

## 4. Demand Management Measures

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### 4.1. Overview

Water conservation, often called demand-side management, can be defined as practices, techniques, and technologies that improve the efficiency of water use. Such practices are referred to as Demand Management Measures (DMM). Increased efficiency expands the use of the water resource, freeing up water supplies for other uses, such as population growth, new industry, and environmental conservation.

The increasing efforts in water conservation are spurred by a number of factors: growing competition for limited supplies, increasing costs and difficulties in developing new supplies, optimization of existing facilities, delay of capital investments in capacity expansion, and growing public support for the conservation of limited natural resources and adequate water supplies to preserve environmental integrity.

YLWD recognizes the importance of water conservation and has made water use efficiency an integral part of water use planning. YLWD is not a California Urban Water Conservation Council (CUWCC) signatory; however, it is currently implementing all 14 DMMs described in the Act. DMMs as defined by the Act correspond to the CUWCC's Best Management Practices (BMPs).

This section of the UWMP satisfies the requirements of § 10631 (f) & (g). It describes how each DMM is being implemented by YLWD and how YLWD evaluates the effectiveness of the DMMs implemented. This section also provides an estimate of existing conservation savings where information is available.

### 4.2. Water Use Efficiency Programs

YLWD has implemented and is actively participating in many water conservation activities. A Water Conservation Ordinance was adopted by YLWD Board of Directors in July 2009 as Ordinance No. 09-01. Additionally, as a member agency of MWDOC, YLWD actively participates in various Metropolitan residential and CII rebate programs, as well as school and public education and outreach programs, and other programs administered by MWDOC. MWDOC implements many of the urban water conservation BMPs on behalf of its member agencies. MWDOC's 2010 Regional UWMP should be referred to for a detailed discussion of each regional BMP program. YLWD works cooperatively with MWDOC for technical and financial support needed to implement the DMMs. MWDOC's current Water Use Efficiency Program, detailed in its 2010 RUWMP, implemented on behalf of its member agencies, follows three basic focuses:

1. Regional Program Development – MWDOC develops, obtains funding for, and implements regional BMP programs on behalf of all retail water agencies in Orange County.
2. Local Program Assistance - MWDOC assists retail agencies to develop and implement local programs within their individual service areas.
3. Research and Evaluation – MWDOC conducts research programs which allow an agency to measure the water savings benefits of a specific program and then compare those benefits to the costs of implementing the program in order to evaluate the economic feasibility of the program.

Table 4-1 provides an overview of YLWD’s DMM program status and Table 4-2 provides a summary of water use efficiency program funding.

**Table 4-1: Urban Supplier’s Demand Management Measures Overview**

Demand Management Measure (DMM)	DMM Status		
	Past	Current	Future
Residential Water Surveys		√	
Residential Plumbing Retrofits		√	
System Water Audits, Leak Detection and Repair		√	
Metering with Commodity Rates		√	
Large Landscape Conservation Programs		√	
High-Efficiency Washing Machine Rebates		√	
Public Information Programs		√	
School Education Programs		√	
Commercial, Industrial and Institutional Programs		√	
Wholesale Agency Assistance		N/A	
Conservation Pricing		√	
Conservation Coordinator			√
Water Waste Prohibition		√	
Residential ULFT Replacement Programs	√		

A Stage 2 water conservation ordinance is still in effect. YLWD’s uses door hangers for notifying water wasters, usually high water consumption and leaks. A hotline is available on YLWD’s website for notifying water wasters.

**Table 4-2: YLWD Water Use Efficiency Program Budget**

Water Use Efficiency Program	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Water Conservation Materials	\$17,600	\$19,500	\$21,500	\$23,500	\$25,800
Rebate Programs	\$15,000	\$16,500	\$18,000	\$19,800	\$21,800
Other Water Conservation Programs	\$3,600	\$4,000	\$4,400	\$4,800	\$5,200

Water conservation materials include quarterly newsletters. Water conservation programs include public outreach events and enforcement materials.

**4.2.1. DMM 1: Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers**

In the past, a formal residential survey program was implemented in which a qualified technician checked water-using devices within single and multi-family homes to evaluate landscape and irrigation programs. This program ceased in the fiscal year ending in June of 2002 due to cost-constraints. Subsequently, YLWD conducts residential survey on an as-needed basis. When high bill complaints are received, YLWD meter reader staff conducts a site visit to check out the customer’s meter and check for leaks on both sides of the service. If a leak is found on the water system’s side, YLWD will send out staff to fix the leak. If the leak is found on the customer’s side, it is the responsibility of the customer to fix the leak.

