

ATTACHMENT 2: DROUGHT IMPACTS

Drought Impacts

The Pajaro River Watershed IRWM region is experiencing severe drought impacts. As shown in the adjacent US Drought Monitor map (Figure 1), the Pajaro River Watershed IRWM region is located in the hardest hit area of the State. **The U.S. Drought Monitor has classified the region's drought condition as D4: Exceptional drought – the highest drought classification possible.**

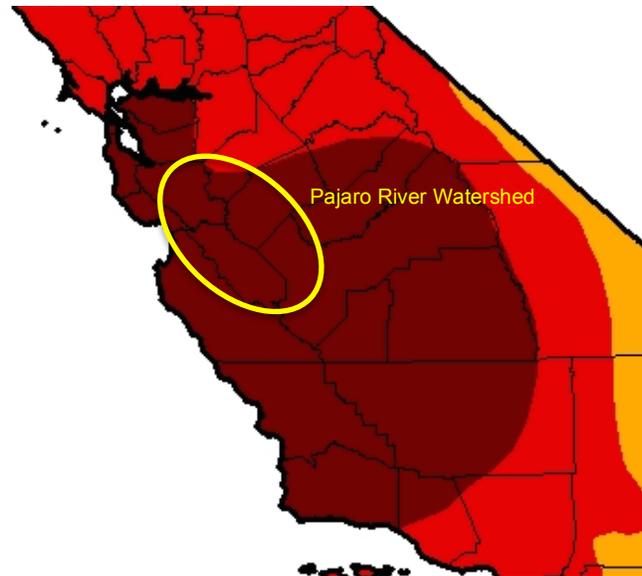


FIGURE 1: US DROUGHT MONITOR MAP

As described below, the Pajaro River Watershed IRWM region has encountered or will likely encounter the following five drought impacts by September 30, 2014:

- ✓ At risk of not meeting existing drinking water demands
- ✓ At risk of not meeting existing agricultural water demands
- ✓ At risk of not meeting ecosystem water demands
- ✓ Drinking water MCL violations
- ✓ Groundwater basin overdraft

The following section provides a description of the regional water management impacts due to the 2014 drought and any anticipated or projected impacts if drought conditions continue into 2015. Focus is placed on the regions where projects are being proposed.

✓ The Pajaro River Watershed is currently at risk of not meeting existing drinking water demands.

Southern Santa Clara County overlies the Llagas Groundwater Subbasin. All the drinking water demands for the subbasin are met with groundwater. Groundwater supplies are maintained through natural groundwater recharge, managed aquifer recharge with local and imported water supplies, and in-lieu recharge from deliveries of surface water supplies for irrigation demands and recycled water use. Santa Clara Valley Water District (SCVWD) has a zero percent allocation for agriculture and a 50 percent allocation for M&I from the Central Valley Project (CVP). Local surface water supplies are also limited. Consequently, SCVWD has had to cut back managed groundwater recharge operations. In order to conserve the limited supplies of imported water for drinking water plants in northern Santa Clara, all releases of imported water to creeks and ponds for groundwater recharge were discontinued at the end of January 2014, with the exception of releases to Madrone Channel and upper Coyote Creek, both of which provide recharge for the Llagas Groundwater Subbasin and help meet the City of Morgan Hill's immediate water supply needs. These releases of imported water are expected to continue, but may be further reduced depending on water supply conditions. Year to date recharge in the subbasin is 39% of the five-year average and groundwater levels are 30 feet lower than the five-year average. If water supply conditions deteriorate further in 2014 or drought conditions continue into 2015, groundwater recharge could be further reduced and groundwater levels could drop to the point where the City of Morgan Hill's groundwater production capacity is insufficient to meet drinking water demands. Lower groundwater levels also affect the ability of West San Martin Water Works, San Martin County Water District, several mutual water companies, and hundreds of private well owners to meet their existing drinking water demands.

90% of the City of Watsonville drinking water demands are supplied by twelve groundwater wells extracting from the Pajaro Valley basin. Years of severe to exceptional drought have exacerbated a condition of groundwater overdraft in the Pajaro Valley. Water levels in the groundwater basin are dropping, as a result of years of deficit groundwater production (extractions with little to no recharge), causing concentrations of salts and nutrients to increase and threatening municipal, rural residential and agricultural water supplies. Depressed water surface elevations are shown in Figure 2. These conditions will continue to worsen if the drought continues into 2015. Additionally, the City is faced with a stringent hexavalent chromium regulation that will be implemented in July 2014. Eight of the City's wells are impacted by hexavalent chromium and exceed the new 10ppb MCL. Until treatment is implemented the impacted wells will not meet primary drinking water standards. Coupled with the drought impacts, the City is currently at risk of not meeting drinking water demands.

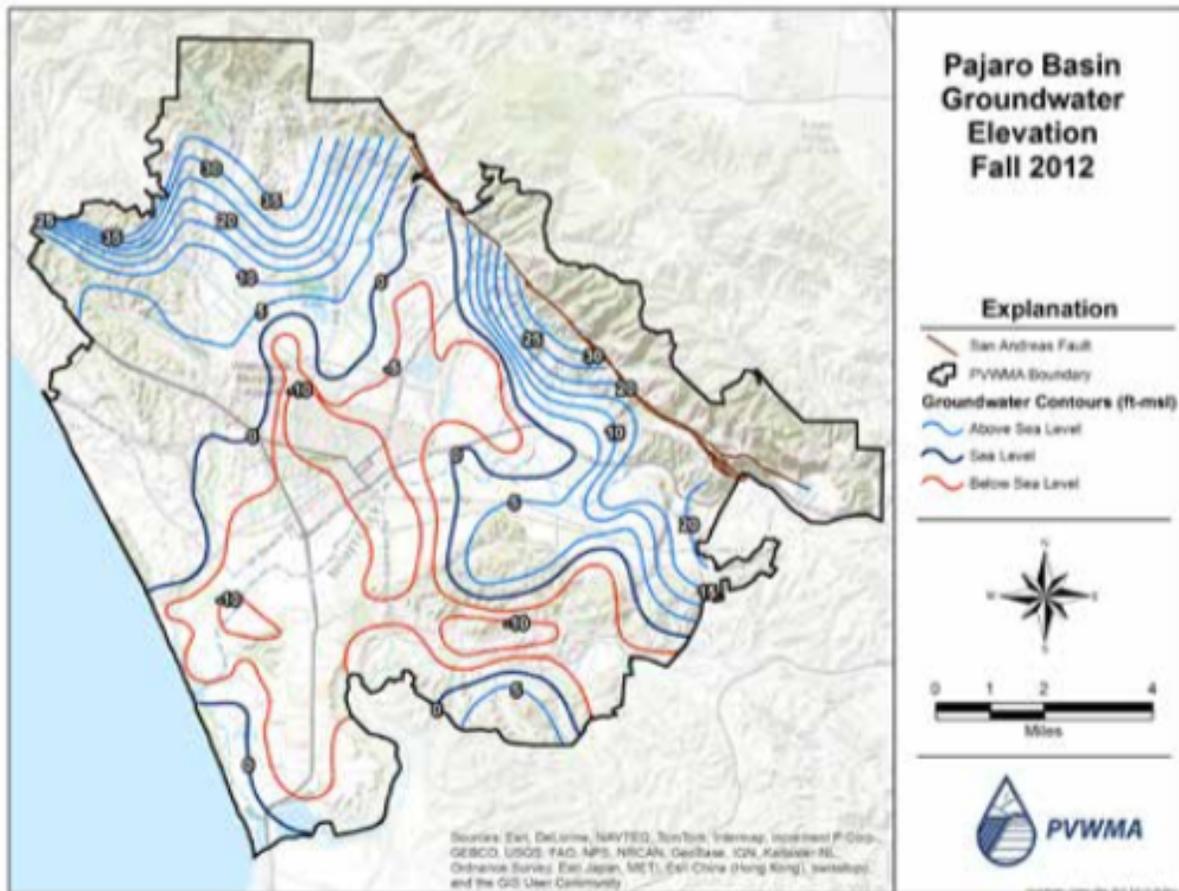


FIGURE 2: PAJARO BASIN GROUNDWATER ELEVATIONS

✓ The Pajaro River Watershed is currently at risk of not meet existing agricultural water demands.

As previously stated, years of severe drought have exacerbated a condition of groundwater overdraft in the Pajaro Valley, causing depressed groundwater surface elevations and leading to increased seawater intrusion in the Pajaro Valley coastal area.

In the Pajaro Valley, with a population of approximately 70,000 people and 30,000 cropped acres, agriculture is nearly a \$1 billion a year industry, producing high value commodity crops including fruits, vegetables and flowers (Santa Cruz County Ag Commissioner). The source of irrigation supply is almost entirely groundwater. Due to the lack of rainfall, not only is the Pajaro Valley not receiving much needed groundwater recharge, but also growers have had to pump groundwater to replace the irrigation needs

that are met by rainfall in many years. In recent years with average rainfall, water use in the Valley is about 50,000 acre-feet. In 2013, when the Valley received only 3.5 inches of rainfall, water use increased to 61,600 acre-feet. The demand is met mostly by additional groundwater production from an already stressed groundwater basin.

As noted above, SCVWD has a zero agricultural allocation from the CVP and very limited local surface water supplies. SCVWD is in the process of discontinuing deliveries to 72 water users that have SCVWD permits for delivery of untreated surface water from raw water pipelines, which includes some agricultural customers. While customers put in place alternate sources of supply, the District is delivering 80 percent of 2013 use. Agricultural water users are also at risk due to declining groundwater levels. Agricultural pumping accounts for about half the pumping in the Llagas Subbasin. As noted above, groundwater levels in the Llagas Subbasin are about 30 feet lower than the 5-year average. Agricultural wells are typically shallower than municipal wells and are greater risk going dry. SCVWD is currently at risk of not meeting agricultural demands and these conditions will continue if there is another drought year with zero CVP agricultural allocations.

The 2014 Drought has heavily impacted San Benito County, particularly the agricultural community and its supporting industries. However, the effects have been wide spread and are expected to worsen if the drought continues into 2015. San Benito County is heavily dependent on imported surface water from the CVP to provide a high quality source of water for the agricultural users in the valley. Prior to the implementation of the San Felipe Unit of the CVP in the late 1970s to import surface water, the agricultural users in the county were dependent on groundwater from the Gilroy-Hollister groundwater basin, which underlies the broad valley that extends from the northern part of San Benito County into the southern part of Santa Clara County. Prior to the importation of CVP water, the groundwater basin was in severe overdraft resulting in land subsidence in some areas of the valley. Groundwater levels have largely recovered with the importation of CVP water and the corresponding reduction in groundwater pumping.

The SBCWD has a contract entitlement for 35,550 AFY of imported CVP water for agricultural use. During the 10 year period between 2003 and 2013, the average CVP use was approximately 18,032 AFY, while the average groundwater use was approximately 23,060¹. The SBCWD received a 0 percent allocation for agricultural CVP water in 2014. Although the SBCWD has some limited carryover surface water storage in San Luis Reservoir and San Justo Reservoir coming in to 2014, that amounted to only about 9,000 ac-ft, or less than half what might be supplied during a typical year. As a result, the SBCWD is not able to meet its existing agricultural water demands for 2014.

The consequences of the limited agricultural supply are multiple. The SBCWD estimates that approximately 7,500 to 10,000 acres of land will be fallowed during 2014 or irrigated with lower quality groundwater which has high levels of total dissolved solids (TDS) and boron. Using the lower quality groundwater with high TDS and boron concentrations can result in salt buildup in the soil, lower crop yields, damage to permanent crops (e.g., stone fruit trees), and ultimately limits farmers to growing lower value crops that can handle higher salt loads.

✓ The Pajaro River Watershed is currently at risk of not meeting ecosystem water demands.

Streams that are normally flowing this time of year are dry (Figure 3), threatening protected fish and wildlife habitat, most importantly *Oncorhynchus mykiss* (steelhead trout). Corralitos Creek currently provides 10% of Watsonville's drinking water. Currently, the City can only utilize the plant during summer months when there is good water quality (low turbidity and low suspended solids). Limited creek flows and competing uses have put the region currently at risk of meeting ecosystem demands. If the drought continues and creeks remain dry, ecosystem impacts will be exacerbated.

In the upper watershed, releases from Uvas and Chesbro reservoirs are providing limited flows in Uvas and Llagas Creeks as of May 2014, but drying creeks are expected as the water in the reservoirs is exhausted this summer. If dry conditions continue into 2015, it is likely that there would be continued dry backs in local creeks.

¹ Annual Groundwater Management Plan, Todd Engineers, 12/10/2013.

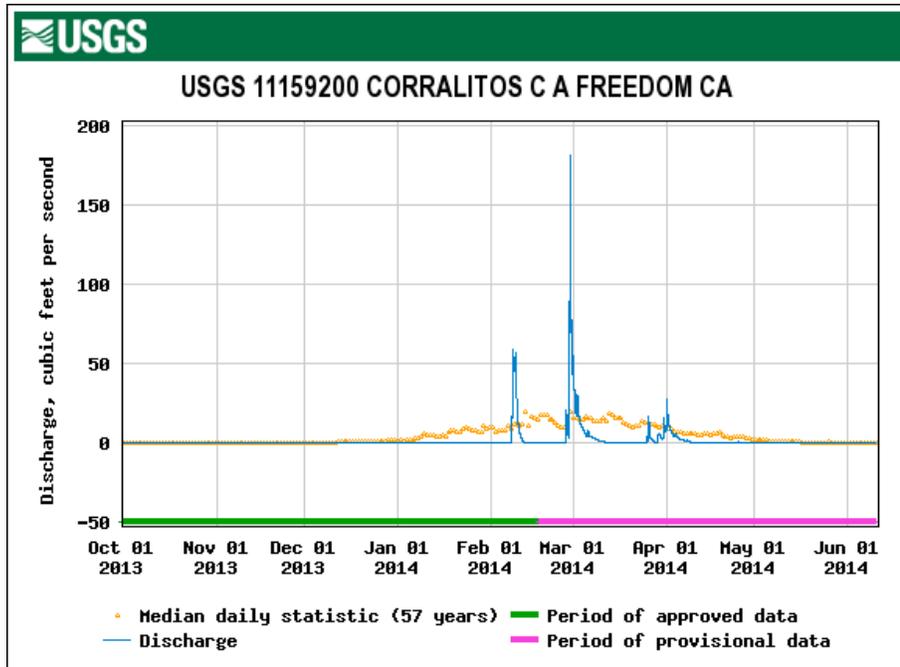


FIGURE 3: CORRALITOS CREEK STREAM GAUGE

✓ *The Pajaro River Watershed will experience drinking water MCL violations by September 30, 2014.*

As previously noted, the City of Watsonville is faced with a stringent hexavalent chromium regulation that will be implemented in **July 2014**. The City of Watsonville utilizes 12 production wells, all of which are impacted by hexavalent chromium and six of which will exceed the new 10ppb MCL (Figure 4). 50% of the City's water supply will be in violation of the new MCL, and will become unavailable once the MCL is implemented. Until treatment is implemented, the impacted wells will not meet primary drinking water standards leaving the City vulnerable to drinking water MCL violations. The City will be dependent on the remaining six wells and the Corralitos Filter Plant to meet the critical water needs of City residents, both of which are in jeopardy due to the drought.

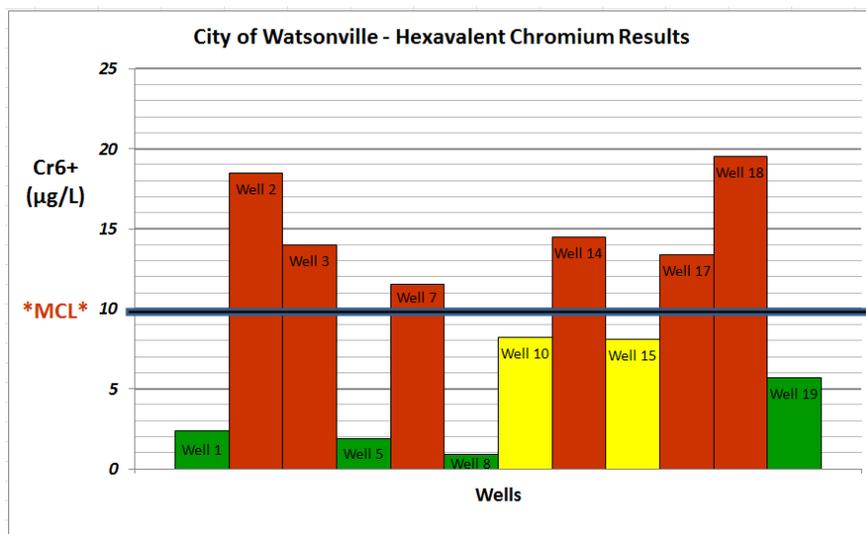


Figure 4. Hexavalent Chromium Levels

✓ **The Pajaro River Watershed is currently experiencing groundwater basin overdraft.**

A survey of PVWMA wells, conducted in January 2014, indicated that groundwater levels were on average 6 feet lower than normal, with water levels in the coastal monitoring wells about 10-15 feet below sea level at a time when they are usually less than 5 feet below sea level. This type of storage depletion, when located in a coastal basin, induces seawater intrusion. Despite advancements in developing a supplemental delivered water supply to the most heavily impacted coastal area, seawater intrusion continues to contaminate the Pajaro Valley's primary source of water and is threatening the local agricultural economy at a rate of approximately 1,900 acre-feet per year. Figure 5 shows the seawater intrusion (SWI) front moving inland through time.

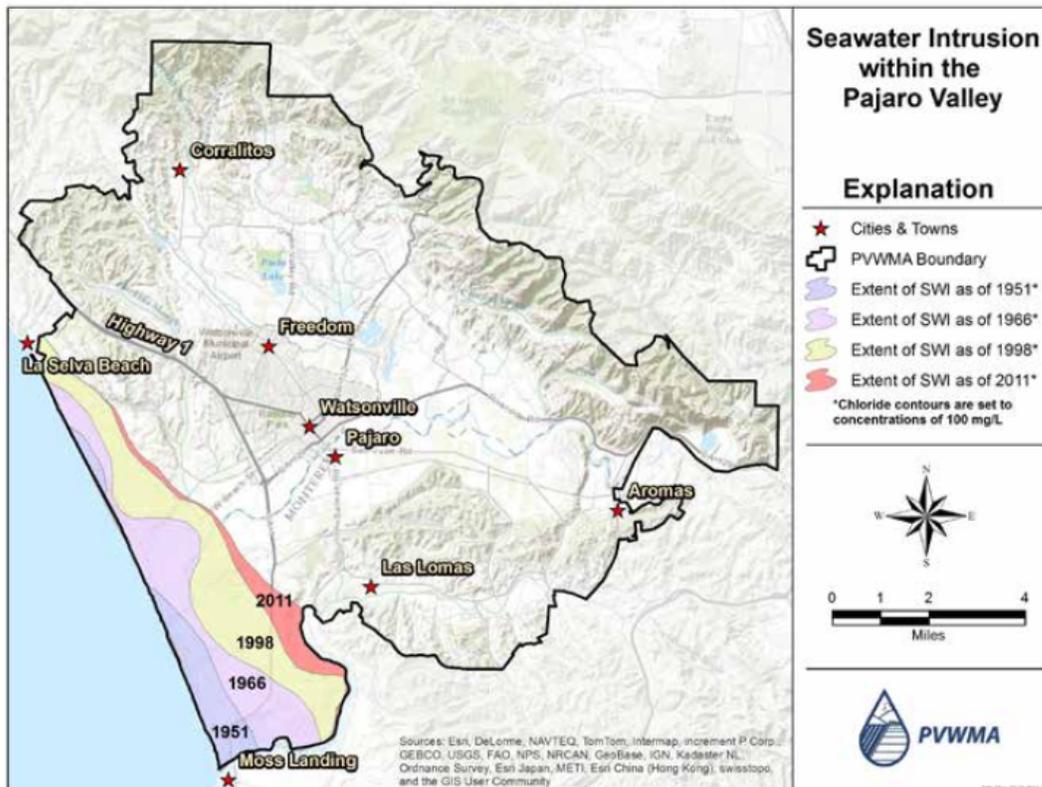


FIGURE 5: PAJARO VALLEY SEAWATER INTRUSION

In the upper watershed (SCVWD), the year-to-date managed recharge estimate is 3,700 acre-feet, or 39% of the five-year average at the end of May 2014. The year-to-date groundwater pumping estimate is 15,400 acre-feet, or 126% of the five-year average. The groundwater level in Llagas Subbasin (in the index well at San Martin) is about 22 feet lower than last year and 30 feet lower than the five-year average. The Cities of Morgan Hill and Gilroy and the County of Santa Clara have passed ordinances aimed at achieving 20 percent water use reductions. However, if the water use reductions are not achieved and drought conditions continue into 2015, the Llagas Subbasin could enter overdraft conditions.

