

**Santa Clara Valley Water District
Water Management Plan
2017 Criteria**

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Section 1: Description of the District

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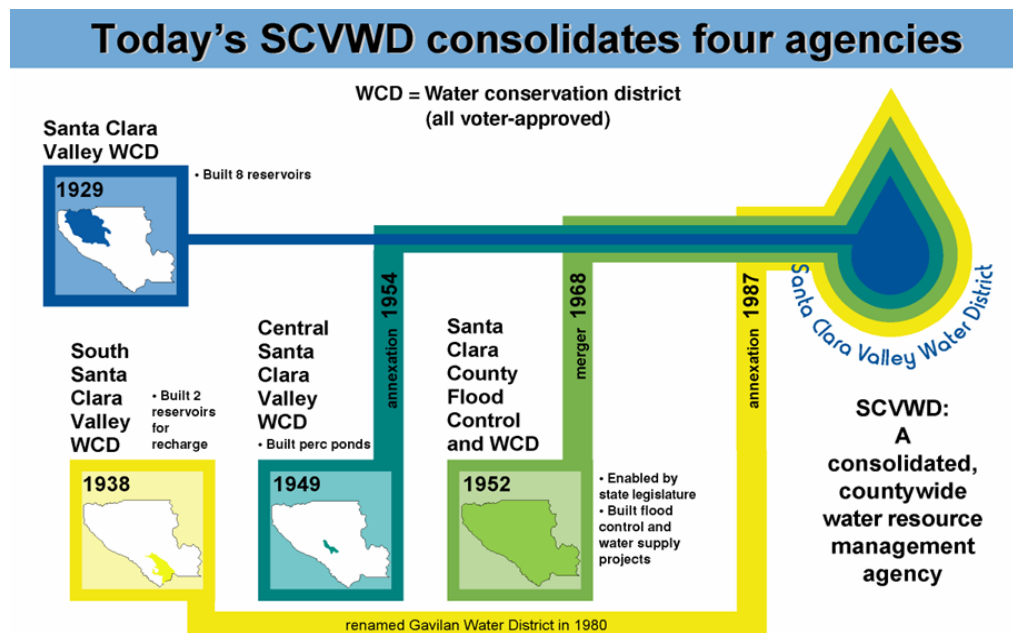
A. History

1. **Date district formed:** 1929 Date of first Reclamation contract: 1977

Original size (acres): 224,000 Current year (last complete calendar year): 2016

The Santa Clara Valley Water District (District) was originally formed in 1929 as the Santa Clara Valley Water Conservation District. Figure 1 shows the evolution from the original Water Conservation District to the multi-purpose water resources management agency of today. Today, the District provides wholesale water supply, groundwater management, flood protection, and stream stewardship services to all of Santa Clara County.

Figure 1: Evolution of Santa Clara Valley Water District



2. Current size, population, and irrigated acres

	2015
Size (acres)	832,000
Population served (urban connections)	1.9 million
Irrigated acres	17,250

3. Water Supplies Received

Water supply sources within Santa Clara County include water imported via state and federal water projects, water purchased by retailers directly from the San Francisco Public Utilities Commission (SFPUC), local surface water, groundwater, and recycled water. The water supplies received by the District in 2015 are provided in the following table.

Water supplies received in 2015

Water Source	2015 AF
Federal urban water (Tbl 1)	32,374
Federal agricultural water (Tbl 1)	0
State water (Tbl 1)	*
Local surface water (Tbl 1)	26,560
Prior Year carryover	27,530
Upslope drain water (Tbl 1)	0
District groundwater (Tbl 2)	0
Banked water (Tbl 1)	38,045
Transferred water (Tbl 1)	18,804
Recycled water (Tbl 3)	0
Other – From SFPUC via Intertie	0
Total	143,313

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

The District's retail customers that have treated water contracts, and therefore directly receive Central Valley Project (CVP) supplies from the District, are listed below.

District Retailer	Sources of Supply	Service Area
California Water Service Company	SCVWD Treated Water, Groundwater	Los Altos, Los Altos Hills, Mountain View, Sunnyvale
Milpitas	SCVWD Treated Water, San Francisco Public Utilities Commission (SFPUC), Recycled Water	Milpitas
Mountain View	SCVWD Treated Water, San Francisco Public Utilities Commission (SFPUC), Groundwater, Recycled Water	Mountain View

San Jose Municipal Water	SCVWD Treated Water, San Francisco Public Utilities Commission (SFPUC), Groundwater, Recycled Water	San Jose
San Jose Water Company	SCVWD Treated Water, Groundwater, Local Surface Water, Recycled Water	Campbell, Cupertino, Los Gatos, Monte Sereno, San Jose, Saratoga
Santa Clara	SCVWD Treated Water, San Francisco Public Utilities Commission (SFPUC), Groundwater, Recycled Water	Santa Clara
Sunnyvale	SCVWD Treated Water, San Francisco Public Utilities Commission (SFPUC), Groundwater, Recycled Water	Sunnyvale

4. Annual Entitlement Under Each Right and/or Contract

Imported water provides 45% of the District's water needs. The District maintains long-term contracts with the federal government and the state of California to ensure reliable supply. Both Central Valley Project (CVP) and State Water Project (SWP) supplies are imported via the San Francisco Bay/Sacramento-San Joaquin Delta.

Central Valley Project

In 1977, the District entered into a contract with the United States Bureau of Reclamation for a maximum of 152,500 acre-feet per year from the San Felipe Division of the Central Valley Project. 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 acre-feet per year, and were as low as 48,375 acre-feet per year in 1991. After the drought, Reclamation established an Interim M&I Water Shortage Policy which provided some protection to Central Valley Project M&I contractors. In addition, a Water Reallocation Agreement was executed in 1997 by the District, Reclamation, and certain agricultural Districts who are members of the San Luis & Delta-Mendota Water Authority, which provided additional protections to the District's M&I water supplies from the Central Valley Project. As a result, the District's long-term average Central Valley Project water allocation for M&I and agricultural purposes is about 113,000 acre-feet per year.

State Water Project

The District contracted with the State Water Project (SWP) in 1961 for a maximum of 100,000 acre-feet per year. Deliveries began in 1965 through the South Bay Aqueduct. Since 1991, regulatory conditions have reduced SWP deliveries. Staff analysis of anticipated Endangered Species Act impacts and other requirements indicates that SWP deliveries may be reduced to an average delivery of 60,000 acre-feet per year in normal years and 35,000 acre-feet per year in a critical dry period.

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-W0023
CVP (joint assignment)	6,260		Up to 6,260 annually, but limited to 25% of total allocated supply over term of joint assignment	14-06-200-3365A-IR13-B
SWP	100,000	Up to 100,000		N/A

*The District'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 the District for both M&I and Irrigation purposes is limited to 152,500 AF.

In 1999, SCVWD 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. The District receives a portion (approximately 25%) of the water made available under this contract over the term of the agreement.

5. Anticipated land-use changes. For Ag contractors, also include changes in irrigated acres.

Santa Clara County is home to a very dynamic economy and approximately 1.9 million people (Department of Finance, 1/1/2015). 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.

Land use in Santa Clara County is anticipated to remain fairly stable. Most new construction is anticipated to be infill within existing urban centers with continued moderate urbanization in the south county. Total county population in 2000 reported by Association of Bay Area Governments (ABAG) in 2010 was 1,781,642 and ABAG Plan Bay Area 2013 projects population to grow to 2,423,500 by the year 2040 (nearly 35%). This increasing population and projected significant job growth will increase demand for water. Overall, countywide water demand is projected to increase by about 106,000 acre-feet or 32 percent by 2040, compared to year 2010 water use, taking into account implementation of planned water conservation programs.

6. Cropping patterns (Agricultural only)

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

Original Plan 1989		Previous Plan 2009		Current Plan 2015	
Crop Name	Acres	Crop Name	Acres	Crop Name	Acres
Beans (Bush	1,140	Beans (Bush	0	Beans (Bush	715
Cherries	963	Cherries	868	Cherries	502
Corn (Sweet)	833	Corn (Sweet)	924	Corn (Sweet)	1,534

Grapes	1,101	Grapes	0	Grapes	1,538
Peppers	1,382	Peppers	2,019	Peppers	2,004
Walnuts	875			Other Field Crops	4,820
Tomatoes	1,996	Tomatoes	1,349	Tomatoes	1,881
Lettuce	1,954	Lettuce	2,157	Lettuce	2,532
Prunes	861	Alfalfa	894	Ornamental	0
Other (<5%)	7,526	Other (<5%)	5,898	Other (<5%)	1,724
Total	18,631	Total	14,109	Total	17,250

2015 Data from Santa Clara County Crop Report

7. Major irrigation methods (by acreage) (Agricultural only)

Original Plan 2002		Previous Plan 2009		Current Plan 2015	
Irrigation Method	Acres	Irrigation Method	Acres	Irrigation Method	Acres
Trickle/Drip	7,434	Trickle/Drip	7,611	Drip/Micro	8,774
Level Basin	873	Level Basin	144	Drip	2,690
Sprinkler	8,193	Sprinkler	6,241	Sprinkler/Drip	4,323
Other	120	Other	113	Sprinkler	1,463
Total	16,620		14,109	Total	17,250

B. Location and Facilities

See Attachment A for maps showing water supply distribution to and within the district.

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 Camp On	Less than 5% error

2. & 3. Agricultural and Urban Distribution System

The District's conveyance systems serve both agricultural and urban communities through groundwater recharge and water treatment. Figure 2 illustrates the location of the District'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 the District's water treatment plants to the retail water companies that sell water directly to the public.

The District has one distribution system that delivers both M&I and Agricultural supplies.

