbasins identified by the Department of Water Resources Bulletin 118: the Santa Clara Subbasin (Basin 2-9.02), which includes the north county and the Coyote Valley, and the Llagas Subbasin (Basin 3-3.01) in the south county.

The table below presents the area and estimated operational groundwater storage capacity of each subbasin. The operational storage capacity is based on hydrology, demands, and operational data and represents the maximum cumulative storage without causing undesirable results or high groundwater nuisance conditions. Groundwater elevations outside this range would likely lead to undesirable results, such as resumed land subsidence in the Santa Clara Subbasin. Valley Water does not define a particular “safe yield” value but instead manages groundwater to maintain sustainable conditions through annual operations and long-term water supply planning, which ensures the subbasins are in long-term balance.

Table 2-1. Groundwater Subbasins that Underlie Valley Water’s Service Area

Name	Size (Square Miles)	Useable Capacity (AF)
Santa Clara Subbasin	297	383,000
Llagas Subbasin	88	165,000

The Santa Clara and Llagas Subbasins are described briefly below, with extensive detail available in Valley Water’s 2021 Groundwater Management Plan, which is the first periodic update to the DWR approved Alternative to a Groundwater Sustainability Plan under SGMA. Valley Water is designated as the exclusive Groundwater Sustainability Agency for the Santa Clara and Llagas Subbasins under SGMA.

SECTION 2 – INVENTORY OF WATER RESOURCES

2.1. Santa Clara Subbasin

The Santa Clara Subbasin (DWR Basin 2-9.02) extends from the Cochrane Road area in Morgan Hill to the county's northern boundary. It is bounded on the west by the Santa Cruz Mountains and on the east by the Diablo Range. The subbasin is approximately 29 miles long, 15 miles wide and covers a surface area of 297 square miles. The subbasin underlies a relatively flat valley and consists of unconsolidated alluvial sediments. The recharge area, comprised of alluvial fan and fluvial deposits along the edge of the subbasin, allows surface water to replenish principal aquifers. In the northern, central portion of the basin, a laterally extensive, low permeability aquitard restricts the vertical flow of groundwater and contaminants, forming a confined area.

2.2. Llagas Subbasin

The Llagas Subbasin (DWR Basin Number 3-3.01) extends from near Cochrane Road in Morgan Hill to the county's southern boundary at the Pajaro River. The subbasin is bounded by the Santa Cruz Mountains to the west and the Diablo Range to the east. The Llagas Subbasin is about 15 miles long in the northwest/southeast direction and 3 to 6 miles wide with a surface area of 88 square miles. The Llagas Subbasin underlies a relatively flat valley and consists of unconsolidated alluvial sediments.

Like the Santa Clara Subbasin, the Llagas Subbasin has both recharge and confined areas. The recharge area is located at the north, western, and eastern edges of the subbasin and is the area where active groundwater recharge takes place due to high lateral and vertical permeability. In the southern and central portion of the subbasin, clays and silts become more vertically and laterally extensive creating confined artesian conditions, especially in the general area near the Pajaro River.

3. Map of District-Operated Wells and Managed Groundwater Recharge Areas

See Attachment A for maps of Groundwater Subbasins and Recharge Facilities

Valley Water owns many monitoring wells, the Campbell Well Field, and a few wells that are used to irrigate Valley Water mitigation projects. None of the Valley Water owned wells are regularly operated to provide water for agricultural or M&I use.

4. Description of Conjunctive Use of Surface and Groundwater

Valley Water's water supply strategy since the 1930s has been to maximize conjunctive use to enhance water supply reliability and avoid undesirable results like chronic overdraft, land subsidence, and seawater intrusion. Related activities include the managed recharge of imported and local supplies and in-lieu recharge through the provision of treated surface water and raw water, acquisition of supplemental water supplies, and water conservation and recycling.

Valley Water's managed recharge program uses runoff captured in local reservoirs and imported water delivered by the raw water conveyance system to recharge groundwater through approximately 277 acres of recharge ponds and over 91 miles of local creeks. Valley Water's annual managed recharge capacity is approximately 143,500 AFY. About 81,600 AF of local and imported water was recharged through Valley Water facilities in 2020.

In 2020, treated water and recycled water deliveries provided about 103,000 and 17,000 AF of water, respectively. Valley Water's long-term water conservation programs also saved

approximately 75,000 AF. These in-lieu recharge programs continue to play a critical role in maintaining groundwater storage by reducing demand on groundwater.

5. Groundwater Management Plan

The 2021 Groundwater Management Plan can be found on Valley Water's website at: https://www.valleywater.org/your-water/where-your-water-comes/groundwater/sustainable.

6. Groundwater Banking Plan

In May 1996, Valley Water took the first step in implementing its banking strategy when it approved an agreement with Semitropic Water Storage District (Semitropic) to store 45,000 AF of SWP water in Semitropic's groundwater basin on behalf of Valley Water. In 1997, Valley Water approved a long-term agreement with Semitropic. The total storage capacity available to Valley Water in Semitropic Water Bank is 350,000 AF, and the current storage balance (December 2021) is 297,211 AF. Through 2020, Valley Water has banked water in 17 of the past 25 years, and withdrawn water in 10 years. There were three years when there was both puts and takes and one year of no activity. A copy of the banking agreement is in Attachment G. Commencing January 1, 2013, Valley Water, along with other banking partners, executed a letter of agreement with Semitropic Water Storage District in order to pay for costs associated with arsenic treatment of recovered water to meet water quality requirements in the California Aqueduct.

C. OTHER WATER SUPPLIES

Other water supplies reported in Section 5, Table 1 in groundwater banking takes and carryover used.

D. SOURCE WATER QUALITY MONITORING PRACTICES

1. Potable Water Quality (Urban only)

Valley Water's water quality laboratory performs analytical testing per regulatory requirements to ensure that the treated drinking water that Valley Water provides is of the highest possible quality, meeting or exceeding all federal and state drinking water standards.

The laboratory accomplishes this by performing a range of analytic services on both untreated (source) and treated water, including organic, inorganic, and microbiological analysis. The laboratory's water quality professionals perform water quality compliance and operational control monitoring, using methodologies approved by the Environmental Protection Agency, State agencies, and using suitable analytical instrumentation.

Valley Water's annual water quality report is in Attachment H. This report provides information on the quality of water in Valley Water's water treatment plants. Valley Water's retailers' annual water quality reports are in Attachment L.

2. Agricultural Water Quality Concerns

Yes _____ No _____X_____

3. Description of the Agricultural Water Quality Testing Program and the Role of Each Participant, Including the District, in the Program

Valley Water conducts a regional groundwater quality monitoring program and conducts special monitoring as needed. In 2020, Valley Water tested groundwater quality at over 100 wells throughout the county and analyzed data from 252 public water supply wells. Related information is presented in Valley Water's Annual Groundwater Report available at https://www.valleywater.org/your-water/groundwater. Valley Water has limited access to agricultural wells but uses water supply well data to compare to Basin Plan Agricultural objectives. The Central Coast Regional Water Quality Control Board requires groundwater quality testing at agricultural sites as part of their Irrigated Lands Program.

Current Water Quality Monitoring Programs for Surface Water by Source (Agricultural Only)

Analyses Performed	Frequency	Concentration Range	Average
N/A			

E. WATER USES WITHIN THE DISTRICT

1. Agricultural

See Section 5, Water Inventory Tables, Table 5 - Crop Water Needs.

2. Types of Irrigation Systems Used for Each Crop in 2020

The crops listed below make up at least five percent of the total irrigated acres. The miscellaneous category combines the remaining crops. Double cropping is not included in the total acres.

Crop Name	Acres[1]	Irrigation Method[2]
Hay	3,011	Sprinkler
Lettuce	2,105	Sprinkler/Drip
Grapes	1,726	Drip/Micro
Peppers - Bell	1,261	Drip/Micro
Corn	1,041	Sprinkler/Drip
Spinach	966	Sprinkler/Drip
Cherries	953	Drip/Micro
Tomatoes - Fresh	951	Drip/Micro
Broccoli	905	Sprinkler/Drip
Miscellaneous	7,083	N/A
Total	**20,002**	

[1] County of Santa Clara 2020 Crop Report.
[2] Santa Clara Valley Water District Crop Irrigation Water Use Update (ERA Economics, 2014).

SECTION 2 – INVENTORY OF WATER RESOURCES

3. Retailer Related Water Use for 2020

Customer Type	Number of Connections	AF
Wholesale (Treated Water)	28	103,436
Total	**28**	**103,436**

4. Urban Wastewater Collection/Treatment Systems Serving the Service Area (AF)

Treatment Plant	Treatment Level	Discharge to San Francisco Bay	Discharge to Percolation Ponds	Recycled/Reused for Agriculture, Irrigation, or Industrial
Palo Alto Regional Water Quality Control Plant	3	20,064	0	734
Sunnyvale Water Pollution Control Plant	3	11,800	0	378
San Jose/Santa Clara Regional Wastewater Facility	3	92,852	0	12,572
South County Regional Wastewater Authority	3	0	5,086	1,564
Total		**124,716**	**5,086**	**15,248**

Data are from State Water Resources Control Board Recycled Water reporting portal

5. Groundwater Recharge in Current Year (Table 6)

Recharge Area	Method of Recharge	AF*	Method of Retrieval
91 Miles	In-Stream Recharge (Creeks)	64,600	Pumped by water retailers and other well owners
277 Acres	Off-Stream Recharge (Recharge Ponds)	17,000	Pumped by water retailers and other well owners
	Total	**81,600**	

*Recharge values shown are for 2020.