In addition to an as-needed residential survey program, YLWD promotes public outreach and additional DMMs to reduce single- and multi-family water demands. YLWD also participates in regional landscape programs aimed at helping residential and small commercial customers to be more water efficient through MWDOC including Smart Timer Rebate Program, Rotating Nozzle Rebate Program, Synthetic Turf Rebate, and the California Friendly Landscape Program as described below.

**MWDOC’s Regional Programs**

***Smart Timer Rebate Program*** - The Smart Timer Rebate Program started in FY 2004/05. Under this regional program, residential and commercial properties, including HOA common areas, are eligible for a rebate when they purchase and install a weather-based irrigation controller which has the potential to save approximately 41 gallons per day per residence and reduce runoff and pollution by as much as 49%. Once residents are enrolled in the rebate program, a detailed residential outdoor water survey is conducted to inspect the irrigation system, distribution uniformity, and irrigated area. Water savings from the program can be estimated from information obtained from the water surveys pre- and post-installation of the Smart Timer. To date, 95 rebates have been given out to

YLWD residential customers and 78 rebates to small commercial customers which translate to a water savings of approximately 186 acre-feet. YLWD will continue to provide on-site meetings, literature and incentives related to this program. As part of the MWDOC Grant for the SmarTimers a site audit and inspection is required and provided by contract through MWDOC.

***Rotating Nozzle Rebate Program*** – This rebate program started in 2007 and is offered to both residential and commercial customers. Through this program, site owners will purchase and install rotary nozzles in existing irrigation systems. Following the submittal of a rebate application, water bill, and original purchase receipt, MWDOC will direct a third party installation verification contractor to perform installation verifications on up to 100% of the sites that installed devices. To date, within YLWD’s service area, 1,374 rotating nozzles have been installed at residential properties and another 3,369 at small and 500 at large commercial properties representing a combined water savings of 97 acre-feet since the beginning of the program.

***Synthetic Turf Rebate Program*** – Through this program, residential and small commercial customers of participating retail water agencies are eligible to receive rebate money for qualifying synthetic turf projects. To date within YLWD’s service area, 28,816 sq. ft. of turf grass has been replaced by synthetic turf on residential properties and another 5,835 sq. ft. on commercial properties translating to a combined estimated savings 14.8 acre-feet.

***California Friendly Landscape Training (Residential)*** - The California Friendly Landscape Training provides education to residential homeowners and professional landscape contractors on a variety of landscape water efficiency practices they can employ. These classes are hosted by MWDOC and/or the retail agencies to encourage participation across the county. The residential training program consists of either a half-day Mini Class or individual, topic-specific, four-hour classes.

#### **4.2.2. DMM 2: Residential Plumbing Retrofit**

Through Metropolitan’s mass showerhead distribution, over 95% of single-family and multi-family residential accounts in Orange County have been retrofitted with low flow showerheads. A total of 9,972 showerheads have been retrofitted in YLWD’s service area by 2004. Additionally, YLWD participated in MWDOC’s regional ultra low flow toilet (ULFT) rebate program which ended in 2009. A total of 7,891 ULFTs were distributed under this program to single-family and multi-family homes in YLWD’s service area representing a cumulative water savings of 2,887 acre-feet. The high efficiency toilet (HET) rebate program has since replaced the ULFT program as discussed under DMM 14.

### 4.2.3. DMM 3: System Water Audits, Leak Detection and Repair

YLWD began its Meter Maintenance Program in 2006 and the Pipeline Replacement Program in 1993. The last audit of these programs was conducted in 2007. The meters are tested quarterly on an as-needed basis and if found defective they are replaced. According to YLWD's 2005 Domestic Water System Master Plan, YLWD has experienced an average of 4% non-revenue water use per year over the last 10 years varying between 2 and 8%.

YLWD's Meter Maintenance Program and Pipeline Replacement Program will help maintain non-revenue water use at this relatively low level. Table 4-3 summarizes actual pipeline replaced and funds expended under the Pipeline Replacement Program in the past five years as well as projections for the next five years. The two programs are described below.

