

## IV WATER CONSERVATION

This section describes the Best Management Practices currently implemented by VCWWD No. 8, and provides an analysis of the Best Management Practices not scheduled for implementation.

### A. Law

10631. (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

(A) Water survey programs for single-family residential and multifamily residential customers.

(B) Residential plumbing retrofit.

(C) System water audits, leak detection, and repair.

(D) Metering with commodity rates for all new connections and retrofit of existing connections.

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

(I) Conservation programs for commercial, industrial, and institutional accounts.

(J) Wholesale agency programs.

(K) Conservation pricing.

(L) Water conservation coordinator.

(M) Water waste prohibition.

(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

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## B. Background

On September 28, 2000, former Governor Davis signed SB 553 into law. This bill revises the Urban Water Management Planning Act by replacing the 16 Demand Management Measures with the 14 Best Management Practices currently being implemented by Group 1 signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California. This bill took effect immediately.

## C. Water Demand Management Measures Not Scheduled for Implementation

VCWWD No. 8 and/or its water wholesalers are currently implementing 12 of the 14 Best Management Practices (BMP) called for by SB 533. The reasons that two of the BMPs are not being implemented in the VCWWD No. 8 service area are discussed in this subsection.

### **BMP 1: Water survey programs for single-family residential and multifamily residential customers**

Water survey programs for single-family residential and multifamily residential customers, are one of the BMPs not currently being implemented by VCWWD No. 8. This BMP overlaps with other conservation measures such as ultra-low flow toilets, low-flow showerheads, low-flow faucets, landscape measures, metering, pricing, public information, and in-school education. Based on a labor rate of \$40 per hour, and 2.3 hours to perform each survey, the cost per audit is estimated to be \$93. If it is assumed that all conservation measures recommended in an audit are followed by the consumer (low-flow shower head, faucet aerator, leak detection and repair, lawn irrigation, toilet tank displacement dam) there would be an annual water savings of 17.55 billing units per survey. Experience at other agencies has shown that the consumer acceptance rate of conservation measures would result in an average savings of 10.6 billing units per year per survey. VCWWD No. 8 currently purchases water from CMWD at a cost of \$1.26 per billing unit. The survey measures have an estimated life of 5 years with no residual value. The internal rate of return for residential water surveys is negative. A negative rate of return is unacceptable to VCWWD No. 8. If in the future, funds are available from some other source to offset some or all of the cost of this BMP, a new evaluation will be made.

This BMP is under review by the California Urban Water Conservation Council (CUWCC) and may be removed in 2007 and replaced with another BMP focusing on residential landscape water use.

### **BMP 2: Residential plumbing retrofit**

Residential plumbing retrofit is the other BMP not currently implemented by VCWWD No. 8. This BMP overlaps with ultra-low flush toilets, low-flow showerheads, low-flow faucets, landscape measures, metering, pricing, public information, and in-school education. The Retrofit Kit being analyzed includes two shower flow restrictors, one toilet tank displacement bag, and two toilet tank leak detection tablets, and installation information including leak detection and repair tips. These kits are intended for use in non-conserving showerheads and toilets, and would be mailed upon request. It is estimated that these kits have a material cost of \$17.45 each, and a mailing cost of \$1.25. It is estimated that administrative cost of the program would be \$2,000 per year. The goal would be to distribute 100 kits per year. Total cost per kit is estimated at \$38.70. It is estimated that the shower flow restrictors would have an 11% installation rate, the toilet tank displacement bags would have a 30% installation rate, and that the leak detection tablets would result in leak repairs in 10% of toilets tested. Average water savings per kit is estimated to be 2.01 billing units per year. The retrofit kit is estimated to have a useful life of 5 years with no residual value. The cost of water is \$1.26 per billing unit. The internal rate of return for residential plumbing retrofit kits is negative. A negative rate of

return is unacceptable to VCWWD No. 8. If in the future, funds are available from some other source to offset some or all of the cost of this BMP, a new evaluation will be made.