6. (A) & (B) Transfers and Exchanges Into and Out of the Service Area in Current Year

A. (Table 1): Valley Water received transfers totaling 15,305 AF in 2020.

B. (Table 6): 1,630 AF of transfers were made out of Valley Water's service area in 2020.

7. Wheeling, or Other Transactions in and out of the District Boundaries – (Table 6)

No wheeling through Valley Water boundaries was performed in 2020.

8. Other Uses of Water (Described in Section 2-C)

Valley Water took 16,800 AF of water from Semitropic and used 24,685 AF of prior year carryover in 2020.

F. OUTFLOW FROM THE DISTRICT (AGRICULTURAL ONLY)

1. Surface and Subsurface Drain/Outflow

Not applicable.

2. Description of the Outflow (surface and subsurface) water quality testing program and the role of each participant in the program

Not applicable.

3. Outflow (surface drainage & spill) Quality Testing Program

Not applicable.

4. Provide a brief discussion of the District's involvement in Central Valley Regional Water Quality Control Board programs or requirements for remediating or monitoring any contaminants that would significantly degrade water quality in the receiving surface waters.

Valley Water's service area is not within the jurisdiction of the Central Valley Water Quality Control Board. Not applicable.

G. WATER ACCOUNTING (INVENTORY)

Section 5 presents Combined Water Inventory Tables.

SECTION 3. BEST MANAGEMENT PRACTICES (BMPs) FOR AGRICULTURAL CONTRACTORS

A. CRITICAL AGRICULTURAL BMPs – 2020 UPDATE

1. Measure the volume of CVP water delivered by the district to each turnout with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6%

A. Number of delivery points (turnouts and connections: **25**

B. Number of delivery points serving more than one farm: **3**

C. Number of measured delivery points (meters and measurement devices): **25**

D. Percentage of water delivered to the contractor that was measured at a delivery point: **100%**

E. Total number of delivery points not billed by quantity: **0 unmetered customers received water in FY2020**

F. Delivery point measurement device table

Measurement Type	Number	Accuracy* (+/- %)	Reading Frequency (Days)	Calibration Frequency (Months)	Maintenance Frequency (Months)
Propeller meter	25	+/- 2%	30	60	12

2. Designate a water conservation coordinator to develop and implement the Plan and develop progress reports

Name:	Metra Richert	**Title**:	Water Supply Planning and Conservation Unit Manager
Address:	5750 Almaden Expressway, San Jose, CA 95118	**Email**:	MRichert@valleywater.org
Telephone:	408-630-2978		

3. Provide or support the availability of water management services to water users. See Attachment I, Notices of District Education Programs and Services Available to Customers.

Valley Water has sponsored a Mobile Irrigation Lab within its service territory to provide free technical services for growers to help improve irrigation efficiency in seasonal row crops, tree crops, greenhouse crops, nurseries, and vineyards. This service includes irrigation system evaluations, seasonal irrigation and soil moisture monitoring, irrigation system design consultation, irrigation scheduling support, and more.

Valley Water provides CIMIS reference evapotranspiration estimates for use in irrigation scheduling on its website. Local CIMIS station information, non-ideal station estimates for Saratoga and Spatial CIMIS evapotranspiration estimates county wide as well as irrigation scheduling calculators for drip and sprinkler systems are available at this link: https://www.valleywater.org/saving-water/agriculture.

Valley Water is also performing an Agricultural Water Use Baseline Study in Santa Clara County to help further understand conservation potential in the agriculture sector and how best to develop conservation programs that will be effective and useful. The study will be completed in 2022.

A. On-Farm Evaluations

On farm irrigation and drainage system evaluations using a mobile lab type assessment

	Total in district	# surveyed 2016	# surveyed 2017	# surveyed 2018	# surveyed 2019	# surveyed 2020
Irrigated acres	20,002	33	147	284	0	104
Number of farms	890	8	21	12	0	26

B. Real-time and normal irrigation scheduling and crop ET information

Normal year irrigation scheduling does not work adequately west of the Coast Range. Estimated cumulative irrigation requirements for several crops of importance in the Llagas Valley are posted on Valley Water's website referenced above. Valley Water's Mobile Irrigation Lab program offers irrigation scheduling and system design consulting to improve farm irrigation efficiency.

C. Surface, ground, and drainage water quantity and quality data provided to water users

See Section II-D for water quality information and II-F for irrigation drainage information.

D. Agricultural water management educational programs and materials for farmers, staff, and the public

Valley Water maintains an agricultural section on its website https://www.valleywater.org/saving-water/agriculture featuring CIMIS information and irrigation calculators. Valley Water also works with partners to share information on funding sources for irrigation system improvements (e.g., UCCE Farm Advisors, CDFA, NRCS, etc.).

E. Other

4. Pricing Structure – Based at Least in Part on Quantity Delivered

As described in Section 1-G, Valley Water's current rates are based on uniform, quantity charges for the various sources of water type of use. Costs are in direct proportion to the amount of use. Agricultural rates are set lower by Valley Water to help preserve the open space benefits of agriculture. Valley Water currently plans to retain the existing billing procedures and pricing structure as detailed in Section I-G of this report.

5. Evaluate and Improve Efficiencies of District Pumps

Valley Water operates and maintains the San Felipe Division Facilities including Pacheco, Coyote, and Vasona Pumping Plants. In order to maintain pump reliability and efficiency and maximize service life before replacement, Valley Water is rebuilding each pump every

twelve years. This rehabilitation interval is based on historical information from previous rebuilds, inspection reports, corrosion data and potential failure modes. Improved engineering design and better corrosion resistance material were used in the rebuilds. The rehabilitation interval and the modification will likely extend the pump service life beyond USBR's estimate, from 35 years to 50 years or more. Staff recommends rebuilding one or two pumps at a time so there will be no major impact on operation and logistics management.

Valley Water installed vibration, temperature, and flow monitoring sensors on the pumps. The sensors will continuously monitor the pump performance and collect additional data that will help further optimize the pump rebuild schedule. Long-lead factory wet-end spare parts were procured from the Japan factory to ensure their availability when needed.

B. EXEMPTIBLE BMPS FOR AGRICULTURAL CONTRACTORS

1. Facilitate Alternative Land Use

There are currently no lands in the county where irrigation leads to unmanageable problems such as high levels of selenium, saline drainage, or drainage difficulties.

2. Facilitate Use of Available Recycled Urban Wastewater

The wastewater treatment plants in Santa Clara County all produce some water that is reclaimed and not discharged to the receiving water. These plants are not operated by Valley Water. However, Valley Water operates the Silicon Valley Advanced Water Purification Center opened in 2014 to produce up to 8 Million Gallons per Day (MGD) of purified water from the San Jose-Santa Clara Regional Wastewater Facility. The purified water produced at the purification center is blended with the recycled water supply produced at the regional wastewater facility to enhance its quality and expand its usage via the South Bay Water Recycling System.

Valley Water further promotes recycled water through collaborative cost-sharing agreements, such as for the Wolfe Road Recycled Water Facilities project, which expanded recycled water distribution in Sunnyvale and Cupertino. Additional recycled water projects are underway near Gilroy in south Santa Clara County and near Palo Alto in northwest Santa Clara County. Valley Water is completing planning and engineering studies for potential potable reuse for groundwater recharge or direct potable reuse. A Countywide Water Reuse Master Plan (CoRe Plan) was finalized in 2021 to integrate and expand water reuse for potable and non-potable use as a local, reliable, environmentally sustainable, adaptive, drought-resistant water supply and to guide strategic investment of public funds over the next 25 years. Efforts are underway to deliver an indirect potable reuse project based on the CoRe Plan to recharge groundwater at approximately 10 MGD production capacity from Palo Alto Regional Water Quality Control Plant.

3. Facilitate the Financing of Capital Improvements for On-farm Irrigation Systems

Since agricultural production is such a small part of Santa Clara County's economy, facilitating financing of capital improvements for on-farm irrigation systems is not a high priority at the present. Valley Water periodically reevaluates the economics of this financing and is currently conducting an Agricultural Water Use Baseline Study to help identify opportunities for additional agricultural water conservation assistance programs. Furthermore, Valley Water works with partners to share information on funding sources for irrigation system improvements (e.g., UCCE Farm Advisors, CDFA, NRCS, etc.).

SECTION 3 – BMPs FOR AGRICULTURAL CONTRACTORS

4. Incentive Pricing

Valley Water complies with this incentive pricing BMP by charging customers based on the quantity of water used. Valley Water's water rate structure is described in detail in Section 1-G. As a wholesale water supplier, Valley Water does not utilize tiered water pricing or other water conserving rate mechanisms. The pricing of agricultural water is affected by the public policy goal of retaining agricultural lands in the county for open space.

In addition, Section 26.7 of the District Act (see Attachment B) contains a provision that allows for charging increased fees for excessive groundwater pumping. This provision is available to be used during periods of water supply shortage as an incentive to reduce demands.

5. (A) Line or Pipe Ditches and Canals and (B) Construct/Line Regulatory Reservoirs

A. As described in Section 1-B, Valley Water already utilizes high pressure pipelines and lined canals to transport imported raw water and locally conserved water to various locations for treatment and distribution or for groundwater recharge.

B. The current configuration of facilities, including surface water reservoirs, provides adequate system delivery flexibility for water supply purposes.

6. Increase Flexibility in Water Ordering by, and Delivery to, Water Users

Valley Water has identified several projects which may increase the flexibility of water supply operations and are worthy of further study. These include additional in-county surface storage, enlargement of existing water treatment facilities and other programs still being developed.

Studies are in progress to determine the feasibility, as well as the potential costs and benefits, of increasing surface water storage. Studies are also in progress to determine the cost effectiveness of treatment plant expansion.

