Water Use Efficiency Program

YEAR END REPORT

FISCAL YEAR 2008-2009

Santa Clara Valley Water District SM

Santa Clara Valley Water District SM

OUR MISSION

The mission of the district is a healthy, safe, and enhanced quality of living in Santa Clara County through watershed stewardship and comprehensive management of water resources in a practical, cost-effective, and environmentally sensitive manner for current and future generations.

5750 Almaden Expressway
San Jose, CA 95118
(408) 265-2600
www.valleywater.org

ABOUT THE SANTA CLARA VALLEY WATER DISTRICT

The Santa Clara Valley Water District is the primary water resources agency for Santa Clara County, California. It acts not only as the county's water wholesaler, but also as its flood protection agency and is the steward for its streams and creeks, underground aquifers and District-built reservoirs.

As the county's water wholesaler, the water district makes sure there is enough clean, safe water for homes and businesses. As the agency responsible for local flood protection, the water district works diligently to protect Santa Clara Valley residents and businesses from the devastating effects of flooding. Our stream stewardship responsibilities include creek restoration and wildlife habitat projects, pollution prevention efforts and a commitment to natural flood protection.

BOARD OF DIRECTORS

From left, Richard P. Santos, Joe Judge, Rosemary Kamei, Tony Estremera, Sig Sanchez, Patrick Kwok, Larry Wilson.

Rosemary Kamei	District 1
Joe Judge	District 2
Richard P. Santos	District 3
Larry Wilson	District 4
Patrick Kwok	District 5
Tony Estremera	District 6
Sig Sanchez	District 7

FROM THE OFFICE OF THE CEO

This eighth annual Water Use Efficiency Program Year End Report presents the actions taken by the Santa Clara Valley Water District, and the success of the community, in achieving water use efficiency goals for fiscal year 2008/09.

As the third dry year in a row, FY 08/09 had many water supply challenges. Along with low rainfall and reduced sierra snowpack, a federal court ruling to curtail pumping from the Sacramento-San Joaquin Bay Delta further restricted the amount of available water.

Despite these significant challenges, careful planning and investments in a diverse portfolio of water supply resources helped us meet our water conservation and recycling goals; that is, a reliable water supply for the residents and businesses of the community. Our water use efficiency program is a key part of this portfolio, with nearly 65,000 acre-feet of water savings in FY 2008/09 – roughly enough water to supply 130,000 families in Santa Clara County. Water Conservation is widely considered the most cost-effective option in an available water supply portfolio. Our water conservation program is no different as it relies on a thorough cost-benefit analysis to develop program details and rebate levels.

We are proud to report that the district once again received recognition as a statewide leader in water and energy conservation. Out of hundreds applicants, the Santa Clara Valley Water District was one of five organizations, and the only governmental agency, chosen to be honored in the "Best Overall" category from California's energy efficiency outreach campaign, "Flex Your Power." Our District helped the community save over 19.5 billion gallons of water through its programs during the last fiscal year (FY 07/08). These programs include technical and financial assistance in the residential, commercial, landscape, and agricultural sectors of Santa Clara County.

Using water wisely to meet the needs of the growing community and meet challenges such as the possible continuation of the drought, reduced flow from the Bay Delta and climate change issues, will continue to be a goal of the District in years ahead.

Beau Goldie
Chief Executive Officer
Santa Clara Valley Water District

WUE UNIT STAFF FOR FY 08/09

(From left): Hossein Ashktorab, Pam John, Karen Morvay, Toni Vye, Bob Siegfried, Kurt Elvert, Jeannine Larabee, Keith Whitman, Ray Wong, Kevin Galvin, Jerry De La Piedra, Stanley Zhu.

WATER UTILITY ENTERPRISE:

Jim Fielder,
Chief Operating Officer

WATER SUPPLY MANAGEMENT DIVISION:

Keith Whitman,
Deputy Operating Officer

WATER USE EFFICIENCY UNIT STAFF:

Hossein Ashktorab,
Unit Manager

Jerry De La Piedra,
Program Administrator

Kurt Elvert,
Water Conservation Specialist I

Kevin Galvin,
Senior Water Conservation Specialist

Pam John,
Senior Civil Engineer

Jeannine Larabee,
Water Conservation Specialist II

Karen Morvay,
Water Conservation Specialist II

Robert Siegfried,
Assistant Civil Engineer II (Agricultural)

Toni Vye,
Project Assistant

Ray Wong,
Associate Engineer (Civil)

Stanley Zhu,
Senior Civil Engineer

WUE UNIT INTERNS FOR FY 08/09

(From left): Kevin Carley, David Nguyen, John Fosnaugh, Alexsis Shields, Michael Gonzales, Becky Olsen, Erica Silva, Rosalie Sears. (Not pictured: Shawn Kefauver, Kira Darlow, Elizabeth Sarmiento)

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EXCUTIVE SUMMARY

The Santa Clara Valley Water District's (water district) water conservation and water recycling programs are a key part of its core business, providing about 17 percent (or roughly 65,000 acre-feet in FY 08/09) of the district's total water supply. The water district is planning on raising this percentage significantly; by the year 2030, water use efficiency (WUE) programs, which may include desalination in addition to water conservation and water recycling, will account for roughly 25-30 percent of the total water supply.

Water use efficiency programs reduce demand on existing water and energy supplies, helping to lessen the costs and environmental impacts of developing additional supplies. In addition to helping meet long-term water reliability goals, WUE programs also help meet short-term demands placed on supply during critical dry periods as well as during a regulatory drought.

These programs will also protect the south bay salt-marsh habitat and the endangered species that live there by reducing freshwater effluent released from wastewater treatment facilities.

These programs assist the district in meeting its board ends policies for water supply reliability, water conservation and water recycling. The board's ends policies, in conjunction with the district's 2003 Integrated Water Resources Planning Study (IWRP) and 2005 Urban Water Management Plan (UWMP), require that: water conservation is implemented to the maximum extent that is practical; water recycling be expanded within Santa Clara County in partnership with the community; and a variety of water supply sources are available to minimize risk.

Water Conservation Outreach Campaign ad

In March, 2009, as **the district entered into its third consecutive dry year,** the Santa Clara Valley Water District board of directors unanimously passed a resolution declaring a water shortage alert and calling upon the cities, the county and water retailers to immediately activate their existing drought ordinances and enforce a mandatory 15 percent reduction in water use. The board's decision to move from voluntary to mandatory conservation was based upon both a thorough analysis of Santa Clara County's current water supply conditions and contingency planning to factor in the potential of additional years of drought and other impacts to the district's water supply. To achieve these mandatory restrictions, the water district continues to cooperate with municipalities and water retailers.

Additionally, restrictions on pumping water from the Sacramento-San Joaquin Delta to protect fisheries have reduced the quantity and reliability of the district's imported water supplies. Water from the Sierra snowpack conveyed through the Delta constitutes about half the district's drinking water and that supply has been significantly reduced.

Increasing public awareness of the drought was a priority for the district and the district stepped up public outreach efforts. A new media campaign was developed which included television, radio, newspaper, billboards and online advertisements.

The eighth Year End Report provides an overview of achievements in Fiscal Year 08/09 and a look at current water use efficiency programs, including water conservation, water recycling and desalination. The report also looks at new and future projects, partnerships and completed research.

In December, 2008, **the district was one of five organizations, and the only governmental agency, chosen to be honored in the "Best Overall" category from California's energy efficiency outreach campaign, "Flex Your Power."** The annual Flex Your Power awards identify businesses and government agencies that demonstrate determined efforts to save energy and water, and to decrease carbon emissions in California. The water district helped save over 19.5 billion gallons of water through its programs during the last fiscal year (FY 07/08). These programs include technical and financial assistance in the residential, commercial, landscape, and agricultural sectors of Santa Clara County.

Hossein Ashktorab receives the Flex Your Power Award

In FY 08/09, the Water Use Efficiency Unit completed an updated version of the report, **"From Watts to Water,"** which provides an analysis of the energy savings and air quality benefits provided by the district's comprehensive suite of water conservation and water recycling programs. These programs have resulted in a cumulative savings of 487,000 acre-feet of new water supplies between FY 92/93 and FY 07/08. In addition to saving water and providing greater water supply reliability, water conservation and water recycling programs save energy and thereby reduce air pollutant emissions, including carbon dioxide, a greenhouse gas that contributes to global warming.

The analysis, which was recently updated with data from FY 07/08 and current energy and air emissions factors, shows that the district's water conservation and water recycling programs have resulted in savings of approximately 1.82 billion kilowatt-hours (kwh) of energy, which represents a financial savings of $236 million (in residential electricity rates) and is equivalent to the annual electricity required for 265,136 households. Through saving this energy, approximately 429 million kg of carbon dioxide emissions were eliminated, which is equivalent to removing 78,263 passenger cars from the roads for one year.