#### **D. Water Demand Management Implementation**

The following water demand reduction methods have been or are scheduled to be implemented in the VCWWD No. 8 service area:

##### **BMP 3: System water audits, leak detection and repair**

VCWWD No. 8 has implemented a number of measures to allow more accurate monitoring of water deliveries and reduce the percentage of unaccounted for water. These measures include:

- The installation of pump station master meters in each pressure zone.
- VCWWD No. 8 recognizes that if not properly maintained and calibrated, water meters can have slippage resulting in customers seeing artificially low usage and billing. For this reason, VCWWD No. 8 maintains an active program where meters, 2" and larger, are regularly field tested and repaired or replaced as necessary. This ensures that the consumer is aware of actual water usage, and in so doing, encourages conservation. This also reduces the quantity of unaccounted for water.
- A meter replacement program for 3/4" and 1" meters that are over 20-years old. This program is primarily directed toward residential services. In the past five years, approximately 5,000 meters have been replaced under this program.
- An improved computerized billing system and hand-held computerized data collection devices are utilized by VCWWD No. 8, to allow for frequent analysis of water delivery data.

These measures improve the VCWWD No. 8's ability to audit and account for all water deliveries. VCWWD No. 8 has a relatively new system, where the majority of the pipelines are less than 30 years old. Because of the newness of the system there have been minimal system leaks. In 2004, approximately 0.27 percent of the water delivered into the VCWWD No. 8 system was unaccounted for.

##### **BMP 4: Metering with commodity rates for all new connections and retrofit of existing connections**

VCWWD No. 8 meters all services and charges commodity rates for the amount of water used. Single Family Residential Accounts are currently billed \$1.62 per billing unit (100 cubic feet) of water for use from zero to 55 billing units, and \$2.07 for all billing units in excess of 55 billing units per cycle. All other accounts are billed \$1.62 per billing unit for all water consumed. All modified portable and recycled water rates are presented in Resolution no. WWD-200 attached in Appendix D of this report.

##### **BMP 5: Large landscape conservation programs and incentives**

The City's Department of Environmental Services, and the Building and Safety Division have developed guidelines for water saving landscape for new construction. Pamphlets are available if customers request them concerning landscaping and other conservation ideas. These pamphlets have been available for approximately 10 years. VCWWD No. 8 has also adopted a landscape ordinance and developed a landscape maintenance manual outlining required irrigation methods for new construction.

In addition, CMWD, VCWWD No. 8's wholesaler, is engaged in a pilot program that uses moisture sensors in order to control landscape clocks on large landscaped areas. Over a period of one year, water usage on two similar areas, one with moisture sensors and one without, will be evaluated to assess potential savings. The results of this study will be made available, and may result in a formalized program encouraging the use of moisture sensors.

### **BMP 6: High-efficiency washing machine rebate programs**

Metropolitan Water District of Southern California (MWDSC), in partnership with Southern California Edison (SCE) has sponsored a rebate program for the purchase of new generation, high-efficiency clothes washers. This program was available to consumers in the VCWWD No. 8 service area. The rebate amounts that ranged between \$85 and \$150, are based on combined water and energy savings. This program was managed by MWDSC and SCE. This program was recently discontinued. However, MWDSC currently implements a similar program by providing a rebate of \$100 per high efficiency washing machine.

### **BMP 7: Public information programs**

VCWWD No. 8 has maintained membership in the Ventura County Water Conservation Program. This organization actively pursues providing public information and educational programs throughout Ventura County to encourage water conservation.

VCWWD No. 8, in response to past drought, prepared a series of water conservation tips which were broadcast on the local community television channel in order to provide customers with techniques to reduce overall water consumption. These announcements will be rebroadcast should future drought conditions occur. VCWWD No. 8 has prepared a water conservation brochure, which is available upon request. VCWWD No. 8 has "water by request" cards available to any interested restaurants.

### **BMP 8: School Education Programs**

VCWWD No. 8 personnel provide water conservation talks to area middle schools and Moorpark College classes upon request. In addition, VCWWD No. 8 is working with CMWD to address water conservation throughout their service areas. These Programs include:

- Teacher workshops to familiarize teachers with program materials and terminology.
- Kindergarten through 3<sup>rd</sup> Grade - All About Water is a book that contains water activities and experiments involving water conservation, water quality, water distribution, the water cycle, and fresh and salt water.
- 4<sup>th</sup> Grade - Admiral Splash:  
This program teaches about the water cycle, the history of Southern California's water supply, the distribution system, water uses and conservation.
- 5<sup>th</sup> Grade - Waterways:  
Waterways is an educational program that addresses the history of water in the United States.
- 6<sup>th</sup> Grade - California Smith, Water Investigator:  
This program informs students about water supply and distribution in California, contemporary water issues, and water conservation.
- The H2O Shows  
Three different assembly programs are offered:

- 1) For Grades K-2, a flannel board presentation of the water cycle, a water cycle song and a discussion about water conservation;
- 2) For Grades 3-4, a slide presentation of the use of California's water resources by early Native Americans to the present day, a water conservation game, The Water Tap Rap and a film; and,
- 3) For Grades 5-6, a slide presentation of how water is imported, a water conservation game, the Water Tap Rap and a film.