Conveyance Method	<i>Miles</i>
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

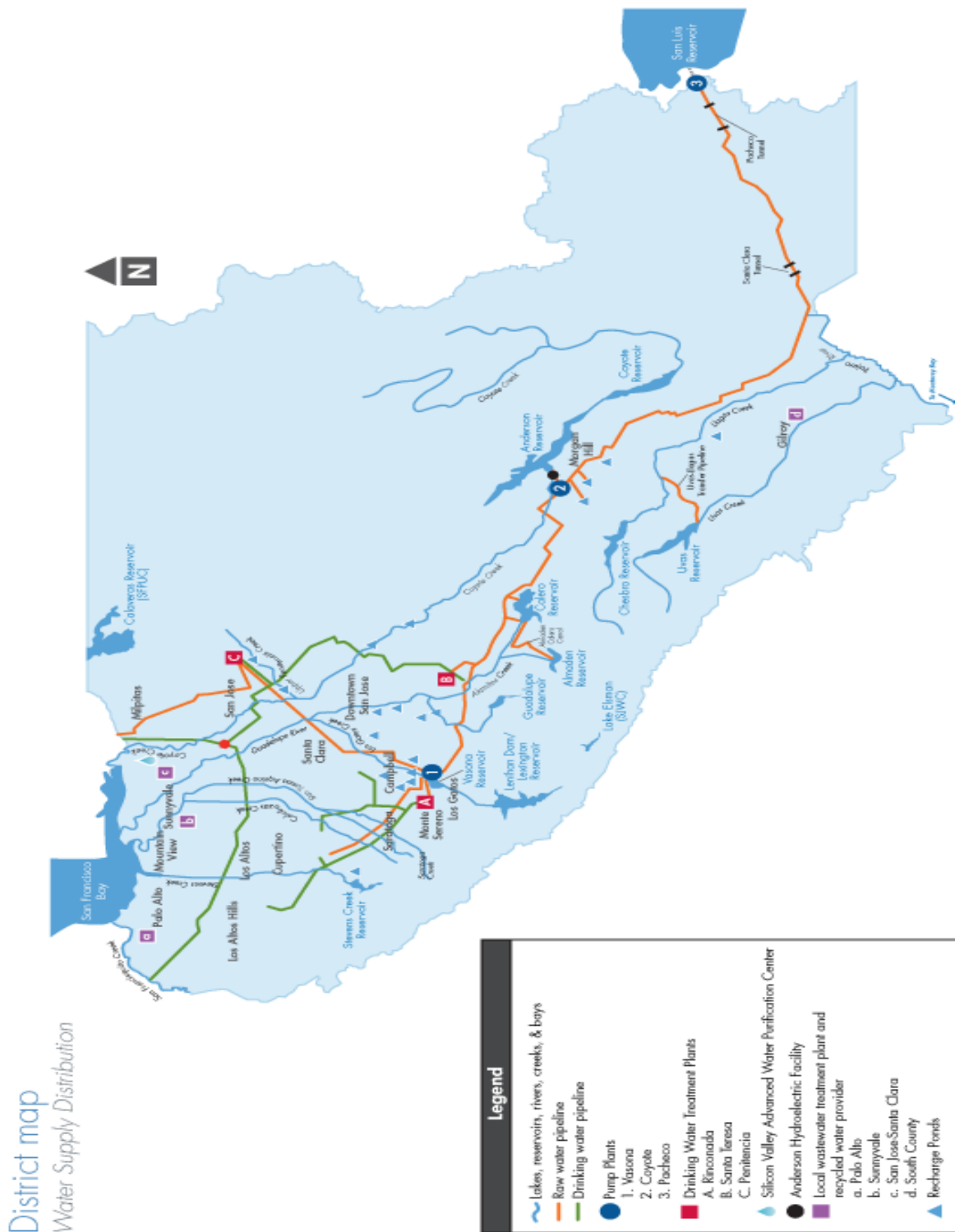
Penitencia Water Treatment Plant

- East Pipeline
- Milpitas Pipeline
- Parallel East Pipeline

Raw water pipelines include the following:

Santa Clara Conduit
Cross Valley Pipeline
Almaden Valley Pipeline
Central Pipeline

Figure 2 – Water Supply Distribution System



4. Storage facilities (regulating reservoirs)

The District manages 10 local reservoirs which capture local runoff and are used to store imported water. The total storage capacity of these reservoirs is 169,009 acre-feet. 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 have resulted in reduction (for seismic risk management) of about a third of the total surface storage capacity.

Reservoir	Reservoir Capacity (acre-feet)	Restricted Capacity (acre-feet)
Almaden	1,586	1,472
Anderson	90,373	61,810
Calero	9,934	4,585
Chesbro	7,945	7,945
Coyote	23,244	12,382
Guadalupe	3,415	2,218
Lexington	19,044	19,044
Stevens Creek	3,138	3,138
Uvas	9,835	9,835
Vasona	495	495
Total	169,009	122,924

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 water as necessary or take water from a raw water pipeline. Restrictions on surface water agricultural deliveries are subject to the needs of drinking water treatment plants during times of shortage. Surface water deliveries were stopped in 2015 due to severe drought.

7. Restrictions on water source(s)

Restriction	Cause of Restriction	Effect on Operations
Ground surface subsidence	Over-pumping of groundwater	Encourage retailers to limit their groundwater pumping and manage recharge operations.
Contract limitations	Drought and environmental conditions (water quality, fish	Rely on stored water, encourage cities to adopt mandatory water conservation measures/rationing, purchase additional

	migration and habitat).	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, and reoperation as much as possible to minimize impacts.

8. Proposed changes or additions to facilities and operations for the next 5 years

District operations are continually adapted to meet changing regulatory requirements, water supply and water quality conditions, flood protection 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, Calero and Guadalupe Dams
- Seismic evaluations of Coyote, Chesbro and Uvas Dams
- Rehabilitation of Almaden Dam outlet works

Transmission:

- Raw and treated water pipeline inspection and rehabilitation
- Main Avenue and Madrone Pipelines Restoration
- Vasona Pumping Plant Upgrades

Water Treatment Plants:

- Penitencia Water Treatment Plant Residuals Management
- 5-year makeover of the Rinconada Water Treatment Plant processes to ensure plant reliability for the next 50 years; this will include the addition of fluoridation facilities.

Recycled Water and Purified Water:

- Complete development of the Purified Water Program and establish a schedule of Program implementation.
- Explanation 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.

FAHCE

- Meet requirements associated with the anticipated modified water rights order that will specify changes in operations and infrastructure improvement necessary to fulfill the Fisheries and Aquatic Habitat Collaborative effort (FAHCE) Fish Habitat Restoration Plan

C. Topography and Soils

1. Topography of the district and its impact on water operations and management

Santa Clara Valley Water District CVPIA Water Management Plan
October 2017

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 Diablo Range into Santa Clara County. In order to deliver water to the District 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, District Soils Map

3. Agricultural limitations resulting from soil problems (Agricultural only)

Soil Problem	Estimated Acres	Effect on Water Operations and Management
Portions of south Santa Clara County in the Gilroy area, near the Pajaro River, may at times be subject to naturally high water table.	N/A	The District does not operate a managed groundwater recharge program in this area.

D. Climate

1. General climate of the district service area

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg Precip.	2.8	2.6	2.3	1.1	.4	.1	0	0	.2	.7	1.5	2.5	14.3
Max. Temp.	58.4	62.2	65.7	69.7	74.4	79.2	82.1	81.8	80.6	74.6	64.9	58.4	71.0
Min. Temp	41.8	44.5	46.0	47.8	51.6	55.1	57.3	57.4	56.4	52.1	45.9	41.8	49.8
ETo	1.5	1.9	3.5	5.0	6.0	6.8	7.0	6.3	4.8	3.5	1.9	1.4	49.6

Rainfall from District Station 86 (1874-2015), temperature from University of California Davis (1951-2015), and ETo from District Alamos Station.

2. Impact of microclimates on water management within the service area

The topographical variations mentioned above also create variations in weather or microclimates. In addition to the normal amount of precipitation that is generated by these midlatitude systems, the orographic lift, due to the Santa Cruz and Diablo Ranges, significantly enhances rainfall amounts in the north county. 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.

The microclimates' effect on water management is reflected in the orientation of District 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 has an exceptionally diverse inventory of environmental resources including grasslands, oak woodlands, redwood forests, salt marshes, seasonal wetlands, and extensive riparian habitat. The county is located at the southern end of San Francisco Bay and is located within the Pacific Flyway.

Water related environmental and recreational resources include approximately 640 miles of rivers, streams, creeks, 10 reservoirs, and several recharge facilities which are operated as joint-use recreational facilities. In addition, a number of the District's reservoirs are also operated as joint-use recreational facilities under agreement with the Santa Clara County (County). An extensive network of walking and biking trails crisscross the county. City parks such as 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 Clapper 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

The Board of Directors has adopted an "Ends Policy" related to management of natural resources.

Policy E-4	There is water resources stewardship to protect and enhance watersheds and natural resources and to improve the quality of life in Santa Clara County. Accordingly, the following goals and objectives are adopted:
4.1	Protect and restore creek, bay and other aquatic ecosystems.
4.2	Improved quality of life in Santa Clara County through appropriate public access to trails, open space, and District facilities.
4.3	Strive for zero net greenhouse gas emission or carbon neutrality.

In 1996, a water rights complaint was filed at the State Water Resources Control Board (SWRCB) indicating that District water supply operations in Coyote Creek, Guadalupe River, and Stevens Creek impact steelhead trout and Chinook salmon. In 1997, the Central California Coast Steelhead was listed as a threatened species under Federal Endangered Species Act. To address the complaint and ESA issues, the District, Guadalupe – Coyote Resource Conservation District (GCRCD), Trout Unlimited, the California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), and national Marine Fisheries Service (NMFS), participated in the Fisheries and Aquatic Habitat Collaborative Effort (FAHCE) to develop a Settlement Agreement. The Settlement Agreement was initialed in 2003. A key Settlement Agreement provision is the Fish Habitat Restoration Plan (Restoration Plan), which

proposes changes in reservoir releases to support instream flow needs for salmonids, channel enhancements, monitoring an adaptive management, in addition to several fish habitat improvements already completed as early FAHCE implementation.

3. Recreational and/or cultural resources areas within the service area

The county of Santa Clara, the 15 municipalities within the county, and various private enterprises offer numerous recreational and cultural resources within the District'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

District 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.

See Attachment B for full text of each. These rules are distributed to all well owners.

Surface water rules and regulation are governed by Resolution 70-28 as amended. The District's highest surface water priority is to ensure sufficient supplies to the District's treatment plants. Raw water is also used for groundwater recharge and agriculture.

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 District 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 the District's standard treated water contract, in times of water shortage, the District 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, surface water deliveries ceased to all but a few surface water users throughout 2015.

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. There is no surface or subsurface drainage from farms

5. Policies on water transfers by the district and its customers

The District has routinely engaged in water transfers and exchanges to help meet these policies. Water transfers and exchanges have also been identified in the District's 2012 Water Supply and Infrastructure

Master Plan as a way to increase water supply reliability. Short-term or spot market, water transfers usually involve an agreement to purchase water within a one-to-two year period. The District routinely uses short-term water transfers to increase water supplies in times of shortage. Per District Policy EL-5.3.3, the District's Board of Directors has authorized the District's Chief Executive Officer to execute imported water agreements.

G. Water Measurement, Pricing, and Billing

This section provides information on water measurement, pricing, and billing for CVP water delivered by the District to agricultural and domestic customers at turnouts and to retailer distribution systems. The District also measures and bills for other water use, including groundwater, recycled water, and raw water deliveries to non-agricultural customers outside urban distribution systems.

Water Supply	No. of Accounts	Percent of Total	Water Quantity (AF)	Percent of Total
Treated Water				
Metered	28	100%	90,671	100%
Un-metered	0	0%	0	0%
Total	28	100%	90,671	100%
Raw Surface Water				
Metered	37	62%	948	99%
Un-metered	23	38%	12	1%
Total	60	100%	960	100%
Total				
Metered	65	74%	91,619	100%
Un-metered	23	26%	12	0%
Total	88	100%	91,631	100%

Of the thirty unmetered accounts reported in the 2011 CVPIA Water Management Plan, the District has since added meters to seven of the accounts. There are two agricultural and twenty-one domestic accounts that remain to be metered. The plan was to meter all accounts, however during the most recent drought, the District curtailed surface water deliveries, putting that effort on hold. The District is currently working to revise its 1974 Rules and Regulations for the Service of Surface Water with an emphasis on water conservation and metering. The District needs an additional two years to finalize this effort and install meters on the remaining unmetered accounts or work with the customers to connect to an alternative water supply.