WATER CONSERVATION PROGRAMS

INDOOR PROGRAMS - RESIDENTIAL		
Program Name	*Program Participation for FY 08/09*	*Total Program Participation to Date*
Water Wise House Calls	1,592	27,599
Residential High-Efficiency Toilet Rebate Program	2,459	4,565
Residential Clothes Washer Rebate Program	13,965	92,466
Showerhead Distribution Program	7,253	148,994
Residential Water Softener Rebate Program	465	1,469
Residential High-Efficiency Toilet Installation Program with PG&E	19	19

LANDSCAPE PROGRAMS – RESIDENTIAL & COMMERCIAL		
Program Name	*Program Participation for FY 08/09*	*Total Program Participation to Date*
Weather-Based Irrigation Controller Rebate Program	407	902
Irrigation Technical Assistance Program	154	1,108
Water Efficient Landscape Rebate Program	250	351
Irrigation Hardware Rebate Program for Residents	39	49
Irrigation Hardware Rebate Program for Commercial, Industrial and Institutional facilities (CII)	6	15



COMMERCIAL, INDUSTRIAL, INSTITUTIONAL (CII) PROGRAMS		
Program Name	*Program Participation for FY 08/09*	*Total Program Participation to Date*
Commercial Clothes Washer Rebate Program	268	3,085
CII & Multi-Family Dwelling High Efficiency Toilet Installation Program	4,582	13,014
CII Water Survey Program	153	309
Water Efficient Technologies (WET) Program	2	73
Pre-Rinse Spray Valve Program	26	4,321
Mobile Home Submeter Rebate Program	1,442	2,934

WATER RECYCLING PROGRAMS

Recycled Water Program (Administered by various Santa Clara County agencies)	*Recycled Water Delivered in FY 08/09 (Acre-Feet)*	*Total Recycled Water delivered from FY 99/00 through FY 08/09 (Acre-Feet)*
South Bay Water Recycling Program	9,697	74,954
Palo Alto Water Recycling Program	3,242	13,090
Sunnyvale Water Recycling Program	1,643	14,669
South County Regional Wastewater Authority Water Recycling Program	1,902	12,782
Total	16,484	115,495

WATER CONSERVATION

OVERVIEW

Besides meeting long-term water reliability goals, water conservation programs help meet short-term demands placed on the water supply system during critical dry periods which was especially important during FY 08/09, a critically dry year. These programs also reduce the frequency of demand reduction requirements made on water retailers, and reduce wastewater flows to Bay Area treatment plants, thereby protecting the Bay's salt-marsh habitat.

The water conservation program experienced another successful year, both in terms of water savings, reaching totaling about 48,450 acre-feet in FY 08/09, and in terms of program participation, research and partnerships.

Water Conservation Outreach Campaign ad

In FY 08/09, the total annual water savings attributable to all residential conservation programs reached 39,550 acre-feet.

Water Conservation: IN THE HOME

Water-Wise House Call

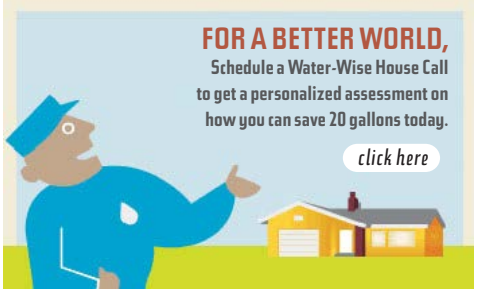
The water district continues to expand programs in the residential sector, which remains one of the key areas for water conservation. The water district employs a strategy of incentives and rebates, one-on-one home visits with free installations of water-saving devices, workshops, and outreach at community events to promote residential water savings.

WATER-WISE HOUSE CALL PROGRAM

The water district has been providing the Water-Wise House Call Program at no cost to county residents since 1998. The program is available to residents of single family homes and to owners managers of apartments, condominiums and mobile home complexes. During the survey, technicians check for toilet flapper leaks, measure fixture flow rates, offer conservation information, and install free toilet flappers, showerheads and aerators.

Surveyors also test the customer's irrigation system for uniformity, calculate an annual irrigation schedule, program the irrigation controller, and provide landscaping tips.

The water district performed 1,524 residential home surveys during FY 08/09. Over 27,500 residential surveys have been completed since the program began.



Water Conservation Outreach Campaign ad

The district provides free low-flow showerheads and aerators to residents

LOW-FLOW SHOWERHEAD AND AERATOR DISTRIBUTION PROGRAM

In FY 08/09, the water district distributed 12,923 aerators and 7,253 low-flow showerheads. Showerheads and aerators are provided, free of charge, to the public and to local water retailers to distribute to their customers. These devices are also installed in residences during Water-Wise House Calls. Over 271,000 showerheads and aerators have been distributed since the program started.

RESIDENTIAL CLOTHES WASHER REBATE PROGRAM

The water district began offering rebates for water efficient clothes washers in 1995, and continued through FY 08/09.

- For FY 08/09 13,965 rebates were issued, more than any other fiscal year.
- Since the program began, over 92,400 rebates have been issued.
- The rebate amount provided varied from $125 to $200, depending on the efficiency of the machine. The rebate is a combined Water and Energy rebate of either $125 or $200 for eligible PG&E customers, offered in conjunction with PG&E. This partnership with PG&E which began in January of 2008, allows customers to apply using one application form for both the water and energy rebate.

This program continues to transform the market by only offering rebates on the most efficient machines while making it easier for customers to apply for their rebate.

The Consortium for Energy Efficiency rates the efficiency of individual machines and categorizes them in tiers with the most efficient machines being placed in the highest tier. For the entire fiscal year only the two highest tiers, Tier 2 and 3, were rebated. Despite the Program's requirement for more efficient machines, participation levels increased.

RESIDENTIAL HIGH-EFFICIENCY TOILET PROGRAM

The water district's high efficiency toilet (HET) program began in FY 03/04 and continues to provide a $125 rebate to residents when they replace their old inefficient (3.5 gallons per flush or more) toilets with new HETs. HETs use at least 20 percent less water than the federally regulated 1.6 gpf toilets and include three types of technologies: pressure assisted flush, which utilizes a flush valve similar to commercial grade toilets; dual flush toilets, which have full and half-flush options; and gravity flush toilets. The district issued over 4,500 high-efficiency toilet rebates since the program began in FY 03/04. In FY 08/09, a total of 2,459 rebates were issued, more than any other fiscal year.

WATER SOFTENER REPLACEMENT REBATE PROGRAM

Building on the experience and lessons learned from the pilot program, a full-scale water softener replacement rebate program was developed. The program is a regional effort among the water district, San Benito County Water District, and South County Regional Wastewater Authority (SCRWA). In FY 08/09, 465 rebates were issued. Since the program began, 1,469 rebates have been issued.

The water district and the San Benito County Water District jointly received a $300,000 grant from the California Department of Water Resources under proposition 50. The water district is receiving $150,000 from the grant, which will go toward 1,000 Santa Clara County rebates of $150 each for the replacement of older water softeners.

The pilot program, which began in November 2003 and concluded in September 2004, provided 400 Santa Clara county residents with a rebate of $150 for the replacement of their pre-1999 inefficient water softener system with a more efficient, newer system. In July of 2007 the program was implemented as a full-scale program, with grant funding for 2,000 rebates at $150 each for San Benito County and Santa Clara County residents.

As a regional effort, SCRWA contributed $30,000 towards an additional 200 rebates earmarked specifically within SCRWA's service area. That area, consisting of Morgan Hill and Gilroy, has mostly hard water and therefore a prevalence of water softening devices. A water softener replacement rebate program is one tool to managing salt entering the SCRWA facility. The water district and the cities of Morgan Hill and Gilroy continue joint efforts to educate residents in the SCRWA service area regarding salinity issues.

Water Conservation: IN LANDSCAPE

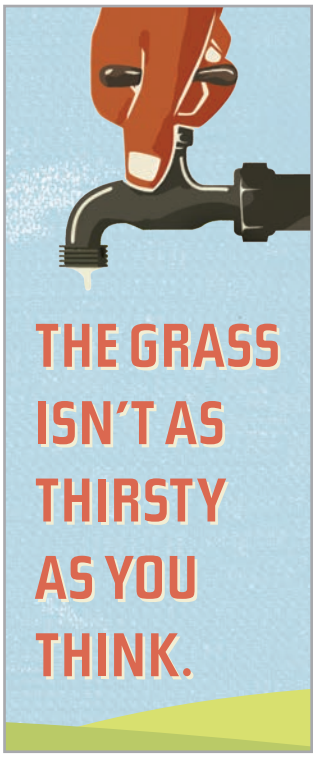
A water wise garden of drought tolerant plants

On average, about half of the water used by residents in the county goes to irrigating outdoor landscape. Having focused attention for many years on indoor water use, the district has now turned its attention to landscape irrigation – the area the water district sees as having the greatest potential for water savings in the residential and commercial sectors. The water district's WUE program offers a variety of programs, from irrigation evaluations and rebates for water-efficient irrigation equipment to classes and workshops, which help businesses and homeowners become as water efficient as possible. The water savings attributed to these programs for FY 08/09 are about 1,250 acre-feet per year.