7. Construct and Operate District Spill and Tailwater Recovery Systems

As stated previously in Section 1-G, Valley Water utilizes a high-pressure distribution system to transport imported raw water as well as locally conserved water.

8. Plan to Measure Outflow

- Total # of outflow (surface) locations/points: **NA**
- Total # of outflow (subsurface) locations/points: **NA**
- Total # of measured outflow points: **NA**
- Percentage of total outflow (volume) measured during report year: **NA**
- Identify locations, prioritize, determine best measurement method/cost, submit funding proposal.

9. Optimize Conjunctive Use of Surface and Groundwater

Valley Water's commitment to conjunctive water management is reflected in its 2021 Groundwater Management Plan, which contains as the first recommendation: "Maintain existing conjunctive water management programs and evaluate opportunities for enhancement or increased efficiency." Ongoing Valley Water operations planning considers available water supplies and projected demands in determining the source and volume of surface water to be

delivered for managed groundwater recharge, drinking water treatment, or other use. To support operations planning and long-term water supply efforts, Valley Water uses various tools, including three numerical groundwater flow models. These models are used to evaluate and forecast groundwater storage and water levels under different operational and hydrological conditions to maximize conjunctive use.

As part of the Water Supply Master Plan 2040, Valley Water is evaluating various conjunctive use projects, including stormwater reuse, new groundwater recharge facilities, and expanded recycled water use.

9.1. Additional Reservoir Storage

One possible alternative identified as helping meet the future water supply needs of the county is additional reservoir storage. This would allow more water, local and imported, to be stored during wet years for carryover until periods when groundwater recharge and or storage capacity is available. This would increase the use of recharge facilities and the conjunctive use of the groundwater basins.

10. Automate Distribution and/or Drainage System Structures

As stated previously, Valley Water utilizes a high-pressure distribution system to transport imported raw water as well as locally conserved water.

11. Facilitate or Promote Water Customer Pump Testing and Evaluation

Valley Water promotes water user pump testing and evaluation through various educational measures, including distribution of the publication “Handbook for Agriculture Water Use Efficiency” which includes a section on pump efficiency. This publication is available on our website and is distributed at various outreach events.

12. Mapping

See Section 1 - Figure 2

C. PROVIDE A 5-YEAR BUDGET FOR IMPLEMENTING BMPS

1. Amount Actually Spent During Current Year

Year 2020 or Year 1			
BMP #	**BMP Name**	**Actual Expenditure (not including staff hours)**	**Staff Hours**
A.	1. Measurement	$0	360
	2. Conservation Staff	$0	125
	3. On-farm Evaluation/Water Delivery Info	$10,139	100
	a. Irrigation Scheduling	$0	28
	b. Water Equality	$0	163
	c. Agricultural Education Program	$0	28
	4. Quantity Pricing	$0	2,213
	5. Contractor's Pumps	$0	136
B.	1. Alternative land use	$0	0
	2. Urban recycled water use	$0	207
	3. Financing of on-farm improvements	$0	0
	4. Incentive pricing	$0	0
	5. Line or pipe canals/install reservoirs	$0	0
	6. Increase delivery flexibility	$0	0
	7. District spill/tailwater recovery systems	$0	0
	8. Measure outflow	$0	0
	9. Optimize conjunctive use	$0	701
	10. Automate canal structures	$0	0
	11. Customer pump testing	$0	0
	12. Mapping	$0	0
	Total	**$10,139**	**4,061**

SECTION 3 – BMPs FOR AGRICULTURAL CONTRACTORS

2. Projected Budget Summary for the Next Year

Year 2021 or Year 2			
BMP #	**BMP Name**	**Budgeted Expenditure (not including staff hours)**	**Staff Hours**
A.	1. Measurement	$0	360
	2. Conservation Staff	$0	125
	3. On-farm Evaluation/Water Delivery Info	$83,919	100
	a. Irrigation Scheduling	$0	60
	b. Water Equality	$0	200
	c. Agricultural Education Program	$0	260
	4. Quantity Pricing	$0	2,262
	5. Contractor's Pumps	$0	272
B.	1. Alternative Land Use	$0	0
	2. Urban Recycled Water Use	$0	207
	3. Financing of On-farm Improvements	$0	0
	4. Incentive Pricing	$0	0
	5. Line or Pipe Canals/Install Reservoirs	$0	0
	6. Increase Delivery Flexibility	$0	0
	7. District Spill/Tailwater Recovery Systems	$0	0
	8. Measure Outflow	$0	0
	9. Optimize Conjunctive Use	$0	1,061
	10. Automate Canal Structures	$0	0
	11. Customer Pump Testing	$0	0
	12. Mapping	$0	0
	Total	**$83,919**	**4,907**

SECTION 3 – BMPs FOR AGRICULTURAL CONTRACTORS

3. Projected Budget Summary for 3rd Year

Year 2022 or Year 3			
BMP #	**BMP Name**	**Budgeted Expenditure (not including staff hours)**	**Staff Hours**
A.	1. Measurement	$0	360
	2. Conservation Staff	$0	125
	3. On-farm Evaluation/Water Delivery Info	$120,000	100
	a. Irrigation Scheduling	$0	60
	b. Water Equality	$0	200
	c. Agricultural Education Program	$0	260
	4. Quantity Pricing	$0	2,260
	5. Contractor's Pumps	$0	270
B.	1. Alternative Land Use	$0	0
	2. Urban Recycled Water Use	$0	200
	3. Financing of On-farm Improvements	$0	0
	4. Incentive Pricing	$0	0
	5. Line or Pipe Canals/Install Reservoirs	$0	0
	6. Increase Delivery Flexibility	$0	0
	7. District Spill/Tailwater Recovery Systems	$0	0
	8. Measure Outflow	$0	0
	9. Optimize Conjunctive Use	$0	1,060
	10. Automate Canal Structures	$0	0
	11. Customer Pump Testing	$0	0
	12. Mapping	$0	0
	Total	**$120,000**	**4,895**

4. Projected Budget Summary for 4th Year

Year 2023 or Year 4			
BMP #	**BMP Name**	**Budgeted Expenditure (not including staff hours)**	**Staff Hours**
A.	1. Measurement	$0	360
	2. Conservation Staff	$0	125
	3. On-farm Evaluation/Water Delivery Info	$100,000	100
	a. Irrigation Scheduling	$0	60
	b. Water Equality	$0	200
	c. Agricultural Education Program	$0	260
	4. Quantity Pricing	$0	2,260
	5. Contractor's Pumps	$0	270
B.	1. Alternative Land Use	$0	0
	2. Urban Recycled Water Use	$0	200
	3. Financing of On-farm Improvements	$0	0
	4. Incentive Pricing	$0	0
	5. Line or Pipe Canals/Install Reservoirs	$0	0
	6. Increase Delivery Flexibility	$0	0
	7. District Spill/Tailwater Recovery Systems	$0	0
	8. Measure Outflow	$0	0
	9. Optimize Conjunctive Use	$0	1,060
	10. Automate Canal Structures	$0	0
	11. Customer Pump Testing	$0	0
	12. Mapping	$0	0
	Total	**$100,000**	**4,895**

5. Projected Budget Summary for 5th Year

Year 2024 or Year 5			
BMP #	**BMP Name**	**Budgeted Expenditure (not including staff hours)**	**Staff Hours**
A.	1. Measurement	$0	360
	2. Conservation Staff	$0	125
	3. On-farm Evaluation/Water Delivery Info	$100,000	100
	a. Irrigation Scheduling	$0	60
	b. Water Equality	$0	200
	c. Agricultural Education Program	$0	260
	4. Quantity Pricing	$0	2,260
	5. Contractor's Pumps	$0	270
B.	1. Alternative Land Use	$0	0
	2. Urban Recycled Water Use	$0	200
	3. Financing of On-farm Improvements	$0	0
	4. Incentive Pricing	$0	0
	5. Line or Pipe Canals/Install Reservoirs	$0	0
	6. Increase Delivery Flexibility	$0	0
	7. District Spill/Tailwater Recovery Systems	$0	0
	8. Measure Outflow	$0	0
	9. Optimize Conjunctive Use	$0	1,060
	10. Automate Canal Structures	$0	0
	11. Customer Pump Testing	$0	0
	12. Mapping	$0	0
	Total	**$100,000**	**4,895**

SECTION 4. BEST MANAGEMENT PRACTICES (BMPs) FOR URBAN CONTRACTORS

A. URBAN BMPs

Foundational BMPs

1. Utility Operations Programs

1.1. Operations Practices

A.1) Conservation Coordinator

Metra Richert, Unit Manager
Water Supply Planning & Conservation Unit
5750 Almaden Expressway, San Jose, CA 95118
(408) 630-2978
MRichert@valleywater.org

Number of Conservation Coordinator Staff

There are seven full-time staff members in the Water Conservation Program and up to 20 student interns and temporary staff (number varies depending on season and program needs). Staff includes one Senior Water Conservation Specialist, five Water Conservation Specialists, and one Management Analyst. As part of the recent drought response, a second Senior Water Conservation Specialist was temporarily promoted from the Water Conservation Specialist series.

A.2) Water waste prevention

Valley Water collaborates with local agencies to develop model water use restrictions that will assist the water retailers and cities in the development of their water waste ordinances. During the last drought, Valley Water collaborated with the water retailers to adopt a consistent two day per week watering restriction for the majority of the county. After the last drought, Valley Water continued a 20% voluntary call for conservation with a recommended three-day per week watering restriction through 2020.