***Meter Maintenance Program*** – Water meters are key to YLWD's ability to collect revenues for the water it sells. However, like any other mechanical device, water meters require routine maintenance to function properly. Typically, water meters that are not regularly maintained will read less than the actual amount flowing, but it is also not uncommon for these meters to stop working altogether. The interval at which water meters should be maintained varies with meter type, meter size, water use patterns, water quality, and other parameters. Small residential and commercial meters should be tested every 5 to 10 years and rebuilt or replaced as appropriate. Large meters should be calibrated annually and rebuilt or replaced as required. Typically, the calibration of larger meters can be checked with the meter in place. If a problem is identified, then the meter can be replaced with a new or refurbished one and the existing meter pulled out for repairs. If it is found that a large number of meters are not reading properly when they are inspected, then the maintenance schedule would be shortened.

***Pipeline Replacement Program*** – YLWD's distribution system includes about 348 miles of 4 to 39-inch water mains. According to the YLWD's 2005 Domestic Water System Master Plan, an average of 1% of the existing pipelines should be replaced each year. Rehabilitation projects, such as relining of the existing pipe, typically reduce the useful diameter and are therefore only practical where excess capacity exists. Rehabilitation includes replacement of main line valves, fire hydrants, and appurtenances.

**Table 4-3: System Water Audits, Leak Detection and Repair DMM**

Year	% of Unaccounted for Water	Total Miles of Distribution Lines	Miles of Main Surveyed	Miles of Lines Replaced	Expenditures (million \$)
2006	4%	348	3.1	3.1	\$4.2M
2007	4%	348	0	0	0
2008	4%	348	0	0	0
2009	4%	348	2.1	2.1	\$2.1M
2010	5%	348	2.4	2.4	\$2.6M

Year	% of Unaccounted for Water	Total Miles of Distribution Lines	Miles of Main Surveyed	Miles of Lines Replaced	Expenditures (million \$)
2011	4%	348	2.5	2.5	\$2.75M
2012	4%	348	2.5	2.5	\$2.75M
2013	4%	348	3.0	3.0	\$3.3M
2014	4%	348	3.0	3.0	\$3.3M
2015	4%	348	3.0	3.0	\$3.3M

YLWD has not developed a formal methodology to estimate the water savings attributable to this DMM. There are, however, real water savings as a result of the the Meter Maintenance Program and the Pipeline Replacement Program which maintains an acceptable non-revenue water of 4% on average.

**4.2.4. DMM 4: Metering with Commodity Rates**

Metering with commodity rates by wholesale and retail agencies has been an industry standard throughout Orange County for many years. It involves setting water rates based upon the external costs of importing water or producing water from local sources, the internal costs of distribution and service and establishing the sources for financing or funding these costs.

YLWD began metering with commodity rates in 1969. All customer connections are metered and billed by volume of use. Currently, YLWD has a minimum service charge of \$11.73 per monthly bill with an additional fee of \$2.52 billed per 100 cubic feet of water used.

**4.2.5. DMM 5: Large Landscape Conservation Programs and Incentives**

The City of Yorba Linda has adopted a Water Efficient Landscape Ordinance (Ordinance No. 2009-938) and Implementing Guidelines (Resolution No. 2009-4055) in accordance with AB 1881 in 2009. This Water Efficient Landscape Ordinance takes effect within the

City of Yorba Linda which is serviced by YLWD. The purpose of this ordinance is to establish alternative water efficient landscape regulations that are acceptable under AB 1881 as being as least as effective in conserving water as the Model Ordinance in order to:

- Promote the benefits of consistent landscape ordinances with neighboring local and regional agencies;
- Promote the values and benefits of landscapes while recognizing the need to invest in water and other resources as efficiently as possible;
- Establish a structure for planning, designing, installing, and maintaining and managing water efficient landscapes in new construction and rehabilitated projects;
- Establish provisions for water management practices and water waste prevention for existing landscapes;
- Use water efficiently without waste by setting a Maximum Applied Allowance as an upper limit for water use and reduce water use to the lowest practical amount; and
- Encourage the use of economic incentives that promote the efficient use of water, such as implementing conservation pricing.

YLWD also serves a small portion of the City of Anaheim which has also adopted a Water Efficient Landscape Ordinance (Ordinance No. 6160) in accordance with AB 1881. Copies of the two ordinances are provided in Appendix D.

With regards to implementation programs, YLWD supports its wholesaler, MWDOC on several large landscape water use efficiency programs. Many of MWDOC's landscape water use efficiency programs target both residential and commercial customers as described under DMM 1. MWDOC also offers programs in Orange County which specifically assist large landscape customers as follows:

***Landscape Performance Certification Program (LPCP)*** – This is a MWDOC-administered program which started in 2004. The LPCP is a water management training program sponsored by MWDOC and Metropolitan and offered at no cost to CII customers with dedicated irrigation meters. The program helps create site specific water budgets and tracks monthly water use for each participating site.