LANDSCAPE AREA MEASUREMENT AND WATER USE BUDGETS STUDY

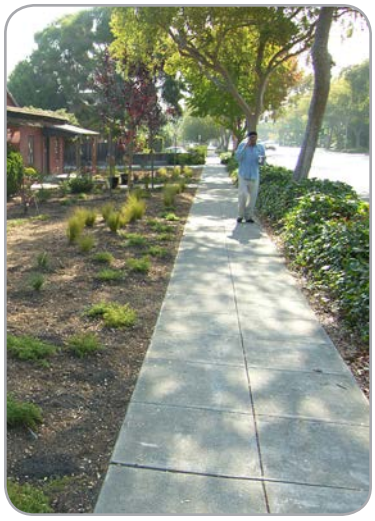
In 2002, the water district used multi-spectral images to identify landscape and agricultural areas by parcel for over 900 square miles in Santa Clara County. These images were then used to categorize types of surfaces (such as areas of turf grass, trees, water features, bare ground, hardscape, etc.) for each parcel. This information will be used to calculate an optimal water budget for sites around the county.

Concurrently, the water district is developing web-based software that allows county water users to receive a site-specific water budget on-line by entering their contact information, meter readings, and other data. This county-wide water budget database will allow on-line users to compare their actual water usage with recommended amounts for their specific area.



Water Conservation Outreach Campaign ad

WATER-EFFICIENT LANDSCAPE REBATE PROGRAM



The Water Efficient Landscape Rebate Pilot Program (WELRP) began in December 2005. It is designed to help customers replace high water using landscapes, such as unused or unwanted irrigated turf grass, with district approved low water use plants and/or permeable hardscape.

In FY 08/09, the water district, the City of Morgan Hill, the City of Palo Alto, the City of Milpitas, and Stanford University formed a partnership for this program thereby doubling the rebate for participants within those service areas.

The rebate for this program is $75 per 100 sq. ft. for customers in Santa Clara County. Morgan Hill, Milpitas, Stanford, and Palo Alto customers receive $150 per 100 sq. ft. of converted landscape. Maximum rebates are:

In FY 08/09, 250 rebates were issued resulting in over 200,000 square feet of high water using landscape removed.

IRRIGATION TECHNICAL ASSISTANCE PROGRAM

The water district has been providing technical assistance to large landscape managers since 1995 through the Irrigation Technical Assistance Program (ITAP). Technicians check the irrigation system for inefficiencies, determine an optimal water use budget, and make site-specific recommendations to improve water management. ITAP participants can potentially save up 1,500 gallons per acre per day, representing a potential $1,000 per acre cost savings annually.

The water district provided 154 sites with ITAP services in FY 08/09. This is a record number for the program, with more completed than in any other fiscal year. Since the program's inception, over 1,100 parks, golf courses, large commercial sites, and large residential developments have received ITAP evaluations.

IRRIGATION SYSTEM HARDWARE REBATE PROGRAM (for commercial large landscape)

This program aims at achieving difficult-to-attain but cost-effective water conservation on sites with one acre or more of irrigated landscape. After participating in the water district's Irrigation Technical Assistance Program (ITAP), commercial and residential large landscapes are eligible to receive a rebate of up to 50 percent (up to $4,000) on the cost of ITAP-identified irrigation system upgrades. Six rebates were issued in FY 08/09, making a total of fifteen since the program began.

IRRIGATION SYSTEM HARDWARE RETROFIT PROGRAM (for residential landscapes)

Kurt Elvert conducting a landscape inspection

By building on the customer information accrued through the Water-Wise House Call Program over the last three years, the residential Irrigation System Hardware Retrofit Program targets the installation of water-efficient irrigation hardware on residential sites previously identified as having, unrealized high conservation potential.

These hardware installations can be expected to produce water savings lasting longer than the savings that can be attained through behavioral change alone. In FY 08/09, 39 rebates were issued, bringing the total to 49 since the program began.

WEATHER-BASED IRRIGATION CONTROLLER REBATE PROGRAM

The water district's Weather Based Irrigation Controller (WBIC) Installation Program employs a new generation of irrigation controllers in managing landscape water use. These controllers (also called "smart controllers") utilize temperature data, relative humidity, wind speed and solar radiation to calculate site-specific irrigation schedules. The controllers modify their irrigation schedules daily to remain consistent with the landscape's changing irrigation requirements. The program provided rebates for 407 WBICs in FY 08/09, for a total of 902 since the program began.

Weather-based irrigation controller installed at a Silicon Valley company.

Water Conservation: IN BUSINESS

Commercial Water Survey Program site in Morgan Hill

The Water Use Efficiency Unit combines education, technical assistance and financial incentives to encourage reduced water consumption among commercial, industrial and institutional water users.

Annual water savings attributable to business conservation programs reached 6,650 acre-feet in FY 08/09.

WATER EFFICIENT TECHNOLOGIES PROGRAM

The Water Efficient Technologies (WET) program provides rebates for process, technology, and equipment retrofits that save water. The rebate rate is $4.00 per hundred cubic feet (ccf) of water saved annually with a minimum annual water savings requirement of 100 ccf. Since 1997, the water district and the City of San Jose have maintained a cost-sharing agreement to help fund this program. To date, the district has funded (either entirely or through cost-sharing with the City of San Jose) $828,687 for 76 projects saving approximately 2.24 billion gallons (2.99 million ccf) over the lifetime of the projects.

Ozone laundry system at hotel, a WET Rebate Program participant

COMMERCIAL, INDUSTRIAL, INSTITUTIONAL (CII) WATER USE SURVEY PROGRAM

This program for commercial, industrial and institutional (CII) establishments in Santa Clara County began in FY 03/04 and continued into FY 08/09. It provides: a thorough survey of the indoor water use of CII establishments, suggestions for ways to become more water efficient, and recommendations for the district programs that will help fund water efficiency improvements.

The reports recommend the district programs that can help fund water efficiency improvements, such as the Water Efficient Technologies Program and the Irrigation Technical Assistance Program, to expedite equipment changes and address outdoor water use. Because most of the water savings potential seems to exist in the industrial and institutional sectors, those sectors were targeted.

153 surveys were completed in FY 08/09. Since the program began, 309 surveys have been conducted.

Palo Alto water survey site

Ozone laundry system being installed

A water survey was performed at this site in Morgan Hill

COMMERCIAL CLOTHES WASHER REBATE PROGRAM

The Commercial Clothes Washer Rebate Program provides laundromats and apartment complexes in Santa Clara County a rebate of $400 for each purchased or leased commercial high-efficiency clothes washer.

The water district rebates only the most water efficient machines. By doing this, the district influences buyers to make the more water-efficient choice. The Commercial Clothes Washer Rebate Program provided 268 rebates in FY 08/09. Since the start of the program, 3,085 rebates have been issued.

Water-efficient clothes washers

COMMERCIAL AND APARTMENT HIGH-EFFICIENCY TOILET INSTALLATION PROGRAM

This program provides free installation of high-efficiency toilets (HETs) and urinals (HEUs) in the Commercial, Industrial and Institutional sectors, as well as in the multi-family sector. There have been 2,964 HETs installed in the commercial sector and 1,618 HETs installed in the multi-family dwelling sector, for a total of 4,582 installations for FY 08/09. Since the program began, over 13,000 HETs have been installed.

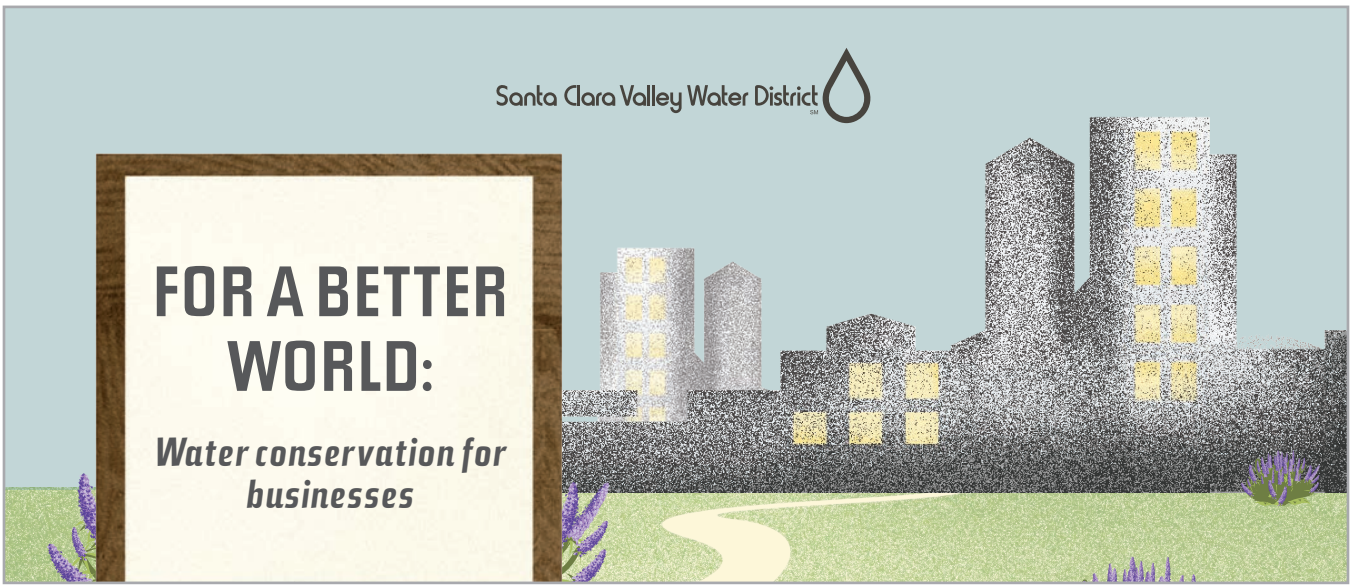
The High-Efficiency Toilet Installation Program was expanded to include "flush valve" toilets

Water submeter installed at a mobile home park in San Jose

MOBILE HOME PARK SUBMETER REBATE PROGRAM

This program, which began as a pilot program in FY 00/01, gives a rebate for every water submeter installed at mobile home parks. During the pilot program, 1,187 rebates were distributed. Water use records from participating mobile home parks showed an average water savings of 23 percent per mobile home. The program was extended and, in FY 08/09, 1,442 more water submeters were installed, bringing the total for the program to 2,934.