In 2014, as part of Valley Water's response to the last drought from 2012 to 2016, Valley Water initiated a Water Waste Inspector Program (Water Waste Program). The Water Waste Program facilitates and responds to reports of water waste and violations of local water use restrictions. It also provides an opportunity to educate homeowners and businesses on water conservation as well as the various rebate and technical assistance programs Valley Water offers. In the first two years of the Water Waste Program, nearly 10,000 water waste reports were received and responded to. As of 2020, Valley Water has responded to 11,746 water waste reports.

To facilitate the community's ability to report water waste, four reporting options were developed: email, a water-waste hotline, a portal on Valley Water's website, and through a mobile application developed for iPhone and Android users. In 2021, the mobile application was updated as part of a new customer relationship management software. It is expected this tool will improve the effectiveness and efficiency of responding to water waste reports. It will also improve how Valley Water collaborates with local cities and water retailers in resolving water waste countywide.

A.3) Wholesale agency assistance programs

Valley Water continues to provide a high level of support and enjoys the special cooperative partnership with water retailers in the regional implementation of the Demand Management Measures (DMMs). Valley Water meets regularly with its water retailers, through a Water Conservation Subcommittee to discuss pertinent issues (e.g., drought, ordinances, legislation, conservation program updates, etc.); to provide updates on Valley Water's water conservation programs; to collaborate and align efforts with water retailer efforts; to share information about emerging technologies and practices; to cross-promote training/events; and to share information about California Water Efficiency Partnership (CalWEP) membership and benefits. Valley Water's 2021 Water Conservation Strategic Plan analyzed participation trends across the service area to identify specific areas that had strongest potential for additional program participation. This tool and reference document will inform and support Valley Water's future conservation program marketing and design, including how to bring existing and new conservation programs to the areas that could benefit from them most. Lastly, the 2021 Water Conservation Strategic Plan surveyed water retailers to better quantify and understand the water conservation programs their customers were utilizing, identify needs to increase water conservation program participation, and inquire additional programs that would benefit their respective service areas.

1.2. Water Loss Control

Valley Water has operated a distribution system survey and leak detection program since 1991, thus fulfilled the DMM 3 – System Water Audits, Leak Detection and Repair. The Leak Detection Program is in the operation and maintenance of its wholesale treated water distribution and groundwater recharge systems. All facilities are 100 percent metered or gauged. Valley Water's Leak Detection Program includes: 24-hour-per-day monitoring of meters on all major conveyance facilitates; daily flow records; monthly inspections; and water balances. Meters are calibrated regularly as part of Valley Water's preventive maintenance program.

Flows in major facilities are monitored continuously with a SCADA system in Valley Water's Operations Center, located at the Rinconada Water Treatment Plant and at each of Valley Water's other two water treatment plants. Technicians and operators perform daily and monthly inspections. Daily, they record metered and gauged flows to verify system integrity. Monthly, the Rights-of-Way—in which facilities are buried—are inspected by helicopter for signs of leakage. Also, monthly, an overall water balance and a treated water supply balance are conducted to establish and identify errors such as possible meter problems or distribution leakage. Our goal is to perform an investigation when the discrepancy is greater than 5 percent.

Valley Water operates a facility for meter testing. Smaller meters up to 24 inches are tested based upon volume or time period. The program follows American Water Works Association (AWWA) standards. Larger meters are periodically tested volumetrically where feasible. All meters are regularly calibrated to manufacturer's specifications as part of Valley Water's preventive maintenance program.

1.3. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections

On a monthly basis, Valley Water meters and bills by volume of use all of its retail agency potable water supply deliveries. All municipal and industrial water users in the county are currently metered and were metered prior to the adoption of the MOU. Valley Water operates an aggressive water measurement program for both treated water deliveries and groundwater users. The current water measurement system measures 100 percent of all treated water deliveries, 95 percent of surface-delivered raw water deliveries, and over 90 percent of all

groundwater pumping. The remaining volume of groundwater pumping is done by over 3,000 small water users such as residential well owners, with nearly 90% of these users pumping less than 2 acre-feet per year. Although these small wells are not metered, an estimate of water pumping or usage is made to determine groundwater production charges. Meters have not been installed on these wells because the cost of installing and reading the meters exceeds the revenue generated by these wells.

In addition, Valley Water offers rebates for the installation of submeters (since 2008) as well as switching from a mixed-use meter to a dedicated landscape meter (since 2012). The submeter rebate program provides $150 per submeter installed at multi-family housing complexes, such as mobile home parks and condominium complexes. In 2015, the program was expanded to include individual well owners and homes on a shared well. Valley Water plans to continue these programs to meet the region's long-term water conservation goals.

1.4. Retail Conservation Pricing – See Attachment N

2. Education Programs

2.1. Public Information Programs

2.1.1. Public Outreach and Media Campaign

Outreach activities include multi-media marketing campaigns directed at the diverse county population, website development and maintenance, social media, publications, Valley Water participation at community events, interagency partnerships, video advertisements, movie theater video inclusion, water conservation workshops and seminars, and a speaker's bureau. Specifically, in 2020 and 2021, outreach efforts focused on the following:

- Conducted research through polling to gauge public interest and perceptions of Valley Water programs, resources and projects
- Comprehensive campaign summaries highlighting a plan of action
- Webinars soliciting feedback from retailers and other agencies
- Interagency coordination (media guides sharing campaign materials, movie theater inclusion, bill inserts)
- TV news partnerships (NBC/Telemundo, Audacy Radio)
- Professional sports team partnerships (San Francisco 49ers, San Jose Sharks, San Jose Giants)
- Speaker's Bureau presentations (including by members of the Board of Directors)
- Media events (Groundbreaking ceremonies, Landscape Rebate Program, Press Conferences)
- Press coverage (tv, radio, newspapers, publications)
- Blog posts focused on conservation and purified water messaging
- Social Media engagement and posting (Nextdoor, Facebook, Twitter, Instagram, LinkedIn)
- Water conservation giveaways (yard signs and shower buckets)

These strategies were implemented by delivering broad-based advertising programs, consistent social media postings and engagements, the monitoring of Constant Contact mentions, participating in community events, collaborating with water retailers to develop their own outreach materials, assisting retailers to include Valley Water content in their outreach materials

and to reach non-English speaking residents to ensure they are informed about water issues. In fact, multi-ethnic outreach expanded beyond translating existing outreach materials to targeting media stories, coverage, and paid advertisements specifically to their communities.

Every year Valley Water carries out a multi-media, multi-ethnic campaign emphasizing the importance of water conservation. In the Spring of 2019, Better World Advertising and Valley Water collaborated to develop the "Yards Have Evolved" public education campaign. This campaign sought to encourage water conservation among residents and businesses in Santa Clara County by emphasizing the importance and benefits of landscape transformation, discouraging high water using grass lawns, and increasing conversions/participation in the Landscape Rebate Program (LRP).

Overall, the media strategy was designed to maximize the reach and visibility of the campaign, by engaging residents and businesses in Santa Clara County via a variety of media channels. This contributed to heightened public awareness of the importance of water conservation and converting lawns through the LRP. Ads were developed and disseminated in English, Vietnamese, Chinese, and Spanish including print, online/mobile, social media, and radio ads. The ads directed individuals to Valley Water's conservation website, www.watersavings.org, for more information and resources. While the ads primarily targeted homeowners, some ad buys also engaged business owners within the county. The campaign launched on May 1, 2020 and served a total of 68,549,920 impressions.

In addition to the media campaigns mentioned above, other efforts included sending postcards and/or letters with a promotional flyer to end-users; bill inserts; handing out program flyers, fact sheets, and brochures at various events; posting board statements to the Valley Water website and blogs to valleywaternews.org.

2.1.2. Nursery Program

To increase the public's awareness of water-efficient gardening techniques, in 1995 Valley Water developed the Nursery Program. This program distributes, at least quarterly, a series of educational materials to nurseries throughout the county. To display the materials, the program includes literature racks offering free informational materials about water-wise gardening, efficient irrigation techniques, drought-resistant plants, drip irrigation, and Valley Water's water conservation programs. In future program years, the literature racks may ultimately be replaced or supplemented with digital resources that would not need to be replenished as regularly. Valley Water continues to create new outreach material to best serve the public, including the Drought Survival: Lawn Care rack card which was added to the Nursery Outreach distribution materials in FY 2016.

The Nursery Program has expanded its distribution to include irrigation supply stores and larger home improvement retailers such as Home Depot and Lowes, and literature is now displayed at 37 nursery retailers total. In 2020 this program faced logistical problems relating to COVID-19 restrictions and was temporarily placed on hold.

2.1.3. Workshops

Valley Water continues to provide personnel and media sources to program management and supporting various workshops. From 2016 to 2020, staff attended and tabled many events with varying participation levels. At these events, staff provided outreach materials, handouts, gave presentations and were available to answer questions as well as provide guidance on programs. Over the last five years, Valley Water promoted water conservation through workshops and trainings throughout the community. Examples of these include Graywater Laundry to

Landscape workshops and presentations to schools, local universities, industry association gatherings, nursery staff, community gardens, native plant society members, corporate events, local Master Gardeners, PG&E's Water Conservation Showcase, and many more. On average, Valley Water conservation staff give about thirty presentations each year.

The Landscape Summit series began in 2016 and has continued to take place every year since then. The Landscape Summit is an annual event hosted by Valley Water to bring together the landscape community to learn about water issues in the county and California as a whole and how water relates to the landscaping industry. In 2019, Valley Water began hosting the Green Gardener Graywater Installer Certification Program series with a focus on graywater-system design and implementation catered to professionals. In 2020, the COVID-19 pandemic resulted in the cancellation of workshops and events for the rest of the year. Staff soon began the planning and implementation of Facebook series workshops, and webinars which will be discussed in a future report. Valley Water has focused staffing on program management and the drought response but strives to support other agencies. We continue to advertise and promote similar workshops implemented by neighboring agencies through our Events webpage in addition to assisting with identifying speakers and other types of support.