***California Friendly Landscape Training (Professional)*** – The California Friendly Landscape Training Program provides education to residential homeowners and professional landscape contractors on a variety of landscape water efficiency practices they can employ. These classes are hosted by MWDOC and/or the member agencies to encourage participation across the county. The Professional Training Program course consists of four consecutive classes in landscape water management, each building upon principles presented in the preceding class. Each participant receives a bound handbook

containing educational materials for each class. These classes are offered throughout the year and taught in both English and Spanish languages.

In addition, YLWD takes advantage of regional and local efforts which target and market to large landscape properties by providing bill inserts, direct marketing efforts, ads in various publications, educational seminars/symposiums for property owners, and presentations at Homeowners Associations (HOAs) board meetings. YLWD also has a local gardening program.

**Local Gardening Program** - YLWD's Water Conservation Gardening Class is a 6-class series offered free to YLWD's customers and others for a small fee. The class is taught by a landscape designer and is aimed at educating residents on growing low-water using plants.

#### **4.2.6. DMM 6: High-Efficiency Washing Machine Rebate Program**

YLWD participates in the SoCal Water Smart residential rebate program offered by Metropolitan. This program offers financial incentives to single-family and multi-family residential customers through the form of a rebate for various landscape products as described under DMM 1 in Section 4.2.1 and clothes washers as described below.

Orange County residents are eligible to receive an \$85 rebate when they purchase a new High Efficiency Clothes Washer (HECW). This program began in 2001 and is sponsored by MWDOC, Metropolitan, and local retail water agencies. Rebates are available on a first-come, first-served basis, while funds last. Metropolitan recently ended this program in 2011. Applications must have been postmarked by December 6, 2010 to qualify for a rebate. Participants must be willing to allow an inspection of the installed machine for verification of program compliance. To qualify for a rebate, the HECW must have a water factor of 4.0 or less. An HECW with a water factor of 4 will use approximately 15 gallons of water per load compared to a conventional top-loading clothes washer which can use 40 gallons or more per load. Depending on use, these machines can save 10,000 gallons of water per year. Participants are encouraged to contact their local gas and/or electric utility as additional rebates may be available.

As of FY 2010-11, YLWD has given out 2,446 high-efficiency washing machine rebates to its customers. This equates to a potential water savings of 305 acre-feet.

#### **4.2.7. DMM 7: Public Information Programs**

Water use efficiency public information programs are built around communication, coordination and partnerships with regional agencies including cities, MWDOC, Metropolitan, local, state, federal legislative and regulatory bodies. Information programs are carried out on behalf of YLWD and in coordination with regional efforts. The goal is

to help the public understand current issues and the challenges, opportunities, and costs involved in securing a reliable supply of high quality water.

YLWD endeavors to reach the public with accurate information regarding present and future water supplies, the demands for a suitable quantity and quality of water and the importance of implementing water efficient techniques and behaviors. Members of YLWD coordinate with regional water agencies to publicize the availability of water use efficiency programs and technology throughout Orange County, and to provide a consistent, synchronized regional message. A description of the public information programs is provided below.

YLWD has also implemented Public Relations campaigns to spread information about YLWD's current issues, challenges, opportunities, and demands for a suitable quantity and quality of water. The programs emphasize the importance of implementing water efficient techniques and behaviors, and distribute current information regarding present and future water supplies.

### **YLWD's Local Public Information Program**

YLWD's public communication programs are described below.

***Poster Contest Slogan*** - Each year, elementary school students are honored as winners in the "Water is Life" Poster and Slogan Contest. Entries to the contest are solicited throughout the fall and winter as part of the school education program. More than 1,000 entries are typically received regionally, a portion of which are from the YLWD service area. As part of participation in this program, winners within the YLWD service area will be recognized in May and June at a YLWD Board of Directors meeting. The winning artwork and slogans will be incorporated by MWDOC into a school year calendar for distribution to every classroom in Orange County the following academic year.

### **Participation in Public Events**

Through its participation in the Association of California Water Agencies and the California Water Awareness Campaign, representatives of YLWD will also support and participate in statewide events and activities throughout Water Awareness Month. This includes procuring a proclamation from the State Governor, distributing media kits and distributing water education kits to classrooms, all of which reinforce the need to use water wisely, in the semi-arid Southern California region.