1. Agricultural Customers receiving CVP Water in 2015

- a. Number of delivery points (turnouts and connections) 25
- b. Number of delivery points serving more than one farm 0
- c. Number of measured delivery points (meters and measurement devices) 23
- 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 2-unmetered customers
received water in FY2015

- f. Delivery point measurement device table

Measurement Type	Number	Accuracy* (+/- %)	Reading Frequency (Days)	Calibration Frequency (Months)	Maintenance Frequency (Months)
Propeller meter	23	+/- 2%	30	60	12

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	Preventive Maintenance Only
	10" mag meter	1	+/- 2%	7	6	Preventive Maintenance Only
	12" mag meter	6	+/- 2%	7	6	Preventive Maintenance Only
	16" mag meter	4	+/- 2%	7	6	Preventive Maintenance Only
	18" mag meter	3	+/- 2%	7	6	Preventive Maintenance Only
	20" mag meter	6	+/- 2%	7	6	Preventive Maintenance Only
	24" mag meter	3	+/- 2%	7	6	Preventive

						Maintenance Only
	30" mag meter	1	+/- 2%	7	6	Preventive Maintenance Only
	33" mag meter	1	+/- 2%	7	6	Preventive Maintenance Only
	36" mag meter	2	+/- 2%	7	6	Preventive Maintenance Only
Total		28				

*Documentation verifying the accuracy of measurement devices must be submitted with Plan and included as Attachment C.

3. Agricultural and Urban Rates

Adopted Water Charges for Fiscal Year 2014-15

Adopted Rate Board Resolution can be found in Appendix B.

Type of Charge	AG Water (\$/AF)	M&I Water (\$/AF)
Surface Water ¹		
Other Zone W-5 Deliveries ²	37.74	337.60
Other Zone W-2 Deliveries ³	37.74	765.60
Minimum Charge Zone W-5 ⁴	239.25	239.25
Minimum Charge Zone W-2 ⁵	560.25	560.25
Treated Water		
Contract ⁶	N/A	847.00
Noncontract ⁷	N/A	822.00

¹ Surface water charge is the sum of the basic user charge plus the water master charge. It also includes the capital cost and power, wherever applicable.

² Other Zone W-5 Deliveries = Basic user (AG or M&I @ \$19.14/AF or \$319/AF) + Water Master (\$18.60/AF)

³ Other Zone W-2 Deliveries = Basic user (AG or M&I @ \$19.14/AF or \$747/AF) + Water Master (\$18.60/AF)

⁴ Minimum Charge W-5 = 0.75 X Basic User W-5 (M&I @ \$319.00/AF).

⁵ Minimum Charge W-2 = 0.75 X Basic User W-2 (M&I @ \$747.00/AF).

⁶ Treated Water Charge is the sum of Basic User (\$747.00/AF) and Treated Water Surcharge (\$100.00/AF).

⁷ Treated Water charge for noncontract deliveries is offered to all treated water retailers in the Rinconada Water Treatment Plant service area for deliveries from that facility. The charge for non-contract deliveries is the sum of the basic user charge (\$747.00/AF) and the treated water surcharge for non-contract water (\$75.00/AF).

Annual charges collected from agricultural and urban customers FY2015

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)
\$847/AF	\$/AF-Treated Water	90,671	\$76.799M
\$456/AF	\$/AF Surface Water	1,541	\$703M

See Attachment C Page (insert page number here), District Sample Bills

Water-use Accounting Procedures

The District 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 the District merged with the Gavilan Water Conservation District. Upon written request, the District 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 C.

H. Water Shortage Allocation Policies

1. Current year water shortage policies or shortage response plan - specifying how reduced water supplies are allocated

Agricultural surface water deliveries are reduced or ceased by on urban treated water demands, in accordance with the District's treated water contracts Below is the District's Water Shortage Contingency Plan from the 2015 Urban Water Management Plan.

Water Shortage Contingency Plan from District 2015 Urban Water Management Plan

Stage	Stage Title	Projected End of Year Groundwater Storage	Requested Reduction in Water Use ⁽¹⁾	Actions
Stage 1	Normal	Above 300,000 AF	None	The District continue ongoing outreach strategies aimed toward achieving long-term water conservation targets. Messages in this stage focus on services and rebate programs the District provides to facilitate water use

Stage	Stage Title	Projected End of Year Groundwater Storage	Requested Reduction in Water Use ⁽¹⁾	Actions
				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 2	Alert	250,000 to 300,000 AF	0-10% demand reduction	This stage is meant to warn customers that current water use is tapping groundwater reserves. Coordinate ordinances with cities and prepare for a stage 3 situation. Additional communication tools can be employed to augment Stage 1 efforts, promote immediate behavioral changes, and set the tone for the onset of shortages. Specific implementation plans will be developed when a worsening of the water shortage has occurred. Supplemental funding may be identified to augment budgeted efforts.
Stage 3	Severe	200,000 to 250,000 AF	10-20% demand reduction	Shortage conditions are worsening, requiring close coordination with retailers and cities to enact ordinances and water use restrictions. Requires significant behavioral change by water users. The intensity of communication efforts will increase as the severity of shortage increases. Messages are modified to reflect for dire circumstances.
Stage 4	Critical	150,000 to 200,000 AF	20-40% demand reduction	This is the most severe stage in a multiyear drought. The District will expand Stage 3 activities and encourage retailers and cities to enforce their water shortage contingency plans, which could include fines for repeated violations.
Stage 5	Emergency	Below 150,000 AF	Up to 50% demand reduction	Stage 5 of the water shortage contingency plan is meant to address an immediate crisis such as a major infrastructure failure. Water supply would only be available to meet health and safety needs. The District would activate its EOC and provide daily updates on conditions.

2. Current year policies that address wasteful use of water and enforcement methods

See Attachment P.

The California Constitution (Art. X Sect. 2) prohibits the waste of water in California. The District's approach to reducing the wasteful use of water is to promote conservation. As described in Sections 3 and 4, the District has been very successful at encouraging local water users to conserve water. The District has developed model water use prohibitions and restrictions, and has worked closely with local retail agencies, cities and the County to encourage their adoption and enforcement.

Following the 1991 drought, the District Act was amended to allow the District to develop overproduction charges for groundwater pumping. This provision, Section 26.7, allows the District 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.

Reclamation staff previously recommended that the District develop an ordinance prohibiting water waste for the groundwater pumpers that are outside the boundaries of the 13 water retailers, and pay water management fees for the water they pump. In 2009, the District sought to include provision prohibiting waste of groundwater in a revision to the District Act. However, the District did not succeed in implementing the revision. Although an ordinance that gives the District authority to prohibit others from wasting groundwater has not yet been officially adopted by the District, the District's retailers implement measures that achieve similar objectives. Unlike its water retailers, the District has no authority to enforce an ordinance prohibiting groundwater waste. Therefore, a reasonable approach is to rely on water retailers to enforce similar measures. Water waste prohibitions are described by retailer in Attachment P.

The County of Santa Clara 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.

In 2014, as part of the response to the ongoing drought, the District initiated a Water Waste Inspector Program. This program facilitates the response to reports of water waste and violations of local water use restrictions. To facilitate the community's ability to report water waste, four reporting options were developed: email, a water-waste hotline, a portal on the District's website, and through a mobile application.

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 the District's annual water supply planning.

The District'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. Currently, DWR and USBR have reinitiated consultation with the USFWS and NMFS on the long-term operations of the SWP and CVP under the Endangered Species Act. New Biological Opinions and Incidental Take 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, the water district's imported supplies could be significantly impacted.

The District participates in various programs, including Water Storage Investment Program, development of the California WaterFix and California EcoRestore Projects, 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 the district and delivered, by month (Table 2)

See Chapter 5, Water Inventory Tables, Table 2

The District 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 the District to pump groundwater if necessary as an emergency backup to its treated surface water system. The three wells are run periodically to keep them exercised but are not regularly used to deliver groundwater.

2. Groundwater subbasins that underlie the service area

The groundwater subbasins in Santa Clara County provide about half of the county's water supply for use, through pumping by retail water agencies or individual well owners. The District manages two major groundwater subbasins identified by the Department of Water Resources Bulletin 118: the Santa Clara Subbasin (Basin 2-9.02) in the north county and the Llagas Subbasin (Basin 3-3.01) in the south county.

Table 2 presents the approximate size and operational groundwater storage capacity of each subbasin. The operational storage capacity is the volume of groundwater between the operational minimum and maximum groundwater elevations. Groundwater elevations outside this range would lead to unacceptable adverse impacts, such as land subsidence. The District 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. Groundwater Subbasins that Underlie the District

Name	Size (Square Miles)	Useable Capacity (AF)
Santa Clara Subbasin	297	375,000
Llagas Subbasin	74	150,000

The Santa Clara and Llagas Subbasins are described briefly below, with extensive detail available in the District's 2016 Groundwater Management Plan, which was submitted to DWR as an Alternative to a Groundwater Sustainability Plan under the Sustainable Groundwater Management Act (SGMA). The District is designated as the exclusive Groundwater Sustainability Agency for the Santa Clara and Llagas Subbasins under SGMA.

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. Recharge area comprised of alluvial fan and fluvial deposits along the edge of the subbasin allow 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.

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 74 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 District Map of Groundwater Subbasin and Recharge Facilities

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

4. Description of conjunctive use of surface and groundwater

The District'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 salt water intrusion. Related District 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.

The District's managed recharge program uses runoff captured in local reservoirs and imported water delivered by the raw water conveyance system to recharge groundwater through more than 390 acres of recharge ponds and over 90 miles of local creeks. The District's annual managed recharge capacity is approximately 100,000 AFY. About 54,900 AF of local and imported water was recharged through District facilities in 2015, about half of the long-term average due to limited supplies of local and imported surface water due to continued drought.

In 2015, treated water and recycled water deliveries provided about 94,500 and 20,000 AF of water, respectively. The District's long-term water conservation programs also saved approximately 64,000 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 2016 Groundwater Management Plan can be found on the District website at:
<http://www.valleywater.org/Services/Groundwater.aspx>

6. Groundwater Banking Plan

In May 1996, the District 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 the District. In 1997, the District approved a long-term agreement with Semitropic. The total storage capacity available to the District in Semitropic Water Bank is 350,000 AF, and the current storage balance (August 2017) is 232,245 AF. Since 1997, the District has banked water in thirteen of the 20 years, and withdrawn water in nine years. There were three years when there was both put and take, separated by several months in between of no activity. There was one year of no activity. A copy of the banking agreement is in Attachment G.

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)

The Santa Clara Valley Water District's water quality laboratory is responsible for ensuring that the treated drinking water that the district 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 methodology approved by the Environmental Protection Agency and state-of-the-art instrumentation.