Because so many sustainable landscaping events take place throughout Santa Clara County and are sponsored by multiple agencies, Valley Water was instrumental in developing and administering the South Bay Green Gardens website (www.southbaygreengardens.org). This site was started as a place where all of the public agencies and organizations in the county could promote their events, workshops, etc. The page has become a one-stop shop for information not just on these events, but on all aspects of sustainable landscaping such as pest management, rainwater management, soils and composting, and much more. Valley Water helps fund this site and co-chairs the committee which manages it. The committee includes information about multiple benefits in the site, such as pesticide reduction, water conservation, waste reduction through composting, and stormwater management, in order to show integration of these issues. Additionally, Valley Water staff update the site and make sure the events pages are current.

2.1.4. Going Native Garden Tour

To showcase exemplary native plant gardens, Valley Water has co-sponsored the Going Native Garden Tour every spring since 2003. Between 2016 and 2019, an average of 6,000 participants annually had visited upwards of 70 participating gardens. In response to COVID-19 restrictions, virtual tours were added in 2020. These native plant gardens demonstrated the beauty and efficiency of well-maintained native gardens to residents of Santa Clara and San Mateo counties. In addition to showcasing native plants, at least one garden offered native plants for sale each year. In 2018 and 2019, Valley Water staff hosted a Graywater Laundry to Landscape Workshop during the tour at a residence who had previously completed a graywater project through Valley Water's Graywater Laundry to Landscape Rebate Program. Currently, over 45 demonstration gardens are promoted on Valley Water's webpage year-round by way of an interactive garden map created to help people easily find gardens nearby to explore.

2.1.5. Community Events

Each year Valley Water participates in numerous community events, including environmental fairs, Earth Day events, garden tours, and many others. Since June 2015, Valley Water has distributed multiple educational materials and program flyers at nearly 205 events. In fact, more

than 100 community events had been held in the fiscal years 2016 and 2017 alone. These events include:

- Silicon Valley Chamber Business Expo
- Our City Forest Plant Sales
- Multiple city Earth Day events
- Pumpkins in the Park
- Silicon Valley Water Conservation Awards
- Going Native Garden Tour

2.2. School Education Programs

Valley Water's Education Outreach Program (EO) provides free presentations, educational programs, and tours of Valley Water facilities to TK-12 grade students, educators, libraries, after-school programs, youth-serving organizations and members of the public within Santa Clara County. The EO team engage the community in learning about water conservation, water supply and infrastructure, watershed stewardship, pollution prevention, and flood and emergency preparedness.

Valley Water provides free educational curricula, aligned to state standards, to local educators and students, including PowerPoint presentations, workbooks, student activity sheets, and videos designed for pre-school -12th grade. The EO team also provides Educator Workshops for local teachers and educators and supports them in leading their own programs and activities to independently educate their students on water-related topics.

Since 1995 Valley Water has employed a full-time Public Information Representative III staff position (PIR III) to coordinate the Valley Water Education Outreach program. In 2016, an additional full-time Public Information Representative II staff position (PIR II) was created to support the PIR III and the part-time staff positions, which includes 4-5 part-time PIR I staff and student interns. These two full-time staff positions develop and implement the EO program.

Between FY2016 and FY20 (July 2015 - June 2020), EO staff reached over 75,000 students and 2,950 teachers in over 2,300 classrooms. EO staff were involved in 114 tours at Valley Water outdoor classroom locations, facilities, and the Silicon Valley Advanced Water Purification Center (SVAWPC). EO hosted 20 Educator Trainings and reached over 19,000 members of the public at events and library programs. During 2020, EO transitioned from in-person presentations to virtual programming and continued to engage and support the community with interactive activities and educator professional development. EO reached a wide audience through virtual school presentations and also by engaging the public through library programs, STEAM (**S**cience, **T**echnology, **E**ngineering, **A**rt, and **M**athematics) Nights and "Wonders of Water Wednesdays", a weekly after-school science series.

2.2.1. Programmatic BMPs

Valley Water and its major water retailers enjoy a special cooperative partnership in the regional implementation of a variety of water conservation programs. As the water wholesaler for Santa Clara County, Valley Water is responsible for the implementation of the foundational DMMs. However, it is also implementing multiple components of many of the other DMMs.

Participation in all programs listed below is tracked by water retailer on a monthly basis. Furthermore, many water retailers participate in cost sharing agreements maintained by Valley

Water. These cost sharing agreements benefit all parties through economies of scale. In FY2020, Valley Water administered more than $3.8 million in cost-sharing agreements with the local cities, water retailers, and nonprofit organizations combining expenses and revenues.

Additionally, Valley Water has sent out (and will continue to send in the future) customer surveys to determine overall satisfaction with a program and to see how a program may be improved. Valley Water will continue to work with its water retailers to implement the programs that best meet the public's needs while achieving the local, regional, and state-wide goals.

3. Residential

Valley Water continues to expand programs in the residential sector, which remains one of the key areas for water conservation. Valley Water employs a variety of rebates, workshops and outreach at community events to promote residential water savings. Annual long-term water savings attributable to residential conservation programs reached nearly 57,000 AF in FY2020.

A.1) Residential assistance program *and* A.2) Landscape water surveys

As the administrator of this program, Valley Water develops and implements a strategy to target and market outdoor water-use surveys to single-family and multi-family residential customers throughout Santa Clara County, except for San Jose Water Company's (SJWC) service area as they administer their own program. From 1998 to 2017, Valley Water performed more than 46,000 residential audits through the Water-Wise House Call Program. The vendor performing the Water-Wise House Calls went out of business in 2017, which resulted in the program being redesigned. In 2017, Valley Water launched the Water Wise Survey Program to replace the Water-Wise House Call Program.

Valley Water's Water Wise Survey Program includes two components, a DIY Indoor Survey Kit and a Water Wise Outdoor Survey. The DIY Indoor Survey Kit educates the customer on how to read a water meter; checking flow rates of showerheads, faucet aerators, and toilets; installing low-flow showerheads, faucet aerators, and/or toilet flappers if necessary; checking for leaks; checking the irrigation system for efficiency (including leaks). Between 2015 and 2020, Valley Water has distributed 1,539 DIY Indoor Survey Kits to Santa Clara County homes.

A Water Wise Outdoor Survey consists of measuring landscaped area; developing an efficient irrigation schedule for the different seasons; and providing the customer with evaluation results, water savings recommendations, and other educational materials. Valley Water increased program efficiency and participation by using landscape measurements from this program as an initial qualifying step for the Landscape Rebate Program, for those who chose to participate in both programs. Since 2017, Valley Water has performed nearly 850 outdoor surveys through the Water Wise Outdoor Survey Program.

Valley Water's largest retailer, SJWC, offers free water audits to all of its customers. The audits are performed at customer request, typically in response to a high-water bill concern and/or in response to SJWC or Valley Water marketing efforts. Audits are performed for both residential and commercial customers. Valley Water supports SJWC's water audit program by providing free water conservation supplies, such as showerheads and faucet aerators. SJWC began performing water audits at the end of 1991 and completes about 2,300 per year with approximately 1,700 completed in 2020, and 48,000 audits since the program began. Valley Water also distributes high-quality, low-flow showerheads and faucet aerators to single-family and multi-family residents through the water retailers and public events. Since program inception in 1992, more than 340,000 low-flow showerheads and aerators have been distributed

throughout the county, including almost 16,000 showerheads and over 19,000 aerators in the last 6 years to residents of single- and multi-family homes.

Valley Water plans to continue offering free showerheads and aerators through its Water-Wise House Call Program, its water retailers, and through various outreach events to meet the region's long-term water conservation goals. In April 2021, Valley Water launched its Online Shopping Cart Program, which offers an easy-to-use, one-stop-shop experience for Santa Clara County residents and businesses to order free water saving devices and resources. This new program has been incredibly popular and will be reported on in the next cycle.

A.3) High-efficiency clothes washers (HECWs)

Valley Water offered a residential high-efficiency washer rebate between July 1995 and June 2017. In October 2001, Valley Water began participating in the regional Bay Area Water Utility Clothes Washer Rebate Program, which successfully partnered with PG&E since January 2008. In January 2015, qualifying standards were adjusted to streamline requirements to only rebate for qualifying EnergyStar Most Efficient (ESME) washers at a combined rebate of $150 ($100 of which was from Valley Water). Valley Water approved more than 177,000 rebates since the program between 1995 and 2016 when the program ended.

A.4) WaterSense Specification (WSS) toilets

Valley Water provided incentives for replacing inefficient toilets with efficient toilets between 1992 and 2016. During that period, nearly 271,000 efficient toilets were installed in residential properties directly due to Valley Water rebate programs.

Part of a larger program targeted to commercial, industrial, and institutional sites, Valley Water offered a toilet replacement (direct installation) program for apartment complexes free of cost to the consumer between 2007 and 2020. Almost 19,800 toilets were replaced with the most efficient toilets available at the time of installation in qualifying apartment complexes. To qualify, the toilets within these apartment complexes must flush at 3.5 gallons per flush (gpf) or greater. In 2020, a pilot program for a new program used 1.6 gpf as the new qualifying standard successfully replaced 59 inefficient toilets with 0.8 gpf toilets, with plans to launch county-wide in 2021.