Four programs targeted at students in Grades 6 through 12, addressing water quality, water politics, and the positive and negative impacts of the State Water Project upon fisheries, wildlife, the land, the economy, and the people have been developed and are offered by CMWD.

### **BMP 9: Conservation programs for commercial, industrial, and institutional accounts**

VCWWD No. 8 has identified many of the large water users in commercial, industrial, and institutional (CII) sector and reported this information to CMWD. CMWD has made contact with some of these organizations and water surveys have been offered at no cost to the customer. Larger users have been offered more comprehensive surveys in order to identify conservation methods that can be implemented in the most cost effective manner.

In addition, MWDSC has established the following CII rebate programs available in the VCWWD No. 8 service area:

- Cooling Tower Conductivity Controller. A \$500 Rebate is offered for this installation. With proper management this device can reduce average water consumption by 800,000 gallons annually.
- Ultra low flow toilet/urinal retrofit. A \$60 rebate per fixture replaced. Average savings are 30-50 gallons of water per toilet per day.
- High Efficiency Washing Machine. A \$100 rebate per machine installed. Annual savings per washer are estimated at more than 150,000 gallons.
- Pre-rinse kitchen sprayer. A \$50 rebate per sprayer (which may cover the full cost of a new kitchen sprayer). Estimated annual savings of 75,000 gallons per sprayer.

MWDSC also offers industrial incentives for large water users. MWDSC will pay as much as \$154 for every acre-foot of water saved from a process change, for up to five years, if the change results in a savings of at least 10 acre-feet of water per year.

### **BMP 10: Wholesale agency programs**

The VCWWD No. 8 is not implementing Wholesale Agency Assistance Programs. The District is not a water wholesaler, and so this BMP is not applicable. CMWD and MWDSC are the VCWWD No. 8's wholesalers and have implemented Wholesale Agency Assistance Programs.

### **BMP 11: Conservation pricing**

VCWWD No. 8 currently bills for water service based on metered water use. This provides consumers with an economic incentive to monitor water use. In addition, the VCWWD No. 8 maintains a two-tiered increasing block rate structure for single-family residential accounts. VCWWD No. 8 is continuously reviewing current rate structures in response to any planned changes in delivery quantities by CMWD and to further promote water conservation.

**BMP 12: Water Conservation Coordinator**

VCWWD No. 8 does not have a Water Conservation Coordinator per se, but instead utilizes the services of Water Conservation Coordinators at CMWD and MWDSC.

**BMP 13: Water Waste Prohibition**

It has been the City/District's policy to enact mandatory water use prohibitions during drought emergencies. Mandatory water use prohibitions are usually enacted through the passage of an ordinance, which has the effect of law and is enforceable.

The last such ordinance was repealed at the end of the last drought. In place of the ordinance, the City of Simi Valley and the District adopted a joint resolution (City Resolution No. 93-15 and District Resolution No. WWD-125) which promotes the conservation of water. A copy of the resolution is provided in Appendix D of this report.

Section 2 of the joint resolution contains the following measures in order to conserve water supplies, and to avoid or minimize the effects of any future water shortage:

1. There should be no hosing or other washing of sidewalks, walkways, driveways, parking areas or other paved surfaces, except as required for safety or sanitary purposes, as determined by police, fire, public health or environmental protection authorities.
2. Washing of motor vehicles, trailers, boats and other types of mobile equipment should be done only with a bucket or a hose equipped with a positive shutoff nozzle for quick rinses, except that washing may be done at a commercial car wash or with recycled water.
3. Water should not be used to clean, fill or maintain levels in decorative fountains, ponds, lakes or other similar aesthetic structures unless such water is part of a recycling system (this provision shall not apply to swimming pools or to lakes used for irrigation purposes).
4. Restaurants, hotels, cafes, cafeterias or other public place where food is sold, served or offered for sale, should serve drinking water to persons only when requested.
5. Leaks from indoor and outdoor plumbing fixtures should be repaired promptly (within forty-eight [48] hours of discovery).
6. Lawns, landscaping or other turf areas should only be watered during the hours between 4:00 p.m. and 10:00 a.m. (Except that this provision shall not apply to agricultural water users, commercial nurseries, golf courses, parks, and similar water dependent industries).
7. Water should not be allowed to run off landscaped areas into adjoining streets, sidewalks or other paved areas due to incorrectly directed or maintained sprinklers or as a result of excessive watering, if such runoff can reasonably be prevented.