In the SBCWD area, the reduction in imported surface water and heavier reliance on groundwater will result in a net overdraft for 2014. The SBCWD's 2013 Annual Groundwater Report found that groundwater levels were 10-20 feet lower in some areas of the basin in October 2013 than they were in October 2012 due to increased groundwater pumping and widespread declines in groundwater elevation. It is notable that in 2012, approximately 19,855 ac-ft of groundwater was pumped and used in the basin and that increased to over 31,000 ac-ft in 2013. Based on the 0 percent allocation of imported CVP water and limited carryover storage, the anticipated demand for groundwater pumping is expected to be even higher in 2014, resulting in a continued reduction in the groundwater elevation.

Water Conservation Measures

All four project proponents included in the Pajaro River Watershed Emergency Drought Program have implemented mandatory or voluntary 20% water conservation measures as described below.

Project 1: Delivered Water Enhancement and Drought Response Irrigation Program

Project Sponsor: Pajaro Valley Water Management Agency

Water Conservation Target: 20%

The heightened drought response measures that have been promptly initiated by the PVWMA advanced the ongoing conservation measures that were already underway in response to the previous two low rainfall years, and the long-term groundwater overdraft conditions. The summary below describes the drought response conservation measures that are currently in place, and those in development for the near future.

PVWMA adoption of a drought emergency declaration and a voluntary 20% reduction in water use

In January 2014, the PVWMA Board of Directors adopted Resolution 2014-03 recognizing the State of California Drought Declaration and requesting a voluntary 20% water use reduction by residential, industrial and agricultural users (Exhibit A). The Board also approved the development of a Drought Response Program that accelerated the implementation of conservation programs described in the Basin Management Plan Update (PVWMA 2014). A direct media campaign to increase water use awareness, guided educational tours for over 1,200 students per year at the Recycled Water Facility, development of a rebate program for laundry to landscape graywater conversions, and irrigation efficiency assessments are all components of the conservation program.

Conservation Chapter of the Basin Management Plan Update

As part of the broader Basin Management Plan Update (BMP) (Exhibit B), a goal of 5,000 acre-feet per year of conservation has been identified and accounts for about 40% of the proposed solution to the long-term problems of groundwater overdraft and seawater intrusion in the Pajaro Valley aquifers. Because agricultural uses account for about 85% of total water use, the goal identified in the BMP Conservation chapter is to be primarily accomplished through agricultural irrigation efficiency, and through outreach, technical and financial assistance programs that maximize the accessibility of conservation resources for growers. This strategy was drafted collectively over a three-year period by stakeholders, consultants, and partners, and was finalized and adopted by the PVWMA Board of Directors in April 2014. The BMP Conservation Program will be formally implemented and funded pending a new rate structure, which, if successful, would become effective in fall of 2015.

Previous and ongoing conservation measures

In response to the previous two dry winters, in 2013 and 2014 the PVWMA Board of Directors declared May as Water Awareness Month. In doing so, the Board showed Agency support for local, regional and statewide efforts to encourage all residents to become water aware and understand the connection between their individual water use and the broader community's groundwater supplies, which they ultimately rely upon.

In July 2013, PVWMA initiated a water conservation program that focuses on outreach and education to the agricultural community, which has the most potential to conserve water on a large scale. The program is coordinated by the Ag Water Quality Coalition and has built partnerships with the National Resources Conservation Service, the Resource Conservation Districts of both Santa Cruz County and Monterey County, UC Cooperative Extension, Community Water Dialogue, and Ecology Action to leverage resources, align program goals, and maximize effectiveness of irrigation efficiency and conservation resources. As a direct response to the drought declaration, PVWMA directed the conservation program partners to accelerate implementation of a Conservation Pilot BMP program, to begin implementation in July 2014. Through engagement with key stakeholder groups and technical experts, programs are in development that reflect the needs and interests of the agricultural community and that have technical merit.

The Conservation Program accomplishments and areas of development include the following:

- Expanding grower outreach and accessibility to a range of water management resources including irrigation distribution uniformity analyses, implementation assistance, access to a range of irrigation scheduling tools, groundwater recharge projects, and other water management practices that maximize efficiencies,
- Coordinating with irrigation efficiency programs in the area to align goals with those identified in the BMP,
- Hosting bilingual grower & irrigator workshops and field demonstration sites featuring experts from the U.C. Ag Extension, U.C. Davis, the Resource Conservation District, the Natural Resources Conservation Service and local growers with success stories,
- Participating in and supporting the Community Water Dialogue, Strawberry Commission and other industry-driven conservation outreach initiatives,
- Implementing rural residential incentive programs, including expanded graywater use programs, high efficiency toilet retrofits, low flow showerheads and lawn replacement programs,
- Developing web-based and hardcopy agricultural and rural residential toolkits,
- Launching a comprehensive media campaign utilizing the Agency's website, TV, radio public service announcements and print to expand awareness of our water resources within the community, and
- Cooperative outreach with the City of Watsonville by co-leading Recycled Water Facility tours to roughly 1,000 students a year.

Project 2: South County Recycled Water Improvements

Project Sponsor: Santa Clara Valley Water District

Water Conservation Target: 20%

The Santa Clara Valley Water District (wholesaler) Board of Directors adopted Resolution 14-11 on February 25, 2014 calling for a water use reduction target equal to 20% of 2013 water use through December 2014 and recommending that retail water agencies, local municipalities, and the County of Santa Clara implement mandatory measures needed to achieve the 20% water use reduction target (Exhibit C). SCVWD has also reduced treated water deliveries in northern Santa Clara County (in the San Francisco Bay Region) by 20%, which helps preserve supplies for the entire county since the SCVWD water supply system is integrated. SCVWD has also discontinued or reduced by 20% its delivery of untreated surface water (Exhibit D, May Update on 2014 Water Supply and Drought Response, page 3).

SCVWD also increased its water conservation rebates for several key programs on April 22, 2014. The SCVWD Board of Directors authorized as much as \$1 million in additional funds to increase rebate amounts for conservation programs in response to California's extraordinary drought. The increases in rebate amounts are temporary, to provide a greater incentive for residents and businesses to act now to implement permanent water conservation changes (<http://www.valleywater.org/EkContent.aspx?id=10989>). Rebate amounts for several key programs have doubled, while others have increased significantly:

- Landscape conversions rebates have doubled from \$1 per square foot to \$2 per square foot. This amount is even higher in Morgan Hill, which is a cost-share partner.
- SCVWD's "Laundry to Landscape" graywater rebate program has been doubled to \$200 per system.
- Several irrigation hardware rebates have doubled. Customers may receive up to \$1,000 for landscape meters, flow sensors and hydrometers.
- Weather based irrigation controllers are now eligible for a rebate of up to \$1,000 per controller that serves 13 to 24 stations and \$2,000 per controller that serves 25 or more stations.
- Businesses that implement large-scale projects that reduce water use can receive a rebate of \$8 per 100 cubic feet of water (CCF) saved per year, or 50% of the project cost, whichever is less. That is double the previous rebate amount.
- Connectionless commercial food steamers can earn a rebate up to \$1,000 per compartment, up from \$485.

- Rebates for commercial clothes washers can qualify for a rebate up to \$800 per washer, doubling the previous amount.

Other SCVWD water conservation programs include submeter rebates for mobile home parks and condominium complexes, residential high efficiency clothes water rebates, water-wise house calls, high efficiency toilet rebates, free low-flow shower heads and more, and direct install commercial high-efficiency toilets and urinal flush valves.

The SCVWD also approved \$1.25 million for expanded public outreach about the water conservation programs during summer 2014.

As part of its long-term water supply plan, SCVWD has more than 20 water conservation programs to fulfill a long term goal of saving 98,800 acre-feet of water by the year 2030, when water conservation efforts are projected to account for approximately 20 percent of the county's total water supply. Last fiscal year, the district's and community's efforts saved 56,000 acre-feet of water. Since the district began investing in water conservation in 1992, water use in Santa Clara County has remained relatively flat despite a 25 percent increase in population over the same time period.

On April 2, 2014, the City of Morgan Hill (retailer) declared a Level 1 Supply Shortage to implement the mandatory measures needed to achieve the 20% reduction in water use called for by SCVWD.

On May 20, 2014, the County of Santa Clara Board of Supervisors adopted a resolution urging all residents and businesses to immediately adopt water conservation practices to achieve a minimum 20% reduction in water usage.

On June 16, 2014, the Gilroy City Council (retailer) directed staff to prepare an ordinance implementing certain restrictions and other measures related to water use in order to achieve the 20% reduction in water use called for by SCVWD.

If dry conditions continue into 2015 and/or water use reductions are not achieved in 2014, the District could fall to Stage 5 (Emergency) of its Water Shortage Contingency Plan, which would require water use reductions of up to 50%. SCVWD would continue to work with retailers and cities to enact ordinances and water use restrictions and encourage retailers and cities to enforce their plans, which could include fines for repeated violations. SCVWD would further expand outreach efforts and open a drought information center.

Project 3: Expanded Recycled Water Use Project
Project Sponsor: San Benito County Water District
Water Conservation Target: 25%

Shortly after the passage of the Water Conservation Act of 2009 (SB7-x), the water conservation agency that represents the SBCWD went in to action to reduce water usage 20% by the year 2020 in San Benito County. The Water Resources Association of San Benito County (WRASBC) represents the SBCWD, Sunnyslope County Water District (Sunnyslope), the City of Hollister and the City of San Juan Bautista for all their water conservation and water resource protection programs. An outreach campaign was developed to bring water awareness and the need to be efficient with this resource to the forefront. Bill inserts, newspaper ads, workshops, public speaking engagements, school programs and videos were produced to support this effort. (See: http://www.youtube.com/watch?v=C7_8nAoCLPU)

All the utilities the WRASBC represent indicate that the interim target of a 10% reduction by 2015 has already been met or surpassed. Sunnyslope has surpassed the interim target by accomplishing an 18.25% reduction of water use in the last year, as documented in the graph in Exhibit E.

In January 2014, shortly after Governor Brown declared a water emergency for the state, the SBCWD followed suit. Resolution 2014-02 declared a Water Shortage Emergency in San Benito County and the SBCWD implemented their Water Shortage Contingency Plan – Stage 1 (Exhibit F). This plan was

developed in conjunction with the City of Hollister and the Sunnyslope. The Plan (Stage 1) calls for a 15% voluntary reduction on top of what was called for by the passage of SB7-x. The SBCWD also enacted Interim Overuse Policies Applicable to Agricultural and M&I San Felipe Customers (Central Valley Project water).

The WRASBC responded to the emergency by doubling their outreach efforts and conducted workshops in the winter and spring for both agricultural and residential customers on how to be more water efficient with irrigation water. The WRASBC has increased their focus to reduce water usage in residential landscapes since over 50% of residential water use is dedicated to landscape irrigation. Free Water-Wise Landscape Plans are available along with water efficient landscape irrigation hardware rebates. The WRASBC also conducts free landscape irrigation evaluations and develops scheduling times for those customers that need assistance. A new Turf Removal Program will be introduced in July 2014 that will encourage people to remove turf and install native or drought tolerant plants in the rehabilitated area. The WRASBC will be out at the local Farmer's Market in the City of Hollister several times this summer and will host a booth at the San Benito County Fair at the beginning of October to encourage the planting of drought tolerant and/or native California plants that require much less water than turf or other high water using plants. A workshop will follow the fair and will be held at a local nursery that stocks native and low water-use plants.

All the agencies represented by the WRASBC have seen further reductions with the stepped-up activities of the WRASBC. **Combining the 10% reduction to meet the provisions of SB7-x with the new goals to reduce usage another 15%, it is anticipated that a 25% reduction in water use will be achieved soon.** If the drought persist through the fall/winter, the SBCWD along with the City of Hollister and Sunnyslope will review the Water Shortage Contingency Plan and decide which Stage to enact in response to a prolonged drought. The agencies have developed a four-stage rationing plan to follow during declared water shortages. The rationing plan includes voluntary and mandatory rationing, depending on the severity and anticipated duration of the water supply shortage.

As water purveyors, the District, City, and Sunnyslope must provide the minimum health and safety water needs of the community at all times. The water shortage response is designed to provide a minimum of 50 percent of normal supply during a severe or extended water shortage. The rationing program triggering levels shown below were established to ensure that this goal is met.

Rationing stages may be triggered by a shortage in one water source or a combination of sources. Although an actual shortage may occur at any time during the year, a shortage will usually be forecasted by the SBCWD by mid-spring each year. If it appears that the area faces a dry year, the SBCWD will begin contacting the agricultural community in March, so that individual farmers can minimize potential financial impacts. The District will also notify the City and Sunnyslope, as well as its own M&I customers, to begin the process of water reductions appropriate to a particular shortage stage.

The main water sources are groundwater and imported water. Rationing stages may be triggered by a supply shortage or by contamination in one source or a combination of sources. The specific criteria for triggering the Hollister area's rationing stages are shown below in the table below from the Hollister Urban Area Water Management Plan 2010:

Shortage Condition	Stage	Customer Reduction Goal	Type of Rationing Program
Up to 15%	I	15%	Voluntary
15 – 25%	II	25%	Mandatory*
25 - 35%	III	35%	Mandatory*
35 - 50%	IV	50% or >	Mandatory*

* For those customers with pumps in the ground and overlying water rights, compliance with any rationing program mandated by local water agencies would likely be voluntary.

Project 4: Corralitos Creek Water Supply and Fisheries Enhancement
Project Sponsor: City of Watsonville
Water Conservation Target: 20%

In support of Governor Brown's declaration of a drought emergency, the City of Watsonville adopted Resolution No. 12-14 CM calling for a voluntary 20% reduction in water use (Exhibit G). This resolution has been in effect since January 28, 2014. In addition, the City of Watsonville has been actively implementing a water conservation program for nearly two decades. This program includes:

- Outreach through educational campaigns
- Water conservation exhibit at the Nature Center which is visited annually by 7000 local Spanish speaking residents
- Lead agency in Earth Day events. Concentration on water conservation where staff provides indoor and outdoor guidelines for water conservation
- Coordination of a grey water landscape event
- The City offers free water audits for customers upon request
- Free plumbing accessories are offered to customers to help reduce and conserve water

If drought conditions continue throughout 2015, the City of Watsonville will use the action levels outlined in the Urban Water Management Plan as a guide for further water conservation measures. These actions include the following:

- Reductions in consumption when the differential between actual or predicted supply and the theoretical maximum per day requires a reduction of 17-20%
- Reduce from 98 gallons/day per person to 94 gallons/day per person
- Public outreach messages in restaurants, restrooms, and other public places
- Expansion of irrigation conservation message
- Cease water used in training exercises

If drought conditions continue beyond 2015, the City will then begin implementing Level Three measures which include:

- Continuance of the above actions
- Require reduction of 21-22%
- Stop use of fountains
- Prohibit water using air conditioners or coolers
- Reduce residential consumption to 91 gallons/day per person
- Mandatory promotion of low-flow fixtures
- Mandatory school program
- Mandatory irrigation program

EXHIBIT A: PVWMA WATER CONSERVATION RESOLUTION



**Resolution 2014-03
A Resolution of the Board of Directors of the
Pajaro Valley Water Management Agency**

**Recognizing State of California Drought Declaration
and Requesting 20% Water Use Reduction**

WHEREAS, Santa Cruz County is experiencing the third consecutive year of below normal precipitation, with 2013 the driest year on record; and

WHEREAS, the Agency's groundwater levels are declining in an already overdrafted basin; and

WHEREAS, extremely dry conditions have persisted since 2012 and may continue beyond this year and more regularly into the future, based on scientific projections of the impact of climate change upon rainfall patterns, runoff rates and recharge volumes in Santa Cruz County, requiring both short and long term approaches to better manage our water resources; and

WHEREAS, on January 17, 2014, Governor Brown declared a State of Emergency to exist in California due to prolonged drought conditions; and

WHEREAS, the Governor has called on all Californians to voluntarily reduce their water usage 20 percent, to ease the effects of the water shortage on agriculture, communities, and fish and wildlife.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Pajaro Valley Water Management Agency that all Agency customers should be aware of the drought and take actions to reduce ground water usage by at least 20 percent.

PASSED AND ADOPTED by the Pajaro Valley Water Management Agency, County of Santa Cruz, State of California, the 19th day of February, 2014, by the following vote:

AYES: Imazio, Cavanaugh, Lynn, Newel, Faurot, Zamora
NOES: None
ABSENT: Persoff
ABSTAIN: None

Rosemarie Imazio, Chair

ATTEST:
Laura R. Taay, Secretary

EXHIBIT B: PVWMA BMP CONSERVATION CHAPTER

INTRODUCTION

Agricultural water conservation plays a major role in this Basin Management Plan (BMP) Update, providing over 40 percent [5,000 acre feet per year (AFY)] of the approximately 12,000 AFY estimated yield or reduction in pumping to be achieved by the seven projects and programs that constitute the BMP Update. By reducing demand, a conservation program may eliminate the need for one or more expensive capital improvement water supply projects. Conservation also provides water quality and financial benefits to growers. Increased efficiency reduces excess watering, which, in turn, reduces the amount of agricultural runoff entering the Basin's surface and ground water. Increased efficiency also reduces the cost of pumping water and the loss of fertilizer and other amendments that are moved out of the root zone due to overwatering.

Approximately 80% of total water use in the basin is attributed to agriculture. Of the remaining uses, the City of Watsonville represents about 13 percent, rural residential about 3 percent, non-agricultural metered wells account for about 2 percent and other municipal uses about 2 percent (PVWMA data from 2006-2010, data on delivered water from 2011). The City of Watsonville has an active conservation plan directed at its urban users. **The conservation component of the BMP Update therefore, focuses on agriculture, where most water is used and the potential for savings is greatest.** This section, which was written by the Central Coast Agricultural Water Quality Coalition, provides an overview of previous conservation studies and efforts and the approach that will be taken as part of the BMP Update to identify and implement an effective conservation program within PVWMA's service area.

PAST AND CURRENT CONSERVATION EFFORTS

Previous Studies

Water conservation is not a new concept in the Pajaro Basin. Numerous organizations and agencies have studied the overdraft problem and undertaken efforts to implement workable and effective conservation

programs as part of the basin management solution. These efforts provide the basis for the BMP Update conservation plan and PVWMA will continue to work with these groups to develop and implement responsive conservation strategies.

Previous studies and plans that have examined opportunities for agricultural water conservation in the Basin include:

- Water Conservation 2000, prepared for PVWMA by CH2MHill (2000);
- PVWMA's 2002 Basin Management Plan;
- The 2010 City of Watsonville Urban Water Management Plan (UWMP);
- Approaches to Water Conservation: Pajaro Valley, by Catherine Carlton and Tiffani Jarnigan (2011).

Ongoing Conservation Efforts

Significant agricultural water conservation efforts are ongoing in the Pajaro Basin including:

- California Irrigation Management Information Systems.
- CropManage Program.
- On-Farm Irrigation Efficiency support.
- Grower education and outreach.