A.5) WaterSense Specifications for residential development

Developed in 2015 by the Santa Clara County Water Efficient New Development Task Force, the Model Water Efficient New Development Ordinance (MWENDO) provides ordinance language for local jurisdictions to adopt as part of their municipal code. The model ordinance includes requirements for new developments that promote water use efficiency and the development of alternative sources of water supply. The MWENDO is also an energy efficiency reach code, as it includes requirements at the water-energy nexus that simultaneously reduce both water and energy use. Valley Water is actively promoting adoption and implementation of the ordinance as part of ongoing efforts to support cities' and the county's interests in expanding water efficiency measures.

A.6) Submeter Rebate Program

Beginning as a pilot in 2001 and extended in 2008, this program provided a rebate of $100 for every submeter installed at multi-family housing complexes, such as mobile home parks and condominium complexes. Water use records from participating mobile home parks in the pilot study showed an average water savings of 23 percent per mobile home. Participation peaked in 2010 with 1,740 submeters installed. In 2015, Valley Water increased the rebate amount

to $150 and expanded the program to include individual well owners and homes on a shared well. Since then, nearly 890 submeters have been installed, and during the course of this active program, over 7,100 rebates have been issued. Valley Water plans to continue to offer this program in the future in order to reach the region's long term water conservation goals.

A.7) Graywater Laundry to Landscape Rebate Programs

In the last 5 years, Valley Water issued 40 graywater rebates (launched in 2014) and funded the direct installation of 71 graywater systems (launched in 2019). Since the program launched, 124 total graywater systems have been installed. Valley Water's Graywater Laundry to Landscape (L2L) Rebate Program rebate amount started at $100 in 2014, and in response to the drought, increased to $200 a few months later. The Cities of Cupertino and Morgan Hill and San Jose Municipal Water cost-share with this program to increase the rebate to $400 total. In addition to providing a rebate for properly connecting a clothes washer to a laundry-to landscape system, the graywater program also provides information, resources, and workshops on graywater. Resources include maintenance steps, detergent information, finding contractors, increasing awareness of local nonprofit organizations that specialize in graywater, and educating constituents on important factors to consider with more complicated graywater systems (e.g., branched-drain graywater and whole house graywater systems) even though rebates for those options are not currently offered.

Graywater use in irrigated landscapes decrease potable water use by approximately 17 gallons per person per day or 14,565 gallons per household (on average), depending on the site and system design. California Plumbing Code (CPC) does not require a permit for installing an L2L system. However, the CPC is specific as to how L2L systems can be installed, and Valley Water's rebate's eligibility requirements are framed in order to meet those specifications. Additionally, to protect public health and safety, prior to giving project approval, Valley Water checks each applicant's property's depth to groundwater. At post inspections, applicants must demonstrate adherence to the CPC's specifications to help ensure graywater does not pool or drain to their neighbors' properties.

In 2019, Valley Water in partnership with a local non-profit organization, Ecology Action, launched a training program for landscape professionals and a Graywater Direct Installation Program for underserved community members, including low-income individuals, people 60 years or older, U.S. veterans, and people with disabilities. The Green Gardener Graywater Installer Certification Program trained 20 professionals to install L2L graywater systems. Between June 2019 and June 2020, the direct installation service assessed 307 properties and installed 71 L2L graywater systems. Over 31,660 square feet of medium- and high-water use landscapes were converted from potable irrigation to graywater.

4. Commercial, Industrial, and Institutional (CII)

Valley Water combines education, technical assistance, equipment upgrades, and financial incentives to encourage reduced water consumption among commercial, industrial, and institutional water users. Annual long-term water savings attributable to business conservation programs exceeded 8,400 acre-feet in FY2020.

4.1. Water Efficient Technology Rebate Program

The Water Efficient Technology Rebate (WET Rebate or WET Program; formerly known as the Custom/Measured Rebate Program) provides rebates for process, technology, and equipment retrofits that save water. To encourage all commercial and industrial businesses to implement permanent water reduction measures, unique projects that meet program requirements are eligible for a rebate of either $4 per hundred cubic feet (CCF) of water saved or 50% of

equipment costs excluding taxes and labor, whichever is less, up to $50,000. Projects must save at least 100 cubic feet of water annually. Examples of such projects are generally unique to specific industries such as ozone laundry systems or technologies to reduce potable water use when maintaining ice rinks, with myriad other examples. In January 2014, these rebates were temporarily increased to $8 per CCF to promote participation during the drought before returning to $4 per CCF. Cost sharing agreements increase the rate and maximum rebate in some areas.

To date, Valley Water has funded 110 projects, saving approximately 680,663 CCF/year (1,563 AFY). Since 2015, the WET Rebate has helped save over 28,440 CCF per year from 12 completed projects. In 2021, Valley Water will adjust the program so that the rebate will be based on either the lesser of $4 per CCF or up to 100% of equipment costs excluding taxes and labor, up to $100,000. This doubles the potential proportion of equipment costs covered by the rebate in addition to doubling the maximum rebate. The WET Rebate continues to be one of Valley Water's most cost-effective programs in meeting the region's long-term water conservation goals and Valley Water is increasing its outreach to the business community to drive up the participation level.

4.2. Commercial Toilet and Urinal Programs

Valley Water has been replacing inefficient toilets in commercial, industrial, and institutional (CII) sites since 1994. The CII toilet rebate programs have frequently been offered in tandem with various iterations of high-efficiency urinal (HEU) programs, HET and HEU direct install programs, and retrofit programs for urinal valve installation. Between July 2015 and June 2020, over 7,000 HETs and 464 HEUs were installed inside CII and multi-family properties.

Valley Water also initiated a urinal program to replace flush valves of old, inefficient 1.0 gpf or more urinals with a flush valve that uses only a 0.5 gallon per flush. Since 2010, approximately 2,310 urinals had been retrofitted or rebated. Within these totals, urinal rebates were offered in all but 2013, only 188 fixtures were rebated in that time period.

By the end of 2020, 11,800 high-efficiency toilets and urinals were installed through either rebates or direct installation services at CII properties in Valley Water's service area. As of 2021, both programs have been replaced by the Fixture Replacement Program, which targets CII and MF homes throughout the county and replaces older toilets, aerators, showerheads, and other fixtures with the most-efficient versions, oftentimes exceeding the current state or county efficiency standards.

4.3. Commercial Washer Program

Valley Water offered a rebate to replace inefficient clothes washers between 2000 and 2016. The program was phased out in 2016, with 4,913 efficient clothes washers installed during that time.

4.4. Commercial Faucet Aerator Program

Since 2010, Valley Water has offered free 0.5 gallon per minute faucet aerators to qualifying businesses and schools. Nearly 8,700 faucet aerators have been distributed through this program. After peaking in 2010 at over 3,200 aerators distributed, participation exhibited a downward trend to a low of 650 in 2013. Participation increased again in 2014 to nearly 1,000 but receded to nearly 670 in 2015. Since 2015, Valley Water has distributed over 18,000 aerators to commercial sites, and with the launch of the Online Shopping Cart Program, those numbers are expected to increase in the next reporting cycle.

4.5. Pre-Rinse Spray Valve Program

In previous years the Valley Water partnered with other agencies to offer a direct installation program for pre-rinse spray valves (PRSVs). In 2010 the Valley Water purchased a quantity of high-efficiency PRSVs with a flow rate of 1.15 gallons per minute for distribution to commercial sites, especially those identified through Valley Water's previous CII Water Survey Program. A total of 25 of these sprayers were distributed in 2010. In both 2012 and 2015, approximately 70 pre-rinse spray valves were retrofitted, and nearly 4,600 have been installed since Valley Water began promoting these devices in 2003. From July 2015 to June 2020, Valley Water distributed a total of 360 PRSVs.

5. Landscape Programs

Landscape offers the greatest potential for water savings in both the residential and commercial sectors. Valley Water offers a variety of landscape programs, including landscape field surveys, water budgets, rebates for converting high water using landscape and upgrading irrigation hardware, as well as classes and workshops, all of which help businesses and homeowners become more water efficient. Annual long-term water savings attributable to landscape conservation programs reached more than 7,070 acre-feet in FY2020.

5.1. Large Landscape Program

The Large Landscape Program, previously known as Landscape Water Use Evaluation Program (LWUEP), launched in May 2014. All sites enrolled in the program receive a monthly water usage report. The reports provide an objective evaluation of a site's water use at a glance every billing period. Various data inputs, including irrigated area, vegetation types, type of irrigation system, and daily weather (evapotranspiration minus effective rainfall) are included in a detailed calculation in order to develop the water budgets. Sites are encouraged to share the monthly reports with everyone involved with landscape decision making at the site, including the bill payer, site manager, landscape contractor and board members. Qualifying sites are also eligible to receive a complimentary on-site landscape field survey (described below) by an irrigation expert and receive a thorough investigation of the site's irrigation issues.

A total of 557 sites were enrolled in the program at its outset from the following water retailer service areas: Cities of Gilroy, Mountain View, Palo Alto, Sunnyvale, and Santa Clara. By the end of 2015, 1,050 sites were active in this program. In 2020, there are 3,000 active sites that include both potable and recycled water landscapes. Representing 91% of Valley Water's service area, the full list of participating water retailers includes the original five service areas mentioned above as well as the Cities of Milpitas and Morgan Hill, San Jose Municipal Water, and San Jose Water Company. Nearly 122,000 water-use reports and monthly budgets have been distributed. Valley Water's vendor works closely with participating water retailers to market and leverage the services offered through this program for participating sites.

Analogous to the landscape portion of the Water-Wise House Call Program, Valley Water has offered and provided large landscape field surveys in the county since 1994. Landscape managers have been provided water-use analyses, scheduling information, in-depth irrigation evaluation, a site-specific water budget, and recommendations for affordable irrigation upgrades. Each site received a detailed report upon completion of the survey. An annual report was generated to recap the previous year's efforts. Previously a stand-alone program, starting in 2015 the program was offered through the Large Landscape Program.