Submeter



Water Conservation Outreach Campaign ad

Pre-rinse spray valve

PRE-RINSE SPRAY VALVE PROGRAM

The water district purchased a quantity of pre-rinse spray valves with a flow rate of 1.15 gallons per minute for distribution to commercial sites identified through the district's CII Water Survey Program. A total of 26 of these sprayers were distributed in FY 08/09, and over 4,300 since the district began promoting these devices in FY 02/03.

PILOT COMMERCIAL WATER SOFTENER REBATE PROGRAM

The success of the full scale residential water softener rebate program has prompted additional funding for commercial water softener replacement ($400 per rebate for Santa Clara County businesses). The Pilot Commercial Water Softener Rebate Program offers rebates for the replacement of older water softeners with newer and more efficient models. The countywide program began in May 2008, with three rebates processed in FY 08/09.

District staff inspects water softener

Water Conservation: IN AGRICULTURE

The water district's water use efficiency program conducts growers meetings and provides technical assistance to help growers increase irrigation efficiency. These incentives also help growers comply with non-point source discharge regulations.

ON-LINE IRRIGATION SCHEDULING CALCULATORS

This online resource consists of two calculators, one for drip irrigation systems; the other for sprinkler systems. Each makes it easy to calculate a crop's irrigation requirements based on local California Irrigation Management Information System (CIMIS) weather station data and the percentage of a field that is shaded by the crop around high noon.

These calculators are used to estimate the irrigation water used by a crop since the last irrigation, or to forecast a crop's irrigation requirements for the coming few days.

District weather station

CALIFORNIA IRRIGATION MANAGEMENT INFORMATION SYSTEM (CIMIS)

This free service provides daily reference evapotranspiration estimates to growers and landscape irrigators to use for scheduling irrigation.

Newest addition to weather station network, at Syngenta

Reference evapotranspiration is the water use of a standardized green grass surface. Estimates of the evapotranspiration of all crops and landscapes can be mathematically related to reference evapotranspiration. The water district owns and maintains one weather station in San Martin, and one station west of Saratoga. Growers and landscape irrigators can access current evapotranspiration information around the clock by visiting the district's web site at www.valleywater.org.

AGRICULTURAL IRRIGATION MANAGEMENT PRORGRAM

The water district funds a program implemented by the Santa Clara County Farm Bureau to provide ten growers intensive training in irrigation system fitness and irrigation management. Program technicians sample the output of growers' irrigation systems, provide recommendations as needed to improve the uniformity of the irrigation systems, and conduct follow-up sampling and analysis to estimate any improvement in uniformity that has resulted from implementation of the recommendations. Once irrigation system fitness has been quantified, subsequent training takes place in the use of soil moisture content sampling and the use of crop evapotranspiration information to inform irrigation scheduling. The goal of the program is to create a cadre of efficient irrigators who are able to demonstrate through farming practices that efficient irrigation is achievable.

Water Conservation: OUTREACH & EDUCATION

2009 WATER CONSERVATION CAMPAIGN

In May 2009, the water district launched a new water conservation campaign urging every individual to save 20 gallons per day by taking small actions that can result in big savings. The campaign followed a 15% mandatory water reduction call by the district board of directors because of the statewide drought and a growing concern about water deliveries through the Sacramento-San Joaquin River Delta. Imported water delivered through the Delta constitutes almost half of the district's water supplies. The campaign, designed around people's daily activities involving water use, included television, radio, newspaper, billboards in Santa Clara County and online advertisements. In order to reach our diverse population, ads were developed in English, Spanish, Vietnamese and Chinese. The goal of the campaign, which will continue into 2010, is to educate and inform Santa Clara County residents about how they can reduce water consumption by 15%, which translates to about 20 gallons per day per person. A website was also developed, www.save20gallons.org.

Water use efficiency booth

Water Conservation Outreach Campaign ad

WATER USE EFFICIENCY NURSERY PROGRAM

For the last ten years, the water district has distributed water conservation information through display racks located at county nursery and garden stores. These display racks contain literature discussing water-wise gardening, efficient lawn watering, drought resistant plants, drip irrigation and district programs. In FY 08/09, 20 nurseries participated in the program throughout the county.

Literature rack at a local nursery

WATER-EFFICIENT LANDSCAPING WORKSHOPS FOR HOMEOWNERS

The water district held its 16th annual water-efficient landscaping workshop series in March 2009 over four weekends. The topics were: selecting plants for your water-wise garden, water efficient irrigation design, water-wise garden design, and gardening with natives. The workshops are presented by landscape and irrigation experts each spring to provide practical advice on water-efficient gardening. A total of 185 people attended this series of workshops.

Resident learning about irrigation systems

National Night Out Event

COMMUNITY EVENTS

The water district promoted water use efficiency over 100 community events in FY 08/09, including environmental fairs, Earth Day events and many others. These events give the district's WUE program an opportunity to talk to the public directly, and to educate them about water use efficiency with hands-on displays, educational handouts and one-on-one water conservation advice.

GOING NATIVE GARDEN TOUR

The water district co-sponsored the 7th Annual Going Native Garden Tour in April, 2009. The tour was a great success, showcasing 53 native plant gardens throughout Santa Clara and San Mateo counties, with a record 12,824 visitors. The water district has sponsored this event since its inaugural year.

The Going Native Garden Tour is the Bay Area's first native garden tour. This community-based event is free of charge to the public. Each tour features home and public gardens in a self-guided tour format.

Its goals are to demonstrate reduced water, chemical and pesticide use, improved habitat and the unique aesthetic appeal of gardens designed with California native plants. This year, native plants were being sold to the public at six of the sites.

SEMINARS FOR AGRICULTURE PROFESSIONALS

The water district has presented at growers meetings annually since 1998 on topics relating to water and fertilizer use efficiency, district programs, farm safety and compliance with farm water quality regulations.

All meetings have been presented with simultaneous Spanish translation. Drought irrigation strategies for various crops were discussed at last year's winter meeting.

ANNUAL FERTIGATION WORKSHOP FOR IRRIGATORS

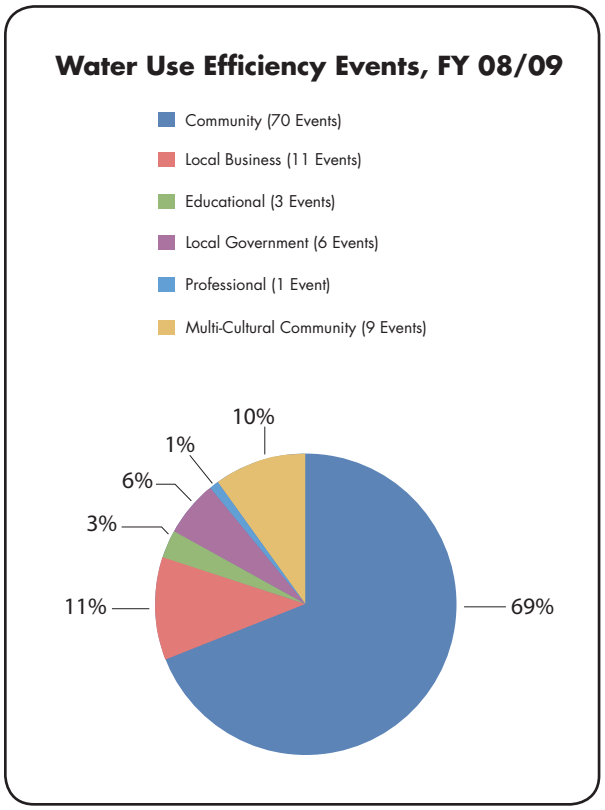
The 2008 annual fertigation workshop was held in July 2008. This workshop, presented with UC Cooperative Extension, San Benito County Water District and the farm bureaus of Santa Clara and San Benito counties, was a hands-on field classroom for irrigators and growers.

Topics covered include balancing the irrigation system, principles of fertilizer injection, calibration of the injection system and post-injection operations. Simultaneous translation for Spanish speakers was available.

