

## **5.0 WATER DEMAND MANAGEMENT PROGRAMS**

The Urban Water Management Planning Act describes two distinct methods for providing information related to Demand Management Measures (DMMs) and meeting the requirements of Water Code Section 10631 (f) and (g): (1) Members of the California Urban Water Conservation Council (CUWCC) may submit annual Best Management Practice (BMP) Activity Reports; or (2) water suppliers who are not members or choose not to submit annual BMP Activity Reports must submit information about their programs, including current activities, scheduled activities, methods of evaluation, savings, and costs.

As an active reporting member of the CUWCC, the Municipal Water District of Orange County (MWDOC) has included its BMP Activity Reports as Section 5.1 and BMP Coverage Reports as Section 5.2 of this Urban Water Management Plan.

Although no future programs are needed to meet the scheduled demand management measures, MWDOC believes in the value of demand management and continuously invests in programs beyond those required by BMP. Supplemental information describing those demand management activities that go beyond voluntary wholesaler BMP implementation is included as Section 5.3.

The five most recent annual BMP Activity Reports are included in this Plan (2000 through 2004), along with BMP Coverage Reports as a measure of implementation over time. MWDOC has not submitted any exemption requests as it has found all BMPs applicable to wholesalers to be cost effective.

### **5.1 Best Management Practice (BMP) Activity Reports (2000 through 2004)**

The California Urban Water Conservation Council Annual Best Management Practice Implementation Reports for 2000 through 2004 are provided as *Appendix 5-A* in this report.

### **5.2 Best Management Practice (BMP) Coverage Report**

The California Urban Water Conservation Council Best Management Practice Coverage Reports for 2000 through 2004 are provided as *Appendix 5-B* in this report

### **5.3 Council Coverage Calculator and Best Management Practice Cost-effectiveness Forms**

MWDOC considers all BMPs applicable to MWDOC as a signatory wholesale water agency to be cost effective and is actively pursuing implementation. As a result, MWDOC has not submitted any cost effectiveness exemptions to the CUWCC.

### **5.4 MWDOC's Accomplishment in Conservation Programs Since 2000**

California's water is a valuable and limited natural resource. There is a continuing

need to conserve and efficiently utilize existing water supplies. Interest in water use efficiency (conservation or demand management measures) has been heightened by the growing need for water throughout California. The growth in water demand will continue due to increases in population and changes in commercial and industrial activity. Water use efficiency will help stretch existing water supplies to meet these growing needs.

MWDOC recognizes water use efficiency as an integral component of the current and future water resource strategy for Orange County. Along with groundwater, recycled water, and imported water, water use efficiency is a low-cost source of new supply for the Orange County region. An ethic of efficient use of water has been developing over the last 14 years of implementing water use efficiency programs. Retail water agencies throughout Orange County also recognize the need to use existing water supplies efficiently – implementation of Best Management Practices-based efficiency programs makes good economic sense and reflects responsible stewardship of the county’s water resources.

As a regional wholesaler of imported water, MWDOC purchases Colorado River and State Water Project water from the Metropolitan and sells it to 29 of 32 retail water agencies in Orange County. The cities of Anaheim, Fullerton, and Santa Ana purchase imported water directly from Metropolitan.

**5.4.1 Role of BMPs in MWDOC Service Area**

The standards for water use efficiency in California are the 14 BMPs contained in the *Urban Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU) established in 1991. The California Urban Water Conservation Council was established through the MOU and acts as the “keeper” of the BMPs with the authority to add, remove, or change BMPs over time. These 14 BMPs include technologies and methodologies that have been sufficiently documented in multiple demonstration projects which result in more efficient water use and conservation. All retail water agencies in Orange County are actively implementing BMP-based programs; however, not all retail water agencies are signatories to the MOU. Table 5-4-1-A identifies those regional and local water agencies and organizations that have signed the MOU, voluntarily committing to a good faith effort to implement cost effective BMPs.