This highly successful and well-received program has conducted nearly 1,820 surveys through 2020. Participants from this program are encouraged to participate in the Landscape Rebate

Program described below. Valley Water plans to continue to offer and expand this program in the future in order to reach the region's long-term water conservation goals.

5.2. Landscape Rebate Program – Conversion Rebates

Valley Water began to focus on water efficient landscapes by launching a version of the Landscape Rebate Program in early 2005. The original program offered rebates to residential and commercial sites for the replacement of approved high water using landscape with low water use plants, mulch and permeable hardscape and since its start, has rebated for the conversion of nearly 13 million square feet of landscape conversion projects.

Currently, Santa Clara County single family, multi-family, institutional, and business properties with qualifying high water using landscape (lawns and pools) can receive rebates for converting to qualifying low water using landscape with a minimum of 50 percent qualifying plant coverage; 2 to 3 inches of mulch; and a conversion from overhead irrigation to drip, micro spray, bubbler, or no irrigation. The $2.00 per square foot rebate rate instituted in July of 2014 continued through FY 2015. In July of 2016 the rebate was reduced to $1.00 per square foot and the previous rebate caps were reinstated. Additionally, Valley Water implemented a $50,000 per site cap for commercial and multi-family sites in January of 2015.

Valley Water experienced unprecedented increases in terms of rebate amounts as well as participation and interest from the community during the drought declared in 2014 and the increased participation continued through FY 2016. From July 2015 through June 2020, Valley Water has rebated for the conversion of over 8.3 million square feet of high water use lawns and pools into low water use landscapes with over 5.3 million square feet of that rebated in FY 2016 alone. A decrease in participation started in July 2016 due to the reduced rebate, however participation rate as leveled off since then at more than 3 times that of pre-drought years. Valley Water plans to continue to offer this rebate in the future in order to reach the region's long-term water conservation goals.

5.3. Landscape Rebate Program – Irrigation Equipment Rebates

Valley Water provides rebates for the following pieces of irrigation equipment:

Qualifying Hardware	Maximum Rebate Amount per Unit
Rain Sensors	$50
High-Efficiency Nozzles	$5
Rotor Sprinklers or Spray Bodies equipped with Pressure Regulation or Check Valves	$20
Dedicated Landscape Meters, Flow Sensors, or Hydrometers	$1,000
Weather Based Irrigation Controller, 1-12 Stations	$300
Weather Based Irrigation Controller, 13-24 Stations	$1,000
Weather Based Irrigation Controller, 25+ Stations	$2,000
In-line Drip Conversion	$0.25 per Square Foot

Similar to landscape conversion, Valley Water's Board approved adding funding to the program during the drought to support higher rebate amounts for many of the items listed above. The increased rebate rates for Weather Based Irrigations Controllers (WBIC) and irrigation meters/flow sensors remained in place after the drought and have been incorporated as a

permanent feature of the program. From July 2015 to June 2020 Valley Water has rebated 179,900 pieces of high efficiency irrigation equipment.

Starting July 2016, Valley Water expanded its equipment rebates to include an in-line drip irrigation conversion. Participants receive a rebate for the removal of existing overhead irrigation systems to be replaced with an approved in-line drip tubing at $0.25 per square foot of converted area. From July 2016 to June 2020, 200,302 square feet of in-line drip conversion has been rebated.

From July 2015 to June 2020, 3,961 WBIC's were installed and rebated as part of the program. This indicates over a 44% increase from the previous 5 years (FY2010-2015). The main factor for this increase was the availability of WiFi-enabled controllers on the market that utilize mobile applications to assist in managing irrigation scheduling. Sometimes referred to as "smart controllers," WBICs utilize the principals of evapotranspiration or "ET" to automatically calculate a site-specific irrigation schedule based on several factors, including plants and soil type. The controller then adjusts the irrigation schedule as local weather changes to regulate unnecessary irrigation, saving up to 20% of irrigation water use when used properly. Valley Water plans to continue to offer these rebates in the future in order to reach the region's long-term water conservation goals.

Table 4-1. Landscape Rebate Program – Rainwater Capture Rebates

Rainwater Capture Devices	Maximum Rebate Amount per Unit
Rain Barrels (40-199 gallon)	$35.00 per Barrel
Cisterns (200 gallons +)	$0.50 per gallon
Rain Gardens	$1 per square per (up to $300)

Another aspect of Valley Water's Landscape Rebate Program is the rainwater capture rebates added January 2019. The rebates for rain barrels and cisterns were added to encourage participants to use alternative water sources and decrease reliance on potable irrigation water. Rain gardens were added to help keep water onsite to recharge local groundwater supplies and, like rain barrels and cisterns, to also reduce runoff into stormwater systems and eventually creeks and streams managed by Valley Water. The rain garden rebate is based on the square footage of the roof area diverted into the constructed rain garden area and since the program start through June 2020, has resulted in rainwater from over 12,300 square feet of roof area diverted into 15 gardens. During this same period of time, 110 rain barrels were installed through the rebate program and 69 cisterns with a total of 32,745 gallons of storage space.

In summary, through a unique cooperative partnership with its retailers, Valley Water offers regional implementation of a variety of water conservation programs in an effort to permanently reduce water use in Santa Clara County. Although Valley Water is only responsible for implementation of the Foundational DMMs, it continues to collaborate with its water retailers to implement various water conservation programs on a regional basis. By taking the lead on implementing many of the various DMM components, Valley Water is ensuring its long-term water supply reliability targets are met to save as well as assisting its water retailers in meeting their goals. The goal of Valley Water's DMM components is to save approximately 99,000 acre-feet per year by 2030 and 110,000 acre-feet per year by 2040, using 1992 as a baseline year. Valley Water is actively working to identify new or improved strategies to reach our savings targets as well as future Water Use Objectives required by Water Efficiency Legislation AB 1668 and SB 606.

B. PROVIDE A 5-YEAR BUDGET FOR EXPENDITURES AND STAFF EFFORT FOR BMPs

1. Amount Actually Spent During Current Year

Year 2020 or Year 1			
BMP #	**BMP Name**	**Projected Expenditures (not including staff hours)**	**Staff Hours**
1.	**Utilities Operations**		
	1.1 Operations Practices	$0	0
	1.2 Water Loss Control	$0	0
	1.3 Metering	$0	0
	1.4 Retail Conservation Pricing	$0	0
2.	**Education Programs**	$0	0
	2.1 Public Information Programs	$1,243,938	316
	2.2 School Education Programs	$567,010	1,112
3.	**Residential**	$2,484,373	8,029
4.	**CII**	$327,394	252
5.	**Landscape**	$606,626	448
	Total	**$5,229,342**	**10,157**

2. Projected Budget Summary for 2nd Year

Year 2021 or Year 2			
BMP #	**BMP Name**	**Projected Expenditures (not including staff hours)**	**Staff Hours**
1.	**Utilities Operations**		
	1.1 Operations Practices	$0	0
	1.2 Water Loss Control	$0	0
	1.3 Metering	$0	0
	1.4 Retail Conservation Pricing	$0	0
2.	**Education Programs**	$0	0
	2.1 Public Information Programs	$113,265	1,199
	2.2 School Education Programs	$476,816	1,767
3.	**Residential**	$2,558,904	8,270
4.	**CII**	$337,216	260
5.	**Landscape**	$636,093	461
	Total	**$4,122,294**	**11,957**

SECTION 4 – BMPs FOR URBAN CONTRACTORS

3. Projected Budget Summary for 3rd Year

Year 2022 or Year 3			
BMP #	**BMP Name**	**Projected Expenditures (not including staff hours)**	**Staff Hours**
1.	**Utilities Operations**		
	1.1 Operations Practices	$0	0
	1.2 Water Loss Control	$0	0
	1.3 Metering	$0	0
	1.4 Retail Conservation Pricing	$0	0
2.	**Education Programs**	$0	0
	2.1 Public Information Programs	$150,000	463
	2.2 School Education Programs	$500,000	3,569
3.	**Residential**	$2,635,671	8,518
4.	**CII**	$347,333	268
5.	**Landscape**	$1,246,984	475
	Total	**$4,879,988**	**13,294**

4. Projected Budget Summary for 4th Year

Year 2023 or Year 4			
BMP #	**BMP Name**	**Projected Expenditures (not including staff hours)**	**Staff Hours**
1.	**Utilities Operations**		
	1.1 Operations Practices	$0	0
	1.2 Water Loss Control	$0	0
	1.3 Metering	$0	0
	1.4 Retail Conservation Pricing	$0	0
2.	**Education Programs**	$0	0
	2.1 Public Information Programs	$150,000	463
	2.2 School Education Programs	$500,000	3,600
3.	**Residential**	$2,714,741	8,773
4.	**CII**	$357,756	276
5.	**Landscape**	$6,200,000	490
	Total	**$9,922,497**	**13,601**

SECTION 4 – BMPs FOR URBAN CONTRACTORS

5. Projected Budget Summary for 5th Year

Year 2024 or Year 5			
BMP #	**BMP Name**	**Projected Expenditures (not including staff hours)**	**Staff Hours**
1.	**Utilities Operations**		
	1.1 Operations Practices	$0	0
	1.2 Water Loss Control	$0	0
	1.3 Metering	$0	0
	1.4 Retail Conservation Pricing	$0	0
2.	**Education Programs**	$0	0
	2.1 Public Information Programs	$150,000	463
	2.2 School Education Programs	$500,000	3,600
3.	**Residential**	$2,796,183	9,037
4.	**CII**	$368,485	284
5.	**Landscape**	$6,200,000	504
	Total	**$10,014,668**	**13,888**