***Participation In Community Parades*** - YLWD enters floats in two local community events, the Placentia Heritage Days Parade and Yorba Linda Fiesta Days Parade. The floats feature a water conservation message adapted to the theme of the parade. Since

1985, it is estimated that more than 12,000 people, not including viewers of the local cable television broadcast, have seen YLWD floats.

***Participation in Community Events*** - YLWD sponsors an information booth at the Yorba Linda Fiesta Days street fair, Main Street Arts & Craft Fair and “Go with the Flow” 5K run & Environmental Exposition. YLWD also sponsors an information booth at the American Cancer Society’s “Walk for Life.” The booth provides an opportunity to distribute materials about YLWD’s water conservation and Xeriscape programs, meet directly with the public to discuss water issues, and pass out drinking water, stress relief water drops, and YLWD water bottles. Since 1985, it is estimated that more than 3,000 people have visited several YLWD sponsored information booths.

### **Speaker Bureau and Student Tours**

***Speakers Bureau*** - Speakers Bureaus are held for local civic, school, and business groups, with presentations on key issues affecting Orange County's water supply. Water use efficiency programs and conservation tips for residents and businesses are integrated into these presentations. During the presentations, printed handouts explaining rebate programs (e.g. High Efficiency Clothes Washer Rebate Program) and other programs (Residential and Commercial Landscaping Workshops, Landscaper Certification) unique to YLWD are sometimes distributed for promotional purposes.

***Student Tours*** - YLWD provides tours of its Richfield Road facility during Water Awareness Month in May. Since 1985, YLWD has made presentations and/or provided facilities tours to more than 2,500 people. YLWD also conducts tours for Girl and Boy scouts upon request.

### **Information Materials**

YLWD prepares press releases, newsletters, fliers, reports, plans, and other publications to raise public awareness about water conservation. Many of these items are posted on the YLWD website ([www.ylwd.com](http://www.ylwd.com)), which displays useful information about upcoming events, programs, water conservation tips, and FAQ’s. A bulletin board features links to information about facility tours, public hearings, the YLWD speaker’s bureau, informational videos, press releases, committee meetings, and water conservation programs. The website also provides links to relevant agencies including MWDOC, Metropolitan, and the Cities of Anaheim, Brea, and Placentia to name a few.

***Distribution of Water Conservation Materials*** - YLWD actively distributes Water Conservation Kits and brochures to residents opening new service accounts. These materials are also available to the public in the YLWD’s office customer service lobby, via the mail upon request and at YLWD’s various public events. Since 1985, more than 5,000 kits have been distributed by YLWD.

***Waterlines Newsletter*** - YLWD publishes a quarterly newsletter that is sent to all customers with their water bills. Articles frequently address the subjects of water supply, water conservation and Xeriscape programs. Since 1985, approximately 720,000 newsletters have been mailed to YLWD customers.

***Water Bill Message*** - Water bills are sent to customers on a monthly basis. The water bill has a message area that is frequently utilized for a brief water conservation message. YLWD mails about 250,000 water bills every year. It is the YLWD's practice to include a "Use Water Wisely" message on all water bills

***Special "Drought Alert" Mailings*** - YLWD has developed a comprehensive mailing list of persons who have attended our public events or have requested information on water related issues. YLWD has used this communication method on several occasions, and each year includes funding in the Budget to mail letters if necessary.

***Water Quality Report*** - Each year, YLWD develops a Water Quality Report. This report, required by the California Department of Health Services, is distributed to all residents of the YLWD. The report includes information about the sources and quality of water for each customer. The report also provides YLWD with the opportunity to include messages about water use efficiency and conservation to all its customers.

### **Media Relations**

YLWD is a credible source of information to the media for local, regional, and statewide water issues. YLWD staff integrates information from legal, environmental, and other informed reports into newsletters made available to the public via the YLWD website ([www.ylwd.com](http://www.ylwd.com)). YLWD staff takes advantage of the local public access channel, facility tours, and press releases as a means of disseminating critical water conservation issues and messages to the public. The details of these are provided below.

***Press Releases/Media Relations*** - The YLWD staff prepares press releases on general YLWD news, upcoming public events, programs, and special issues of concern regarding water supply and conservation. Press releases are coordinated with regional agencies to ensure message consistency as information on water use efficiency is circulated. YLWD also maintains contact with print, electronic and trade media and often serves as a resource for reporters seeking general and specific information.