The monthly water quality report shows the quality of source (untreated) water at each of the District's three water treatment plants, and the treated water which the district delivers to water retailers in Santa Clara Valley. The monthly water quality report shows the quality of source (untreated) water at each of the district's three water treatment plants, and the treated water which the district delivers to water retailers in Santa Clara Valley. The monthly water quality reports are available at
<http://www.valleywater.org/services/WaterQualityReports.aspx>.

The District's annual water quality report and the retailers' annual water quality reports are in Attachment H.

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

The District conducts an extensive water quality monitoring program. Surface water monitoring is conducted pursuant to Title 22 of the California Code of Regulations, under the direct oversight of the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) and according to the District's Source Water Quality Management Program as part of the District's Water Quality Management Plan. The District Title 22 monitoring program in all three reservoirs includes the compliance categories of general physical, microbiological, radionuclide general mineral, inorganic, and regulated organics, which include pesticides, herbicides, and volatile and semi-volatile organic compounds. The Source Water Quality Management Program monitoring includes Title 22 parameters plus site specific local reservoir concerns of nutrients, fluorescence, bromide, Disinfection By-Product (DBP) precursors, ammonium perchlorate, and MTBE.

The District conducts a regional groundwater quality monitoring program and conducts special monitoring as needed. In 2015, the District tested groundwater quality at over 300 wells throughout the country and analyzed data from 225 public water supply wells. Related information is presented in the District's Annual Groundwater Report. The District 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, however, the District does not have access to this data.

4. Current water quality monitoring programs for surface water by source (Agricultural Only)

<i>Analyses Performed</i>	<i>Frequency</i>	<i>Concentration Range</i>	<i>Average</i>
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 2015

<i>Crop name</i>	<i>Acres</i>	<i>Irrigation Method</i>
Mixed Row	2993	Drip/Micro
Pepper	2985	Drip/Micro
Cherries	2796	Drip/Micro
Tomatoes, Bush	2690	Drip
Lettuce	2456	Sprinkler/Drip
Corn (sweet)	1867	Sprinkler/Drip
Pasture (hay)	1463	Sprinkler
TOTAL	17,250	

3. Retailer Related Water Use for 2015

Customer Type	Number of Connections	AF
Wholesale (Treated Water)	28	90,672
Total		90,672

4. Urban Wastewater Collection/Treatment Systems serving the service area (Acre-feet)

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	21,797	0	3,296
Sunnyvale Water Pollution Control Plant	3	10,525	0	967
San Jose/Santa Clara Regional Wastewater Facility	3	88,179	0	13,658
South County Regional Wastewater Authority	3	0	5,440	2,367
Total		120,501	5,440	20,288

1. Effluent data compiled from California Integrated Water Quality System; daily averages summed in Excel
2. Reuse data compiled from Santa Clara Valley Water District Data Access Prototype Application

5. Groundwater recharge in current year (Table 6)

Recharge Area	Method of Recharge	AF	Method of Retrieval
90 Miles	In-Stream Recharge (Creeks)	33,900	Pumped by water retailers and other well owners
390 Acres	Off-Stream Recharge (Recharge Ponds)	21,000	Pumped by water retailers and other well owners
	Total	54,900	

6a. Transfers and exchanges into the service area in current year – (Table 1)

The District received transfers totally 18,804 AF in 2015.

6b. Transfers and exchanges out of the service area in current year – (Table 6)

No transfers were made out of the District in 2015.

7. Wheeling, or other transactions in and out of the district boundaries – (Table 6)

No wheeling through the District was performed in 2015.

8. Other uses of water (Described in Section 2C)

The District took 38,045 AF of water from Semitropic and used 27,530 AF of prior year carryover in 2015.

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.

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

G. Water Accounting (Inventory)

Go to Section 5 for Combined Water Inventory Tables.

Section 3: Best Management Practices (BMPs) for Agricultural Contractors

A. Critical Agricultural BMPs – 2015 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%**

- g. Number of delivery points (turnouts and connections) 25
- h. Number of delivery points serving more than one farm 0
- i. Number of measured delivery points (meters and measurement devices) 23
- j. Percentage of water delivered to the contractor that was measured at a delivery point
100%
- k. Total number of delivery points not billed by quantity 2-unmetered customers
received water in FY2015

- l. Delivery point measurement device table

Measurement Type	Number	Accuracy* (+/- %)	Reading Frequency (Days)	Calibration Frequency (Months)	Maintenance Frequency (Months)
Propeller meter	23	+/- 2%	30	60	12

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

Name: Jerry De La Piedra Title: Water Supply Planning and
Conservation Unit Manager

Address: 5750 Almaden Expressway, San Jose, CA 95118

Telephone: 408-630-2257 E-mail: GDelapiedra@valleywater.org

- 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.

The District has sponsors a mobile irrigation lab within its service territory. The lab performs agricultural irrigation systems distribution uniformity evaluations and pump efficiency tests.

The district maintains a California Irrigation Management Information System (CIMIS) station located in Gilroy in partnership with Synsenta AG and the California Department of Water Resources.

The District provides CIMIS reference evapotranspiration estimates for use in irrigation scheduling on the District's 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:

<http://www.valleywater.org/programs/agriculture.aspx>

a. On-Farm Evaluations

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

	Total in district	# surveyed FY2014	# surveyed in FY2015	# projected for FY2016	# projected FY2017
Irrigated acres	17,250	300	172	38	200
Number of farms		22	30	8	30

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 the District's website referenced above.

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

The District maintains an agricultural section on its website,

<http://www.valleywater.org/programs/agriculture.aspx> featuring CIMIS information and irrigation calculators

e. Other

3. Pricing structure - based at least in part on quantity delivered

As described in Section 1G, the District'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 the District to help preserve the open space benefits of agriculture. The District currently plans to retain the existing billing procedures and pricing structure as detailed in Section I-G of this report.

4. Evaluate and improve efficiencies of district pumps

Santa Clara Valley Water District CVPIA Water Management Plan
October 2017

The District operates and maintains the San Felipe Division Facilities including Pacheco Pumping Plant. In order to maintain pump reliability and efficiency and maximize service life before replacement, District staff are 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 logistic management.

The District 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

(See Planner, Chapter 2, Addendum B for examples of exemptible conditions)

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 Bay. These plants are not operated by the Santa Clara Valley Water District. However, the District owned Silicon Valley Advanced Water Purification Center opened in 2014 to produce up to 8 million gallons per day of purified water from the San Jose-Santa Clara Regional Wastewater Facility. The purified water produced at the new 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.

The District 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. Recently, the District has been conducting preliminary planning and engineering for potential potable reuse such as groundwater recharge. Furthermore, the District is developing a Countywide Recycled and Purified Water Master Plan to integrate and expand recycled and purified water as a local, reliable, environmentally sustainable, adaptive, drought-proof water supply and to guide strategic investment of public funds over the next 20 years.

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. The District periodically reevaluates the economics of this financing. Furthermore, the District works with partners to share information on funding sources for irrigation system improvements (e.g., EQIP, SWEEPs, etc.).

4. Incentive pricing

The District complies with this incentive pricing BMP by charging customers based on the quantity of water used. The District's water rate structure is described in detail in Section 1G. As a wholesale water supplier, the District 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 intended to be used during periods of water supply shortage as an incentive to reduce demands.

5. a) Line or pipe ditches and canals

As described in Section 1-B, the District 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.

Santa Clara Valley Water District CVPIA Water Management Plan
October 2017

b) Construct/line regulatory reservoirs

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

The District 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, the District 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

The District's commitment to conjunctive water management is reflected in its 2016 Groundwater Management Plan, which contains as the first recommendation: "Maintain existing conjunctive water management programs and evaluate opportunities for enhancement or increased efficiency." Ongoing District 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, the District 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 2017 update to the Water Supply Master Plan, the district is evaluating various conjunctive use projects, including stormwater reuse, new groundwater recharge facilities, and expanded recycled water use.

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 basin.

10. Automate distribution and/or drainage system structures

As stated previously, the District 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

The District 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 <u>2015</u> or Year <u>1</u>		Actual Expenditure	
BMP #	BMP Name	(not including staff time)	Staff Hours
A 1	Measurement	\$0	360
2	Conservation staff	\$0	125
3	On-farm evaluation /water delivery info	\$91,974	100
	Irrigation Scheduling	\$0	28
	Water quality	\$0	163
	Agricultural Education Program	\$0	28
4	Quantity pricing	\$0	2213
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		\$91,974	4061

2. Projected budget summary for the next year.

Year <u>2016</u> or <u>Year 2</u>		Budgeted Expenditure	
BMP #	BMP Name	(not including staff time)	Est.Staff Hours
A 1	Measurement	\$0	360
2	Conservation staff	\$0	125
3	On-farm evaluations/water delivery info	\$53,124	100
	Irrigation Scheduling	\$0	60
	Water quality	\$0	200
	Agricultural Education Program	\$0	260
4	Quantity pricing	\$0	2262
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	1061
10	Automate canal structures	\$0	0
11	Customer pump testing	\$0	0
12	Mapping	\$0	0
Total		\$53,124	4907

3. Projected budget summary for 3rd year.

Year <u>2017</u> or <u>Year 3</u>		Budgeted Expenditure	
BMP #	BMP Name	(not including staff time)	Staff Hours
A 1	Measurement	\$0	360
2	Conservation staff	\$0	125
3	On-farm evaluations/water delivery info	\$100,000	100
	Irrigation Scheduling	\$0	60
	Water quality	\$0	200
	Agricultural Education Program	\$0	260
4	Quantity pricing	\$0	2260
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	1060

10 Automate canal structures	\$0	0
11 Customer pump testing	\$0	0
12 Mapping	\$0	0
Total	\$54,713	4895

4. Projected budget summary for 4th year.

Year <u>2018</u> or Year <u>4</u>		Budgeted Expenditure	
BMP #	BMP Name	(not including staff time)	Staff Hours
A 1	Measurement	\$0	360
2	Conservation staff	\$0	125
3	On-farm evaluations/water delivery info	\$100,000	100
	Irrigation Scheduling	\$0	60
	Water quality	\$0	200
	Agricultural Education Program	\$0	260
4	Quantity pricing	\$0	2260
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	1060
10	Automate canal structures	\$0	0
11	Customer pump testing	\$0	0
12	Mapping	\$0	0
Total		\$100,000	4895

5. Projected budget summary for 5th year.

Year <u>2019</u> or Year <u>5</u>		Budgeted Expenditure	
BMP #	BMP Name	(not including staff time)	Staff Hours
A 1	Measurement	\$0	360
2	Conservation staff	\$0	125
3	On-farm evaluations/water delivery info	\$100,000	100
	Irrigation Scheduling	\$0	60
	Water quality	\$0	200
	Agricultural Education Program	\$0	260
4	Quantity pricing	\$0	2260
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

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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	1060
10	Automate canal structures	\$0	0
11	Customer pump testing	\$0	0
12	Mapping	<u>\$0</u>	<u>0</u>
	Total	\$100,000	4895

Section 4: Best Management Practices for Urban Contractors

A. Urban BMPs

Foundational BMPs

1. Utility Operations Programs

1.1. Operations Practices

A.1) Conservation Coordinator

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Number of Conservation Coordinator Staff

There are four full-time staff members in the Water Conservation Program and up to 20 student interns (number varies depending on season and program needs). Staff includes one senior water conservation specialist, and three water conservation specialists. As part of the recent drought response, a program administrator, an office specialist, and a management analyst were temporarily added to the program. The adjusted FY2015 water conservation budget is \$18.3 million, with funding from water charges, cost-share agreements, and grants.