Among the actions PVWMA has undertaken to promote conservation, consistent with the above plans, was the installation of two California Irrigation Management Information Systems (CIMIS) weather stations; a third is to be installed in the near future. CIMIS collects weather data and uses this data to calculate the amount of evaporation from the soil and the amount of water used by crops (transpiration). The resulting factor, evapotranspiration (ET), can be used by growers to calculate the efficient use of irrigation water. CIMIS information can be accessed independently and free of charge through the CIMIS website www.cimis.water.ca.gov. The website provides information from the station nearest to the farm's location as well as access to ET information generated by satellite imagery through the website's spatial CIMIS program. Growers can also request daily, weekly and seasonal email updates of CIMIS data.

Other agencies and companies are also providing support to assist growers in calculating crop water and fertilizer needs. UC Cooperative Extension (UCCE) offers the CropManage program, which uses CIMIS, and a UCCE-developed program to calculate ET and crop needs on a customized basis. Similarly, Hortau Inc. offers a Wireless Irrigation Network (WIN) that builds on CIMIS by adding wireless soil tension meters and a network of wireless transmitters to provide real-time irrigation information. Several local growers are currently employing these systems.

Several companies make hand-held, portable soil moisture meters that can be used by growers as an alternative to using a wireless system. While less precise than permanently installed systems, these meters can provide a low cost, simple indication of soil moisture. They are particularly useful to check that all parts of the field are getting a relatively uniform amount of irrigation. They are also useful for the irrigation person or farm manager who wants to check if his system is working as anticipated.

The Resource Conservation District (RCD) of Santa Cruz County, the RCD of Monterey County, and the Central Coast Agricultural Water Quality Coalition all provide on-farm irrigation efficiency evaluations through a United States Department of Agriculture (USDA) grant that draws to a close in December of 2012.

Three entities, the RCD of Santa Cruz County, Sustainable Conservation (a state-wide non-profit supporting economically sustainable solutions to ecological challenges), and a local grower/shipper are working together to develop stakeholder-supported solutions for water supply and water quality issues. This loosely-associated group, called the Community Dialog Group, is working on the development of potential performance indicators, measurement methods, targets and incentives for water conservation.

These and similar collaborative efforts among industry practitioners will continue to inform the development and implementation of the BMP Update conservation program.

AGRICULTURAL CONSERVATION

Potential Pajaro Basin Conservation Savings

Using crop and well pumping data, Dr. Samuel Sandoval Solis, UC Davis, working with Dr. Michael Cahn, UCCE, has identified a range of potential agricultural water savings specifically for the Pajaro Valley. The savings are based on comparing applied water with the optimal amount of water (based on the ET for each crop type). **Calculated potential savings range from 4,600 AFY to 5,100 AFY¹.** Based on the current crop distribution, these savings tend to be greater for the inland area. Current average water use and the calculated range of savings for coastal and inland areas are shown in Table 6-1.

Table 6-1 Potential Agricultural Water Savings

Target Area	Average Water Use from 2006-2010	Lower End Savings	Higher End Savings
Coastal	15,900	1,600	1,800
Inland	30,300	3,000	3,300
Total	46,200	4,600	5,100

All numbers in AFY
Average water use rounded to nearest hundred
Water use does not include rural residential use

While the coastal area requires a greater reduction in pumped water to address seawater intrusion, lowering inland water use also benefits the Basin, since it reduces the gradient caused by the groundwater depression, which increases saltwater intrusion.

The pumping reductions that could be achieved based on these calculations represent approximately 10 percent savings in current agricultural water use for the basin as a whole, a number consistent with the previous studies described above. It is unlikely that all growers will achieve the same level of savings. However, the current implementation of some irrigation efficiency practices on some fields has been reported to achieve savings higher than 10 percent²; and the goal of this plan is an overall average of at least 10 percent savings across the Basin.

¹The range is a function of assumptions made for 1,480 acres of "Unknown Agricultural Use." The lower end assumes no water savings from these acres, while the upper range assumes a savings of 500 AFY.

²For example, some users of the CropManage and WIN/Hortau system have reported that their individual records indicate higher savings, in the range of 15 percent to 20 percent are achievable, which suggests these tools could help achieve the 10 percent average reduction goal.

Conservation through Irrigation Efficiency

The BMPs conservation component focuses on the potential conservation savings gained by improving agricultural irrigation efficiencies. Irrigation efficiencies are realized by delivering the optimal amount of water to a particular crop. **An efficient irrigation system is characterized by highly uniform distribution, water application rates that are consistent with soil conditions, minimization of evaporation and runoff, and accurate scheduling to apply the right amount of water at the right time.** Other factors to be considered in an efficient system include crop type, soil type and atmospheric conditions.

Factors that contribute to inefficient water use include the high value of some crops such as cool season vegetables and berries. Farm managers may over-water to assure that crop water needs are met because, for all crops in the basin, water costs are a small part of the overall expenses especially compared to the revenue loss from a poor crop. In addition, many farm managers have multiple plantings to manage simultaneously, leading to a tendency to manage all fields in a similar manner, resulting in over-irrigating and/or irrigating under sub-optimum conditions (e.g., during the day, in the wind, etc.). Poor irrigation system design and operation also creates uncertainty about the rate and uniformity of water application, leading to over-watering as a means to compensate for this uncertainty and assure that crop water needs are met. These practices negatively impact water supply, basin overdraft and the efficiency of growers' operations.

While there are many opportunities for increased efficiencies in the irrigation infrastructure, management practices that optimize water use are much more cost effective than wholesale equipment replacement. There are both high and low tech management practices available. It is not necessary to expend a lot to get started. Rather, it is useful and practical to start with the simplest tests and then do more if the over irrigation cannot be easily resolved. For example, to test if the irrigation system is distributing water evenly throughout a field, a field manager could go through some or all of the following steps at the end of an irrigation set. Note that the steps are in order of increasing cost and effort:

1. Drive around the field to make sure that there are no puddles or particularly wet spots. If there are, the irrigation system needs adjustment.
2. Go to endpoints and center of the irrigation system, take a hand shovel and dig down 6 inches, and scoop up and squeeze a handful of soil to make sure it is moist but not mud. Compare the level of wetness at the various endpoints to the wetness at the center. All should be about the same. If they are not, the irrigation system needs adjustment.
3. Use a soil moisture probe (they cost ~ \$4-500) to test the moisture in the soil at the endpoints of the irrigation system and compare to the moisture at the center. All should be relatively the same.
4. Do a distribution uniformity test by putting buckets under emitters in a uniform pattern around the field. All should be about the same. If they are not, the irrigation system needs adjustment.
5. Request UCCE or one of the mobile lab services to do a distribution uniformity test. There are often grants to offset part of the cost. NRCS will pay part of the cost if the test is done as part of a planned upgrade of the irrigation system.
6. Install permanent soil moisture monitors in the field. This can be done in conjunction with a remote reporting device so that the readings are automatically relayed to the growers' computer or cell phone.

Other effective irrigation efficiency practices include the following:

- Increasing distribution uniformity (ensuring that the water within the irrigation system is reaching plants in all sections of the field with uniform amounts of water during the irrigation period) by encouraging uniform nozzles/sprinkler heads, pressure regulators, and proper maintenance (to avoid system loss from the pump to the point of application through leaks or clogs);
- Eliminating tailwater to the maximum extent (and recapturing and reusing remaining water for non-food crop use);
- Matching water used for irrigation to plant needs;
- Scheduling applications to minimize water loss due to evaporation, wind, or watering below the plant root zone;
- Using irrigation calculation tools such as CIMIS (there is a CIMIS station near the coast and one in the middle of the valley as well as the spatial CIMIS system), wireless information networks (e.g., those offered by Hortau Inc.), soil moisture sensors to test

soil moisture, and water meters on the well and sub-mains; and

- Reducing germination and transplant irrigation.

Irrigation infrastructure improvements may involve switching to a more efficient irrigation systems (e.g., from sprinkler or furrow methods to micro-irrigation or drip systems).

Designing the Conservation Program

PVWMA, as part of the BMP Update, is working with partners and stakeholders to develop an effective water conservation program for the Basin designed to accomplish a 5,000 AFY reduction in water use through improved irrigation efficiencies. This section describes the approach that would be taken and steps involved in developing and implementing a viable water conservation program. The program will continue to be honed as the studies discussed below are completed and the discussions with the grower community and local technical providers continue over the next few years. Implementation of the program would also entail the identification of funding, as discussed below.

The goal of the conservation program would be to reduce annual irrigation water use by 5,000 AFY by the end of 2023, when compared to the 2006-2010 Basin wide five-year average (46,200 AFY), which represents a savings of about 10 percent. The overall success in reaching the conservation goal would be measured on a basin-wide scale, not farm-by-farm, so growers who have already invested in conservation would not be penalized. The steps envisioned in the program design are summarized in Figure 6-1.

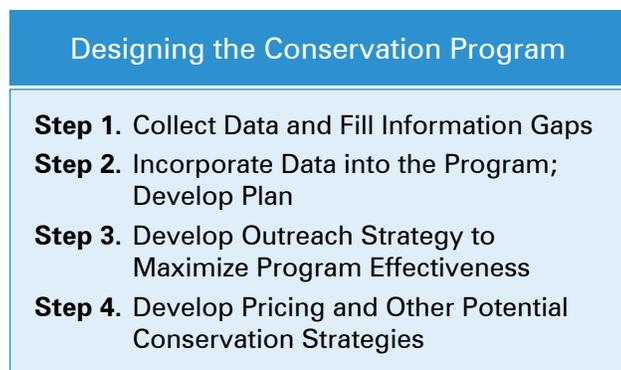


Figure 6-1. Conservation Program Design

Task 1. Collect Data and Fill Information Gaps

To effectively identify areas of greatest potential for conservation and to track implementation results, the conservation plan should be informed with current and appropriate data. This would involve determining data needs, collecting available data, evaluating and packaging the existing data into a useful format, identifying remaining knowledge gaps, and gathering the additional data to fill those gaps. Collected information may be perceived as potentially sensitive and will not be disclosed to the public. If it is not possible for PVWMA to keep such information confidential due to Freedom of Information Act (FOIA) requirements, it would be maintained by a third party that is not bound by FOIA and is experienced in working with confidential information.

Once the PVWMA Board has approved the conceptual conservation program, the following steps would be implemented:

- Determination of actual water use by crop type, by using existing PVWMA well meter data and collecting crop data for the fields served by each well. This will require the evaluation and synthesis of numerous information sources including reviews of existing satellite photos, GIS data bases, climatic zone data, Agricultural Commissioner ranch maps, and various water survey results.
- Establishment of irrigation targets for specific crops. Irrigation targets will be based on the ideal amount of water to meet crop needs without reducing yield or quality. The difference between this target and actual water use by crop type is the measure of potential conservation savings.
- Identifying and addressing water use variables that may distort or contribute to the margin of error when making baseline and conservation estimates. These variables, the ways they are addressed, and any assumptions that are made about them, will be tracked. These variables, which affect the total water use for a farm or ranch include (but are not limited to) rotational change in crop type, location, soil type, and/or number of crops per acre.

Task 2. Incorporate Data into the Program

Using the information described above, the data would be analyzed and used to design an effective outreach program. Development of the outreach program would involve determining crop acreage profiles, water usage, climate zones, soil data and ultimately designing a demonstration project (pilot project) for irrigation efficiency.

Task 3. Develop outreach strategy to maximize program effectiveness

Outreach efforts would target growers who could benefit from additional training and technical assistance. Included would be owners and operators of high-water use crops and growers who have not participated in education and training programs to date. Achieving the 5,000 AFY reduction goal will require the identification of and connecting with those growers who have not participated in water conservation strategies and are not reducing water usage. **By targeting growers who have been identified (by the process described above) as using water above the median for a crop type, the program's resources would be focused on the growers who have the most to gain from implementing irrigation best practices, and would yield the greatest progress toward meeting the program goals.**

Task 4. Develop Pricing and Other Potential Conservation Strategies

In addition to improving irrigation efficiency by using technology to match water applications with crop needs, the conservation program would investigate and consider implementation of other possible conservation strategies. Pricing strategies are commonly used conservation tools, based on the assumption that increases in the price of water will reduce water use. **The two main approaches to conservation pricing are tiered rates, where the price per unit of water increases as more water is used, and increases in the flat rate.** Both approaches face potential economic limitations. The effectiveness of conservation pricing depends in part on the “elasticity,” or sensitivity of water demand to price. Although the elasticity of agricultural water demand has been found to be fairly low, the 2011 conservation study cited above notes that growers may be more responsive to increases

in price (the price elasticity can be increased) when they are aware of ways to increase efficiency. (In other words, growers are more receptive to reducing water usage in response to price when knowledge and tools to do so are available.) To be implemented, either of these pricing strategies would need to meet the legal requirements of California law, including Proposition 218 (Cal. Constitution, Article XIIIID), which requires that the revenues from property-related fees or charges not exceed the proportionate cost of the property-related service attributable to the parcel being charged.

Rotational land fallowing, where agricultural land is taken out of production for a period of time, has been identified in previous studies as effective in reducing water use. However, land fallowing has negative economic side effects³ and is not being considered as a conservation tool for the Basin, although many growers individually practice this technique.

Implementing the Conservation Program

The steps envisioned for **program implementation** are summarized in Figure 6-2. While reductions in water usage achieved by some growers are not universal, there is considerable room for improving water use efficiency in the Basin. **Preliminary studies indicate that berries and vegetables are two crops with significant water savings potential.** Dr. Michael Cahn of the UCCE has completed trials with raspberry growers in the Salinas Valley, indicating that annual irrigation water consumption could be reduced to about 18 acre-inches per season, compared to the average water use of between 36 and 48 acre-inches per season (suggesting a possible 1.5 to 2 AF reduction per season). However, no control fields were used in his research, so this is an estimated number.



Figure 6-2. Conservation Program Implementation

³Even in cases where the loss of income to the farmer is compensated (through subsidies, for example), the indirect effects of fallowing, including losses to businesses and labor that rely on the farming operation, are not offset and can adversely affect a community.

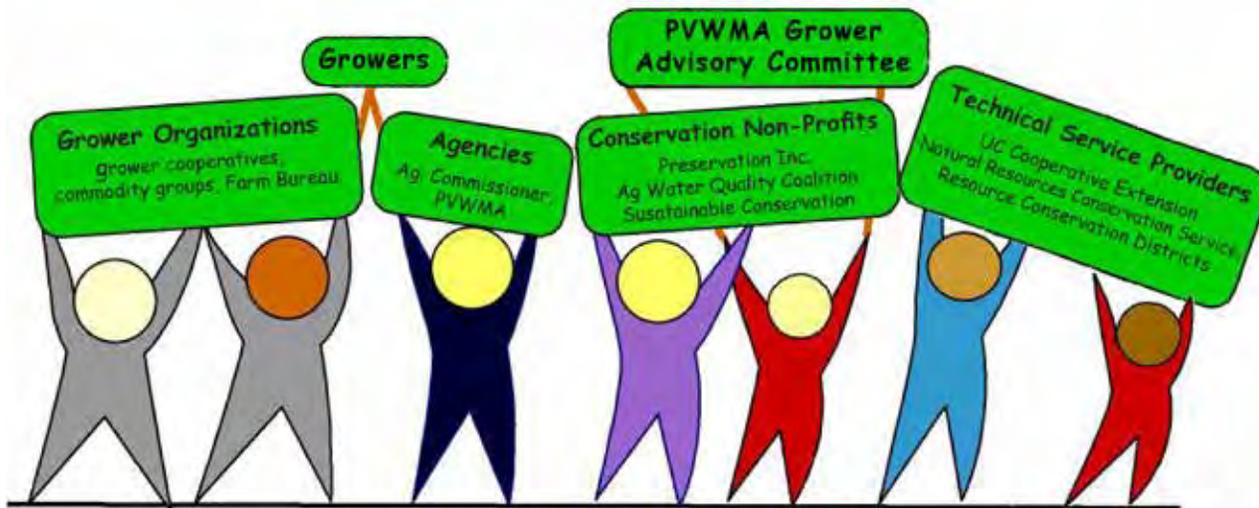


Figure 6-3. Coordination with Stakeholders

Research of irrigation needs for various crops conducted by Drs. Michael Cahn, Richard Smith, and Tim Hartz indicates that many vegetable growers may overwater by 200 to 300 percent, which provides clear room for improvement in practice and reduction in water use. But vegetables may be the hardest crop with which to achieve effective reductions in irrigation use since most vegetables are sprinkler irrigated, fieldworkers are not in the fields on a daily basis as they are with berries and, therefore, are not present to see if crops are suffering from inadequate water application. Also, each vegetable crop is only in the field for 30 to 90 days between planting and harvesting.

Task 1. Implement targeted outreach

On-farm conservation program outreach, education, training, and technical assistance for growers and farm managers in the PVWMA district would begin once funding is identified and secured. As described above, in-field program implementation would focus on those growers who have been identified as using more water than is optimal for a given crop, who grow high water use crops, and those who have not evaluated their irrigation systems or participated in previous education efforts and would implement the program elements described above.

Task 2. Coordination with Stakeholders

In addition to outreach programs described above to solicit grower participation in the BMP Update conservation program, the continuing involvement of partner organizations and diverse members of the agriculture industry (Figure 6-3) in ongoing discussions will be needed to:

- review progress;
- suggest next steps; and
- identify, engage with, and understand the needs of growers in the area.

Necessary partners include the Central Coast Agricultural Water Quality Coalition, grower organizations, commodity groups and cooperatives, the Farm Bureaus, Agricultural Commissioners, the various technical providers (including UCCE, NRCS, and RCDs), the PVWMA Board and staff, as well as a-proposed Ag Conservation Technical Advisory Committee (described below). Publicizing and discussing the program's short term and the long term success would be important elements of the program. Ensuring stakeholder involvement would involve soliciting, processing, and incorporating stakeholder feedback into the various plan components; and then effectively conveying both successes and challenges back to the stakeholders in a clean communication loop. In addition, the program would include continued and expanded coordination with partner organizations such as the RCD of Santa Cruz County, NRCS, Preservation Inc., and Sustainable Conservation, to assess and account for other previous and ongoing irrigation efficiency work, to leverage

each other's stakeholder lists and contacts, and to ensure that a unified and coherent message about conservation goals, objectives and implementation strategies is presented.

Establishment by PVWMA of an Ag Conservation Technical Advisory Committee would be an asset to the program's success. This group could include members of the former PVWMA Grower Advisory Committee and representatives of a complete range of interest groups, and could assist the PVWMA, the Coalition and partners in reviewing progress, adjusting priorities, focusing the need for specific research, adapting the workplan to meet changing conditions, and fostering support from committee members' respective constituents.

Task 3. Measure performance and adapt if needed

The goal of achieving 5,000 AFY in reduced pumping across the basin begins in 2013 with the continued support by PVWMA of other ongoing efforts, with a goal of achieving 100 percent of its targeted savings by 2023 (10-years).

Program success would be measured using a statistical approach to quantify the level of conservation savings. **The formula would compare actual annual water use (based on PVWMA extraction data) to a baseline equal to the average metered water use for the five-year period from 2006 through 2010.** This approach would recognize, account for and acknowledge today's conservation practices, implemented during the years 2011-2012, after the Ad Hoc BMP Committee and the Community Dialog Group meetings started. This methodology would provide an objective measure of the change in water use over time and minimize confounding factors such as droughts, above/below average rainfall/temperatures, and years when rainfall occurs in an unusual pattern affecting irrigation (e.g., years when rain occurs late in the spring and replaces normal early plant irrigation).

Performance measurements may indicate a need to adapt the conservation program. Adaptive management (Figure 6-4) would be part of every component of the conservation program, and semi-annual input from the proposed Ag Conservation Technical Advisory Committee should be considered essential to the effectiveness of the program. A strong evaluation and adaptive management component



Figure 6-4. Adaptive Management Schematic

assures that the conservation program will provide the expected benefits and that stakeholders receive the full value for their investment in this work.

Task 4. Report progress and communicate changes

Regular progress reports would be prepared to track program implementation and facilitate effective adaptive management when program components do not work as envisioned. Progress reports would include semi-annual reports to the Board and stakeholders to summarize overall trends, changes implemented, measurements of success for the various tools implemented, and water conservation evaluation results, with adaptive management adjustments proposed for the next year's work.