***Cable Television*** - YLWD utilizes the local cable television public access channel and frequently runs a message announcing upcoming public events and encouraging water conservation.

***Public Tours of District Facilities*** - YLWD conducts public information tours to its water facilities on an as needed basis including YLWD's Richfield Road headquarters,

wells, water production operation and telemetry unit, and the Santa Ana River groundwater recharge operation. The topics of water supply and water conservation are discussed at length during these tours. Since 1985, it is estimated that nearly 1,000 people have attended YLWD facilities tours.

### **MWDOC's Regional Public Information Programs**

MWDOC currently offer a wide range of public information programs in Orange County in collaboration with its member agencies. Current public information programs in the MWDOC's service area are summarized below.

***Water Facility Inspection Trip Program*** - The inspection trip program is sponsored by MWDOC and Metropolitan. Each year, Orange County elected officials, residents, business owners, and community leaders are invited to attend educational inspection trips to tour key water facilities throughout the state of California. The goal is to educate members of our community about planning, procurement and management of southern California's water supply and the issues surrounding delivery and management of this vital resource.

***O.C. Water Hero Program*** - The goal of this program is to engage children in water use efficiency activities while facilitating discussion with friends and family members about how to save water. Any Orange County child can become a Water Hero by pledging to save 20 gallons of water per day. In exchange for their pledge, they receive a free Water Hero kit, which includes a variety of fun, water-saving items like a 5-minute shower timer and "fix-it" ticket pad for busting water wasters. To become a Superhero, a student must get their parents to also pledge to save 20 gallons of water per day. To date, more than 13,000 children in Orange County have become Water Heroes and more than 4,000 have become Superheroes.

***eCurrents*** - This monthly electronic newsletter is designed to keep MWDOC's 28 member agencies, residents and businesses, stakeholder groups, opinion leaders, and others apprised of MWDOC news, programs, events, and activities. The publication also serves to keep readers informed about regional, state, and federal issues affecting water supply, water management, water quality, and water policy and regulation.

***Water Advisory Committee of Orange County (WACO)*** - WACO was formed in 1983 to facilitate the introduction, discussion, and debate of current and emerging water issues among Orange County policymakers and water professionals. The committee's membership has evolved to include elected officials and management staff from Orange County cities and water districts, engineers, attorneys, consultants, and other industry professionals. Monthly meetings are open to the public and are typically held on the first Friday of each month at 7:30 a.m.

#### **4.2.8. DMM 8: School Education Programs**

YLWD participates in MWDOC's regional school education program. School water education has been part of MWDOC's activities for more than 30 years. It is MWDOC's goal to educate children about local water issues and help them understand the value of water and how they can protect our water resources and the environment. MWDOC's on-going school education programs are described below.

***Water Education School Program*** - One of the most successful and well-recognized water education curriculums in southern California is MWDOC's Water Education School Program. For more than 30 years, School Program mascot "Ricki the Rambunctious Raindrop" has been educating students in grades K-5 about the water cycle, the importance and value of water, and the personal responsibility we all have as environmental stewards.

The School Program features assembly-style presentations that are grade-specific and performed on-site at the schools. The program curriculum is aligned with the science content standards established by the State of California. Since its inception in 1973, nearly three million Orange County students have been educated through the School Program.

In 2004, MWDOC formed an exciting partnership with Discovery Science Center that has allowed both organizations to reach more Orange County students each year and provide them with even greater educational experiences in the areas of water and science. Discovery Science Center currently serves as the School Program administrator, handling all of the program marketing, bookings, and program implementation. During the 2010-11 school year, more than 70,000 students will be educated through the program.

***Water Education Poster & Slogan Contest*** - Each year, MWDOC holds a Water Education Poster and Slogan Contest to increase water awareness. To participate, children in grades K-6 develop posters and slogans that reflect a water awareness message. The goal is to get children thinking about how they can use water wisely and to facilitate discussion about water between children and their friend, parents, and teachers. Each year, more than 1,500 poster and slogan entries are received through the contest.

During a special judging event, approximately 16 posters and 10 slogans are selected as the winners. All of our winners – and their parents, teachers, and principals – are invited to attend a special awards ceremony with Ricki Raindrop at Discovery Science Center. At the awards ceremony, the winners are presented with their framed artwork as well as a custom t-shirt featuring their poster or slogan, a trophy, a certificate, and other fun water-saving prizes.