Water Conservation: EVENTS

The District attended over 100 community events in FY 08/09 including:

- August .....National Night Out at Emma Prusch Park
- September...26th Annual South Bay Home and Garden Show
- September...City of Sunnyvale State of the City Celebration
- September...West Coast Green Expo
- October .....Spirit of Japantown Festival
- October .....Muslim Community Association Eco Fair
- March .....Santa Clara Valley Water District's Water Efficient Landscape Workshop Series
- April .....Going Native Garden Tour
- May .....Loma Verde Villages Home Owners Association Board Meeting
- May .....Morgan Hill Mushroom March Gras
- June .....Water Conservation Talks at Yamagami's Nursery



Nursery Event

Water Conservation: COST-SHARING AGREEMENTS & PARTNERSHIPS

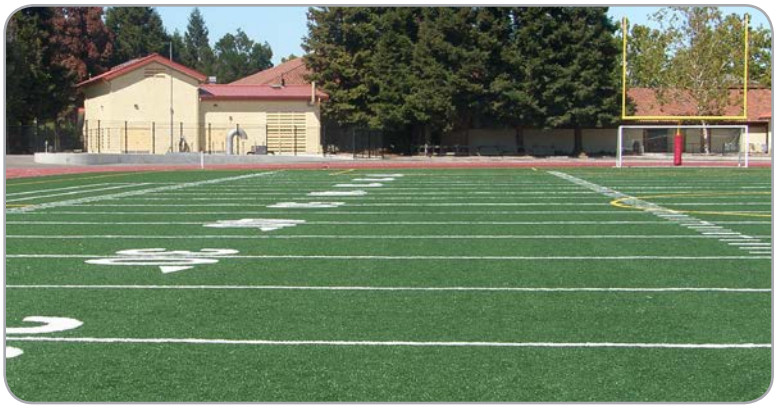
Water use efficiency is a community-wide effort, and it will take the cooperation of many agencies, organizations and water retailers to meet future water supply goals. The water district maintains cost-sharing agreements with many cities and utilities to provide water use efficiency programs for residential and commercial water customers.

THE WATER DISTRICT'S WATER CONSERVATION PROGRAM ADMINISTERED MORE THAN $720,000 IN COST-SHARING AGREEMENTS IN FY 08/09.

Cost-sharing agreements that were active in FY 08/09 included:

- City of Palo Alto: Cost-sharing agreement for a variety of water conservation programs - $160,905
- City of Santa Clara: Cost-sharing agreement for commercial high-efficiency clothes washer rebates - $12,500
- City of San Jose: Cost-sharing agreement for a variety of water conservation programs: $406,977
- California Water Service Company: Cost-sharing agreement for a variety of water conservation programs - $50,000
- City of Morgan Hill: Cost-sharing agreement for the Water-Efficient Landscape Rebate and Residential HET Programs - $50,000
- City of Milpitas: Cost-sharing agreement for the Water-Efficient Landscape Rebate Program - $5,000
- Stanford University: Cost-sharing agreement for the Water-Efficient Landscape Rebate and Residential HET Programs - $35,000

Water Conservation: STUDIES & RESEARCH



Site of artificial turf in Santa Clara County

The water district is continually conducting research, on its own and in collaboration with other agencies, to increase water savings and cost-effectiveness in its water conservation programs. Data from the studies and research listed below will be vital in creating an effective, long-range water management strategy for Santa Clara County.

ARTIFICIAL TURF STUDY

Artificial turf has the potential to save substantial quantities of water, and has received considerable attention from the water conservation community. The water district is considering offering financial incentives for the installation of artificial turf, but is currently conducting a study to determine whether there are any adverse water quality impacts to groundwater or to surface water due to leachate from artificial turf. A preliminary study by the water district suggests that heavy metal contamination may be a concern.

Toward this end, the water district partnered with Stanford University to conduct a water quality study to investigate the impact, if any, of artificial turf on groundwater and surface water. The study, which included field as well as laboratory components, has been completed and is in the data analysis phase with a final report expected in early 2010.

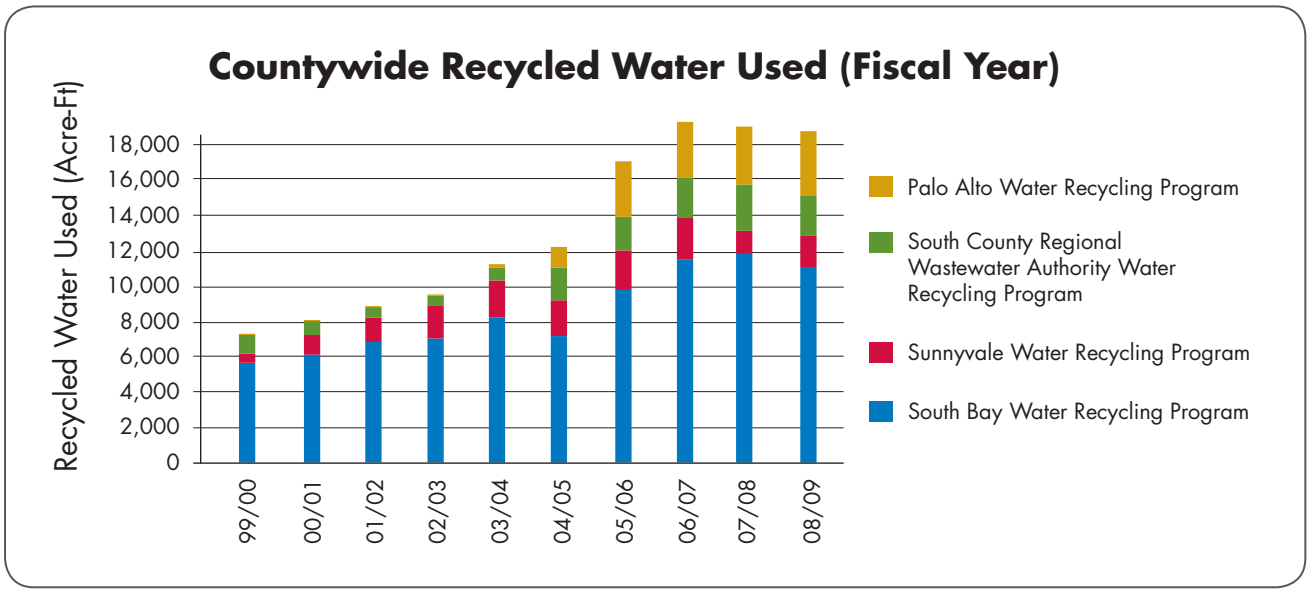
WATER RECYCLING & DESALINATION

OVERVIEW

The water district collaborates and coordinates with local agencies and recycled water producers on recycled water development and use. Water demand correlates with the county's population and economy, and will expand as the economy expands. With the state court decisions in FY 07/08 and the subsequent biological opinions in FY 08/09, Delta water imports were reduced. This, added pressures on the district's water supply. Recycled water is already used in this county with many years of success. Recycled water use can be expanded and advanced treatment can be utilized to enhance the quality of recycled water, thus enhancing its marketability.

Advanced treated recycled water and desalination are two potential sources of water supply that can be integrated into the district's water supply portfolio to further diversify it and make it more robust against droughts or other hydrological changes. These sources are locally controlled in contrast to imported water brought into the county.

Recycled water and desalination are all-weather resources. Increasing recycled water supplies in Santa Clara County will increase overall water supply reliability and augment the district's imported water supply and local surface and groundwater supplies.



Recycled Water Liaison Committee members: (Seated from left to right are) Santa Clara Mayor Patricia Mahan, San Jose Councilman Pierluigi Oliverio, Councilman Kansen Chu, District Director Rosemary Kamei, Director Tony Estremera, and Director Patrick Kwok.

KEY EFFORTS IN RECYCLED WATER AND DESALINATION INCLUDE:

- The Bay Area Regional Desalination Project : Pre-Feasibility and Feasibility studies and reports were completed. The **Pilot** Desalination Project work began at the East Contra Costa Site and pilot operations were completed in May 2009. The final report on the pilot work would be completed at the end of 2009.
- The Pilot Brackish Desalination Project was completed. The research partner, Stanford University, prepared a final report.
- The Long-term Recycled Water negotiations with the City of San Jose, the administering agency for South Bay Water Recycling, began in full-force in 2008. A Board-Council level "Recycled Water Liaison Committee was established. A long-term agreement will be developed that will include agreed upon quantities of recycled water to be incorporated into the district's water supply planning portfolio and expansion of recycled water usage. This agreement will also include the joint work effort on the South Bay Advanced Recycled Water Treatment facility. *(See section under district's Cooperative Relationships for more information)*
- Recycled water reimbursements were paid out to the Cities of San Jose and Sunnyvale for recycled water that offset the need for the district to provide potable water supplies.
- Joint Board meeting was held with South County Regional Wastewater Authority on the topic of a producer, wholesaler and retailer recycled water agreement, and on the production of an environmental document (CEQA) for the South County Recycled Water Master Plan project.
- Progress towards the Advance Treated Recycled Water Project design and CEQA documentation was significant.
- Joint meeting with the San Jose City Council on April 23, 2009 highlighted water recycling and water conservation.