CONSERVATION PROGRAM FUNDING

PVWMA has limited conservation program funding opportunities due to the restrictions in the Agency Act on the use of augmentation funds. Since conservation is not specifically called out in PVWMA's enabling legislation as an activity that may be funded with augmentation charges, only Management Fees which are collected as a per parcel charge on the tax rolls, have been used to fund conservation. The available Management Fees are not adequate to fund a meaningful program.

Given these current limitations, PVWMA can implement a three-pronged approach for continuing conservation efforts and working towards full implementation of a conservation strategy:

- Continuing coordination with other conservation activities and organizations;
- Securing outside funding (grants) to support implementation of a conservation strategy; and
- Working towards Agency Act modifications to allow appropriate funding of a conservation strategy.

The BMP Committee and the Board recognize that conservation activities by others, occurring outside of Agency efforts, are ongoing and have a lot of momentum to continue. Supporting these ongoing efforts by the Basin communities (growers and landowners) is essential to addressing the basin's overdraft and seawater intrusion problems today. In Phase 1 of the BMP Update (after 2015) there will be additional opportunities to increase irrigation efficiency and community awareness of water use that will be a key component of the BMP Update.

Given the restrictions of the Agency Act, any significant funding of the conservation strategy in advance of an Agency Act amendment would have to occur through grants. PVWMA will identify and pursue conservation funding opportunities that would support the implementation of the conservation strategy. Funding opportunities include the U.S. Bureau of Reclamation Water Use Efficiency Grant, CA Department of Water Resources Water Use Efficiency Grant, CA Department of Water Resources Integrated Regional Water Management Program Implementation Grant, and others.

OTHER CONSERVATION EFFORTS IN THE BASIN

City of Watsonville

The City of Watsonville is committed to conservation efforts that are described in their Urban Water Management Plan (UWMP), both as a partner of the PVWMA and as a domestic water supplier required by state law to reduce per capita water use. The UWMP identifies 1,000 AFY as an achievable objective for urban conservation within the city. **Conservation efforts to meet this objective are an important factor in meeting the City Council's goal of not increasing groundwater pumping in the future as the city's population grows.**

One way the city will avoid increasing groundwater pumping will be by implementing conservation measures and constructing the Corralitos Creek Water Supply and Fisheries Project⁴. No net increase in the City's groundwater pumping is, in turn, a key assumption in the hydrologic modeling of the BMP Update.

City conservation programs include the following:

- Water survey programs for single-family residential and multifamily residential customers;
- Residential plumbing retrofit including ultra-low flush toilet replacement programs.
- System water audits, leak detection, and repair;
- Metering with commodity rates for all new connections and retrofit of existing connections;
- Large landscape conservation programs and incentives;
- High-efficiency washing machine rebate programs;
- Public information programs;
- School education programs;
- Conservation programs for commercial, industrial, and institutional accounts;
- Conservation pricing;
- Water conservation coordinator; and
- Water waste prohibition.

The City spends approximately \$290,000/year on water conservation, of which \$180,000/year funds toilet and washing machine rebate and retrofit programs, about \$50,000/year funds landscape water audit programs, and \$60,000/year is spent to educate the public on water conservation through the nature center, targeted adult education programs, and school tours.

Rural Residential Units

When maximum conservation is achieved from large acreages (i.e., the agricultural water users, where the largest conservation gains can be realized), PVWMA would extend the conservation implementation efforts to the approximately 2,300 *unmetered rural residential* users within the PVWMA service area. Likely strategies would include support for low-flow toilet retrofits, irrigation efficiency evaluation and system design support, and other water-saving home retrofits, such as low flow shower heads, faucet adaptors and hose nozzles.

⁴This project, which will increase year-round water availability and fish passage, is funded through a U.S. Bureau of Reclamation grant awarded in 2011.

EXHIBIT C: SCVWD WATER CONSERVATION RESOLUTION

RESOLUTION NO. 14- 11

CALLING FOR 20 PERCENT WATER USE REDUCTION
THROUGH DECEMBER 31, 2014

WHEREAS, in California, water is a precious and limited resource that must be used wisely; and

WHEREAS, 2013 was the driest year on record and 2014 is projected to be critically dry as well; and

WHEREAS, on January 17, 2014, Governor Brown proclaimed a State of Emergency calling on all Californians to reduce their water usage by 20 percent, and calling on local urban water suppliers and municipalities to implement their local water shortage contingency plans immediately; and

WHEREAS, Santa Clara County relies on water supply imported by the State Water Project and Central Valley Project to provide treated drinking water, replenish the local groundwater basin and prevent the return of historic overdraft and land surface subsidence that could damage Bay-front levees and other critical infrastructure in northern Santa Clara County; and

WHEREAS, in 2014, State Water Project allocations have been reduced to zero percent of contract quantity, Central Valley Project water allocations for agricultural use are also expected to be zero percent, and Central Valley Project water allocations for municipal and industrial uses are expected to be no greater than 50 percent, or as needed to support public health and safety; and

WHEREAS, deliveries of imported water to the Santa Clara Valley Water District's (District's) drinking water treatment plants are being affected by poor water quality conditions in the Sacramento-San Joaquin Delta that have developed from lack of precipitation and depleted storage in State and federal reservoirs, and deliveries may be further limited or interrupted this summer due to degraded Delta water quality and low storage levels in San Luis Reservoir; and

WHEREAS, local watershed runoff has been extremely low this winter, and the District's ability to augment reservoir storage with imported water is limited because of California Department of Water Resources Division of Dam Safety requirements; and

WHEREAS, through careful water management, Santa Clara County groundwater reserves at the start of 2014 were well within the normal range, but these reserves are projected to drop significantly by the end of 2014; and

WHEREAS, the District must maintain sufficient local surface and groundwater reserve supplies to cope with supply interruptions from natural disasters and catastrophic events such as earthquake; and

WHEREAS, the District's Urban Water Management Plan, Water Shortage Contingency Plan guides the District's water supply management actions for supply augmentation, increased water use reduction measures, and the use of local reserve supplies; and

WHEREAS, the District through coordination with retail water agencies, local municipalities and the County of Santa Clara is increasing public outreach and education to create greater awareness of countywide water supply challenges and need for efficient water use; and

WHEREAS, the District must rely on the actions of the retail water agencies, local municipalities and the County of Santa Clara to enact and implement local ordinances and water use reduction measures; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Santa Clara Valley Water District that a water use reduction target equal to 20 percent of 2013 water use is called for through December 31, 2014, and it is further recommended that retail water agencies, local municipalities and the County of Santa Clara implement mandatory measures as needed to achieve the 20 percent water use reduction target.

PASSED AND ADOPTED by the Board of Directors of Santa Clara Valley Water District by the following vote on February 25, 2014:

- AYES: Directors D. Kennedy, R. Santos, N. Hsueh, B. Keegan, B. Schmidt,
L. LeZotte, T. Estremera
NOES: Directors None
ABSENT: Directors None
ABSTAIN: Directors None

SANTA CLARA VALLEY WATER DISTRICT

By: 
TONY ESTREMER
Chair/Board of Directors

ATTEST: MICHELE L. KING, CMC


Clerk/Board of Directors

EXHIBIT D: SCVWD MAY 2014 DROUGHT RESPONSE UPDATE



Meeting Date: 5/27/14
 Agenda Item No.: 4.1
 Manager: J. Maher
 Extension: 2073
 Director: All

SUPPLEMENTAL BOARD AGENDA MEMORANDUM

SUBJECT: Update on 2014 Water Supply and Drought Response

REASON FOR SUPPLEMENTAL MEMORANDUM:

To allow for inclusion of the most current drought response information and include an additional recommendation*.

RECOMMENDATION:

- A. Receive, review, and discuss updated information on 2014 water supply and drought response efforts;
- B. Authorize the Chief Executive Officer (CEO) to approve budget adjustments in FY14 and FY15 totaling up to \$500,000 from the Water Utility Operating and Capital Reserve to augment the Water Conservation Program and related outreach;
- *C. Determine, by a four-fifths vote, that there is a need to continue the emergency action declared by the CEO on May 14, 2014, pursuant to Public Contract Code §22050 and District Resolution 05-67 in support of the California Aqueduct Reverse Flow Project.

SUMMARY:

The District's comprehensive drought response is being implemented through fifteen strategies grouped into four general categories: (A) water supply and operations; (B) water use reduction; (C) drought response opportunities; and (D) administrative and financial management. Highlights of new information for each strategy are included in Attachment 1 (May 2014 Drought Response Strategy Updates). The staff presentation (Attachment 2) for this month's update will focus on four key topics:

Topic		Drought Response Strategy
1	Water Use Reduction Program	#4, Reduce water use by 20%
2	Environmental Management of Raw Water Operations	#2, Manage and deliver raw water supplies
3	Untreated Surface Water Customers	#2, Manage and deliver raw water supplies
4	California Aqueduct Reverse Flow Project	#1, Secure imported water supplies

SUBJECT: Update on 2014 Water Supply and Drought Response

(05/27/14)

1. Water Use Reduction Program

On January 31, 2014, the Board set a preliminary countywide water use reduction target of 10 percent, and on February 25, 2014, set the final target of 20 percent. Staff has been working with water retailers, municipalities and the county to increase water conservation efforts and public outreach, and implement other actions to reduce water use. As these efforts begin to take effect, preliminary water use data for the months of February and March indicate that cumulative countywide savings of approximately 12 percent were realized, compared to the same period in 2013. Water use and savings reports by retailer are included in Attachment 3. A summary of the District's new programs and updated conservation rebates is included in Attachment 4, and a summary of conservation programs and actions undertaken by water retailers and municipalities is included in Attachment 5.

On April 22, the Board approved a budget adjustment of \$250,000 to plan, develop and initiate a major summer conservation marketing campaign before July 1, 2014. At that time, staff informed the Board that additional funding up to \$500,000 would be needed in FY15 to fully implement the plan and launch the campaign through the summer months. Staff expected to make a subsequent budget recommendation in FY15. However, staff has learned that there is a need to secure media buys earlier than planned, and is now requesting CEO authority to approve budget adjustments in FY14 and FY15 totaling up to \$500,000 from the Water Utility Capital and Operating Reserve as needed to implement the summer conservation marketing campaign.

2. Environmental Management of Raw Water Operations

Due to very limited local and imported surface water supplies, the District's managed groundwater recharge program is significantly curtailed this year. In total, only 25% of the amount normally released for groundwater recharge, or about 25,000 acre-feet, will be available for recharge this year. Dry conditions in creeks and recharge ponds and resulting impacts on aquatic species are a concern of fish and wildlife regulatory agencies, local municipalities and the general public who see these visible signs of the drought. The current public information fact sheets on "Reservoir and local stream conditions" and "Groundwater recharge pond maintenance" are included in Attachment 6.

At the April 22, 2014, Board meeting, a Board Member Request was made for "a report on the mortality of aquatic species in percolation ponds, streams and creeks as a result of the drought, and to include the feasibility of moving these species above reservoirs." (R-14-0016). The District has been working closely with the California Department of Fish and Wildlife (CDFW) and other regulatory agency staff to address fish and wildlife impacted by the drought. In normal rainfall years, District water utility operations provide aquatic habitat for native and non-native species alike. In drought conditions, aquatic habitats are impacted first and more severely than other habitats, causing some animals to migrate, change behavior, or die off. District biologists are providing stream condition reports to agency staff to assist in documenting the effects of the drought, but neither the District nor CDFW has an estimate of fish and wildlife losses. Over the years, many non-native species have colonized local streams, reservoirs and recharge ponds, sometimes through releases by the local community. Losses of these non-native species will likely benefit local fish and wildlife species that have evolved to withstand the climate extremes of their native habitat.

SUBJECT: Update on 2014 Water Supply and Drought Response

(05/27/14)

CDFW is the state agency responsible for managing local fish and wildlife resources and issuing appropriate permits to allow work in habitat areas and to rescue or relocate species when warranted. The widespread nature of the drought has made relocation of native species difficult to support, and as a result, CDFW has developed a policy that severely limits the instances where rescue or relocation of fish species can be approved (CDFW Departmental Bulletin No. 2013-04, Issued March 20, 2013). The permit approved by CDFW for the District's pond maintenance work will not include rescue or relocation of wildlife, with the exception of western pond turtles that may be present in Alamitos or Los Capitancillos ponds.

3. Untreated Surface Water Customers

Due to very limited local and imported surface water supplies, on March 21, 2014, notices were sent to 72 water users that currently have District permits for delivery of untreated surface water from raw water pipelines informing them that service would be discontinued on May 1. The notice provided a process for agricultural and commercial water users to apply for extensions of time, if needed, to put in place alternate sources of supply. In total, the District received and granted 25 applications from agricultural and commercial water users for extension of service to June 30, 2014, including five golf courses in northern Santa Clara County and 15 agricultural accounts on the Half Road Lateral in south county (six accounts for parcels owned or leased by the Mariani family). Due to operational limitations on the Half Road Lateral, which is a privately owned system, extending service for agricultural water users essentially means that service is continuing for the whole system (38 accounts), but the amount provided during the 2-month extension will be 80 percent of metered 2013 water use and intended for agricultural use only. Staff is continuing to work with Half Road Lateral customers not only on the immediate issue of establishing an alternate supply, but on options for more viable long-term operation and management of this system.

The District also received a total of nine applications from non-commercial municipal and industrial accounts which did not meet the criteria for a time extension. Generally, these accounts use untreated surface water for domestic landscape irrigation. Over the years, several untreated surface water accounts have installed hydrants despite being informed that the District does not operate or maintain the raw water system in a manner that can be relied upon for fire protection, and that under the District's "Rules and Regulations for Delivery of Surface Water", the service is interruptible and at the user's risk. The turnouts for these accounts will remain unsecured, but water users are being informed that landscape irrigation and other non-qualifying uses must cease until further notice.

4. California Aqueduct Reverse Flow Project

This District participates in the Semitropic Water Bank (Semitropic), which is located in Kern County, about 200 miles south of the Delta on the California Aqueduct (see location map). Because the District is located "upstream" of Semitropic, the return of banked water is normally accomplished by exchanges within the State Water Project (SWP): Semitropic pumps groundwater into the California Aqueduct for delivery to other SWP contractors downstream, and the District takes delivery of an equal amount of SWP water pumped from the Delta that would otherwise go to those contractors.



In this critically dry year, the capacity for exchanges within the SWP is limited and it is still not clear that there is sufficient capacity to meet all the demands within the SWP for exchanges. To ensure that supplies from Semitropic are available to meet Santa Clara County's essential treatment plant needs and prevent severe depletion of groundwater reserves in 2014, a reverse flow project is being developed to move up to 30,000 acre-feet of Semitropic's pumped groundwater up the California Aqueduct approximately 100 miles so that it can be used for exchanges within the Central Valley Project (CVP). Banked water is normally retrieved from Semitropic in the fall months of the year, and on May 14, 2014, the CEO declared an emergency to ensure that the necessary approvals and equipment are in place to initiate reverse flow by September 1. Staff is recommending that the Board determine by a four-fifths vote, that there is a need to continue the emergency action declared by the CEO, pursuant to Public Contract Code §22050 and District Resolution 05-67, to enable timely procurement of necessary consultant services, public works, services, supplies and other essential equipment without giving notice to bids to let contracts.

SUBJECT: Update on 2014 Water Supply and Drought Response

(05/27/14)

OVERVIEW OF DISTRICT DROUGHT RESPONSE

On February 25, the Board approved a resolution setting a county-wide water use reduction target equal to 20 percent of 2013 water use, and recommending that retail water agencies, municipalities and the county implement mandatory measures as needed to accomplish that target. This action was based on the District's Water Shortage Contingency Plan¹ and estimated 2014 water supply conditions that showed groundwater reserves could reach the Stage 3 ("Severe") level by the end of the calendar year if water use reduction measures are not implemented. Additional background can be found in staff's update provided to the Board on March 25, 2014.² The District's comprehensive drought response strategies are described below:

A. Water Supply and Operations

1. Secure imported water supplies.

This strategy includes working with state and federal project operators (California Department of Water Resources and U.S. Bureau of Reclamation) and contractors of the State Water Project (SWP) and Central Valley Project (CVP) to secure the District's 2013 contract carryover supplies and 2014 contract allocations. It also includes supporting initiatives to control Delta salinity; providing for return of water from the Semitropic Water Bank; determining the availability of supplemental water transfers and imported water carryover for 2015; and coordinating with San Francisco Public Utilities Commission on drought impacts to the Hetch-Hetchy Project.

2. Manage and deliver available raw water supplies.

This strategy optimizes distribution of limited local and imported supplies, including deliveries to the three water treatment plants, operation of District reservoirs and the groundwater recharge system, and deliveries to untreated surface water users. Given 2014 water supply conditions, ongoing communication is required with regulatory agencies and other stakeholders regarding changing conditions in reservoirs, creeks and recharge ponds, as well as working with untreated surface water customers to establish alternate sources of supply.

3. Optimize treated water quality and availability.

This strategy focuses on optimizing treatment plant operations and source water supplies to meet drinking water quality and reliability objectives, in coordination with the District's retail treated water contractors. It includes continuing to meet treated water quality objectives despite poorer water quality conditions in the Delta this year, and projected low

¹ Santa Clara Valley Water District's 2010 Urban Water Management Plan, <http://www.valleywater.org/Services/WaterSupplyPlanning.aspx>

² Supplemental Board Agenda Memo, Item 4.1, Update on 2014 Water Supply and Drought Response, March 25, 2014, http://cf.valleywater.org/About_Us/Board_of_directors/Board_meetings/_2014_Published_Meetings/MG5_3638/AS53651/AI53719/DO53900/DO_53900.pdf

storage levels in San Luis Reservoir that will affect both the quality of this source of supply as well as potentially even the ability to pump water from the reservoir during the late summer and early fall months. This strategy also includes operating the Campbell Well Field to augment supplies in the West Pipeline and working with SFPUC to use the Hetch-Hetchy Intertie when necessary to meet treated water schedules. Staff is continuing to work with retailers to reduce treated water use to the targeted level of 80% of the original contract quantities.

B. Water Use Reduction

4. Reduce 2014 water use by 20% compared to 2013 water use.

This strategy includes promoting short-term and long-term actions to reduce water use in 2014, and tracking progress toward achieving the 20% target set by the Board on February 25. Activities include promoting the District's water conservation programs; coordinating with retail water agencies, municipalities and the County of Santa Clara on drought response ordinances and programs; and implementing a public outreach and education campaign.

5. Ensure that District facilities set a model for water conservation.

Many water conservation measures have been implemented at District facilities in past years, including low flow toilets, dual flush valves in high use areas, low flow aerators on faucets in restrooms and break areas, low flow devices in showers, drought tolerant landscaping and/or native vegetation, and Calsense intelligent irrigation controllers for landscaping. In 2013, the District reduced water use by 9% (10.8 million gallons) compared to 2012 (12.1 million gallons). In 2014, the District will expedite additional actions that may serve as a model for achieving water savings, and reduce water use at District facilities by more than the countywide 20% water use reduction target.

6. Support customers and key stakeholders to minimize adverse drought impacts.

This strategy includes providing assistance to retail water agencies for their outreach, operations and conservation programs. The District meets regularly with the Water Retailers and subcommittees (Water Supply, Treated Water, Water Quality, Groundwater, Conservation, Communication and Ad Hoc Drought Response Subcommittees). Assistance is also being provided to surface water customers, agricultural water users, municipalities and others as they implement drought response. The Landscape Advisory Committee is convened to discuss drought response as it affects landscape businesses. This strategy includes tracking and reporting customer and stakeholder requests.

C. Drought Response Opportunities

7. Leverage community awareness to advance long-term conservation measures.

This strategy includes measures that may be taken in 2014 to increase participation in the District's long-term water conservation programs. It also identifies, evaluates and supports new innovative conservation measures, including Safe Clean Water (SCW) Water Conservation Research Grant efforts, which may be implemented in calendar year 2015.

SUBJECT: Update on 2014 Water Supply and Drought Response

(05/27/14)

Staff is also investigating opportunities for advancing sustainable, long-term savings through land use initiatives, where feasible.