***Children’s Water Education Festival*** - The largest water education festival of its kind is the annual Children’s Water Education Festival (Festival). The Festival is presented by OCWD, the National Water Research Institute, Disneyland Resort, and MWDOC. Each year, more than 5,000 students participate in the Festival over the course of this two-day event. The Festival is currently held at the Richard Nixon Library and Birthplace in Yorba Linda, California.

The Festival presents a unique opportunity to educate students in grades four through six about local water issues and help them understand how they can protect our water resources and the environment. Students attend the Festival with their teacher and classmates, visiting a variety of booths focused on different water-related topics throughout the day. Participating organizations (presenters) engage the students through interactive educational presentations that are aligned with the science content standards established by the State of California. Since its inception, more than 80,000 children from schools throughout Orange County have experienced the Festival and all it has to offer.

#### **4.2.9. DMM 9: Conservation Programs for Commercial, Industrial and Institutional Accounts**

YLWD offers financial incentives under the Save Water Save A Buck Rebate Program which offers rebates for various water efficient devices to CII customers as described below.

***Save Water Save a Buck*** – This program began in 2002 and offers rebates to assist CII customers in replacing high-flow plumbing fixtures with low-flow fixtures. Facilities where low-flow devices are installed must be located in Orange County. Rebates are available only on those devices listed in Table 4-4 below and must replace higher water use devices. Installation of devices is the responsibility of each participant. Participants may purchase and install as many of the water saving devices as is applicable to their site.

**Table 4-4: Retrofit Devices and Rebate Amounts Available Under Save Water Save a Buck Program**

Retrofit Device	Rebate Amount
High Efficiency Toilet	\$50
Ultra-Low-Water or Zero Water Urinal	\$200
Connectionless Food Steamers	\$485 per compartment
Air-Cooled Ice Machines (Tier III)	\$300
Cooling Tower Conductivity Controller	\$625
pH / Conductivity Controller	\$1,750
Dry Vacuum Pumps	\$125 per HP
Water Pressurized Broom	\$110

As of FY 2010/11, YLWD’s CII customers have installed a total 254 water-saving fixtures representing a water savings of 262 acre-feet. YLWD will continue to educate CII customers to meet the DMM requirements.

Additionally, MWDOC has created regional water use efficiency programs targeting CII customers in Orange County. These programs are available to MWDOC’s member agencies as described below.

**Water Smart Hotel Program** – In 2008 and 2009, MWDOC received grants from DWR and the US Bureau of Reclamation to conduct the Water Smart Hotel Program, a program designed to provide Orange County hotels and motels with commercial and landscape water saving surveys, incentives for retrofits and customer follow-up and support. The goal of the program is to implement water use efficiency changes in hotels to achieve an anticipated water savings of 7,078 acre feet over 10 years.

The Program is offered to hotels in MWDOC’s service area as identified by retail water agencies. It is anticipated that detailed survey of the indoor and outdoor water using aspects of up to 105 participating hotels will be performed. Participating hotels will receive survey reports that recommend indoor and outdoor retrofits, upgrades, and other changes that should, based on the survey, result in significant water savings. Quantities of each device and associated fixture and installation costs, water savings and payback information (based on rebate amount Incentives offered through the Save Water Save A Buck Rebate Program) will be augmented using DWR and USBR Water Use Efficiency grant funds to bridge the gap between existing incentives and the actual costs of Hotel Water Survey recommendations. To date, over 24 surveys have been performed county-

wide, and over 9,500 water-saving devices have been installed through the program. These devices are saving an estimated 351 acre feet per year or 3,510 acre feet over the ten year device life.

***Industrial Process Water Use Reduction Program*** - The IPWURP provides engineering surveys to identify water saving process improvements in the Orange County industrial customer base. Additionally, it provides Engineering Assistance and Financial incentives to help implement the recommendations from those surveys. This is done with funding from DWR, USBR, Metropolitan and MWDOC. To date the program has identified a water savings potential of 450 million gallons per year. The program water savings goal is 80 million gallons per year or 245 acre feet per year within MWDOC's service area.