Water Recycling & Desalination

WHAT IS RECYCLED WATER IN SANTA CLARA COUNTY

Recycled water pumps

Recycled water is highly treated wastewater that is purified through multiple levels of treatment. Wastewater is the resulting product of water that has been used in homes and businesses. Wastewater goes into underground pipes that carry it to a wastewater treatment plant.

In Santa Clara County, there are four wastewater treatment plants that rigorously treat wastewater to remove most of the pollutants before the treated water is discharged into the San Francisco Bay or stored in evaporation ponds. Some of this treated water is further filtered and disinfected to become recycled water that can be put to many beneficial uses, as allowed by stringent state standards. Some of these uses are landscape irrigation, cooling tower uses, other industrial uses, and dust-suppression during construction.

Why is recycled water important to Santa Clara County?

- Recycled water is a drought-proof or all-weather supply, immune from global climate change.
- Use of recycled water for irrigation or industrial use saves potable supplies for drinking purposes.
- Recycled water helps preserve our saltwater and tidal habitat by reducing freshwater discharge to the San Francisco Bay.
- Provides a reliable source of water to the community and private entities that protects their investments in parks and landscaping (i.e., this water will be available even during times of drought).
- A green and healthy environment enhances the quality of life in this county.

Quick Facts about recycled water in Santa Clara County

- Recycled water in Santa Clara County undergoes three levels of treatment plus disinfection. This is termed "tertiary treatment."
- All recycled water in this county meets required standards or is of higher quality than required by the standards set by the State for the various uses. The second stage of treatment is sufficient for landscape irrigation according to the state standards; however, all recycled water in Santa Clara County goes above that standard.
- Recycled water is safe and children will not get sick from playing on turf that is irrigated with recycled water.
- Recycled water has been used for irrigation in municipal settings (parks, schools, golf courses), and there has never been a reported instance of a public health problem from using this recycled water.
- The district is planning treatment projects (i.e., advanced treatment) as a way to reduce salts in recycled water to increase potential for recycled water use.

WHAT IS ADVANCED TREATED RECYCLED WATER?

Advanced treated recycled water is wastewater that has undergone ultra-treatment to become ultra-purified water. Typically, three major treatment steps are employed to achieve this ultra-purified water.

1. Microfiltration: Tiny straw-like plastic membranes filter out bacteria, particles and protozoa.
2. Reverse Osmosis (RO): Water is forced through the molecular structure of the RO membranes where dissolved minerals, pharmaceuticals and viruses are removed.
3. Ultraviolet light disinfection: This step destroys any potential harmful trace organics. It is technically not needed for killing germs since these are already removed in the two previous steps, but becomes an additional safety measure.

THE WATER DISTRICT'S POLICY & PLANNING LEADERSHIP IN WATER RECYCLING & DESALINATION

To ensure that the mission of the water district is realized, the Board of Directors established organizational outcomes, or Ends Policies, to be achieved by the CEO. Ends Policies describe the specific outcomes to be achieved, starting with general statements followed by specific descriptions.

The governing Board of the water district adopted the following policies that guide recycled water activities at the district:

2.1.4. There are a variety of water supply sources.

2.1.4.1. The district's variety of water supply sources is protected.

2.1.4.2. The district's water supply sources are further diversified by making new investments in a mix of all-weather supplies, storage, and dry year transfers or option agreements.

2.1.7. Water recycling is expanded within Santa Clara County in partnership with the community, consistent with the district's Integrated Water Resources Plan (IWRP), reflecting its comparative cost assessments and other Board policies.

2.1.7.1. Target 2010, water recycling accounts for five percent of total water use in Santa Clara County.

2.1.7.2. Target 2020, water recycling accounts for ten percent of total water use in Santa Clara County.

The water district's 2003 update to the Integrated Water Resources Planning Study and the 2005 Urban Water Management Plan identified water recycling and desalination, along with water conservation, as key components in meeting future dry year shortfalls.

The 2005 Urban Water Management Plan specifically states that, "the difference shown between recycled water projection and the water district target in 2010 and 2020 will potentially be achieved by additional investments in recycled water projects including advanced treatment of recycled water, groundwater recharge and streamflow augmentation."

The 2005 Urban Water Management Plan's projection for recycled water in the year 2010 is almost 17,000 acre-feet. This represents a shortfall of approximately 2,500 acre-feet from the Board's 5 percent target for 2010. Similarly, the 2020 projection estimates that, at the current levels of effort, recycled water expansion in 2020 will only be 25,000 acre-feet, which is an almost 15,000 acre-feet shortfall from the Board's 10 percent target of 40,000 acre-feet. However, if recycled water use is to reach Board targets, significant investment in recycled water expansion projects need to be made.

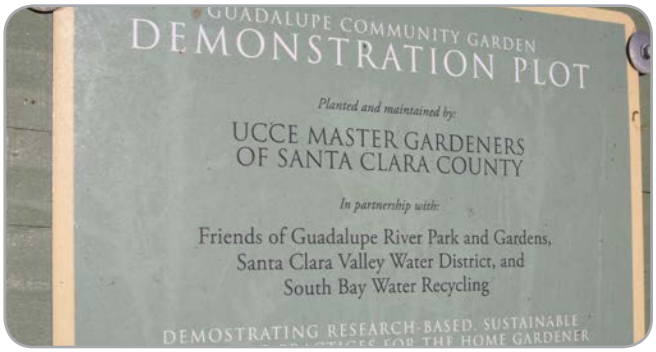
The water district sees desalination as another viable way to diversify its water supply portfolio and increase supply reliability. The 2003 Integrated Water Resources Planning Study identified two preliminary objectives for desalination: augmentation of the district's current water resources, and creation of greater drought or emergency reliability by serving as a consistent, supplemental water supply source.

Water Recycling & Desalination

APPROACH

The water district's approach to recycled water expansion is to collaberate and coordinate with the cities and publicly owned agencies that produce and/or distribute recycled water. The water district has entered into recycling relationships with all four recycled water producers in Santa Clara County: the South Bay Water Recycling Program (SBWR) operating out of the San Jose/Santa Clara Water Pollution Control Plant, the Sunnyvale Water Pollution Control Plant (Sunnyvale WPCP), the Palo Alto Regional Water Quality Control Plant, and the South County Regional Wastewater Authority (SCRWA) in Gilroy. (The water district is the recycled water wholesaler in Gilroy).

RIBBON CUTTING AT GUADALUPE GARDENS



Water Recycling & Desalination

DISTRICT'S COOPERATIVE RELATIONSHIPS:

LONG-TERM FRAMEWORK AGREEMENT WITH THE CITY OF SAN JOSE:

The District Board has adopted policies that target increases in the amount of recycled water used in the County (i.e. targets for years 2010 & 2020 respectively, E2.1.7, E-2.1.7.2) and one that states that the district should aggressively protect the County's groundwater basins (E-2.1.6). In furtherance of these Board Policies, the district and the water retailers in Santa Clara County previously completed a Recycled Water Collaborative Effort (Phase I, 2003) whose findings state that enhancing the quality of recycled water would markedly improve the expansion of its uses and also be protective of uses of recycled water over certain sensitive areas of the groundwater basin. The Phase I Collaborative Effort also recommended that the district should collaborate with recycled water producers in Santa Clara County to expand the use of recycled water.

In 2006, the Board authorized staff to retain consultant services to design the Advanced Recycled Water Treatment Facility (AWT). After the AWT is operational and demonstrates effective treatment ability, and following public outreach, Board deliberation on potential policies regarding indirect potable reuse may be initiated, should the Board desire that direction.

With climate change impacting hydrology, and environmental and legal constraints impacting imported water supplies, the district took on efforts to enhance the reliability and diversity of our water sources, especially our local water sources. This finding is consistent to the finding from the Integrated Water Resources Plan (IWRP 2003) of which the stakeholders recommended to improve recycled water quality and expand recycled water uses. Since 2006-2007, the district and the City of San Jose, embarked on a Recycled Water Collaborative Effort Phase II, and this effort led to the creation of the Board Recycled Water Liaison Committee effort of 2008-2009.

The Recycled Water Liaison Committee (Liaison Committee) is comprised of three District Board Members (Directors Patrick Kwok, Rosemary Kamei, and Tony Estremera); two City of San Jose Council Members (Councilman Kansen Chu and councilman Pierluigi Oliviero); and the Mayor of the City of Santa Clara (Mayor Patricia Mahan). The Liaison Committee discussed key terms for a long-term, mutually beneficial Recycled Water Framework Agreement. It is anticipated that the long-term agreement will be executed in 2010.

District board memebers and staff and city of Santa Clara staff meet with Orange County Executives and elected officials at their advanced Recycled Water Treatment Facility for their groundwater replenishment system.