8. Accelerate recycled water program development and implementation.

The current drought has raised interest in expediting implementation of both non-potable and potable reuse components of the District's Water Master Plan by existing and potential recycled water partners, legislators, water users and others. Staff is identifying and preparing high-priority recycled water projects (up to 10 million gallons per day) to make them shovel-ready within the next 12 months; pursuing regulatory proposals to provide for safe implementation of indirect and direct potable reuse projects; and completing master planning of all recycled water efforts. Other aspects of this strategy include support and pursuit of legislative proposals to streamline the implementation of recycled projects and provide potential funding.

9. Leverage opportunity to maintain uniquely accessible District facilities.

Many District facilities are expected to be more accessible this year for inspections and maintenance, given the limited surface water in District reservoirs and limited raw water operations. For example, some groundwater recharge ponds that have been in continuous service for decades may be drained completely this year providing opportunity for cleaning and refurbishment. This strategy takes advantage of unique conditions in 2014 to expedite work and advance District asset management. This strategy also includes installation of meters for untreated surface water accounts and pursuing metering of un-metered wells as long-term measures that will improve water accounting and drought response.

10. Leverage opportunity to further development of the District's workforce.

Effective drought response requires shifting staff resources to meet current needs, and this also creates opportunity for staff to gain new knowledge, skills and abilities. This strategy includes establishing processes for fair and expedited re-allocation of staff resources to assist with implementation of drought response so that the District is better able to serve the public this year and in future years through workforce development.

11. Advance community knowledge, awareness, and understanding of the water supply system and services provided by the District.

This strategy includes efforts to expand outreach communication and engagement with general public and working even more closely with media to convey drought and water conservation messages. This also provides an opportunity to expand outreach to key stakeholders (e.g., city councils) and regional groups.

D. Administrative and Financial Management

12. Secure Federal and State funding to offset drought impacts and accelerate conservation and recycling programs.

Staff is tracking a number of State and federal legislative initiatives aimed at providing drought relief and funding to offset costs of drought response and accelerate water supply and water use efficiency projects. This strategy focuses on grant application requirements and project eligibility to maximize funding opportunities for District and customer projects and programs. It also includes pursuing funding and reimbursements for District projects and programs, and collaborative opportunities to assist customers with offsetting financial impacts of the drought.

13. Leverage Emergency Operations Center (EOC) to assist in supporting drought efforts.

Soon after the Governor's January 17, 2014, Declaration of Drought Emergency, the District activated its EOC at Level 1 to facilitate response to drought-status inquiries from the State Operations Center (SOC), Coastal Regional Operations Center (REOC) and the local, Santa Clara County Operational Area (OA). Emergency resource requests may be requested through the EOC, as determined by the District's EOC Director, and the EOC also helps track drought-related costs for potential reimbursement. The EOC communication structure provides opportunity for additional outreach to policy and staff representatives of local municipalities, the county and emergency response providers about the need to achieve the 20% water use reduction target and to promote water conservation.

14. Adjust District resource allocations necessary to respond to drought and provide development of staff.

This strategy includes identifying, tracking and processing budget adjustments and other adjustments of resources as needed to support overall implementation of drought response. In addition to staff resource adjustments discussed in Strategy #10, drought response is expected to include increased/adjusted budgets for an effective water use reduction campaign, additional pumping and water treatment costs, extraordinary maintenance projects, and supplemental imported water. The strategy includes clearly identifying the schedule impacts and other impacts of these resource adjustments as non-drought-related work is delayed or removed from project work plans.

15. Support the Board of Directors.

This strategy includes ensuring that the Board is provided timely and accurate information on 2014 water supply conditions and drought response to support their efforts and linkages to the community. This strategy includes support for the Board Ad Hoc Conservation Committee and Ad Hoc Recycled Water Committee to discuss drought-related opportunities to advance these important programs. It also includes ensuring that Board advisory committees are informed of 2014 water supply, drought response measures, and implementation of the 2014 water use reduction campaign. Board updates are provided monthly on 2014 water supply and drought response, including progress toward achieving the 20% water use reduction target.

SUBJECT: Update on 2014 Water Supply and Drought Response

(05/27/14)

FINANCIAL IMPACT CHANGE:

The current recommendation for the CEO to approve budget adjustments up to \$500,000 from the Water Utility Capital and Operating Reserve for the Water Conservation Program and related outreach would bring the total approved budget adjustments for this purpose to \$2.25 million. On January 28, 2014, the Board authorized an initial budget adjustment of \$500,000 to support the Water Conservation program and related outreach. On April 22, 2014, the Board approved an adjustment of \$250,000 to plan, develop and initiate a major summer conservation marketing campaign and an adjustment of \$1 million to augment conservation program rebates.

CEQA:

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect change in the physical environment.

ATTACHMENTS:

Attachment 1: May 2014 Drought Response Strategy Updates

Attachment 2: Staff Presentation

Attachment 3: Summary of Water Use and Savings by Retailer

Attachment 4: District Water Conservation Program Rebates

Attachment 5: Water Retailer and Municipalities Conservation Actions and Programs

Attachment 6: Fact Sheets on Groundwater Recharge Operations and Pond Maintenance

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May 2014 Drought Response Strategy Updates

SUPPLY AND OPERATIONS

- DWR puts plans for Delta water quality barriers on hold
- SWP allocation from zero to 5%, but delivery only after Sept. 1
- Continuing development of Semitropic exchanges, transfers
- Friant contractors file complaint against Reclamation

1. Secure imported water

- Anderson Reservoir filled for summer treatment plant supply
- CDFW coordination on reservoir operations, maintenance
- Meeting with neighbors on pond cleaning
- Half Road Lateral Meeting on May 12, additional scheduled

2. Manage and deliver available raw water

- Effectively managing source water blend and treatment processes to maintain treated water quality
- Assisting Milpitas with revised TW contract schedule issues

3. Optimize treated water quality and availability

Santa Clara Valley
Water District



May 2014 Drought Response Strategy Updates

WATER USE REDUCTION

- Major retailer cumulative savings for Feb/Mar = 12%
- Targeted conservation letters mailed to approx. 60k residential and 20k commercial customers
- Summer community outreach plan to include presentations at outdoor classrooms

**4. Reduce
2014 water
use by 20%**

- Reduced water use by 46% from February to date
- Postponement of new permanent landscape at RWTP
- Testing and plumbing repairs throughout district facilities
- Reduced irrigation and car wash schedules

**5. Ensure
district
facilities set
model for
conservation**

- Meeting monthly with retailer conservation subcommittee, assisting with water use reduction program implementation
- Numerous meetings, presentations to city councils, County Board/Supervisors, others

**6. Support
customers
and key
stakeholders
to minimize
impacts**

Santa Clara Valley
Water District



May 2014 Drought Response Strategy Updates

DROUGHT RESPONSE OPPORTUNITIES

- Increased conservation rebates for eight programs
- Water Conservation Hot Line calls have doubled
- Expediting next SCW Conservation Grant solicitation

7. Advance long-term water conservation

- Collaborating with C&E Farms and San Jose Water Co.
- Initiated planning to connect Cinnabar Golf Course

8. Accelerate recycled water program

- Pond cleaning permitted through Valley HCP
- DFW permit secured for Los Cap, Alamitos and Guadalupe
- Public meetings held; fact sheet prepared
- Dewatering completed at Los Cap; Alamitos scheduled

9. Maintain uniquely accessible District assets

- Developed and implemented Resource Request and Reassignment process
- Accomplished 4 temporary reassignments

10. Adjust District resource allocations

- Multimedia campaign underway, radio scripts approved
- Ethnic and youth media and poster contest launched

11. Advance knowledge of District services

May 2014 Drought Response Strategy Updates

ADMINISTRATIVE AND FINANCIAL MANAGEMENT

- Working with regional partners to develop grant applications for recycled water, conservation and water treatment for DWR's 2014 Drought Solicitation

12. Secure funding for drought and accelerate programs

- On 4/25/14, Governor extended State of Emergency by Executive Order
- Continue Operational Area weekly updates and external coordination with other emergency services

13. Leverage EOC to assist drought efforts

- Drought specific cost tracking process in place
- \$254 thousand in labor and materials
- \$1.75 million in budget adjustments

14. Adjust District resources

- Provided support and materials for 3 presentations in May

15. Support the Board

Santa Clara Valley
Water District



Update on 2014 Water Supply and Drought Response

May 27, 2014



Water Shortage Contingency Plan

From District's 2010 Urban Water Management Plan

Stage	Title	Projected End-of-Year Groundwater Storage (Acre-Feet)	Suggested Short-Term Reduction in Water Use
1	Normal	Above 300,000	None
2	Alert	250,000 to 300,000	0 – 10%
 3	Severe	200,000 to 250,000	10 – 20%
4	Critical	150,000 to 200,000	20 – 40%
5	Emergency	Less than 150,000	Up to 50%

Board Resolution, February 25, 2014: NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Santa Clara Valley Water District that a water use reduction target equal to 20 percent of 2013 water use is called for through December 31, 2014, and it is further recommended that retail water agencies, local municipalities and the County of Santa Clara implement mandatory measures as needed to achieve the 20 percent water use reduction target.

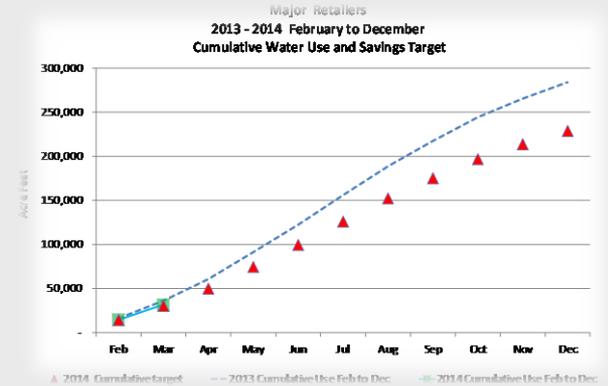
Drought Response Strategies

Supply and Operations	Water Use Reduction	Drought Response Opportunities	Administrative and Financial Management
1. Secure imported water supplies	4. Reduce 2014 water use by 20%	7. Advance long-term water conservation	12. Secure funding to offset drought impacts, accelerate programs
2. Manage and deliver available raw water	5. District facilities model water conservation	8. Accelerate recycled water program	13. Leverage EOC to assist drought efforts
3. Optimize treated water quality and availability	6. Minimize drought impacts to stakeholders	9. Maintain uniquely accessible District assets	14. Adjust District resource allocations
		10. Further develop the District's workforce	15. Support the Board
		11. Advance knowledge of District services	Attachment 2, Page 3 of 21

Key Drought Response Activities

District 2014 Drought Strategies

Activity	Drought Response Strategy
1 Water Use Reduction Program	#4, Reduce 2014 water use by 20%
2 Environmental Management of Raw Water Operations	#2, Manage and deliver available raw water supplies
3 Untreated Surface Water Customers	#2, Manage and deliver available raw water supplies
4 California Aqueduct Reverse Flow Project	#1, Secure imported water supplies



2013 Water Use by Major Retailers

1. Water Use Reduction Program

<u>2013</u>	<u>North County Ground water</u>	<u>South County Ground water</u>	<u>Treated Water</u>	<u>SFPUC</u>	<u>SJWC; Stanford Surface</u>	<u>2013 Monthly Use</u>	<u>2013 Cumulative Use Feb to Dec</u>
<i>January water use values are NOT used in water savings calculations or cumulative use values.</i>							
<i>Jan</i>	<i>3,066.8</i>	<i>1,191.7</i>	<i>5,783.5</i>	<i>3,447.0</i>	<i>1,830.1</i>	<i>15,319.1</i>	<i>15,319.1</i>
Feb	3,207.0	1,208.5	6,735.4	3,672.0	1,401.8	16,224.7	16,224.7
Mar	5,726.3	1,585.7	8,344.8	3,600.0	664.9	19,921.7	36,146.4
Apr	6,555.6	1,906.2	10,867.8	4,700.0	523.2	24,552.8	60,699.1
May	8,415.6	2,314.3	13,644.1	5,873.0	443.6	30,690.6	91,389.7
Jun	8,938.8	2,506.1	13,755.0	5,328.0	670.2	31,198.1	122,587.8
Jul	10,579.6	2,419.3	13,639.5	5,770.0	775.3	33,183.7	155,771.5
Aug	9,948.1	2,399.5	13,632.2	6,166.0	753.1	32,898.9	188,670.4
Sep	7,957.0	2,305.2	12,838.9	4,940.0	590.6	28,631.7	217,302.1
Oct	8,075.5	2,153.7	11,605.3	4,641.0	498.5	26,974.0	244,276.1
Nov	6,843.3	1,692.3	8,753.1	3,594.0	326.0	21,208.7	265,484.8
Dec	6,850.9	1,397.7	7,180.9	3,158.0	202.8	18,790.3	284,275.1
Feb to March Totals	8,933.3	2,794.2	15,080.2	7,272.0	2,066.7	36,146.4	
<i>Feb to Dec Totals</i>	<i>83,097.7</i>	<i>21,888.5</i>	<i>120,997.0</i>	<i>51,442.0</i>	<i>6,849.9</i>	<i>284,275.1</i>	

2014 Water Use by Major Retailers, Feb-Mar

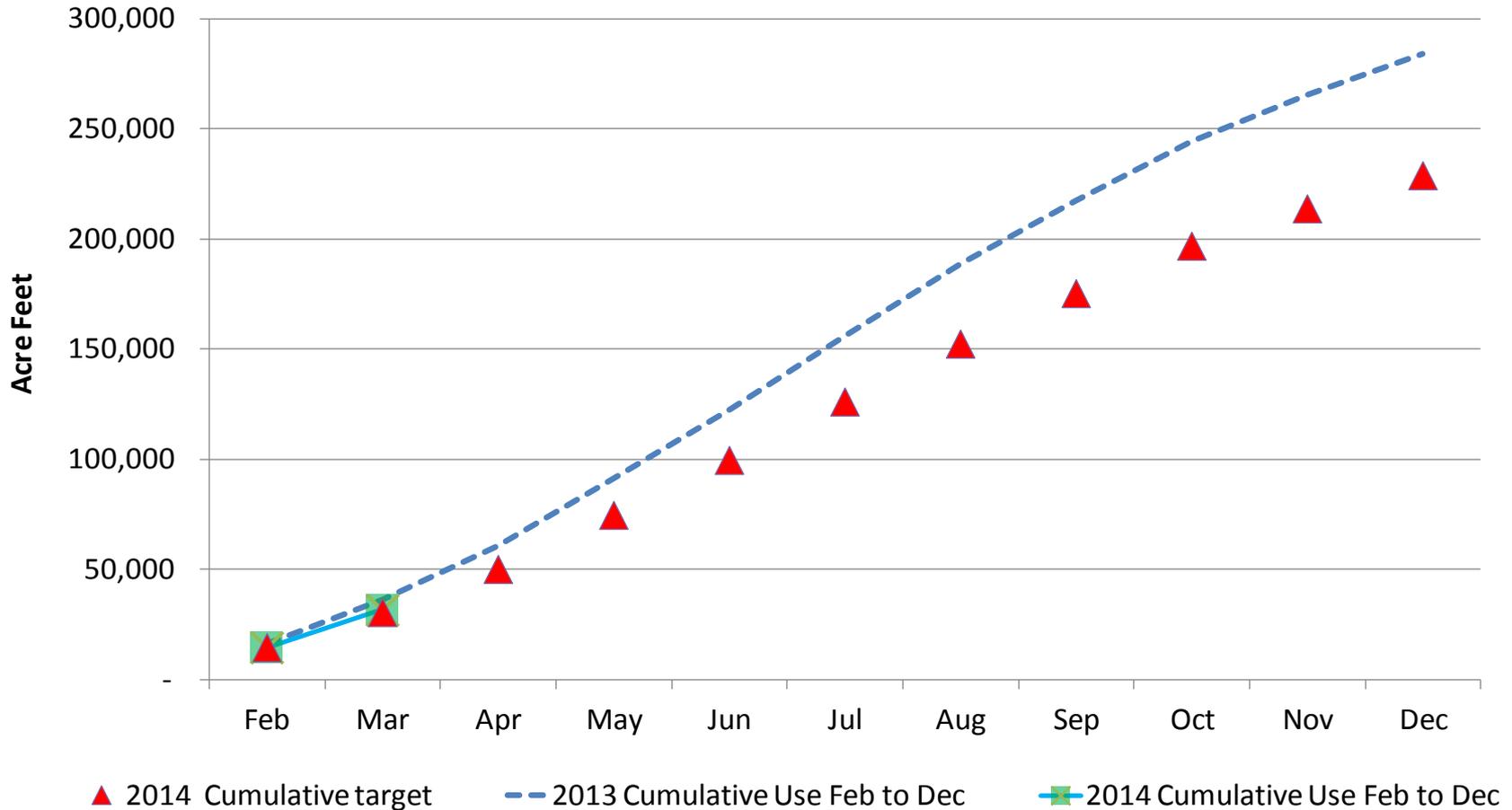
1. Water Use Reduction Program

<u>2014</u>	<u>North County Ground water</u>	<u>South County Ground water</u>	<u>Treated Water</u>	<u>SFPUC</u>	<u>SJWC; Stanford Surface</u>	<u>2014 Monthly Use</u>	<u>2014 Cumulative Use Feb to Dec</u>	<u>%Savings from 2013 <+> savings</u>
January water use values are NOT used in water savings calculations or cumulative use values.								
<i>Jan</i>	6,486.0	1,692.7	7,913.0	3,631.3	0.3	19,723.3	19,723.3	<i>Not Applicable</i>
Feb	5,767.2	1,163.9	4,996.0	2,617.1	0.3	14,544.5	14,544.5	10%
Mar	7,337.4	1,305.2	5,530.0	2,848.0	113.4	17,134.0	31,678.5	12%
Apr	-	-	-	-	-	-	-	
May	-	-	-	-	-	-	-	
Jun	-	-	-	-	-	-	-	
Jul	-	-	-	-	-	-	-	
Aug	-	-	-	-	-	-	-	
Sep	-	-	-	-	-	-	-	
Oct	-	-	-	-	-	-	-	
Nov	-	-	-	-	-	-	-	
Dec	-	-	-	-	-	-	-	
Feb to March Totals	13,104.6	2,469.1	10,526.0	5,465.1	113.7	31,678.5		
<i>%Savings by Source of Supply</i>	-47%	12%	30%	25%	94%	12%	-	