Focused on industrial process water only, the program targets, but is not limited to, the highest water use customers in the following sectors Textile, Metals, Electronics, Laundries, Food Processing, and Pharmaceuticals. The program offers two levels of surveys:

- A preliminary Focused Survey to ascertain the magnitude of water savings possible.
- A Comprehensive Survey which is a more detailed study of the customer's process and includes customized retrofit recommendations, estimated costs, savings in water and sewer discharge, and a simple ROI

Incentives are calculated via a "Pay for Performance" model based on water savings (monitored for 1 year). Qualified participants will receive the lesser of:

- \$4.37 per 1,000 gallons of water saved, or
- Fifty (50) percent of the total amount of retrofit cost

The incentives are paid in two payments:

- The first payment after verification of equipment installation and startup
- The second payment after a one-year monitoring period to measure water savings

Types of projects have included treating and reusing water in manufacturing process or for cooling towers and new wash equipment with upgraded washers, nozzles and automated control systems.

#### **4.2.10. DMM 10: Wholesale Agency Programs**

This DMM pertains to wholesale agency programs which are not applicable to YLWD, a retail supplier. YLWD is a member agency of MWDOC, the region's wholesaler that is responsible for the implementation and reporting requirements of this DMM.

#### **4.2.11. DMM 11: Conservation Pricing**

Currently, YLWD's customers are charged an identical rate for all water consumed (uniform rate) above a minimum service charge that is based on the size of their water

meter. YLWD has continued to research ways for achieving further gains in water use efficiency. Alternatives to the current billing arrangement are discussed below.

- a) Flat Rate Increase. This alternative would raise water rates above current levels. The concept of "price elasticity" assumes that consumption of a product will decrease if the cost of the product is increased. Price elasticity could be assumed with regard to discretionary uses of water beyond the minimum required for drinking, cooking and health needs.
- b) Increasing Block Rates. This alternative calls for the initial block quantity of water use to approximate low winter usage levels. The lowest block cost would apply the first block consumed during the billing period. Higher fees are assessed for subsequent blocks. The higher incremental cost of subsequent blocks assumes price will motivate consumers to practice conservation measures by installing water saving devices and/or drought tolerant landscaping.

These practices are in various stages of development and may be implemented as conditions warrant and the benefits of their adoption are found to be worthwhile. YLWD has plans to develop a tiered rates structure in the future.

#### **4.2.12. DMM 12: Water Conservation Coordinator**

YLWD does not currently employ a full-time designated water conservation coordinator. YLWD's Public Information Specialist also plays the role of a water conservation coordinator who is responsible for all the coordination between YLWD and the public as well as between YLWD and other agencies such as MWDOC. In addition, every YLWD staff takes an active role in promoting conservation.

#### **4.2.13. DMM 13: Water Waste Prohibition**

Ordinance No. 09-01 adopted by YLWD's Board of Directors in 2009 institutes water conservation measures, prohibition against water waste and water shortage supply contingencies (Appendix D). The following water conservation requirements are effective at all times and are permanent:

1. Limits on watering hours
2. Limits on watering duration
3. No watering during rain
4. No excessive water flow or runoff
5. No washing down hard or paved surfaces
6. Obligation to fix leaks, breaks, or malfunctions
7. Re-circulating water required for water fountains and decorative water features
8. Limits on washing vehicles
9. Drinking water served upon request only in restaurants
10. Commercial lodging establishments must provide option to not launder linen daily

11. No installation of single pass cooling systems
12. No installation of non-re-circulating water systems in commercial car wash and laundry systems
13. Restaurant required to use water conserving dish wash spray valves

The ordinance also establishes four stages of water supply shortage and response actions to be implemented during times of declared water shortage or declared water shortage emergency, with increasing restrictions on water use in response to worsening drought or emergency conditions and decreasing supplies. This is further discussed in Section 5.

#### **4.2.14. DMM 14: Residential Ultra-Low-Flush Toilet Replacement Programs**

Over the past 19 years, MWDOC has continuously implemented a regional ULFT Rebate and/or Distribution Program targeting single- and multi-family homes in Orange County. Since the end of distribution program in 2004, MWDOC's program has focused solely on providing rebate incentives for retrofitting non-efficient devices with either ULFTs or High Efficiency Toilets (HETS) – toilets using 1.28 gallons per flush or less. The ULFT portion of this program concluded in June 2009, with over 360,000 ULFTs replaced in single family and multi-family homes, and an overall program to date savings of approximately 138,457 acre feet of water. The HET rebate program, which concluded in 2010, has incentivized over 26,000 devices, with an overall program to date savings of approximately 3,419 acre-feet.

YLWD has participated in this program from the beginning. To date 7,891 ULFTs and 532 HETs have been installed in YLWD representing a combined water savings of 2,955 acre-feet. As a benchmark, YLWD had 17,765 single-family and 600 multi-family accounts that were opened prior to 1992.