SOUTH BAY WATER RECYCLING

The South Bay Water Recycling (SBWR) system was implemented to protect salt marsh habitat of two endangered species. SBWR is owned by the San Jose/ Santa Clara Pollution Control Plant, and operated by the City of San Jose. SBWR currently distributes approximately 10,000 acre-feet of recycled water annually to over 550 customers throughout Silicon Valley for irrigation and industrial use. Some of the larger irrigation customers include The Villages Golf and Country Club, Oak Hill Cemetery and the Santa Clara Golf and Tennis Club. Top industrial customers include Metcalf Energy Center, the Don von Raesfeld Power Plant, California Paperboard in Santa Clara, and San Jose State University.

Recycled water used in the Rivermark Development in Santa Clara

In 2008, the system expanded the recycled water use to a car wash in the north San Jose area. Plans are already underway to extend recycled water to the Mineta-San Jose International Airport for car wash and toilet flushing.
The water district has been working with the City of San Jose on its recycled water program since 1994, providing financial assistance and acting as a liaison between water retailers. The water district provided engineering design services for the backbone pipelines of SBWR.

In addition, the district has provided financial incentive since 1995 for recycled water used to displace potable water. In FY 07/08, the water district provided over $1 million in financial incentives to the SBWR used to offset the demand for district potable water in the district's service area. This offsets the need for the district to invest in new supplies. The potable water thus conserved could then be used to recharge the groundwater basin, stored in the local reservoir or in the district's banking facilities, or transferred to other water agencies. Over the last ten years, SBWR recycled water has offset over 67,000 acre-feet, which is equivalent to 32,000,000 kW-h of energy savings and reduction of 7,000 metric tons of CO2.

Since 2006, the water district and the City of San Jose have been jointly developing the advanced recycled water treatment facility (AWT) to enhance recycled water quality to expand its marketability and aggressively protect the groundwater basin. The water district received a state grant of approximately $3 million toward this project. In addition, the U.S. Congress authorized $8.25 million in federal funding for the project. The total estimated cost of the project is approximately $52 million inclusive of costs for engineering planning, design, CEQA process, construction and construction management. At the end of the fiscal year, the project has completed the planning phase and is in the 30% design phase.

The water district and the City of San Jose both recognized the mutual benefits of recycled water and the AWT project. The elected officials of the agencies formed the Recycled Water Liaison Committee (Committee) to negotiate a long-term partnership agreement which lays out the cost share arrangement for the AWT. The committee comprises three district board members, two City of San Jose council members, and the mayor of the City of Santa Clara. The committee met monthly in the second half of 2008. Management staff of these agencies have been meeting frequently to coordinate and support this effort. Ultimately, the water district intends to integrate recycled water into the district's diversified water supply portfolio, and meet the Board's target of 10% recycled water in the total Santa Clara County water supply. The City of San Jose's goal is to beneficially reuse 100% of its wastewater consistent to the City's Green Vision Goal #6.

PALO ALTO WATER QUALITY CONTROL PLANT

The Palo Alto Regional Water Quality Control Plant (RWQCP) serves Palo Alto, Mountain View, Los Altos, Los Altos Hills, Stanford University and the East Palo Alto Sanitary District. Total usage also includes recycled water for a local wetland that was only made possible by recycled water.

In 2005, RWQCP completed the planning phase of its Palo Alto/Mountain View Pipeline Extension with the goal of replacing the existing pipeline to the Shoreline Golf Course and extending the pipeline to the Mountain View-Moffett area east of Highway 101. The proposed pipeline follows the levees along Matadero Creek, and will be located adjacent to East Bayshore towards Mountain View. The pipeline replacement helps fulfill RWQCP permit requirements. The RWQCP is required to operate and maintain the Water Reuse Program to mitigate the discharge of treated wastewater to San Francisco Bay.

Engineering and design of this project started in summer 2005, and construction began in summer 2007. The project cost will be shared between the RWQCP and the cities of Palo Alto and Mountain View and will receive up to $4 million in state Proposition 50, Chapter 7, grants. The construction cost of this project is approximately $16 million. The project sponsors have also applied for other state and federal grants to offset this cost.

In June 2008, the water district and Stanford University entered a lease agreement for leasing the district's skid mounted Reverse Osmosis equipment to Stanford to conduct a pilot study in the RWQCP. The objective of the study is to evaluate the feasibility of desalinating RWQCP recycled water using RO to accomplish the following specific objectives:

1. Quantifying flux and rejection as a function of water recovery,
2. Optimizing chemical addition (anti-scaling agents) for minimization of fouling and cleaning procedures
3. Evaluating the use of different RO membranes for recycled water desalination,
4. Study fouling processes.

RO desalination pilot

SUPPORT FOR SUNNYVALE'S RECYCLED WATER PROGRAM

The use of recycled water in the City of Sunnyvale has experienced a significant decrease in FY 07-08 due to the shut off of the recycled water system between March and May in 2008.

The water district has provided a financial incentive to the City of Sunnyvale's water recycling program since 1997 at the rate of $115 per acre-foot of recycled water used to offset potable water. The reimbursement by the district helps the City offset the deficit between revenues and expenses, and enables the City to make additional capital improvements to increase system reliability and expand system capacity. The water district and Sunnyvale have on-going meetings to discuss other forms of partnership that will assist in the expansion of recycled water.

The Sunnyvale Water Pollution Control Plant (WPCP) continues working on the expansion of its water recycling systems in order to meet state and federal discharge requirements. Staff from the City and the district have had several discussions on developing a long-term comprehensive operating strategy and on near-term recycled water expansion opportunities including services to Moffett Field Golf Course.

SOUTH COUNTRY REGIONAL WASTEWATER AUTHORITY

In south Santa Clara County, the water district is a wholesaler of recycled water. The South County Regional Wastewater Authority (SCRWA) produces recycled water and the City of Gilroy is the retailer. The water district, the City of Gilroy, and SCRWA have producer wholesaler-retailer agreements in place delineating their respective roles and responsibilities. This differs from arrangements in the north part of the county, where the district is not a producer/wholesaler/retailer. The water district takes on partnership roles and enters agreements for joint pipeline construction projects, or joint water quality studies that lead toward the goal of expanding recycled water used in the county.

Since 2006, the water district and SCRWA jointly completed the Immediate-term phase of the South County Recycled Water Master Plan. The Immediate-term phase included the construction of 4,800 feet of 20-inch pipelines, a 3 MG reservoir and the upgrade of the filtration capacity from 3 MGD to 9 MGD. These projects were critical and immediately needed to expand recycled water capacity and operational efficiency. They enabled the system to operate 24 hours a day, compared to the daytime-only operation prior to the upgrade. Approximately 25% of the construction of the Immediate-term phase was funded by a state grant.

By June 30, 2009, the South County Recycled Water System had delivered 1,902 acre-feet of recycled water, compared to 2,311 acre-feet in 2008. The decrease was primarily due to Eagle Ridge's usage reduction. In 2008, Eagle Ridge had experienced some irrigation management changes and decided to blend recycled water with groundwater. In the future, Eagle Ridge is expected to gradually resume to their historical usage.

On July 1, 2009, the U.S. Department of Interior announced an appropriation of $4.35 million from the American Recovery and Reinvestment Act for the South County Recycled Water Master Plan implementation. The water district is diligently working with the Federal agency to recieve the federal funds to expand the recycled water system.

BAY AREA REGIONAL DESALINATION PROJECT

The water district is pursuing desalination projects to:

- Provide replacement sources of water during emergencies such as earthquakes
- Provide a supplemental supply source during extended drought periods
- Allow other major facilities, such as treatment plants, transmission mains and pump stations, to be taken out of service for an extended period of time for maintenance or repairs
- Increase the diversity of the agencies' water supply portfolio by providing a full-time supplemental water supply, which would increase reliability.

The Bay Area's four largest water agencies, the Contra Costa Water District, the East Bay Municipal Utility District, the San Francisco Public Utilities Commission, and the Santa Clara Valley Water District, are jointly exploring the development of regional desalination facilities that would benefit over 5.4 million Bay Area residents and businesses served by these agencies. The Bay Area Regional Desalination Project could consist of one or more desalination facilities, with an ultimate total capacity of up to 71 million gallons per day.

Bay Area Regional Desalination Project

ADVANCED RECYCLED WATER TREATMENT PROJECT (AWT)

The proposed South Bay Advanced Recycled Water Treatment Facility (also referred to as the AWT) project is a joint effort between the District and the City of San Jose. The facility would treat nitrified secondary effluent from the San Jose/Santa Clara Water Pollution Control Plant with advanced treatment technologies including microfiltration, reverse osmosis, and ultraviolet disinfection.

The AWT will produce ultra-pure water which will then be blended with tertiary treated recycled water. The product water would then be distributed through the existing 100-mile South Bay Water Recycling pipeline system (the non-potable system). The blended water will be a much higher quality. It will also enable potential future recycled water use for non-potable landscape irrigation in sensitive areas of the groundwater basins while protecting groundwater resources. Enhanced recycled water quality will also promote other expanded industrial non-potable uses. The AWT will also demonstrate the capability and reliability of these 21st- century treatment technologies.