SECTION 5. DISTRICT WATER INVENTORY TABLES

Table 5-1. Surface Water Supply

2020 Month	Federal Ag Water (acre-feet)	Federal non-Ag Water (acre-feet)	State Water (acre-feet)	Local Water (1) (acre-feet)	Other Water (2) (acre-feet)	Transfers into District (acre-feet)	Total (acre-feet)
Method							
January	0	0	0	3,839	7,816	0	11,655
February	0	238	0	3,420	7,690	0	11,348
March	0	7,167	0	2,224	2,706	0	12,097
April	0	6,784	0	3,729	2,406	0	12,919
May	0	9,916	0	4,003	2,208	939	17,066
June	0	12,017	0	2,533	3,095	674	18,319
July	0	8,833	0	5,514	4,336	2,364	21,047
August	0	11,126	0	5,184	1,217	4,238	21,765
September	0	7,009	0	7,246	1,092	3,839	19,186
October	0	8,892	0	8,605	0	2,896	20,393
November	0	5,214	0	8,059	3,381	355	17,009
December	0	5,575	0	3,533	5,624	0	14,732
TOTAL	**0**	**82,771**	**0**	**57,889**	**41,570**	**15,305**	**197,535**

Notes:
(1) Represents estimated local reservoir inflow less evaporation, and accounts for storage releases or additions.
(2) Includes SWP carryover, SWP delivered through the SFD, CVP rescheduled, net SFPUC intertie, and CVP and SWP takes from the Semitropic Water Bank.

SECTION 5 – DISTRICT WATER INVENTORY TABLES

Table 5-2. Groundwater Supply

2020 Month	District Groundwater (acre-feet)	Private Urban Groundwater* (acre-feet)	Private Agric Groundwater *(acre-feet)
Method			
January	0	5,920	1,085
February	0	6,630	1,108
March	0	8,003	1,097
April	0	7,470	1,108
May	0	9,852	1,123
June	0	10,988	1,176
July	0	11,428	3,274
August	0	11,504	3,262
September	0	10,245	3,237
October	0	9,954	3,209
November	0	8,304	3,223
December	0	7,601	3,217
TOTAL	**0**	**107,899**	**26,119**

*Normally estimated

Table 5-3. Total Water Supply

2020 Month	Surface Water Total (acre-feet)	District Groundwater (acre-feet)	Recycled M&I Wastewater (acre-feet)	Total District Water Supply (acre-feet)
Method				
January	11,655	0	0	11,655
February	11,348	0	0	11,348
March	12,097	0	42	12,139
April	12,919	0	42	12,961
May	17,066	0	42	17,108
June	18,319	0	42	18,361
July	21,047	0	42	21,089
August	21,765	0	42	21,807
September	19,186	0	42	19,228
October	20,393	0	0	20,393
November	17,009	0	0	17,009
December	14,732	0	0	14,732
TOTAL	**197,535**	**0**	**293**	**197,828**

*Recycled M&I Wastewater is treated urban wastewater that is used for agriculture.

SECTION 5 – DISTRICT WATER INVENTORY TABLES

Table 5-4. Raw and Treated Water Distribution System

Canals	Length (Miles)	Capacity (CFS)
Almaden-Calero	4.4	120
Coyote	9	125
Kirk Ditch	1.9	35
Page Ditch	2	50
TOTAL	**17.3**	**330**

Raw Water Pipelines	Length (Miles)	Pipe Diameter (inches)
Almaden Valley	12.25	72, 78
Anderson Force Main	0.81	54
Calero	2.62	78
Central	12.64	66
Coyote-Madrone	1.9	24, 36
Cross valley	8.13	78
Gilroy Reclamation (co-owned)	8.75	12
Hollister Conduit	19.1	54-60
Main Avenue	1.41	24, 36
Pacheco Conduit I and II	7.91	120
Penitencia Force Main	0.52	66
Rinconada Force Main	1.62	72
Santa Clara Conduit I and II	23.52	96
Santa Teresa Force Main	0.41	78
Stevens Creek	7.8	30, 36
Uvas-Llagas Transfer	3.33	36
TOTAL	**112.72**	

Treated Water Pipeline	Length (Miles)	Pipe Diameter (Inches)
Campbell Distributary	2.07	20
East	6.39	33,36,42,48
Graystone	0.2	36
Milpitas	4.6	42
Mountain View Distributary	1.15	24
Parallel East	2.35	54
Penitencia Delivery Main	0.49	66
Santa Clara Distributary	4.12	30,36
Snell	8.51	60,66,72
Sunnyvale Distributary	0.46	33
West	9.17	30,33,48,54,66,78,84
TOTAL	**39.51**	

Table 5-5. Crop Water Needs

2020 Crop Name	Area (crop acres)	Crop ET (AF/Ac)	Leaching Requirement (AF/Ac)	Cultural Practices (AF/Ac)	Effective Precipitation (AF/Ac)	Appl. Crop Water Use (acre-feet)
Apricots	115	3.1	0	0	0.0	352
Beans	859	1.9	0	0	0.0	1,632
Broccoli	905	1.9	0	0	0.0	1,701
Cabbage	623	2.2	0	0	0.6	972
Cherries	953	2.9	0	0	0.6	2,211
Chinese Vegetables	774	1.0	0	0	0.0	774
Corn	1,041	1.7	0	0	0.0	1,749
Garlic	450	1.0	0	0	0.6	351
Grapes	1,726	1.0	0	0	0.6	690
Hay	3,011	3.0	0	0	0.6	7,106
Lettuce	2,105	2.2	0	0	0.1	4,336
Mushrooms	136	3.0	0	0	0.0	408
Onions	40	1.0	0	0	0.6	31
Peppers - Bell	1,261	2.5	0	0	0.0	3,707
Peppers - Wax & Chili	408	2.5	0	0	0.0	1,036
Salad Greens	659	0.9	0	0	0.0	606
Spinach	966	0.9	0	0	0.0	889
Squash	242	1.9	0	0	0.6	407
Tomatoes - Fresh	951	1.8	0	0	0.0	1,693
Tomatoes - Processed	680	1.3	0	0	0.0	898
Walnuts	288	3.0	0	0	0.6	685
Miscellaneous[1]	1,809	1.8	0	0	0.0	3,220
Crop Acres	**20,002**					**35,455**
Total Irrigation Acres[2]	**20,002**					

[1] Miscellaneous includes artichokes, cauliflower, celery, cucumber, herbs, parsley, pumpkins, and shallots.
[2] If this number is larger than your known total, it may be due to double cropping.

SECTION 5 – DISTRICT WATER INVENTORY TABLES

Table 5-6. 2020 District Water Inventory

Type of Water	Location of Information		
Water Supply	Table 3		197,828
Environmental Consumptive Use[1]	(Distribution, Drain, etc.)	minus	11,120
Groundwater recharge	(Intentional - ponds, injection)	minus	81,600
Seepage	Table 4	minus	0
Evaporation - Precipitation	Table 4	minus	0
Spillage	Table 4	minus	0
Leaks, Breaks, Flushing / Fire	Table 4	minus	0
Transfers out of District		minus	1,630
Water Available for sale to customers			103,478
Actual Agricultural Water Sales	2020	From District Records	1,309
Private Groundwater	Table 2	plus	26,119
Crop Water Needs	Table 5	minus	35,455
Drainwater outflow	(tail and tile not recycled)	minus	0
Percolation from Agricultural Land	(calculated)		(8,028)
M&I Actual Water Sales	2020	From District Records	105,131
Inside Use	Feb urban use x 12		70,776
Landscape / Outside Use	(calculated)		34,355
Unaccounted for Water	(calculated)		(2,961)

[1]Represents releases that exceed recharge capacity and includes flood releases

Table 5-7. Influence on Groundwater and Saline Sink

2020	
Agric Land Deep Perc + Seepage + Recharge - Groundwater Pumping = District Influence on Groundwater Storage	81,600
Estimated actual change in ground water storage, including natural recharge)	0
Irrigated Acres (from Table 5)	20,002
Irrigated acres over a perched water table	0
Irrigated acres draining to a saline sink	0
Portion of percolation from agri seeping to a perched water table	0
Portion of percolation from agri seeping to a saline sink	0
Portion of On-Farm Drain water flowing to a perched water table/saline sink	0
Portion of Dist. Sys. seep/leaks/spills to perched water table/saline sink	0
Total (AF) flowing to a perched water table and saline sink	0

SECTION 5 – DISTRICT WATER INVENTORY TABLES

Table 5-8. Annual Water Quantities Delivered Under Each Right or Contract

Year	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (1) (acre-feet)	Other Water (2) (acre-feet)	Transfers into District (acre-feet)	Total (acre-feet)
2011	51,089	21,970	42,491	208,775	0	33,143	357,468
2012	87,500	6,847	17,464	50,906	0	59,038	221,755
2013	79,754	0	3,684	45,271	0	105,390	234,099
2014	61,864	0	0	15,466	0	47,146	124,476
2015	0	32,374	0	40,352	65,575	18,804	157,105
2016	1,655	58,987	37,486	94,844	49,169	37,896	280,037
2017	16,245	51,288	13,875	515,370	34,930	3,098	634,806
2018	15,545	89,899	15,851	36,018	49,249	16,880	223,442
2019	20,641	57,868	10,400	214,163	8,279	9,952	321,303
2020	0	82,771	0	57,889	41,570	15,305	197,535
Total	**334,293**	**402,004**	**141,251**	**1,279,054**	**248,772**	**346,652**	**2,752,026**
Average	**33,429**	**40,200**	**14,125**	**127,905**	**24,877**	**34,665**	**275,203**

Valley Water

Clean Water • Healthy Environment • Flood Protection

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