Cumulative Water Use by Major Retailers

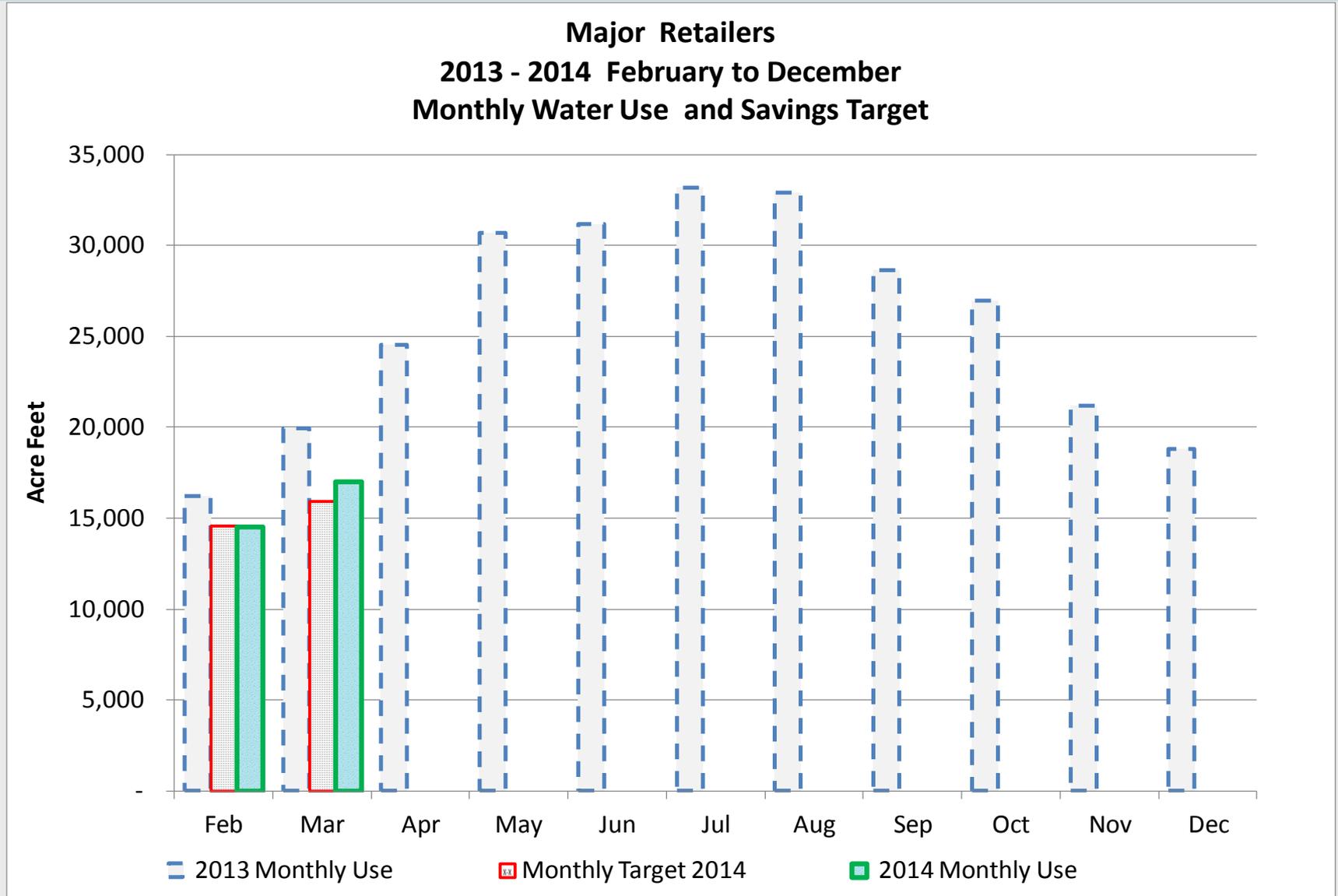
1. Water Use Reduction Program

**Major Retailers
2013 - 2014 February to December
Cumulative Water Use and Savings Target**



Cumulative Water Use by Major Retailers

1. Water Use Reduction Program



Retailer/City/County Calls for Reduction

1. Water Use Reduction Program

Entity	Action
California Water Service	Activated CPUC rule 14.1; 20% call
Gilroy	Will consider voluntary measures in June
Great Oaks	Activated CPUC rule 14.1 (restrictions)
Milpitas	No resolution adopted at this time
Morgan Hill	Adopted resolution for Level 1 (20%)
Mountain View	Calling for 10% voluntary
Palo Alto	Calling for 10% voluntary
Purissima Hills	Calling for 10% voluntary
San Jose Municipal	No resolution adopted at this time
San Jose Water Co.	Activated CPUC rule 14.1 (restrictions)
Santa Clara (City)	No resolution adopted at this time
Santa Clara (County)	Adopted resolution for 20% voluntary
Stanford University	Calling for 10% voluntary
Sunnyvale	Calling for 15% voluntary

Dry reservoirs and streams

2. Environmental Management of Raw Water Operations

- Groundwater recharge program only 25% of normal year-
 - Reservoirs generally dry by end of summer, except Anderson and Calero (imported water)
 - Imported water releases only to upper Coyote Creek and Madrone Channel

- California Dept of Fish and Wildlife coordination
 - Lake/Streambed Alteration Agreements
 - Notification/discussion of planned operations
 - Regular stream condition reports by District biologists; site visits and tours
 - CDFW policy limits fish rescue, relocation
 - Depredation permits for pond maintenance

Recharge Pond Maintenance

2. Environmental Management of Raw Water Operations

Pond	City	Date
Los Capitancillos	San Jose	May
Alamitos	San Jose	May
McClellan	Cupertino	May-July
Main	Morgan Hill	May-July
San Pedro	Morgan Hill	Pending
Oka	Los Gatos	August
Guadalupe	San Jose	June
Penitencia	San Jose	July
Camden	Campbell	September
Helmsley	San Jose	September



- CDFW depredation permit received for work on Los Cap, Alamitos and Guadalupe ponds.

Fact Sheets for Raw Water Operations

2. Environmental Management of Raw Water Operations

Neighborhood Work Notice - May 2014

Groundwater recharge pond maintenance



Drought impacts groundwater recharge ponds

Recharge ponds are critical to protect groundwater basins, one of Santa Clara County's most important natural resources.

Every year, the Santa Clara Valley Water District puts local and imported water in these ponds, where it percolates into underground aquifers for future use. Nearly half the water used in the county each year is pumped from the groundwater basin. This vital resource is the county's primary reserve for drought years.

A lack of winter rainfall resulted in very little local water flowing into district reservoirs and the groundwater basin. The statewide water shortage has also resulted in severe cutbacks to water imported to the county. This has forced the water district to cut back releases to groundwater recharge in order to maintain adequate supply for its drinking water treatment plants.

Drought provides opportunity for pond maintenance

The conditions provide an opportunity for needed maintenance on recharge ponds normally filled with water year-round.

Some, like Los Capitancillos, have seen continuous use for about 30 years. The dry out allows district crews to remove collected sediments, vegetation and other materials to improve percolation capacity and return the ponds to peak performance.

Crews will begin work in early May, with completion scheduled in late fall. The schedule (right) shows when the district expects to initiate work on the recharge ponds. Please note that some ponds may already be drying out.



Water district staff at work at the Los Capitancillos Recharge Ponds. Similar work will take place throughout the year.

Maintenance will follow soon after for many of these ponds. Once the district completes its work, the ponds will remain empty until winter storms return or imported water supplies are restored.

Projected maintenance schedule

Pond	City	Date
Los Capitancillos	San José	May
Alamitos	San José	May
McClellan	Cupertino	May/July
Main	Morgan Hill	May/July
San Pedro	Morgan Hill	Pending
Oka	Los Gatos	August
Guadalupe	San José	June
Penitencia	San José	July
Camden	Campbell	September
Helmsley	San José	September

Wildlife impacts

Throughout the drought, the water district has worked closely with the California Department of Fish and Wildlife (CDFW) and other regulatory agency staff to address fish and wildlife impacted by the extreme drought conditions.

The CDFW manages local fish and wildlife resources and issues appropriate permits to allow work in habitat areas and to rescue or relocate species when warranted.

In normal rainfall years, water supply operations in local streams and recharge ponds provide water and co-aquatic habitat for native and non-native species. Therefore, it is district policy to conduct its operations and maintenance in an environmentally sensitive manner.

Aquatic habitats are impacted first and more severely than other habitats when water is lacking, causing migration, behavior changes and die-off of some animals. Wildlife become concentrated in remaining suitable habitat, increasing competition for resources and the chances for disease outbreaks due to close contact.

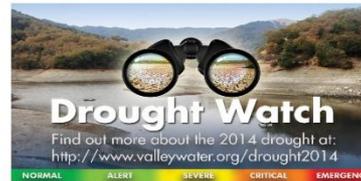
The drought's widespread nature has made native species relocation difficult to support and as a result, the CDFW has developed a policy that severely limits instances where fish rescue or relocation can be approved.

In coordination with CDFW biological staff, the district is managing the effects of drought response on native and non-native species.

Pond maintenance will not include rescue or relocation of wildlife, with the exception of western pond turtles that may be present in the Alamitos or Los Capitancillos ponds.

Most of the fish in the recharge ponds are non-native carp and bass released into the ponds. The district remains committed to educating the community about the problems created by releasing pet turtles, or sport fish, to the ponds and local streams.

However, the loss of these non-native species will likely benefit in the long term the local fish and wildlife that have evolved to withstand the climate extremes in their native habitat.



Contact us

For more information, contact **Jerry Sparkman** at **(408) 630-3254** or visit www.valleywater.org and use our **Access Valley Water** customer request and information system to submit questions. With three easy steps, you can use this service to find out the latest information on the project or to submit questions, complaints or compliments directly to a district staff person.

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Notice to Surface Water Permittees

3. Untreated Surface Water Customers

- Notices sent to 72 pipeline raw water customers for May 1 delivery curtailment
- Applications for extension available for agricultural and commercial users needing time to set up alternate supplies
 - 25 extensions granted (2 months), including:
 - ✓ 15 Half Road Lateral agricultural accounts
 - ✓ 5 golf course accounts
 - 10 non-qualifying applications (non-commercial M&I)
- Remaining issues:
 - Several accounts list “fire suppression” as a use
 - Long-term operation/management of Half Road Lateral
 - Developing recycled water supplies for golf courses, others
 - Untreated surface water diversions from creeks
 - Process to update 1974 Rules and Regulations

Semitropic Water Bank

4. California Aqueduct Reverse Flow Project

The Bay-Delta Watershed and Major Water Projects



California Aqueduct Reverse Flow Project

4. California Aqueduct Reverse Flow Project

SCVWD

San Luis Reservoir

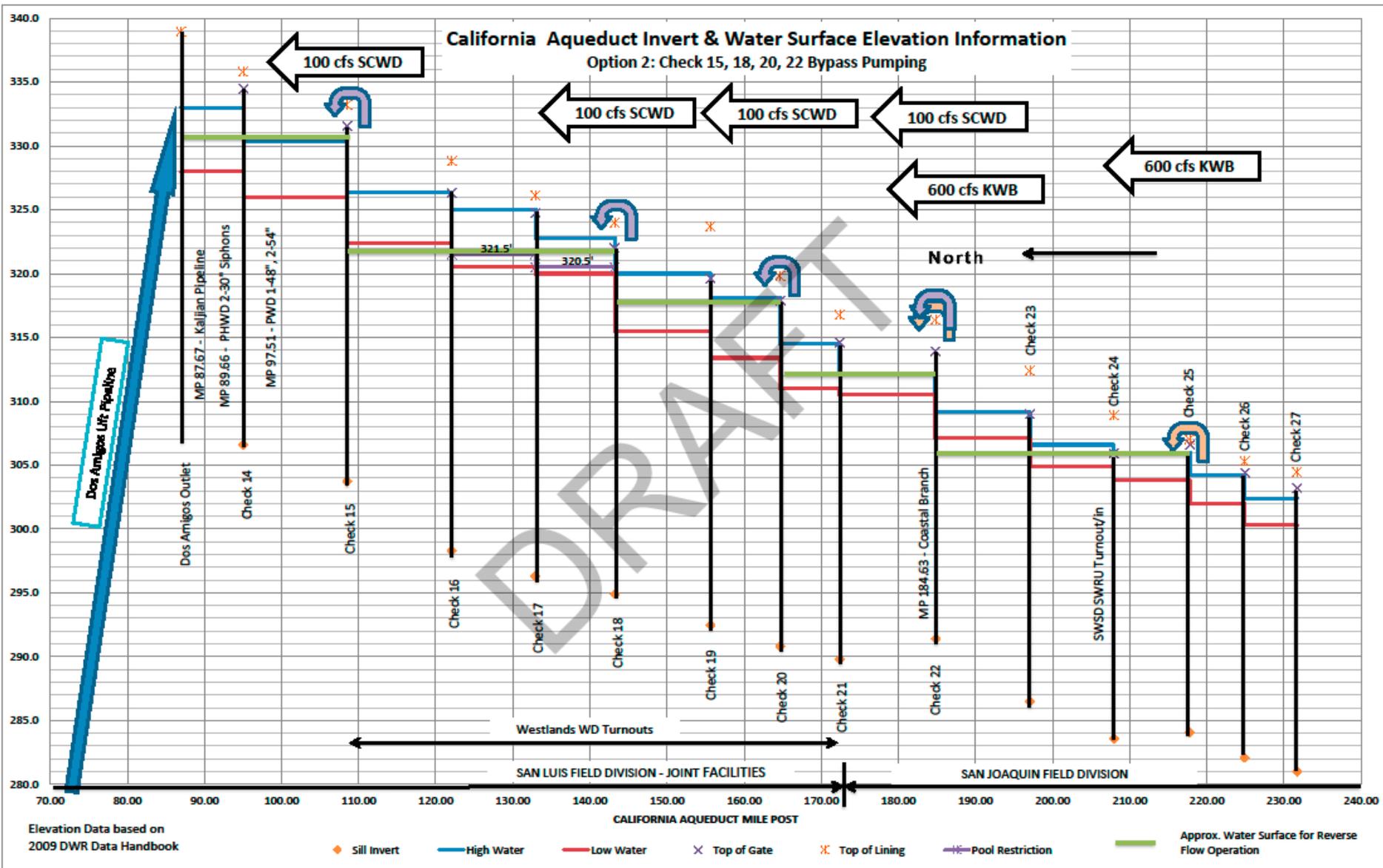
Delivery to CVP

Proposed Project:
Pump water from Semitropic approx. 100 miles up the California Aqueduct for CVP exchange



Water Pumped Over Four Check Structures

4. California Aqueduct Reverse Flow Project



Proposed Pumps at Check 15

4. California Aqueduct Reverse Flow Project



Project Timeline

4. California Aqueduct Reverse Flow Project

June-August
2014

Planning

CEQA/NEPA

Design

Sept 2014-
Feb 2015

Project
Operation

Staff Recommendations

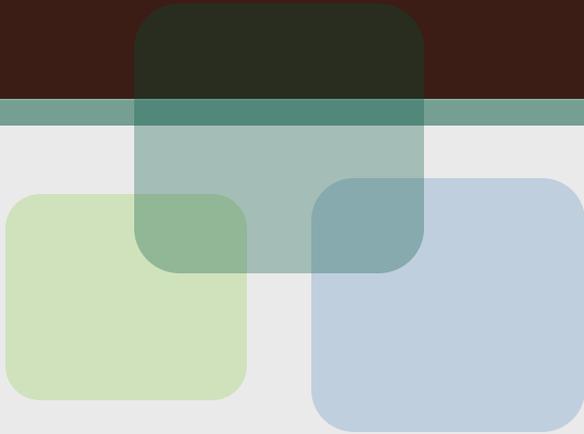
May 27 Update on 2014 Water Supply and Drought Response

- B. Authorize the Chief Executive Officer (CEO) to approve budget adjustments in FY14 and FY15 totaling up to \$500,000 from the Water Utility Operating and Capital Reserve to augment the Water Conservation Program and related outreach.
- C. Determine, by a four-fifths vote, that there is a need to continue the emergency action declared by the CEO on May 14, 2014, pursuant to Public Contract Code §22050 and District Resolution 05-67 in support of the California Aqueduct Reverse Flow Project.



Questions?

Valleywater.org
Save20gallons.org



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TOTAL COUNTY WATER USE BY MAJOR RETAILERS

2013 (Base Year) and 2014 (Reporting Year)

<u>2013</u>	<u>North County Ground water</u>	<u>South County Ground water</u>	<u>Treated Water</u>	<u>SFPUC</u>	<u>SJWC; Stanford Surface</u>	<u>2013 Monthly Use</u>	<u>2013 Cumulative Use Feb to Dec</u>
<i>January water use values are NOT used in water savings calculations or cumulative use values.</i>							
Jan	3,066.8	1,191.7	5,783.5	3,447.0	1,830.1	15,319.1	15,319.1
Feb	3,207.0	1,208.5	6,735.4	3,672.0	1,401.8	16,224.7	16,224.7
Mar	5,726.3	1,585.7	8,344.8	3,600.0	664.9	19,921.7	36,146.4
Apr	6,555.6	1,906.2	10,867.8	4,700.0	523.2	24,552.8	60,699.1
May	8,415.6	2,314.3	13,644.1	5,873.0	443.6	30,690.6	91,389.7
Jun	8,938.8	2,506.1	13,755.0	5,328.0	670.2	31,198.1	122,587.8
Jul	10,579.6	2,419.3	13,639.5	5,770.0	775.3	33,183.7	155,771.5
Aug	9,948.1	2,399.5	13,632.2	6,166.0	753.1	32,898.9	188,670.4
Sep	7,957.0	2,305.2	12,838.9	4,940.0	590.6	28,631.7	217,302.1
Oct	8,075.5	2,153.7	11,605.3	4,641.0	498.5	26,974.0	244,276.1
Nov	6,843.3	1,692.3	8,753.1	3,594.0	326.0	21,208.7	265,484.8
Dec	6,850.9	1,397.7	7,180.9	3,158.0	202.8	18,790.3	284,275.1
Feb to March Totals	8,933.3	2,794.2	15,080.2	7,272.0	2,066.7	36,146.4	
<i>Feb to Dec Totals</i>	<i>83,097.7</i>	<i>21,888.5</i>	<i>120,997.0</i>	<i>51,442.0</i>	<i>6,849.9</i>	<i>284,275.1</i>	

<u>2014</u>	<u>North County Ground water</u>	<u>South County Ground water</u>	<u>Treated Water</u>	<u>SFPUC</u>	<u>SJWC; Stanford Surface</u>	<u>2014 Monthly Use</u>	<u>2014 Cumulative Use Feb to Dec</u>	<u>%Savings from 2013 <+> savings</u>
<i>January water use values are NOT used in water savings calculations or cumulative use values.</i>								
Jan	6,486.0	1,692.7	7,913.0	3,631.3	0.3	19,723.3	19,723.3	Not Applicable
Feb	5,767.2	1,163.9	4,996.0	2,617.1	0.3	14,544.5	14,544.5	10%
Mar	7,337.4	1,305.2	5,530.0	2,848.0	113.4	17,134.0	31,678.5	12%
Apr	-	-	-	-	-	-	-	
May	-	-	-	-	-	-	-	
Jun	-	-	-	-	-	-	-	
Jul	-	-	-	-	-	-	-	
Aug	-	-	-	-	-	-	-	
Sep	-	-	-	-	-	-	-	
Oct	-	-	-	-	-	-	-	
Nov	-	-	-	-	-	-	-	
Dec	-	-	-	-	-	-	-	
Feb to March Totals	13,104.6	2,469.1	10,526.0	5,465.1	113.7	31,678.5		
<i>%Savings by Source of Supply</i>	<i>-47%</i>	<i>12%</i>	<i>30%</i>	<i>25%</i>	<i>94%</i>	<i>12%</i>	<i>-</i>	

Current monthly water use data is preliminary and subject to change.