On September 24, 2007, the Board authorized staff to proceed with the engineering design and construction engineering support tasks in the current consultant agreement. The planning phase and the design are substantially completed and construction is anticipated in 2010. Environmental review required prior to going forward with the project was also underway.

In addition to receiving the ARRA federal funding, the district entered an agreement in December 2008 with the State Department of Water Resources through the Bay Area Clean Water Agencies, to receive an approximately $3M state grant to help pay for the AWT project.

The Planning Study Report for the AWT project identified and analyzed different alternatives to ensure the AWT facility will meet the project objectives; be most cost effective; and has the flexibility for future expansion if warranted. The Planning Study Report evaluated various capacity alternatives of the AWT facility; two different site locations, two different source waters, and three different sources of power.

The proposed project includes the following key elements for implementation for the AWT:

- The capacity of the AWT facility should have 10 million gallons per day (mgd) microfiltration, 8 mgd reverse osmosis, and 10 mgd ultraviolet disinfection,
- The AWT facility should be located adjacent to the existing Transmission Pump Station of the South Bay Water Recycling System on Zanker Road.
- Source water feeding the AWT facility should be the nitrified secondary treated water from the San Jose/Santa Clara Water Pollution Control Plant
- The electrical equipment should be connected to the existing 12KV power line along the perimeter of the project. This will enable the District to wheel clean power (majority are hydropower) through Power and Water Resource Pooling Authority or purchase power from PG&E.

SOUTH COUNTY RECYCLED WATER MASTER PLAN

The district is working with the Cities of Gilroy and Morgan Hill to expand the beneficial use of recycled water in South County. The South County Recycled Water Master Plan, which will be implemented in phases, is intended to expand the existing non-potable recycled water distribution system in Gilroy. In 2008, the existing system beneficially recycled 2,200 acre-feet of water for industrial and irrigation uses. The next project phase will expand the distribution system by approximately 5 miles of pipelines and increase pumping capacity.

The district is in contract with RECON to prepare CEQA and NEPA compliance documents. RECON and its sub-consultants have completed most of the technical studies and are ready to prepare the draft EIR. Due to the new CEQA requirement on analyzing the Greenhouse Gas impacts and AB 32, the district amended the contract to cover this work.

Water Recycling & Desalination

EDUCATION & OUTREACH

Some of the ways the water district conducted public education on recycled water included:

- A table top display used at public events depicting how tertiary-treated recycled water is produced, which explained how the technology used and the rigorous monitoring makes recycled water safe.
- A brochure and pamphlet produced and distributed by the district to the public at events to explain the safety and benefits of recycled water.
- Media outreach via press releases by the water district when new recycled water facilities come on-line.
- The water district's lead in hosting the bi-monthly water recycling retailers' subcommittee meetings to meet, discuss and resolve issues pertaining to the expansion of recycled water.
- The water district's water recycling information on its external website explaining the benefits of recycled water to the community.

NETWORKING WITH CITIES AND WASTEWATER TREATMENT PLANTS

The water district networks with area cities and wastewater treatment plants to ensure the costs of future water supply and sewage treatment are contained to provide the most efficient use of resources for the community. The water district also provides staff support for its Water Retailers Recycling Subcommittee, Agricultural Water Advisory Committee and Landscape Advisory Committee. Staff also track technical and regulatory developments that affect the production and use of recycled water, and participate in statewide recycling organizations and activities.

Water Recycling & Desalination

GRANTS & FUNDING

BAY AREA RECYCLED WATER COALITION

A Bay Area Regional partnership was formed in the 1990's to secure federal funding under Title XVI of the 1992 Reclamation Wastewater and Groundwater Study & Facilities Act (PL 102-575). Seventeen Bay Area water and wastewater agencies studied opportunities to use recycled treated wastewater for beneficial uses.

The water district submitted project funding requests through the federal America Recovery and Reinvestment Act (ARRA). Both recycled water projects that were authorized in 2008 were successful in receiving ARRA funding.

Valley Water, as a member of the Bay Area Recycled Water Coalition (BARWC), worked with federal representatives on the Consolidated Natural Resources Act of 2008.

The district received federal authorization for two projects through the Title XVI program. In particular, this Act authorized the South Bay Advanced Recycled Water Treatment Facility (AWT) and the South County Recycled Water Master Plan (Master Plan) implementation projects. Thereafter, the American Recovery and Reinvestment Act 2009 (ARRA) appropriated stimulus funding to Title XVI program administrated by the United States Bureau of Reclamation (Reclamation). In April 2009, together with BARWC agencies, the district submitted applications to Reclamation requesting ARRA funding for these two authorized projects. Reclamation awarded the district $8.25M and $4.35M from the ARRA funding for the AWT and the South County Recycled Water Master Plan projects respectively.

BAY AREA REGIONAL DESALINATION PROJECT

The four largest San Francisco Bay Area water suppliers (SCVWD, EBMUD, SFPUC, CCWD) have established a partnership to evaluate the feasibility of a regional desalination plant to provide water for 5.4 million residents to meet water supply reliability and emergency needs. The joint venture began in 2003, and the partnership completed the pre-feasibility work.

The study participants were recent joint recipients of $249,950 Proposition 50 funds and conducted an approximately $500,000 feasibility study. The four agencies also received almost $1 million towards the pilot phase of this project. The agencies were authorized in FY 07/08 to receive $4 million in funding for the future phases of this project from the Federal Water Resources Development Act.

Water Recycling & Desalination

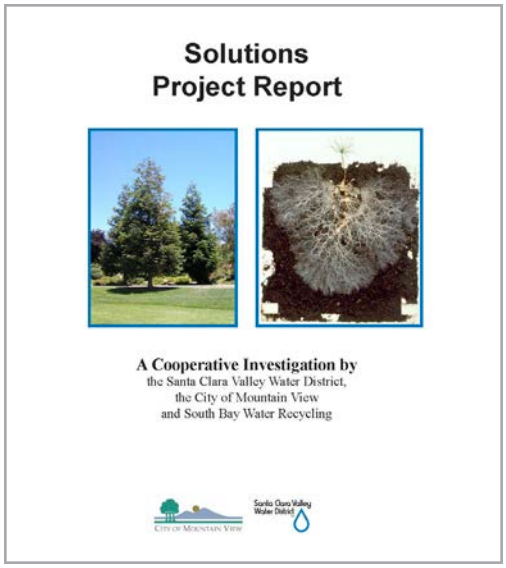
STUDY & RESEARCH

The water district governance policies call for the expansion of water recycling in Santa Clara County, while at the same time ensuring that groundwater basins are protected from threats of contamination. To fulfill these goals, the water district is working to identify new markets and uses for recycled water while also conducting research to evaluate the effects that existing and planned recycled water projects may have on groundwater quality. While recycled water is currently used for large landscape irrigation, agriculture, and some industrial processes, it may also have uses for environmental purposes, such as enhancing stream flows, reservoirs and wetlands. Advanced treated recycled water is under consideration for future groundwater recharge. Expanding recycled water applications will require increased monitoring of soil and groundwater quality, as well as advanced levels of treatment, depending on where and how recycled water is used.

Research will also investigate treatment methods to expand water recycling options and protect groundwater. Current research studies and recently completed studies are described below.

PALO ALTO/MOUNTAIN VIEW/SAN JOSE SOLUTIONS PROJECT

This project evaluated limits to the sustainable use of recycled water for landscape irrigation. Soils from throughout the county were tested at UC Davis against waters varying in sodium and total salt concentration to determine the effect of water quality on soil structure and, consequently, infiltration rate. The project also engaged researchers in the horticulture department at UC Davis to determine the salinity tolerance of Coast Redwood. The susceptibility of the important soils of the County to structural degradation from recycled water irrigation was determined. Coast redwood was found to be highly sensitive to salinity, and a set of best management practices were suggested for the sites investigated during the course of the project. The project results have been published on the water district's website.



THE FEASIBILITY OF BRACKISH GROUNDWATER REUSE

This project investigated the feasibility of implementing brackish groundwater reuse in Santa Clara County to supplement expected shortages in future supplies of potable water. It studied the potential of identifying brackish water as a new source of supply, and it attempted to demonstrate the technical and economic feasibility of treating brackish groundwater with state-of-the-art technology to a quality suitable for beneficial uses. This is work with Stanford University using a grant from the California Department of Water Resources, provided through the Metropolitan Water District of Southern California. The invoicing for grant payments was completed in 2009.

STUDY OF GROUNDWATER IMPACTS FROM THE EXPANDED USE OF RECYCLED WATER FOR IRRIGATION

This study began in July 2007 and is primarily conducted by the district's Groundwater Management Unit with input from the Water Use Efficiency Unit. The study includes conduct a year-long soil column pilot study that evaluates the attenuation of a variety of water quality constituents through unsaturated and saturated soil columns packed with native soils and loaded with tertiary recycled water. The study also includes groundwater and soil pore water quality monitoring at a site that recently began using recycled water for irrigation. The goal of the study is to develop water quality standards and identify Best Management Practices related to the use of recycled water for irrigation to minimize groundwater degradation. The study will be completed in late 2010.

Santa Clara Valley Water District SM

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