A.2) Water waste prevention

The District 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. For instance, in 2009 the District collaborated with local cities and water retailers to develop a model Drought Response and Water Waste Ordinance and then in 2010 to develop a model Drought Contingency Plan. More recently, the District collaborated with the water retailers to adopt a consistent two-day per week watering restriction throughout much of the county.

In 2014, as part of the District's response to the ongoing drought, the District initiated a Water Waste Inspector Program (Program) that will continue through 2017. The idea behind the Program is to facilitate and respond to reports of water waste and violations of local water use restrictions. It also provides an opportunity to educate the homeowner or business on water conservation as well as the various rebate and technical assistance programs the District offers. To facilitate the community's ability to report water waste, four reporting options were developed: email, a water-waste hotline, a portal on the District's website, and through a mobile application developed for iPhone and Android users.

A.3) Wholesale agency assistance programs

The District continues to provide a high level of support and enjoys the special cooperative partnership with the water retailers in the regional implementation of the DMMs. The

District meets regularly, through a water conservation subcommittee, with its water retailers to discuss hot issues (i.e. drought, ordinances, legislation, etc.), District efforts/programs, water retailer efforts, emerging technologies/practices, training/events, as well as CUWCC membership and benefits.

1.2. Water Loss Control

The District 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. The District's Leak Detection Program includes: 24-hour-per-day monitoring of meters on all major conveyance facilities; daily flow records; monthly inspections; and water balances. Meters are calibrated regularly as part of the District's preventive maintenance program.

Flows in major facilities are monitored continuously with a SCADA system in the District's Operations Center, located at the Rinconada Water Treatment Plant and at each of the District'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 right-of-ways—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.

The District 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 the District's preventive maintenance program.

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

On a monthly basis, the District 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. The District 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 95 percent of all groundwater pumping. The remaining 5 percent (by volume) of groundwater pumping is done by small water users such as residential well owners. Although these residential 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, the District 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. The District 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

Outreach activities include multi-media marketing campaigns directed at the diverse county population, website development and maintenance, social media, publications, public meetings, District participation at community events, interagency partnerships, corporate environmental fairs, professional trade shows, water conservation workshops and seminars, and a speaker's bureau. Specifically, in 2014 and 2015, outreach efforts focused on three strategies:

- Support customers and key stakeholders to minimize adverse impacts resulting from the drought conditions;
- Advance community knowledge, awareness, and understanding of the water supply system and services provided by the District; and
- Support the Board of Directors.

These strategies were implemented by delivering broad-based advertising programs, participating in community events, collaborating with water retailers to develop their own 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 the District carries out a multi-media, multi-ethnic campaign emphasizing the importance of water conservation. Until 2008, the campaign was carried out primarily during late spring and the summer months. In 2009, based on a recommendation from the newly developed Five-Year Water Conservation Marketing Plan, the District launched a new year-long campaign. The campaign, "Save 20 gallons", was developed in partnership with the local cities, water retailers, and the county. The idea was to focus on people's daily activities and to quantify the volume of water that can be saved by making minor modifications to everyday behavior.

The District's public outreach efforts also include social media, updates to our website (www.valleywater.org), and development of a microsite that served to transition messaging from a specific target (www.save20gallons.org) to a more general, ongoing objective in 2015 (www.watersavings.org). The websites are updated throughout the year to include the latest program information, the most recent ads, new reports/studies, updates on our workshops, and the addition of special features such as a tour of a virtual water-efficient home. In addition, the District produced and distributed collateral material, including program flyers, bookmarks, free shower timers and other conservation devices, posters, yard and garden signs, restaurant signs for only serving water upon request, hotel signs encouraging the occupant to reuse their towels, static-cling stickers for restroom mirrors, and shower timers.

In late 2012, the District added a new monthly public access television series, "People behind Your Water". These half-hour broadcasts air on a local cable access channel, as well as the District's YouTube channel. The purpose of this show is to highlight various water issues, and managers and

personnel who manage the District's water resources. In 2012, the District was honored to receive the 2012 Silicon Valley Water Conservation Award for its leadership in water conservation as a large government agency and its ongoing support for sustainable, innovative, cost effective, comprehensive programs, and emerging technologies on behalf of its retailers.

In 2013, the District continued to expand its role and services utilizing social media. Access Valley Water was enhanced to facilitate community reporting of water waste complaints. The District also utilized Twitter, Facebook, and YouTube in addition to more traditional efforts such as bill inserts, direct mailers, and direct community outreach to educate the public. Targeted, paid advertisements were purchased from Facebook in 2014 and 2015.

As the drought intensified in 2014 and 2015, the District's Board made public their support for conservation messaging by approving an additional \$2.4 million to support it. Campaign messaging included "It's Time. Save Water."; "El Agua es Asunto de Todos (Water is everybody's business)"; "Help Out, We're in a Drought: Save Water Inside and Out"; "Brown is the New Green"; "Rain or Shine"; and "One Year of Rain Won't End Four Years of Drought". Additionally, the EPA Water Sense's "Fix a Leak Week" is promoted annually every March; 2015 saw this promotion expand to Twitter and Facebook. Furthermore in 2015, the District collaborated with a local nonprofit to target neighborhoods that had well-maintained lawns with door hangers that provided rebate program information. The campaigns were carried out in collaboration with local retailers, cities, and the county.

In addition to the media campaigns mentioned above, the District also implements various program-specific marketing throughout the year. In fact, these efforts helped produce a dramatic increase in participation in water conservation programs in 2014 and 2015. Notably, these efforts to promote programs and resources available to the public resulted in a fivefold increase in requests for program participation in the Landscape Rebate Program. As a result, local businesses and residents installed climate appropriate landscapes, while others let their lawns go brown (the District provided the option to accompany these actions with yard signs stating either "We're Water Smart" or "Brown is the New Green", respectively). Once funding began to be depleted for the landscape programs in early late 2014, outreach efforts shifted to promoting residential water-use surveys through the Water-Wise House Call Program.

Other efforts included sending postcards and/or letters with a promotional flyer to end-users; bill inserts (twice per year or more); handing out program flyers and brochures at various events; purchasing billboard, television, radio, and social media advertisements; and using point-of-purchase advertisements for water-efficient technologies. For example, program-specific details such as qualifying fixtures and eligibility periods are communicated between the District and local plumbing suppliers, "big box" stores, and smaller retailers through a private contractor. This effort began in July 2011 when the District developed two new marketing pieces: a newly designed brochure and a point-of-purchase sticker to identify toilet models in the marketplace that qualified for the District's rebate. These efforts have been improved and adjusted through June 2015 in response to changing rebate criteria and customer feedback.

Water Saving Heroes Program & Business Outreach

In 2014 and through 2015, the District launched the Water Saving Heroes Program to recognize businesses, institutions, and residents for their successful water saving practices during the

drought. Water Saving Heroes included homeowners who had transformed their yards into water-friendly landscapes, and commercial and institutional properties that had implemented effective water conservation strategies and environmentally-sustainable practices.

In 2015, the District produced nine Water Saving Hero e-newsletters which were emailed to 21,200 subscribers. Thirty-five heroes were recognized in the newsletters. Of these, 18 Water Saving Heroes received Certificates of Appreciation and were recognized at several Board meetings throughout the year. In June, a special sports edition of Water Heroes e-newsletter featured the San Francisco 49ers, San José Sharks, and the San José Earthquakes. Also in 2015, the District partnered with the Silicon Valley Business Journal to specifically recognize and thank five local businesses for their water saving accomplishments.

Nursery Program

To increase the public's awareness of water-efficient gardening techniques, in 1995 the District 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 District 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. The Nursery Program literature is currently being distributed to and displayed at more than 30 participating nurseries.

Workshops

Each spring between 2010 and 2012, the District hosted its Water-Efficient Landscape Workshop Series for county residents. The series consisted of four consecutive class sessions addressing topics such as garden design, plant selection, irrigation design, installation and maintenance techniques and gardening with native species. The series drew approximately 150 to 200 attendees each year. The District also offered irrigation workshops that provided hands-on training to English- and Spanish-speaking landscape professionals on irrigation controller programming, system scheduling, and irrigation trouble-shooting. In each class of approximately 40, the participating landscape professionals collectively maintained around 400 sites in the county.

After 20 years, these workshop series were discontinued by the District in order to redirect personnel and media resources to drought-related outreach and efforts during the 2013-2015 calendar years. In addition to the drought, the District personnel observed many of the same individuals attended these workshops year after year. The District continues to advertise and promote similar workshops implemented by neighboring agencies through our Events webpage. To reach a new audience and to promote participation in the District's Landscape Rebate Program, the District opted to focus on workshops at various nurseries throughout the County. In spring 2015, a series of talks at local nurseries were provided that attracted up to 140 individuals. This new approach was more relevant to the community during the drought since its focus was on both the District's Landscape Rebate Program and how to convert lawns to low water-use landscapes independent of the rebate.

Going Native Garden Tour

To showcase exemplary native plant gardens, the District has co-sponsored the Going Native Garden Tour every spring since 2003. Between 2010 and 2015, up to 13,000 participants had

visited upwards of 70 gardens annually. 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. Currently, 19 demonstration gardens are promoted on the District's webpage year-round. A free app for the Apple iPhone and an independent website are maintained to promote and support this program.

Bill Inserts

In the fall of 1999, the District developed a bill insert promoting the reduction of landscape water use by reminding homeowners to cut back on their watering schedule during the fall and winter months. In collaboration with several of the District's water retailers, this insert has been updated and mailed each year in October/November. In addition to the fall back bill insert, the District has developed spring and summer bill inserts and worked with the Santa Clara County cities and retailers to distribute them.

Community Events

Each year the District participates in numerous community events, including environmental fairs, Earth Day events, garden tours, and many others. Since June 2010, District staff has distributed multiple educational materials and program flyers at nearly 430 events. In fact, more than 260 community events had been held in the last two years (since June 2014). These events include:

- Spring Garden Fairs
- Santa Clara County Home and Garden Show
- City of Cupertino Earth Day Fair
- Green Plumbers Workshop
- Silicon Valley Water Conservation Awards
- Going Native Garden Tour

2.2. School Education Programs

Since 1995 the District has employed a full-time staff to coordinate the school education program. This included developing and implementing school programs, contracting with the Youth Science Institute for additional instructors, and supervising university student interns as classroom assistants.

The District has been continually active in this area by providing free classroom presentations, puppet plays, and tours of District facilities to schools within the county. The objective is to teach students about water conservation, water supply, watershed stewardship, and flood protection. The District also provides school curricula to local educators, including workbooks and videos, as well as hands-on training for teachers.