It is anticipated that mandatory prohibition, in the form of a joint ordinance, will be considered for implementation in the event of future drought emergencies.

**BMP 14: Residential Ultra-Low-Flush Toilet Replacement Programs**

VCWWD No. 8 has participated in an Ultra-Low-Flush Toilet Replacement Program in cooperation with CMWD. In 1996, 785 high-water-using toilets were replaced under this program. In 1997, 250 high-water-using toilets were replaced. This program has reached market saturation in the VCWWD No. 8 service area and is not currently in effect at this time.

VCWWD No. 8's conservation activities and those of its water suppliers have benefited and continue to benefit water users within VCWWD No. 8's service area, and throughout the region. Locally water users are benefited by decreased water bills, decreased sewer service charges, and in some cases decreased energy consumption, from water conservation. The regional benefits of water conservation include continued economic and population growth without increasing overall imported water demand.

## E. Water Shortage Contingency Plan

### 1. Law

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

(a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

(c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(f) Penalties or charges for excessive use, where applicable.

(g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(h) A draft water shortage contingency resolution or ordinance.

(i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

### 2. Summary of Water Shortage Contingency Plan

In March 1992, VCWWD No. 8 completed an update of its Water Shortage Contingency Plan (WSCP), which serves as the primary plan to mitigate the numerous potential adverse impacts associated with a water shortage emergency. The following is a summary of programs implemented through the 1992 WSCP:

- Coordinate Planning Efforts: Calleguas Municipal Water District (CMWD) is the wholesale water agency for a large portion of Ventura County. Since VCWWD No. 8 relies almost exclusively on imported water from CMWD, all shortage contingencies were coordinated and based upon CMWD's plan. CMWD adopted the provisions of MWDSC's Incremental Interruptible Conservation Plan (IICP) which was, in turn, adopted by VCWWD No. 8.
- Estimate Worst Case Supply: Worst-case supply estimates were based on the assumption that there would be a 50 percent reduction in CMWD sources. The Stage VI provisions of the IICP mitigate this condition. A 50 percent reduction in CMWD supplies would mean VCWWD No. 8

would only receive 12,580 AFY from CMWD, down from the base year (1989-90) amount of 18,100 AFY.

- Projected Water Demands: Demands expected during the next 36 months, including three percent growth and considering Stage VI reductions, would be met. Adjustments to the Water Conservation Inflection Point (WCIP) would be required to offset supply deficiencies.
- Determine Action Stages: VCWWD No. 8, being almost totally dependent on CMWD as a supply source, utilizes the action steps mandated by the IICP. VCWWD No. 8 modifies its water rates accordingly, depending on the reduction goal. These economic incentives have proven extremely successful by meeting or exceeding annual conservation goals.
- Determine Trigger Points: Trigger points listed in the IICP are used by CMWD. Upon modification by CMWD, VCWWD No. 8 implements reductions usually through a modification in the District's water rate structure as described above.
- Establish Consumption Limits: VCWWD No. 8 has established consumption limits for single-family residential use based upon historical per-household use. All other uses, non-SFR, are based on a straight reduction from past billing history. SFR limits have previously been reflected in the VCWWD No. 8's water rate structure. For example, the allocation for SFR use (to meet CMWD Stage V goals) is 44 Hundred Cubic Feet (HCF) per Standard Billing Cycle (SBC), per connection. SFR users exceeding 44 HFC (called the Water Conservation Inflection Point or WCIP) were billed at a substantially higher rate, which is called the Water Conservation Factor (WCF). Similar WCF's are imposed for non-complying non-SFR users.
- Established Enforcement Methods: The economic incentives have proven highly successful in VCWWD No. 8 achieving its conservation goals. A punitive ordinance against water waste was adopted, and proven successful.
- Provide Revenue Impact Mitigating Measures: VCWWD No. 8 utilizes a water rate structure that ensures all overhead, operating and man-hour costs are covered by the base charge. The cost of water is paid through the commodity charges. Pumping costs are assessed based upon each customer's pressure zone. Because of this rate structure, District revenues are not affected by changes in water consumption.