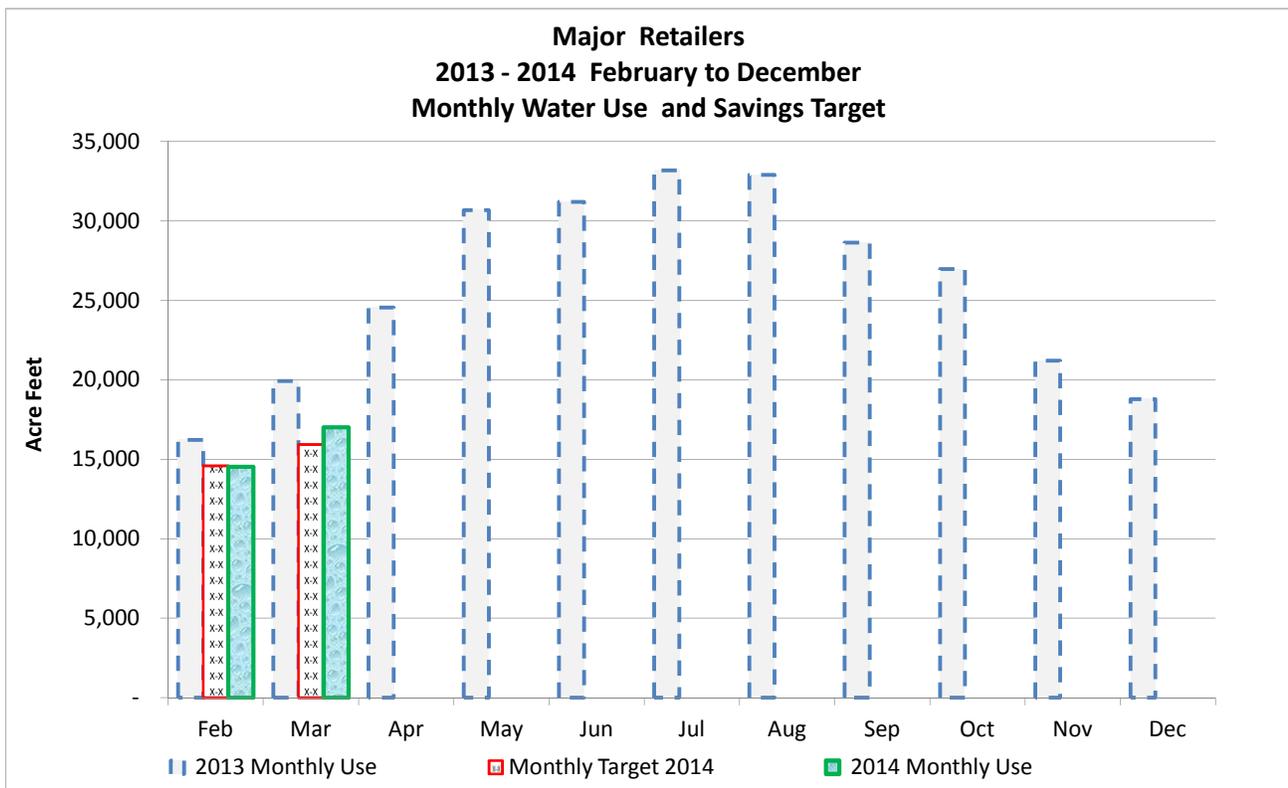
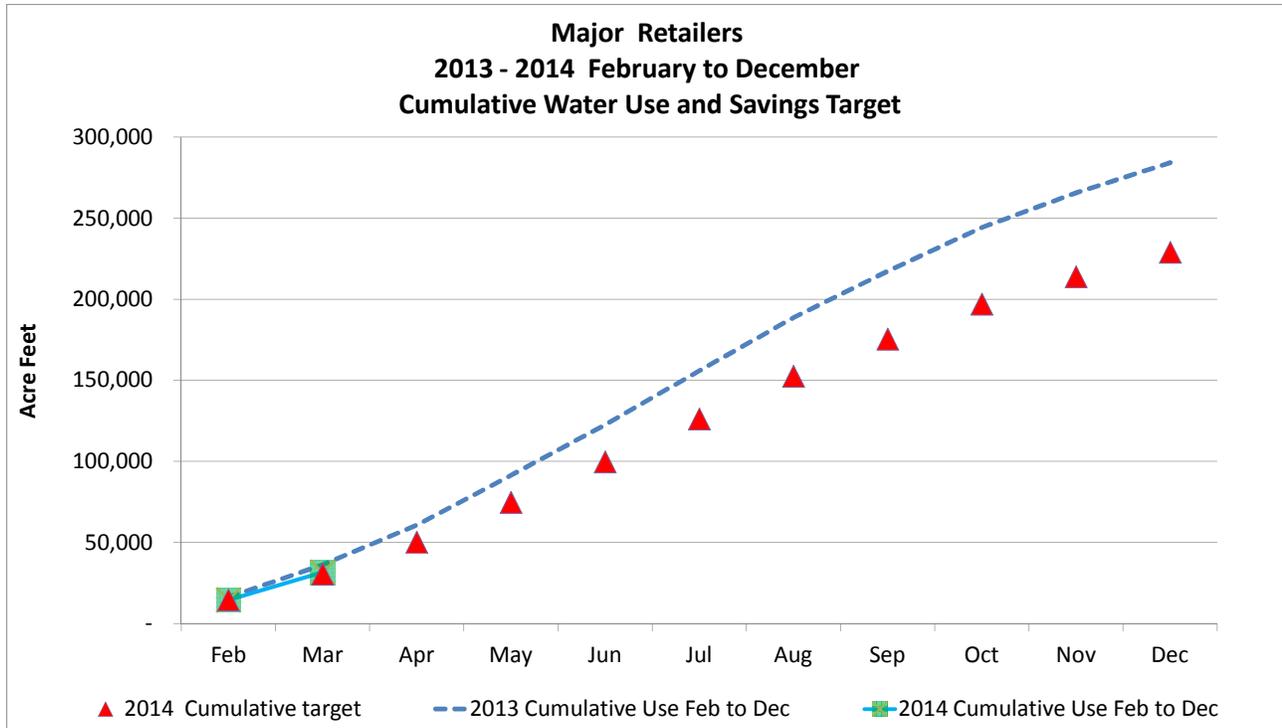
These water use data sets do not include recycled water or surface water sales by the District

Percent savings are shown in positive values where savings have been made and negative percent values where water use is higher than the base year period (2013)

Cumulative total from February to current month

Savings Target for February is 10%. March through December is 20% of 2013 monthly use

TOTAL COUNTY WATER USE BY MAJOR RETAILERS



NOTES

Current monthly water use data is preliminary and subject to change.

January not shown. Call for conservation was 10% for February and 20% March to December 2014.

Water use values depicted here are only for water retailers and other major water users subject to monthly measurement

These water use data sets do not include recycled water or surface water sales by the District

Volumes for the most recent reporting month are not shown graphically as SFPUC data is not available



As of April 22, 2014, certain rebate amounts for several key programs have **doubled**, while others have increased significantly. These increases are temporary, through September 30, 2014, and certain restrictions apply:

Landscape Conversion Rebate Program

- Rebates have doubled from \$1.00 per square foot to \$2.00 per square foot for converting high water using landscape to low water using landscape. This amount is even higher in areas that have a cost sharing partner, such as Palo Alto, Morgan Hill and the San José Municipal Water System. For more information or to schedule a pre-inspection, please call the Water Conservation Hotline at (408) 630-2554.

Landscape Rebate Program

- Several irrigation hardware rebates have doubled. Customers may receive up to \$1,000 for landscape meters, flow sensors and hydrometers.
- Weather based irrigation controllers are now eligible for a rebate of up to \$1,000 per controller that serves 13 to 24 stations and \$2,000 per controller that serves 25 or more stations. Rebates for controllers with 1 to 12 stations remains up to \$300 per controller.

In addition to the new rebate amounts for the Landscape Rebate program, the district offers FREE Landscape Surveys for multi-family, commercial, and institutional sites with a minimum of 5,000 square feet of irrigated landscape. For more information, please call the Water Conservation Hotline at (408) 630-2554.

Graywater Laundry to Landscape Rebate Program

- The rebate program has been doubled to



\$200. Customers can receive \$200 per residential site for properly connecting a clothes washer to a graywater irrigation system. For more information or to schedule a pre-inspection and receive a Graywater Laundry to Landscape Rebate Program application, please email conservation@valleywater.org or call the Water Conservation Hotline at (408) 630-2554.

Commercial Rebate Programs

- Commercial rebates are available for qualifying businesses, apartment complexes and schools in Santa Clara County for high-efficiency washing machines, submeters, process improvements, air-cooled ice machines, and connectionless food steamers. Some rebates that have recently increased include:
 - » Businesses that replace or update equipment which results in a measurable water reduction may receive a rebate of \$8 per 100 cubic feet of water saved per year, or 50 percent of the project cost, whichever is less. That's double the previous rebate amount. The amount is even higher in areas that have a cost sharing partner, such as San José Municipal Water System.
 - » Connectionless commercial food steamers can earn a rebate of up to \$1,000 per compartment, up from \$485.
 - » Commercial clothes washers can qualify for a rebate of up to \$800 per washer, doubling the previous amount.

[continued on back »](#)

As of January 1, 2014, rebates were permanently increased for the following programs:

High-Efficiency Toilet Rebate Program

- Replace your inefficient toilets and you may be eligible to receive up to \$125 per PREMIUM model High Efficiency Toilet and up to \$50 per Non PREMIUM model High Efficiency Toilet, no pre-inspection required. For more information or to receive a High Efficiency Toilet Rebate Program application, please call the water district's contractor, ConserVision Consulting, at 1-877-874-8479.

Residential High Efficiency Clothes Washer Rebate Program

- Purchase and install a qualifying high efficiency clothes washer and you may be eligible to receive up to \$200 for a combined water agency and PG&E rebate on a qualifying Energy Star Most Efficient clothes washer or up to \$50 for a water agency rebate on a qualifying energy efficient clothes washer. For more information or to apply online, visit: waterenergysavings.com. City of Palo Alto residents should visit the city's website for more information.

Submeter Rebate Program

- Mobile home parks and condominium complexes can receive up to \$150 per installed submeter for changing from a master water meter to individual water submeters.

Before purchasing equipment or beginning any project, customers should check eligibility requirements at www.valleywater.org/programs/waterconservation.aspx or call the district's water conservation hotline at (408) 630-2554.

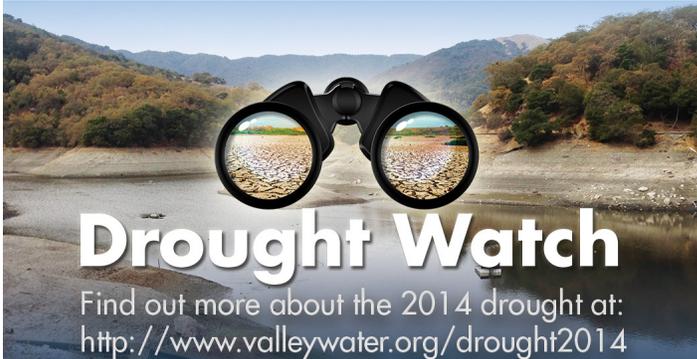
Additional services:

Water-Wise House Call

- A Water-Wise House Call is a free home water use survey that helps identify opportunities where you can conserve water. To suit your schedule, Water-Wise House Calls are available for Santa Clara County residents and apartment managers Monday through Saturday, during daylight hours. To schedule an appointment, please call 1 (800) 548-1882. If you are a San Jose Water Company customer, please call (408) 279-7900 to schedule a free water audit.

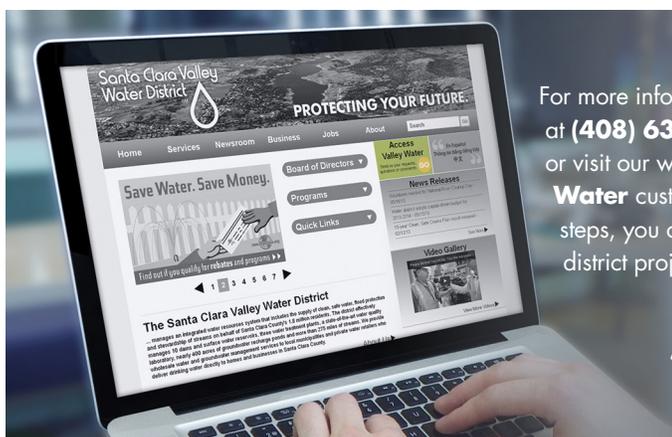
Water Saving Tips

- Visit save20gallons.org or call the Water Conservation Hotline at (408) 630-2554.
- We regularly post water saving tips on our Facebook page and Twitter feed. Follow us and share tips with others.



Drought Watch
Find out more about the 2014 drought at:
<http://www.valleywater.org/drought2014>

NORMAL **ALERT** **SEVERE** **CRITICAL** **EMERGENCY**



CONTACT US

For more information, contact the **Water Conservation Hotline** at **(408) 630-2554**, email conservation@valleywater.org, or visit our website at valleywater.org and use our **Access Valley Water** customer request and information system. With three easy steps, you can use this service to find out the latest information on district projects or to submit questions, complaints or compliments directly to a district staff person.



To get eNews, email info@valleywater.org

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Water Retailer and Municipalities Conservation Actions and Programs 2014

April 4, 2014

<u>Retailer</u>	<u>Call for Conservation or Other Action</u>	<u>Outreach</u>	<u>Cost-Share on District Programs</u>
California Water Service Company	Calling for 20%. Worked with CPUC to activate Rule 14.1 (water restrictions). Sending notification to local elected officials and customers.	Plan to increase outreach/education efforts. Have reached out to key personnel from Los Altos, Los Altos Hills, and Cupertino. Also doing banners, restaurant table tents, and public events. Radio ads running on KGO in May/June. Finalizing video PSA for use on cable stations. Information on website.	Yes, pays for 50% of the District's cost for several of our programs
Gilroy	Council will consider adopting Ordinance and resolution declaring Level 1 (20%) Water Supply Shortage in June 2014.	Plan to increase outreach/education efforts. Working with the District WaterWise Program and may start WaterSmart program. Information on website.	Not at this time but city is considering the home water use report program and if they implement the District will cost-share with them
Great Oaks Water Company	Activated Rule 14.1 (water restrictions) on February 28, 2014	Website notification (3/6/14); bill inserts (3/11/14)	Not at this time
Milpitas	No resolution adopted at this time.		
Morgan Hill	Council adopted resolutions declaring Level 1 (20%) Water Supply Shortage, includes additional restrictions (e.g. limiting the number of days per week for irrigation). Permanent water waste measures in place.	Looking to increase outreach/education efforts. City will start sending out home water use reports (WaterSmart program). Information on website. Planning do add messaging on envelopes and doing bill inserts.	Yes, doubles the District's rebate for residential high-efficiency toilets and adds to the District's rebate for landscape conversion (total rebate is \$3.00 per sq ft).
Mountain View	City Council adopted Stage 1 of Water Shortage Contingency Plan and is calling for customers to voluntarily reduce water use by 10%. Permanent water waste measures in place.	Looking to increase outreach/education efforts, including numerous Earth Day and Green Fair events. Attending multiple events in spring/summer as well. Information on website.	District cost-sharing with MV on WaterSmart Home Water Use Reports

Water Retailer and Municipalities Conservation Actions and Programs 2014

April 4, 2014

<u>Retailer</u>	<u>Call for Conservation or Other Action</u>	<u>Outreach</u>	<u>Cost-Share on District Programs</u>
Palo Alto	City calling for voluntary 10% to be consistent with SFPUC call. Permanent water waste measures in place.	Plan to increase outreach/education efforts. City already sends home water use reports (WaterSmart) to all its residential customers. Information on website.	Yes, PA pays 50% of cost for most District programs. For Landscape Conversion, PA doubles District rebate (\$4.00 per sq ft)
Purissima Hills Water District	Supporting SFPUC's call for voluntary 10%. Permanent water waste measures in place.	Have increased outreach efforts with drought specific information. Staff considering program that will send out home water use reports.	Interested in the District cost-sharing on Home Water Use Report program
San Jose Municipal Water	Increase customer outreach and notification to voluntarily reduce treated water purchased from SCVWD by 20%. Permanent water waste measures in place.	Continue outreach/education efforts, including: <ul style="list-style-type: none"> • Tabling and/or presentations for customers in the Muni Water service area • Website update about drought status and asking Muni Water customers to voluntarily follow the actions similar to SJWC's and GOWC's Rule 14.1 restrictions • Postcard mailing to all Muni Water customers about the drought and voluntary actions similar to SJWC's and GOWC's Rule 14.1 restrictions • Drought section in annual Water Quality Report, mailed to all customers this summer • Article in Employee Newsletter • Daily posts on Facebook during May 4-10 Drinking Water Week • Partnership between the City of San José and the San José Earthquakes, to do outreach to Earthquakes fans via radio, TV, and at games (in conjunction with other ESD Environmental programs) 	Yes, pays for 50% of the District's cost on many of our programs. Also adds to our landscape conversion rebate (total rebate is \$3.00 per sq ft in their service area) and to our measured commercial rebate (total rebate is \$12.00 per ccf saved).
San Jose Water Company	CPUC approval on March 31 to activate Rule 14.1 (water restrictions).	Plan to increase outreach/education efforts, including bill inserts and messaging starting in May. Also attending numerous events, including Water Awareness Night at SJ Giants game. Developing YouTube videos on leak repair and value of water. Continuous website updates.	Not at this time, however SJWC implements their own home survey program

Water Retailer and Municipalities Conservation Actions and Programs 2014

April 4, 2014

<u>Retailer</u>	<u>Call for Conservation or Other Action</u>	<u>Outreach</u>	<u>Cost-Share on District Programs</u>
Santa Clara, City	Still discussing internally. Staff recommendation will likely depend on SFPUC April update and March water use. Permanent water waste measures in place.	Plan to increase outreach/education efforts, including numerous Earth Day and general water conservation events. Program information on website.	Yes for commercial clothes washers
Santa Clara County	The County Board of Supervisors adopted a resolution calling for a voluntary 20% reduction. Other drought response actions include a drought ordinance (water use restrictions) based on the model used by others in the county.	Plan to increase outreach/education efforts, including sending out District materials through tax bills.	Not at this time
Stanford University	Calling for voluntary 10% based on SFPUC's call	Increasing outreach/education, fact sheets, emails, etc. Working with groups on campus	Doubled the District's rebate for residential high-efficiency toilets. Also interested in cost-sharing with the District on a pilot study for a new weather based irrigation controller.
Sunnyvale	15% Reduction Target. Permanent water waste prohibitions in place (Municipal Code Chapter 12.34.020), includes limits on irrigation time and duration	Increased outreach/education efforts. Information on website. Messaging on envelopes. Targeted outreach (letters and door hangers to water wasters)	Not at this time

Water Retailer and Municipalities Conservation Actions and Programs

City/Retailer	Call for Conservation	Water Use Restrictions	2013 Water Use AF Feb to Dec	2014 % Savings to Date
California Water Service	20%	Enacted Rule 14.1 restrictions	14,400	17%
Gilroy	20%	Permanent restrictions plus Level 1	1,066	11%
Great Oaks Water Company	20%	Enacted Rule 14.1 restrictions	11,953	16%
Milpitas	In discussion	None at this time	10,040	11%
Morgan Hill	20%	Permanent restrictions plus Level 1	6,863	15%
Mountain View	10%	Permanent restrictions	11,631	18%
Palo Alto	10%	Permanent restrictions	12,498	26%
Purissima Hills Water	10%	Permanent restrictions	2,204	34%
San Jose Municipal Water	20% - treated water only	Permanent restrictions	20,579	16%
San Jose Water Company	20%	Enacted Rule 14.1 restrictions	135,996	10%
Santa Clara, City of	In discussion	Permanent restrictions	20,321	8%
Santa Clara County	20%	Drought Ordinance	Not Applicable	Not Applicable
Stanford University	10%	N/A	Not available	Not available
Sunnyvale	Recommending 15%	Permanent restrictions, considering	20,459	17%

Groundwater recharge pond maintenance

Drought impacts groundwater recharge ponds

Recharge ponds are critical to protect groundwater basins, one of Santa Clara County's most important natural resources.

Every year, the Santa Clara Valley Water District puts local and imported water in these ponds, where it percolates into underground aquifers for future use. Nearly half the water used in the county each year is pumped from the groundwater basin. This vital resource is the county's primary reserve for drought years.

A lack of winter rainfall resulted in very little local water flowing into district reservoirs and the groundwater basin. The statewide water shortage has also resulted in severe cutbacks to water imported to the county. This has forced the water district to cut back releases to groundwater recharge in order to maintain adequate supply for its drinking water treatment plants.

Drought provides opportunity for pond maintenance

The conditions provide an opportunity for needed maintenance on recharge ponds normally filled with water year-round.

Some, like Los Capitancillos, have seen continuous use for about 30 years. The dry out allows district crews to remove collected sediments, vegetation and other materials to improve percolation capacity and return the ponds to peak performance.

Crews will begin work in early May, with completion scheduled in late fall. The schedule (right) shows when the district expects to initiate work on the recharge ponds. Please note that some ponds may already be drying out.



Water district staff at work at the Los Capitancillos Recharge Ponds. Similar work will take place throughout the year.

Maintenance will follow soon after for many of these ponds. Once the district completes its work, the ponds will remain empty until winter storms return or imported water supplies are restored.

Projected maintenance schedule

Pond	City	Date
Los Capitancillos	San José	May
Alamitos	San José	May
McClellan	Cupertino	May-July
Main	Morgan Hill	May-July
San Pedro	Morgan Hill	Pending
Oka	Los Gatos	August
Guadalupe	San José	June
Penitencia	San José	July
Camden	Campbell	September
Helmsley	San José	September

Wildlife impacts

Throughout the drought, the water district has worked closely with the California Department of Fish and Wildlife (CDFW) and other regulatory agency staff to address fish and wildlife impacted by the extreme drought conditions.