Over the last five years, the District's program has reached over 11,000 students per year, with a high of 22,651 students in 2013. In 2015, over 10,770 kindergarten through 6th grade students and nearly 500 7th grade through 12th grade students were reached. Of the 478 classroom presentations provided in 2015, over 75% were to teachers who had been participating for fewer than 5 years indicating that the District's education programs are continuing to meet an expanding audience. In addition, the District staffed an education booth at 27 events and provided 8 tours to teach the community about water conservation and other District services in 2015.

Materials distributed to students included topical lessons, which vary by age and meet all state education framework requirements and are grade-level appropriate. Examples include lessons using puppet shows and storytelling for pre-kindergarten and early elementary students, and using hands-on science activities and career development information for high school and college students. Finally, included in these educational services is Project WET (Water Education for Teachers) to train teachers how to lead their own classroom activities and lectures in order to independently educate their students on water-related topics into the future. All students who participated in the program received materials.

Programmatic BMPs

The District 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, the District is responsible for the implementation of the foundational DMM's. 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 the District. These cost sharing agreements benefit all parties through economies of scale. In the 2014 and 2015 budget years, the District administered more than \$2.7 million in cost-sharing agreements with the local cities, water retailers, and nonprofit organizations.

Additionally, the District 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. The District 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

The District continues to expand programs in the residential sector, which remains one of the key areas for water conservation. The District 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 50,000 acre-feet in FY2015.

A.1) Residential assistance program & A.2) Landscape water survey

As the administrator of this program, the District develops and implements a strategy to target and market water-use surveys to single-family and multi-family residential customers throughout Santa Clara County, except for San José Water Company's service area as they administer their own program. Since 1998, the District has performed more than 40,500 residential audits through the Water-Wise House Call Program, including more than 4,330 in 2015.

The District's program includes educating 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); 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. In 2004, the District began programming a homeowner's controllers as well (i.e. if allowed by the homeowner, the surveyors will input the recommended schedules into the controller). Recently, the District 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.

The District's largest retailer, the San José Water Company (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 District marketing efforts. Audits are performed for both residential and commercial customers. The District 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 is estimated to have completed over 38,000 audits since the program began. The District 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 more than 66,000 in the last 6 years.

The District 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.

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

The District has offered a residential high-efficiency washer rebate since July of 1995. In October 2001 the District began participating in the regional Bay Area Water Utility Clothes Washer Rebate Program, which has been successfully partnering with PG&E since January 2008. To address concerns for local water quality, washers that utilized silver-ion technology do not qualify for this program regardless of their efficiency. In 2010, the District and PG&E offered a combined rebate of \$175 (\$50 from PG&E; \$125 from the District) for clothes washers in the Consortium for Energy Efficiency's (CEE's) Tier 3, the most water-efficient category. In subsequent years the rebate amount was adjusted along with other program criteria. For the last half of 2015, a multi-tiered combined rebate was implemented to transition program participants to more stringent fixture standards:

- Purchasing Energy Star Most Efficient (ESME) washers resulted in the combined rebate increasing to \$200 (\$125 of which was from the District).
- Purchasing the CEE's Tier 3 washers received a reduced District contribution of only \$50 with the goal of promoting washers that qualify for the more efficient standard.

In January 2015, qualifying standards were adjusted to streamline requirements to only rebate for qualifying ESME washers at a combined rebate of \$150 (\$100 of which was from the District). The recently implemented maximum \$150 rebate is planned to continue through 2016 for qualifying ESME washers only.

The District has given out more than 168,000 rebates since the program began in 1995 (over 9,000 approved rebates in last 12 months of July 2014 to June 2015) and will continue to offer this program through 2016 in order to reach the region's long-term water conservation goals.

A.4) WaterSense Specification (WSS) toilets

From 1992 through June 2003, the District had provided incentives for the retrofit of approximately 244,000 residential toilets. This incentive was implemented in conjunction with each of the 13 participating retailers and through a series of cost-sharing agreements with the City of San José and the City of Sunnyvale.

In 2004, the District shifted to a high-efficiency toilet (HET) program. This \$125 rebate program, which only incentivized purchasing Water Sense HETs, consisted of a rebate program for single-family and multi-family accounts. These more stringent standards promoted savings of approximately 20 percent per toilet relative to the federally regulated 1.6 gallon per flush (gpf) toilet standard. Between 2004 (the first year of the program) and 2013, the District rebated approximately 16,000 HETs, with relatively consistent participation from 2010 to 2013, the last full fiscal year that this program had a 1.28 gpf standard, over 11,000 rebates were issued.

In response to the State of California's new requirement that all toilets sold or installed in the state flush at 1.28 gpf or less, January 2014 marked the beginning of the District's strictest standard yet for HETs to qualify for the rebate program - only Premium HETs would qualify for the \$125 rebate. Premium HETs save nearly 15 percent more water than the state standard of 1.28 gpf by using only 1.1 gpf with superior flush performance (at least 600 grams per flush as evaluated by an independent group under standardized conditions).

Beginning in summer 2014 and prior to implementation of the new State standard, a tiered rebate was implemented wherein non-Premium HETs continued to be eligible for \$50 rebates while Premium HETs could receive the \$125 rebate. Once the State standard went into effect in January 2014, only Premium HETs qualified for the remainder of the program's lifespan.

Surprisingly, participation actually increased from levels observed between 2010 and 2013. In both 2014 and 2015 respectively, approximately 4,600 residential properties participated in the HET rebate program. In total, the District has issued over 25,200 HET rebates since this iteration of the District's high-efficiency toilet rebate began in 2004. The program will be phased out in 2016 in order to reprioritize funds to other programs with greater opportunities for water savings.

Part of a larger program targeted to commercial, industrial, and institutional sites, the District offers a toilet replacement (direct installation) program for apartment complexes free of cost to the consumer. Since 2007, between 937 and 2,676 toilets were replaced by the District in qualifying apartment complexes. To qualify, the toilets within these apartment complexes must flush at 3.5 gpf or greater. In 2015, more than 1,500 inefficient toilets were replaced to bring the historical participation total to nearly 13,700 toilets replaced with HETs through this program.

A.5) WaterSense Specifications for residential development

In 2016, a model Water Efficient New Development Ordinance was developed by the Santa Clara County Water Efficient New Development Task Force. It provides ordinance language for local agencies 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. This District plans to actively promote adoption and implementation of the ordinance.

Submeter Rebate Program

Beginning as a pilot in 2001 and extended in 2008, this program provided a rebate of \$100 (recently increased to \$150) 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. Declining from a peak of 1,740 in 2010, only 87 were installed in 2013. Despite increasing the rebate amount, only 223 were installed in 2015. During the course of this active program, nearly 6,300 rebates have been issued. The District recently expanded the program to include individual well owners and homes on a shared well, and plans to continue to offer this program in the future in order to reach the region's long term water conservation goals.

Graywater Laundry to Landscape Program

In 2014, the District began offering a Graywater Laundry to Landscape (L2L) Rebate Program, generating much interest from the public. The rebate amount started at \$100, and in response to the drought, increased to \$200. 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 as well as pre and post inspections for customers with site-specific characteristics. Resources include 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 manufactured 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 the District'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, the District 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 2015, 13 graywater rebates were issued from nearly 100 inquiries. Participation doubled to 26 rebates in the last six months of 2015. In future program years, the District will continue to evaluate how to adjust or refocus this program in order to maximize the number of inquiries that result in issued rebates.

4. Commercial, Industrial, and Institutional (CII)

The District 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 reached 7,300 acre-feet in FY2015.

Customer/Measured Rebate Program

The Custom or Measured Rebate Program (formerly known as the Water Efficient Technologies or WET 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 \$4 per hundred cubic feet (CCF) of water saved after the first 100 CCF saved. 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.

To date, the District has funded (either entirely or through cost-sharing with the City of San José) 98 projects saving approximately 652,200 CCF/year (1,497 AFY). The two qualifying projects in 2015 saved 15.6 AFY alone. The District will continue to offer this program in the future in order to reach the region's long-term water conservation goals.

Commercial Toilet and Urinal Programs

The District 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. An ultra-low flush toilet (ULFT) rebate program was offered from 1992-1999. In 2000, the District switched to a direct installation program. Additionally, the District reimbursed the City of San José for toilets replaced through their CII ULFT programs. From 1994 through 2005, more than 8,700 ULFTs were installed through District funded programs. In 2005, the District switched to High-Efficiency Toilets, or HETs, that flush at 1.28 gpf or less. Since the program began, more than 29,000 HETs and 2,500 HEUs have been installed.

The District also recently 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 2015, only the HET direct install and HEU valve replacement programs were still in effect, yet they will continue to be offered in the future in order to reach the region's long-term water conservation goals.

Commercial Washer Program

The District and City of San José offered rebates for the replacement of high-efficiency clothes washers in laundromats, in tandem with the Custom or Measured Rebate Program. Beginning in July 2000, the Commercial Washer Program was expanded throughout the county to include commercial machines installed in multi-family complexes. More than 4,600 washers have been rebated since 1999, including 289 in 2015. Participation in this most recent year is up from the 2014 low of 194 but down from the 2010 peak of 367.

In July 2010, the District began issuing rebates only for those machines in the highest tier of water efficiency, which likely contributed to this downward trend. This criteria adjustment will

encourage both the use of more efficient machines, and will be consistent with the requirements of PG&E's washer rebate programs. The rebate amount was increased from \$400 to \$800 in 2014 in response to the drought. The program is expected to be phased out in 2016.

Commercial Facet Aerator Program

Since 2010, the District 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. The District will continue to offer this program in the future in order to reach the region's long-term water conservation goals.

Pre-Rinse Spray Valve Program

In previous years the District partnered with other agencies to offer a direct installation program for pre-rinse spray valves (PRSVs). In 2010 the District 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 the District'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 the District began promoting these devices in 2003. The District plans to contract with a local non-profit to facilitate installation of even more efficient PRSVs targeting economically disadvantaged areas in future budget years in order to meet the region's long-term water conservation goals.

Food Service Rebates

In 2013, the District added two new rebates targeting food service and other relevant businesses in the CII sector: Connectionless Food Steamers Rebates and Air-Cooled Ice Machine Rebates. Originally capped at \$485 per compartment, the Connectionless Food Steamers rebate increased temporarily to \$1,000 per compartment in response to the drought, yet only two food steamers were rebated. These devices replace water-intensive connected steamers to equipment that uses an isolated ("connectionless") pan in the bottom of the steamer. The Air-Cooled Ice Machine Rebate incentive provide up to \$1,000 per water-cooled ice machine replaced with air-cooled ice machines. To date, no such rebates have been issued.

5. Landscape Programs

Landscape offers the greatest potential for water savings in both the residential and commercial sectors. The District 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 3,400 acre-feet in FY2015.

Landscape Water Surveys

Analogous to the landscape portion of the Water-Wise House Call Program, the District has offered and provided large landscape water 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 Landscape Water Use Evaluation Program (described below).

This highly successful and well-received program has conducted nearly 1,660 surveys through 2015. Participants from this program are encouraged to participate in the Landscape Rebate Program described below. The District plans to continue to offer and expand this program in the future in order to reach the region's long-term water conservation goals.

Landscape Water Use Evaluation Program

The 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. Sites are also eligible to receive a complimentary on-site landscape field survey 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: City of Gilroy, City of Mountain View, City of Palo Alto, City of Sunnyvale, and more recently the City of Santa Clara. By the end of mid-2015, an additional 269 sites were added to bring the total number of sites to 826 and the total active sites to 814 (certain sites may suspend participation while work or renovation is completed on site, for example). By the end of 2015, 1,050 sites were active in this program with future years adding more than 1,000 additional sites from San José Water Company (predominately) and the City of Morgan Hill. When accounting for previous total reports distributed through this program, nearly 8,200 water-use reports and monthly budgets have been distributed.

Sites receiving the monthly water budget reports reduce water usage by 20 percent on average when all of the relevant parties receive the report and take appropriate actions. As of the end of 2015, the sites enrolled in the District program were saving 54 percent on irrigation usage, up from 25 percent in 2014 as compared to a cumulative average of the previous 12 months. The District will continue to offer and expand this program in the future in order to reach the region's long-term water conservation goals.

Landscape Rebate Program – Conversion Rebates

The District began to focus on water efficient landscapes by launching a version of the 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. Participants could receive up to \$0.75 per square foot of irrigated turf grass with a maximum rebate of \$1,000 and \$10,000 for residential and commercial sites respectively. In an effort to expedite program participation, the District's Board approved doubling the maximum rebate from \$1,000 up to \$2,000 for residents and from \$10,000 up to \$20,000 for commercial sites in March 2009.

Currently, Santa Clara County single family, multi-family and business properties with qualifying high water using landscape 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. In January 2014, the Landscape Conversion rebate was increased from \$0.75 per square foot (sq. ft.) to \$1.00 per sq. ft. However, in April of 2014 in direct response to the drought, the District's Board approved adding funding to the program to support a rebate of \$2.00 per sq. ft. with no maximum rebate.

Notably, the District experienced unprecedented increases in terms of rebate amounts as well as participation and interest from the community during the drought. From July 2015 to June 2015 alone, over \$5.0 million dollars was rebated for approximately 2.5 million sq. ft. of conversion (nearly 60% of the historical participation). Through June 2015, the District has rebated for over 4.3 million sq. ft. of landscape conversion. The District plans to continue to offer this rebate in the future in order to reach the region's long-term water conservation goals.

Landscape Rebate Program – Irrigation Equipment Rebates

The District 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
WBICs, 1-12 Stations	\$300
WBICs, 13-24 Stations	\$1,000
WBICs, 25+ Stations	\$2,000

Similar to landscape conversion, the District Board approved adding funding to the program during the drought to support higher rebates amounts for many of the items listed above. Due to these higher rebate amounts as well as the effects of the drought, the District experienced unprecedented increases in interest and participation from the community over the last few years. In 2015 alone, more than 144,000 pieces of equipment were rebated: an increase of 112% from 2014 and representing 75% of participation since 2012 when the current iteration of the program began.

Additionally, more than 2,760 Weather-Based Irrigation Controllers (WBICs) have been installed since 2010 (27% of historic participation since 2006). In addition, 635 more WBICs were installed by the end of 2015. 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. The District plans to continue to offer these rebates in the future in order to reach the region's long-term water conservation goals.

Conclusion

The District, through a unique cooperative partnership with its retailers, offers regional implementation of a variety of water conservation programs in an effort to permanently reduce water use in Santa Clara County. Although the District 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, the District is ensuring its long-term water supply reliability goals are met as well as assisting its water retailers in meeting their goals, including compliance with recent legislation calling for 20 percent reduction in per capita water use by 2020.

The District's urban Demand Management Measures are estimated to save nearly 93,000 AFY by the year 2030, using 1992 as a base year. Combined with 6,000 AFY in savings from agriculture water conservation, the total of nearly 100,000 AFY by 2030 accounts for almost 20 percent of pre-savings demand and is a crucial water supply management program, now and into the future.

B. Provide a 5-Year Budget for Expenditures and Staff Effort for BMPs

1. Amount actually spent during current year.

Year <u>2015</u> or <u>Year 1</u>		Projected Expenditures	
BMP #	BMP Name	(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		
2.1	Public Information Programs	\$1,243,938	316
2.2	School Education Programs	\$567,010	1112
3.	Residential	\$1,276,838	1446
4.	CII	\$793,950	810
5.	Landscape	\$12,397,207	1525
	Total	\$5,150,636	4209

2. Projected budget summary for 2nd year.

Year <u>2016</u> or <u>Year 2</u>		Projected Expenditures	
BMP #	BMP Name	(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		
2.1	Public Information Programs	\$113,265	1199
2.2	School Education Programs	\$476,816	1767
3.	Residential	\$989,338	1446
4.	CII	\$733,950	810
5.	Landscape	\$14,283,489	1568
	Total	\$4,141,619	6790

3. Projected budget summary for 3rd year.

Year <u>2017</u> or <u>Year 3</u>		Projected Expenditures	
BMP #	BMP Name	(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		
2.1	Public Information Programs	\$150,000	463
2.2	School Education Programs	\$500,000	3569
3.	Residential	\$696,465	1296
4.	CII	\$445,800	775
5.	Landscape	<u>\$1,904,500</u>	<u>1858</u>
	Total	\$3,695,765	7961

4. Projected budget summary for 4th year.

Year <u>2018</u> or <u>Year 4</u>		Projected Expenditures	
BMP #	BMP Name	(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		
2.1	Public Information Programs	\$150,000	463
2.2	School Education Programs	\$500,000	3600
3.	Residential	\$2,341,760	7795
4.	CII	\$308,600	245
5.	Landscape	<u>\$270,000</u>	<u>435</u>
	Total	\$3,570,360	12538

5. Projected budget summary for 5th year.

Year <u>2019</u> or <u>Year 5</u>		Projected Expenditures (not including staff hours)	Staff Hours
BMP #	BMP Name		
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		
2.1	Public Information Programs	\$150,000	463
2.2	School Education Programs	\$500,000	3600
3.	Residential	\$2,412,013	7795
4.	CII	\$317,858	245
5.	Landscape	\$278,100	435
	Total	\$3,657,971	12538

CUWCC BMP Wholesale Coverage Report 2016

Foundational Best Management Practices for Urban Water Efficiency



BMP 1.1 Wholesale Agency Assistance Programs

ON TRACK

201 Santa Clara Valley Water District

Name:

Gerald De La Piedra

Email:

gdelapiedra@valleywater.org

a) Financial Investments and Building Partnerships

BMP Section	Monetary Amount for Financial Incentives	Monetary Amount for Equivalent Resources	
BMP 3 Residential	968736	27437	
BMP 4 CII	669760	123209	
BMP 5 Landscape	12182224	282163	
BMP 2.1 Public Outreach	148875	116063	
BMP 2.2 School Education Program	205970	151292	

b) Technical Support

c) Retail Agency

d) Water Shortage Allocation

Adoption Date: 5/24/2016

File Name:

2015 UWMP: <http://www.valleywater.org/Services/WaterSupplyPlanning.aspx>

e) Non signatory Reporting of BMP implementation by non-signatory Agencies

NA

f) Encourage CUWCC Membership List Efforts to Recruit Retailers

The District meets regularly with its member agencies through a Water Conservation Subcommittee. At these meetings the CUWCC is discussed on a regular basis.

At Least As effective As

Yes

NA

Exemption

No

Comments:

NA

CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency



BMP 1.2 Water Loss Control **ON TRACK**

201 Santa Clara Valley Water District

Completed Standard Water Audit Using AWWA Software? Yes

AWWA File provided to CUWCC? Yes Copy

of SCVWD_2015_2016_BMP2.1_AWWA-WAS-v5a.xls

AWWA Water Audit Validity Score? 72

Complete Training in AWWA Audit Method Yes

Complete Training in Component Analysis Process? Yes

Component Analysis? Yes

Repaired all leaks and breaks to the extent cost effective? Yes Locate and

Repair unreported leaks to the extent cost effective? Yes

Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair. Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
2	74386	1363036	40	False	4490	1472

At Least As effective As

No

No

Exemption

Comments:

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Foundational Best Management Practices For Urban Water Efficiency



BMP 1.3 Metering With Commodity **ON TRACK**

201 Santa Clara Valley Water District

Numbered Unmetered Accounts No

Metered Accounts billed by volume of use Yes Number of CII

Accounts with Mixed Use
Meters

Conducted a feasibility study to assess merits of a ^{No} program
to provide incentives to switch mixed-use
accounts to dedicated landscape meters?

Feasibility Study provided to CUWCC? No Date:

Uploaded file name:

Completed a written plan, policy or program to test, repair and replace meters

At Least As effective As

Yes

No

Exemption

No

No

Comments:

CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency



BMP 2.1 Public Outreach

ON TRACK

201 Santa Clara Valley Water District Wholesale

Does your agency perform Public Outreach programs? Yes The list of retail agencies your agency assists with public outreach

California Water Service Company - Los Altos District, City of Gilroy, City of Milpitas, City of Morgan Hill, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara Water and Sewer Utilities, City of Sunnyvale, Great Oaks Water Company, Purissima Hills Water District, San Jose Water Company

Agency Name	ID number
California Water Service Company - Los Altos District	5009
City of Gilroy	6302
City of Milpitas	6304
City of Morgan Hill	6305
City of Mountain View	69
City of Palo Alto	71
City of San Jose	85
City of Santa Clara Water and Sewer Utilities	6307
City of Sunnyvale	6308
Great Oaks Water Company	7023
Purissima Hills Water District	184
San Jose Water Company	6306

The name of agency, contact name and email address if not CUWCC Group 1 members

California Water Service Company - Los Altos District, City of Gilroy, City of Milpitas, City of Morgan Hill, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara Water and Sewer Utilities, City of Sunnyvale, Great Oaks Water Company, Purissima Hills Water District, San Jose Water Company

Did at least one contact take place during each quarter of the reporting year? Yes

Public Outreach Program List	Number
Newsletter articles on conservation	20
Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets	569158
Email Messages	113
Website	2
General water conservation information	2
Total	569295

Did at least one contact take place during each quarter of the reporting year? Yes

Number Media Contacts	Number
Articles or stories resulting from outreach	20
News releases	3

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Foundational Best Management Practices For Urban Water Efficiency



BMP 2.1 Public Outreach

ON TRACK

Number Media Contacts	Number
Newspaper contacts	16
Total	39

Did at least one website update take place during each quarter of the reporting year? Yes Public

Information Program Annual Budget

Public Outreach Additional Programs
www.saveourwater.org
www.epa.gov/watersense

Description of all other Public Outreach programs

Annual Budget Category	Annual Budget Amount
	338868
Total Amount:	338868

No

0

Comments:

No

At Least As effective As

Exemption

CUWCC BMP Coverage Report 2016

Foundational Best Management Practices For Urban Water Efficiency



BMP 2.2 School Education Programs

ON TRACK

Does your agency implement School Education programs?