The CDFW manages local fish and wildlife resources and issues appropriate permits to allow work in habitat areas and to rescue or relocate species when warranted.

In normal rainfall years, water supply operations in local streams and recharge ponds provide water and co-aquatic habitat for native and non-native species. Therefore, it is district policy to conduct its operations and maintenance in an environmentally sensitive manner.

Aquatic habitats are impacted first and more severely than other habitats when water is lacking, causing migration, behavior changes and die-off of some animals. Wildlife become concentrated in remaining suitable habitat, increasing competition for resources and the chances for disease outbreaks due to close contact.

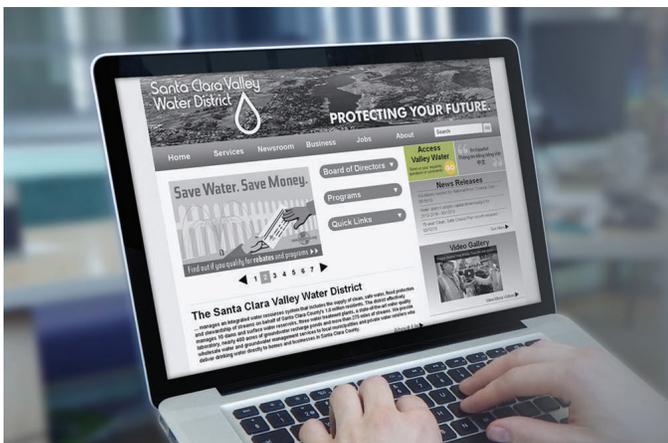
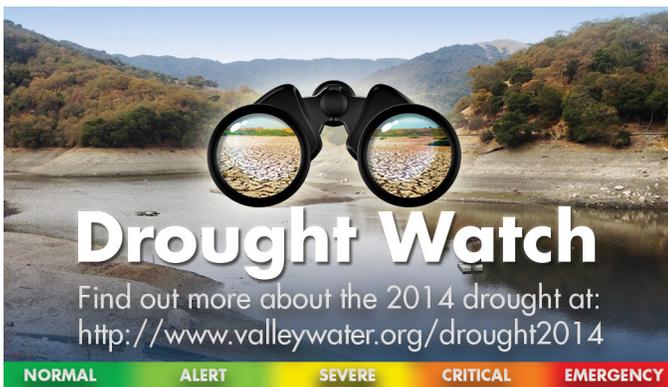
The drought's widespread nature has made native species relocation difficult to support and as a result, the CDFW has developed a policy that severely limits instances where fish rescue or relocation can be approved.

In coordination with CDFW biological staff, the district is managing the effects of drought response on native and non-native species.

Pond maintenance will not include rescue or relocation of wildlife, with the exception of western pond turtles that may be present in the Alamitos or Los Capitancillos ponds.

Most of the fish in the recharge ponds are non-native carp and bass released into the ponds. The district remains committed to educating the community about the problems created by releasing pet turtles, or sport fish, to the ponds and local streams.

However, the loss of these non-native species will likely benefit in the long term the local fish and wildlife that have evolved to withstand the climate extremes in their native habitat.



Contact us

For more information, contact **Jerry Sparkman** at **(408) 630-3254** or visit www.valleywater.org and use our **Access Valley Water** customer request and information system to submit questions. With three easy steps, you can use this service to find out the latest information on the project or to submit questions, complaints or compliments directly to a district staff person.

Reservoir and local stream conditions



Los Capitancillos groundwater recharge ponds in South San Jose are at its lowest level in years.

Lack of rainfall continues to affect creeks and reservoirs

To conserve water in the midst of one of the driest seasons on record, the Santa Clara Valley Water District is modifying its operations. Because of the lack of local rainfall and cut backs in water imported from state and federal water projects, groundwater recharge operations in ponds and creeks have been cut back to conserve drinking water supplies for use this summer.

A priority of the water district is continued delivery of safe, clean water from its drinking water treatment plants to local water providers and municipalities. Imported water typically provides more than 85 percent of the supply for the water district's three drinking water treatment plants. In dry and critically dry years, when local water is limited, up to 99 percent of treated water is from imported water sources.

To ensure adequate drinking water supplies through the summer, imported and local water is being stored in Anderson, Coyote and Calero reservoirs. Despite the few spring storms there has been little local runoff, and all other district reservoirs continue to drop to minimum storage levels. As a result water releases to creeks and ponds are being curtailed.

Reservoir and creek conditions in your area

Cupertino/Saratoga/Los Gatos area:

- Releases from Stevens Creek Reservoir will provide limited flows in Stevens Creek until reservoir water levels fall below intake structures later in the year.
- Rodeo, Regnart, Calabazas and Saratoga creeks will remain dry until significant rainfall occurs.
- Los Gatos Creek flows will be reduced as water levels in Lexington Reservoir fall.
- McClellan, Page, Sunnyoaks, Budd, McGlincy, Oka and Camden ponds will go dry during the spring and are scheduled for maintenance this summer.

South San Jose/Almaden area:

- Alamos and Calero creeks will remain dry until significant rainfall occurs.
- Almaden Lake's elevation will continue to fall over the summer and water quality will decline in the lake.
- Los Capitancillos, Alamos and Guadalupe ponds will likely be dry by May and are scheduled for maintenance in May and June.

East San Jose area:

- Upper Penitencia Creek and most adjacent recharge ponds will remain dry until significant rainfall occurs.
- Piedmont, Capitol and Helmsley ponds will dry back this summer. Ponds at Penitencia Creek Park (City of San José), Penitencia Creek County Park (County of Santa Clara), and Overfelt Garden Park (City of San José) will not be supplied with water until drought conditions end.

Gilroy/Morgan Hill/South San Jose area:

- Releases of imported water to Coyote Creek and Madrone Channel are expected to continue at the current rate, but may be further reduced depending on water supply conditions.
- Releases of local water from Uvas and Chesbro dams will provide limited flows in Uvas and Llagas creeks, but expect drying creeks as the water in the reservoir is exhausted this summer.
- Main Avenue and San Pedro ponds will be dry by June and are scheduled for maintenance this summer.

continued on back »

Wildlife impacts

Throughout the drought, the water district has worked closely with California Department of Fish and Wildlife (CDFW) to address fish and wildlife impacted by the drought. CDFW is the state agency that is responsible for managing local fish and wildlife resources and issuing appropriate permits to allow work in habitat areas and to rescue or relocate species when warranted.

In normal rainfall years, water supply operations in local streams and recharge ponds provide water and aquatic habitat for native and non-native species alike. It is district policy to conduct its water supply operations and maintenance activities in an environmentally sensitive manner, including reservoir releases, stream and pond recharge operations and maintenance.

When water is lacking, aquatic habitats are impacted first and more severely than other habitats, causing migration, behavior changes and die-off of some animals. Lack of water means wildlife become concentrated in any remaining suitable habitat, increasing competition for remaining resources and increasing the chances for disease outbreaks due to close contact.

The widespread nature of the drought has made relocation of any native species difficult to support and, as a result, CDFW has developed a policy that severely limits the instances where rescue or relocation of fish species can be approved.

Operations and recharge pond maintenance will not include rescue or relocation of wildlife from streams or ponds. There are many non-native species that have colonized local streams and reservoirs. The loss of non-native species will likely have a long term benefit to the local fish and wildlife that have evolved to withstand the climate extremes of their native habitat.

Unfortunately, these dry creek and pond conditions are occurring statewide. The water district will continue to coordinate with CDFW staff in addressing the drought effects on native and non-native species.



Guadalupe Creek during the week of March 17, 2014.

Save Water. Save Money.
For water saving rebate programs, go to:
Save20Gallons.org/rebates

Many Rebates Now Doubled!

save20gallons.org
Santa Clara Valley Water District

Drought Watch
Find out more about the 2014 drought at:
<http://www.valleywater.org/drought2014>

NORMAL **ALERT** **SEVERE** **CRITICAL** **EMERGENCY**

Santa Clara Valley Water District
PROTECTING YOUR FUTURE

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Find out if you qualify for rebates and programs >>>

The Santa Clara Valley Water District
...manages an integrated water resources system that includes the supply of clean, safe water, flood protection and distribution of effluent on behalf of Santa Clara County's 1.8 million residents. The district maintains and operates 18 dams and 100 miles of water conveyance. Since 1992, the district has been a leader in providing sustainable water and wastewater management services to local communities and private water utilities who rely on the district for water supply to homes and businesses in Santa Clara County.

CONTACT US

For more information, contact the **Drought Hotline** at **(408) 630-2000**, or visit our website at valleywater.org and use our **Access Valley Water** customer request and information system. With three easy steps, you can use this service to find out the latest information on district projects or to submit questions, complaints or compliments directly to a district staff person.

Follow us on:

/scvwd /valleywater /valleywater

EXHIBIT E: SUNNYSLOPE WATER CONSERVATION

Chart Includes: Only Water Metered to SSCV Customers,
 Chart Does Not Include: COH Interties Wholesale Water Flow

Total Water Metered to SSCWD Customers Chart 2

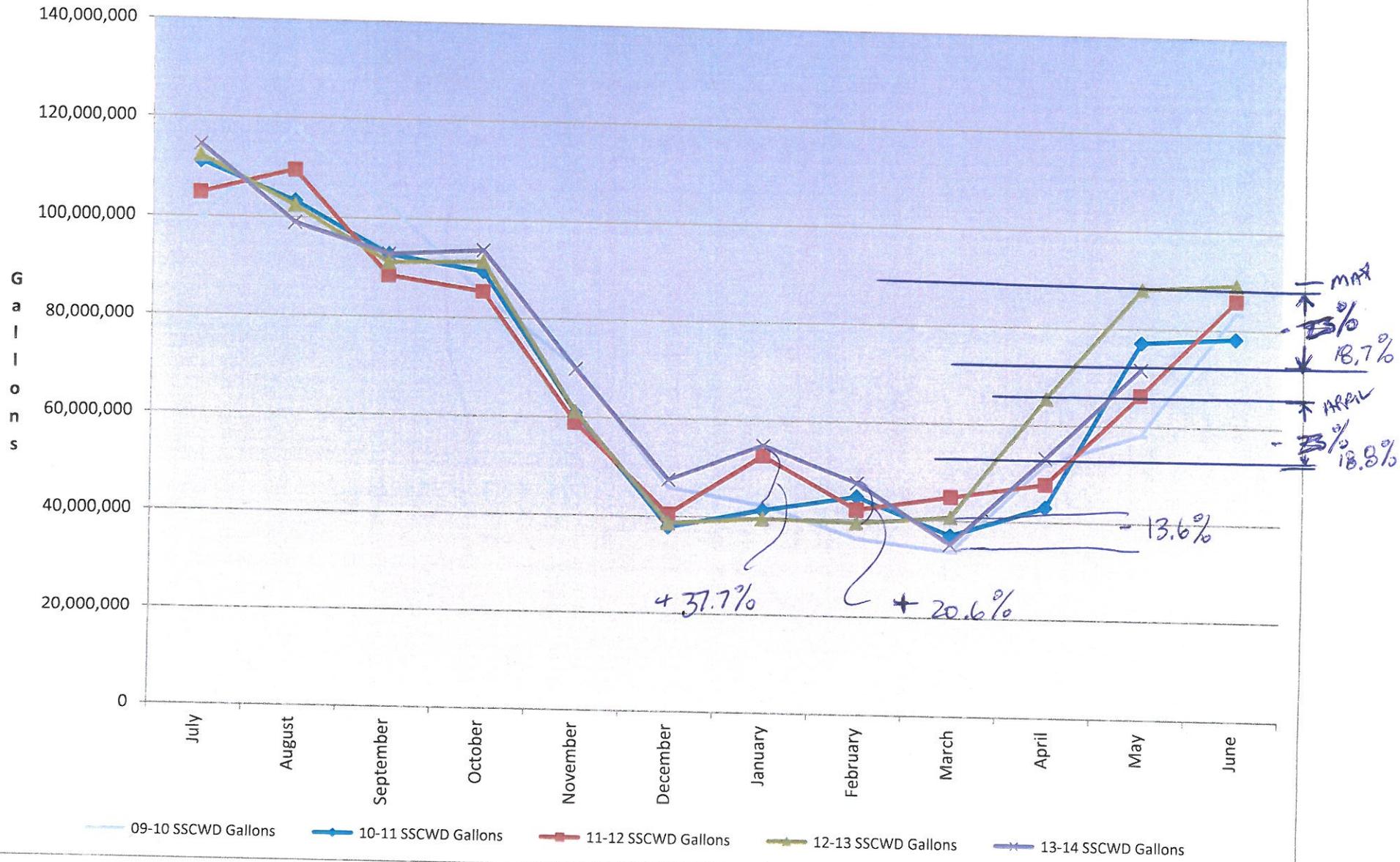


EXHIBIT F: SBCWD WATER CONSERVATION RESOLUTION

RESOLUTION NO. 2014-02

**A RESOLUTION OF THE BOARD OF DIRECTORS OF
THE SAN BENITO COUNTY WATER DISTRICT
DECLARING A WATER SHORTAGE EMERGENCY AND
IMPLEMENTING THE DISTRICT'S WATER SHORTAGE CONTINGENCY PLANS**

The San Benito County Water District Board of Directors does hereby resolve as follows:

PURSUANT to California Water Code Section 350 et seq., the Board of Directors has conducted duly noticed public hearings to establish the criteria under which a water shortage emergency may be declared.

WHEREAS,

The District is a water purveyor to the City of Hollister and the Sunnyslope County Water District for municipal purposes and to agricultural customers in San Benito County for irrigation purposes; and

WHEREAS,

Much of California experienced record dry conditions in January 2013 through January 2014, registering historic lows on the Northern Sierra, Upper Sacramento River and San Joaquin precipitation indices; and

WHEREAS,

The Governor of the State of California, in accordance with the authority vested in him by the state Constitution and statutes, including the California Emergency Services Act, and in particular, section 8625 of the California Government Code proclaimed a State of Emergency to exist in the State of California due to current drought conditions; and

WHEREAS,

The District receives water from the Central Valley Project (CVP) as a federal contractor and it has been projected by the Bureau of Reclamation that south of the Delta contractors will receive a zero allocation for agricultural water users and Municipal and Industrial (M&I) customers will only receive 50% of historical allocations this year;

WHEREAS,

The demand for water service is not expected to lessen;

WHEREAS,

As stated in the Hollister Urban Area Water Management Plan 2010, when the combined total amount of water supply available to the District from all sources falls at or below the Stage II triggering levels, the District will declare a water shortage emergency. The water supply would not be adequate to meet the ordinary demands and requirements of water consumers without depleting the District's water supply to the extent that there may be insufficient water for human

consumption, sanitation, fire protection, and environmental requirements. These conditions are likely to exist until precipitation and inflow dramatically increases.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by the Board of Directors of the San Benito County Water District that a water shortage emergency condition exists that threatens the adequacy of the water supply, until the water supply is deemed adequate. The Board of Directors hereby implements the following interim Water Shortage Contingency Plan.

1. Interim Overuse Policies Applicable to Agricultural and M&I San Felipe Customers (Contract and Small Parcel): Overuse of water will result in a reduction of water available to other users who are entitled to their allocation and will require that the District locate and purchase water on the open market to compensate for the overused water. If an Agricultural or M&I customer overuses their applicable water allocation, the District shall discontinue water service by closing the customer's valve. The customer will be billed their applicable water rate and power rate for usage in addition to a minimum regulatory conservation charge up to \$1,200/Acre-Foot). This charge is not imposed upon a parcel as an incident of property ownership but is a regulatory charge on water users who choose to overuse water allocations. The charge is intended to recover the District's costs for locating and purchasing water in the open market to back-fill the District's supplies so that other District customers' allocations will not be impacted.

2. Changing Account Service Type: Customers will not be allowed to change account service type between contract and small parcel or between contract Ag and contract M & I. However, the District has the discretion to authorize changing of account service type when such is deemed justified under the circumstances.

3. Transfer of Water from Agricultural Contract Customers to Agricultural Small Parcel Customers: Agricultural Contract customers will be allowed to transfer 2013-2014 rescheduled water and 2014-2015 water to small parcel customers. Transfers will only be allowed to agricultural small parcel customers with permanent crops (e.g. trees and vines) who meet either of the following criteria: 1) parcels are designated "high boron", 2) customer has no access to well water.

4. Voluntary Conservation: While the conditions at present warrant a Stage II action, the District is initially implementing a Stage I voluntary conservation action with a Demand Reduction Goal of 15 percent. As the District continues to monitor the water supply and conditions, the Board may choose to modify the action level.

5. Miscellaneous: Any and all provisions of the Water User's Handbook that are in conflict with the provisions of this Resolution are hereby suspended during the term of this interim Resolution. This Resolution shall be reviewed periodically but not later than the first meeting in March, 2015, to determine whether a water shortage condition and emergency exists and whether the policies set forth herein should continue in effect. In the event a court of law determines that any provision of this Resolution is invalid, such determination shall not invalidate the remaining provisions of this Resolution.

BE IT FURTHER RESOLVED that the Board of Directors shall periodically conduct proceedings to determine additional restrictions and regulations which may be necessary to safeguard the adequacy of the water supply for domestic, sanitation, fire protection, and environmental requirements.

BE IT FURTHER RESOLVED that the President of the Board is authorized to sign this Resolution on behalf of this Board and District.

PASSED AND ADOPTED by the Board of Directors of the San Benito County Water District this day 18th of February, 2014, by the following vote:

AYES: DIRECTORS: Tobias, Tonascia, Bettencourt, Flores & Torquato
NOES: DIRECTORS: None
ABSENT: DIRECTORS: None

/s/John Tobias
John Tobias
President

ATTEST: /s/Sara Singleton
Sara Singleton
Assistant Manager

**EXHIBIT G: WATSONVILLE WATER CONSERVATION
RESOLUTION**

RESOLUTION NO. 12-14 (CM)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WATSONVILLE REQUESTING THAT ALL CITY OF WATSONVILLE WATER SERVICE CUSTOMERS PARTICIPATE IN A VOLUNTARY EFFORT TO REDUCE WATER USE BY TWENTY PERCENT IN SUPPORT OF GOVERNOR BROWN'S DECLARATION OF A DROUGHT EMERGENCY

WHEREAS, in an effort to help our community meet this goal, the City of Watsonville Public Works and Utilities Department will continue and expand upon its water conservation program in local schools, through the media and in our residential, business and community outreach.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF WATSONVILLE, CALIFORNIA, AS FOLLOWS:

That the City Council hereby encourages all City water service customers to voluntarily conserve water by twenty percent (20%) in support of Governor Brown's declaration of a drought emergency.

The foregoing resolution was introduced at a regular meeting of the Council of the City of Watsonville, held on the 28th day of January, 2014, by Member Coffman-Gomez, who moved its adoption, which motion being duly seconded by Member Dodge, was upon roll call carried and the resolution adopted by the following vote:

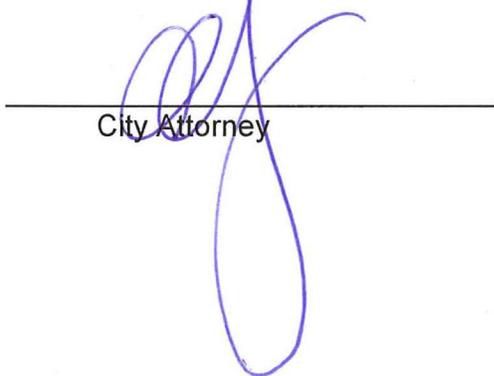
AYES:	COUNCIL MEMBERS:	Bilicich, Coffman-Gomez, Dodge, Hernandez, Hurst, Montesino, Cervantez
NOES:	COUNCIL MEMBERS:	None
ABSENT:	COUNCIL MEMBERS:	None


Karina Cervantez, Mayor

ATTEST:


City Clerk

APPROVED AS TO FORM:


City Attorney