The list of retail agencies your agency assists with public outreach

Yes

California Water Service Company - Los Altos District, City of Gilroy, City of Milpitas, City of Morgan Hill, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara Water and Sewer Utilities, City of Sunnyvale, Great Oaks Water Company, Purissima Hills Water District, San Jose Water Company

Agencies Name	ID number
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City of Palo Alto	71
City of San Jose	85
City of Santa Clara Water and Sewer Utilities	6307
City of Sunnyvale	6308
Great Oaks Water Company	7023
Purissima Hills Water District	184
San Jose Water Company	6306

Materials meet state education framework requirements? Yes

California Water Service Company - Los Altos District, City of Gilroy, City of Milpitas, City of Morgan Hill, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara Water and Sewer Utilities, City of Sunnyvale, Great Oaks Water Company, Purissima Hills Water District, San Jose Water Company

All lessons presented to students are tied to state standards. For a complete listing of lessons by grade level and the standards they teach, go to <http://www.valleywater.org/Programs/SchoolProgram.aspx> and scroll to "State Standards".

Materials distributed to K-6? Yes

California Water Service Company - Los Altos District, City of Gilroy, City of Milpitas, City of Morgan Hill, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara Water and Sewer Utilities, City of Sunnyvale, Great Oaks Water Company, Purissima Hills Water District, San Jose Water Company

All lessons presented to students are tied to state standards. For a complete listing of lessons by grade level and the standards they teach, go to <http://www.valleywater.org/Programs/SchoolProgram.aspx> and scroll to "State Standards".

Materials distributed to students develop and promote water awareness, reinforce water conservation and pollution prevention lessons taught in the classroom and regularly integrate messages and issues of other water district communication programs.

Materials distributed to 7-12 students?

California Water Service Company - Los Altos District, City of Gilroy, City of Milpitas, City of Morgan Hill, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara Water and Sewer Utilities, City of Sunnyvale, Great Oaks Water Company, Purissima Hills Water District, San Jose Water Company

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Yes

California Water Service Company - Los Altos District, City of Gilroy, City of Milpitas, City of Morgan Hill, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara Water and Sewer Utilities, City of Sunnyvale, Great Oaks Water Company, Purissima Hills Water District, San Jose Water Company

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(Info Only)

California Water Service Company - Los Altos District, City of Gilroy, City of Milpitas, City of Morgan Hill, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara Water and Sewer Utilities, City of Sunnyvale, Great Oaks Water Company, Purissima Hills Water District, San Jose Water Company

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Annual budget for school education program:

California Water Service Company - Los Altos District, City of Gilroy, City of Milpitas, City of Morgan Hill, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara Water and Sewer Utilities, City of Sunnyvale, Great Oaks Water Company, Purissima Hills Water District, San Jose Water Company

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371216.00

Description of all other water supplier education programs

California Water Service Company - Los Altos District, City of Gilroy, City of Milpitas, City of Morgan Hill, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara Water and Sewer Utilities, City of Sunnyvale, Great Oaks Water Company, Purissima Hills Water District, San Jose Water Company

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371216.00

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Comments:

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BMP 2.2 School Education Programs

ON TRACK

At Least As effective As

No

No

Exemption

Section V: District Water Inventory Tables

Year of Data 2015

Table 1

Surface Water Supply

2015 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)	Upslope Drain Water (acre-feet)	Total (acre-feet)
Method								
January	0	0	0	1,584	5,070	0	0	6,654
February	0	135	0	17,956	4,854	785	0	23,730
March	0	3,288	0	2,031	3,894	0	0	9,213
April	0	7,005	0	1,450	3,587	0	0	12,042
May	0	6,426	0	573	8,029	0	0	15,028
June	0	7,239	0	289	3,712	2,500	0	13,740
July	0	1,179	0	197	7,163	7,524	0	16,063
August	0	0	0	116	1,477	5,568	0	7,161
September	0	2,749	0	55	7,389	1,307	0	11,500
October	0	2,173	0	110	7,445	0	0	9,728
November	0	0	0	245	8,395	0	0	8,640
December	0	2,180	0	1,954	4,560	1,120	0	9,814
TOTAL	0	32,374	0	26,560	65,575	18,804	0	143,313

(1) Estimated inflow to local reservoirs

(2) Includes SWP carryover, SWP delivered through SFD, CVP rescheduled, and CVP and SWP takes from Semitropic Water Bank

Table 2
Ground Water Supply

2015 Month	District Groundwater (acre-feet)	Urban Groundwater (acre-feet)	Private Agric Groundwater *(acre-feet)
Method			
January		9,103	1,769
February		6,850	1,009
March		7,841	1,362
April		8,088	1,418
May		6,772	1,632
June		6,683	1,818
July		8,678	4,541
August		7,409	3,364
September		8,372	2,895
October		8,274	2,667
November		5,861	1,654
December		6,368	1,488
TOTAL	0	90,300	25,616

Table 3***Total Water Supply***

2015 Month	Surface Water Total (acre-feet)	District Groundwater (acre-feet)	Recycled M&I Wastewater (acre-feet)	Total District Water Supply (acre-feet)
Method				
January	6,654	0		6,654
February	23,730	0		23,730
March	9,213	0		9,213
April	12,042	0		12,042
May	15,028	0		15,028
June	13,740	0		13,740
July	16,063	0		16,063
August	7,161	0		7,161
September	11,500	0		11,500
October	9,728	0		9,728
November	8,640	0		8,640
December	9,814	0		9,814
TOTAL	143,313	0	0	143,313

Table 4

Raw and Treated Water Distribution System

2015 Canals	Length (Miles)	Capacity (CFS)
Almaden-Calero	4.4	120
Coyote	9.0	125
Kirk Ditch	1.9	35
Page Ditch	2.0	50
TOTAL	17.3	330

2015 Raw Water Pipelines	Length (miles)	Pipe Diameter (inches)
Almaden Valley	12.3	72-78
Anderson Force Main	0.8	54
Calero	2.6	78
Central	13.1	66
Coyote-Madrone	2.0	24
Cross valley	8.8	78
Gilroy Reclamation (co-owned)	9.0	12
Hollister Conduit	19.1	54-60
Main Avenue	1.0	16-24
Pacheco Conduit I and II	7.9	120
Penitencia Force Main	0.3	66
Rinconada Force Main	1.0	72
Santa Clara Conduit I and II	20.0	96
Santa Teresa Force Main	0.3	66
Stevens Creek	9.8	20-37
Uvas-Llagas Transfer	2.8	27-39
TOTAL	110.8	804.78

2015 Treated Water Pipeline	Length (miles)	Pipe Diameter (inches)
Campbell Distributary	2.0	20
East	6.4	33-48
Graystone	0.2	36
Milpitas	4.6	42
Mountain View Distributary	1.1	24
Parallel East	4.1	54
Penitencia Delivery Main	0.3	60
Santa Clara Distributary	4.0	30-36
Snell	9.7	60-72
Sunnyvale Distributary	0.5	33
West	9.0	30-84
	41.9	

Table 5

Crop Water Needs

2015 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)
Grapes	1,538	1.7	0.0	0.0	0.6	1,692
Corn	1,534	1.8	0.0	0.0	0.0	2,761
Spinach	1,452	0.5	0.0	0.0	0.0	726
Peppers-Bell	1,438	2.5	0.0	0.4	0.0	4,170
Lettuce	1,433	1.5	0.0	0.0	0.1	2,006
Salad Greens	1,099	1.5	0.0	0.0	0.0	1,649
Tomatoes-Fresh	1,086	1.9	0.0	0.0	0.0	2,063
Tomatoes-Processed	795	1.9	0.0	0.0	0.0	1,511
Beans	715	1.0	0.0	0.0	0.0	715
Cabbage	661	0.7	0.0	0.0	0.6	66
Garlic	653	1.3	0.0	0.4	0.6	718
Peppers-Wax & Chili	566	2.5	0.0	0.0	0.0	1,415
Chinese Vegetables	503	1.9	0.0	0.0	0.0	956
Cherries	502	2.9	0.0	0.0	0.6	1,155
Pumpkins	224	1.9	0.0	0.0	0.0	426
Walnuts	217	2.9	0.0	0.0	0.6	499
Apricots	203	3.0	0.0	0.0	0.0	609
Celery	157	1.8	0.0	0.0	0.0	283
Mushrooms	147	1.9	0.0	0.0	0.0	279
Broccoli	143	1.9	0.0	0.0	0.0	272
Squash	120	1.1	0.0	0.4	0.6	108
Onions	19	1.6	0.0	0.4	0.6	27
Miscellaneous	998	1.9	0.0	0.0	0.0	1,896
	0	0.0	0.0	0.0	0.0	0
Crop Acres	16,203					26,001

Total Irrig. Acres 17,250 (If this number is larger than your known total, it may be due to double cropping)

Table 6**2015 District Water Inventory**

Water Supply	Table 3		143,313
Environmental Consumptive Use	(Distribution, Drain, etc.)	minus	
Groundwater recharge	(intentional - ponds, injection)	minus	54,870
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	
Water Available for sale to customers			88,443
Actual Agricultural Water Sales	2015	From District Sales Records	1,541
Private Groundwater	Table 2	plus	25,616
Crop Water Needs	Table 5	minus	26,001
Drainwater outflow	(tail and tile not recycled)	minus	0
Percolation from Agricultural Land	(calculated)		1,157
M&I Actual Water Sales	2015	From District Records	90,672
Inside Use	Feb urban use x 12		51,574
Landscape / Outside Use	(calculated)		39,098
Unaccounted for Water	(calculated)		(3,770)

*Table 7 - Not Applicable**Influence on Groundwater and Saline Sink*

2015

Agric Land Deep Perc + Seepage + Recharge - Groundwater Pumping = District Influence on Groundwater Storage	0
Estimated actual change in ground water storage, including natural recharge)	0
Irrigated Acres (from Table 5)	0
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

*Table 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)	Upslope Drain Water (acre-feet)	Total (acre-feet)
2006	0	52,797	47,344	174,350	0	28,259	0	302,750
2007	4,000	95,058	38,812	10,580	0	64,978	0	213,428
2008	6,130	96,768	8,184	61,160	0	64,810	0	237,052
2009	0	69,866	9,188	77,749	0	78,076	0	234,879
2010	61,191	0	0	136,824	0	53,923	0	251,938
2011	51,089	21,970	42,491	152,002	0	33,143	0	300,695
2012	87,500	6,847	17,464	67,514	0	59,038	0	238,363
2013	79,754	0	3,684	13,472	0	105,390	0	202,300
2014	61,864	0	0	29,733	0	47,146	0	138,743
2015	0	32,374	0	26,560	65,575	18,804	0	143,313
Total	351,528	375,680	167,167	749,944	65,575	553,567	0	2,263,461
Average	35,153	37,568	16,717	74,994	6,558	55,357	0	226,346

Other Water includes 27,530 acre-feet Prior Year carryover and 38,045 acre-feet Banked water