**Table 5-4-1-A: Memorandum of Understanding Signatory Agencies and Organizations in Orange County**

<b>Water Agencies</b>	<b>Year MOU Signed</b>
Anaheim, City of	1991
Brea, City of	
Buena Park, City of	
East Orange County WD	2000
El Toro WD	1994

Fountain Valley, City of	2000
Fullerton, City of	
Garden Grove, City of	1996
Huntington Beach, City of	2000
Irvine Ranch WD	1991
La Habra, City of	
La Palma, City of	
Laguna Beach County WD	
Mesa Consolidated WD	1994
Moulton Niguel WD	1991
Municipal Water District of Orange County	1991
Newport Beach, City of	
Orange, City of	
Orange County WD	1991
Orange Park Acres Mutual WCo.	
San Clemente, City of	
San Juan Capistrano, City of	1994
Santa Ana, City of	1999
Santa Margarita WD	
Santiago County WD	
Seal Beach, City of	2002
Serrano WD	
South Coast WD	1991
Golden State Water Co.	1991
Trabuco Canyon WD	1991
Tustin, City of	
Westminster, City of	
Yorba Linda WD	
<b>Other Signatory Agencies and Organizations</b>	
County of Orange	1991
Orange County Sanitation District	1991

*In the event of a discrepancy between the information shown above and that contained within a local retail agency's Urban Water Management Plan, the local retail agency's data control.*

While implementation of water use efficiency BMPs is focused primarily on retail water agencies, wholesale water agencies, including MWDOC, develop and implement regional programs on behalf of the retail water agencies and their customers. This regional implementation approach enables economies of scale, provides a more consistent message of efficiency to the public, and assists in acquisition of grant funding for program implementation. Table 5-4-1-B sets forth the BMPs and how they apply to retail and wholesale water agencies, and identifies BMP programs being implemented by MWDOC.

**Table 5-4-1-B: Memorandum of Understanding BMP Implementation Responsibility and Regional Programs in Orange County**

BMP #	EFFICIENCY MEASURE	Applies to:		MWDOC Regional Program
		Retailer	MWDOC as a Wholesaler	
1	Home Water Surveys	√		√
2	Residential Plumbing Fixture Retrofits	75% Saturation goal achieved in 2001		
3	System Water Audits, Leak Detection and Repair	√	(1)	√
4	Metering With Commodity Rates	√		
5	Large Landscape Conservation Programs	√		√
6	High-Efficiency Washing Machine Rebate Programs	√		√
7	Public Information Programs	√	√	√
8	School Education Programs	√	√	√
9	Commercial, Industrial, and Institutional Programs	√		√
10	Wholesale Agency Assistance Programs		√	√
11	Conservation Pricing	√	√	√
12	Conservation Coordinator	√	√	√
13	Water Waste Prohibition	√		√
14	Residential ULFT Replacement Programs	√		√

(1) MWDOC does not own or operate a distribution system; water wholesaled by MWDOC is delivered through the Metropolitan distribution system and meters.

Source: Municipal Water District of Orange County

#### **5.4.2 Review of MWDOC Conservation Programs as Described in 2000 Urban Water Management Plan**

As a wholesaler, MWDOC did not contain a specific implementation plan in its 2000 Regional Urban Water Management Plan. However, as a signatory to the Memorandum of Understanding regarding urban water use efficiency, MWDOC’s commitment to implement BMP-based water use efficiency program continues today. To help facilitate implementation of BMPs throughout Orange County, MWDOC’s efforts focus on the following three areas. These areas both comply with BMP No. 10 - Wholesaler Assistance, and go beyond the basic BMP 10 requirements:

- Regional Program Implementation: MWDOC develops, obtains funding for, and implements regional BMP programs on behalf of all retail water agencies in Orange County. This approach minimizes confusion to consumers by providing, countywide, the same programs with the same participation guidelines, and also maintains a consistent message to the public to use water efficiently. Programs implemented by MWDOC on behalf of the region are identified in Table 5-4-1-B above;
- Local Program Assistance: When requested, MWDOC assists retail agencies to develop and implement local programs within their

individual service areas. This assistance includes collaboration with each retail agency to design a program to fit that agency's local needs, which may include providing staffing, targeting customer classes, acquiring grant funding from a variety of sources, and implementing, marketing, reporting, and evaluating the program. MWDOC provides assistance with a variety of local programs including, but not limited, to Home Water Surveys, Large Landscape, Conservation Public Information, School Education, Conservation Pricing, and Water Waste Prohibitions; and

- Research and Evaluation: An integral component of any water use efficiency program is the research and evaluation of potential and existing programs. Research allows 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 when compared to other efficiency projects or existing or potential sources of supply. Over the past five years, MWDOC has completed three research and evaluation projects. The efforts are summarized below:

#### Orange County Saturation Study, 2001

The principal objective of the *Orange County Saturation Study* was to test the hypothesis that, at least within Southern California, the results from countywide surveys will “produce good estimates of the saturation of low-flow showerheads (LFSHs) among households” served by the individual retail agencies comprising the county. The study results strongly support this hypothesis, but suggest that the required 75% saturation threshold had not quite been achieved as of the winter of 2000. The estimated saturation rates were, however, close enough to the requisite 75% level to support that the combined effect of utility distribution programs and natural replacement may have substantially bridged the gap between then and now. This is an example of an evaluation project that measured the level of project implementation relative to the 75% implementation goal. The full report can be accessed on MWDOC's website.

#### Evaluation of the Landscape Performance Certification Program, 2004

The Landscape Performance Certification Program was a pilot program implemented by MWDOC to comply with the goals of BMP No. 5 - Large Landscape Conservation Programs. BMP No. 5 targets the development of landscape irrigation budgets for dedicated landscape meters and monthly irrigation performance reporting. This program was implemented as a pilot program from 1997 to 2003. As significant participation and program design improvements were made during this time, an evaluation was necessary to determine program effectiveness for continued implementation. This evaluation comprised three parts: (i)

a Process Evaluation designed to determine how effectively the program was being delivered to participants; (ii) an Impact Evaluation to measure water savings; and (iii) the development of Recommendations to be implemented to improve the program. The evaluation revealed a water savings of 367 gallons per day per meter for early participants and 765 gallons per day per meter for later program participants. The evaluation documented several recommendations to improve the project as it transitioned into a standard implementation program. The full report can be accessed on MWDOC's website.

#### Residential Runoff Reduction Study, 2004

This research project, which began in fall of 2001 and concluded in 2003, was designed to verify the water savings measured in the earlier Westpark Study and to evaluate changes in runoff pollutant content and runoff volume from a neighborhood before and after installation of "smart" weather-based irrigation controllers. The evaluation identified an average annual water savings of 10% for those study participants using "smart" weather-based controllers to schedule and regulate their landscape irrigation systems, and a 49% reduction in runoff leaving the neighborhood. Statistically significant changes in pollutant concentrations were not found, resulting in a pollutant reduction of 49%. The full report can be accessed on MWDOC's website.

### **5.4.3 BMP Implementation in MWDOC Service Area**

#### **BMP No. 1 - Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers**

MWDOC assists its retail water agencies to implement this BMP by making available the following programs:

##### NEW as of 2004 - SmarTimer Rebate Program

This regional program is available to all participating retail agencies and their customers. Residential customers are eligible to receive a rebate when they purchase and install a new, state-of-the-art, weather-based sprinkler timer. This advanced sprinkler timer technology has been shown to save 41 gallons per day per residential installation and to reduce runoff and pollution by 49%. A total of 5,000 residential and commercial SmarTimer installations are targeted over the next few years.

##### Protector Del Agua Irrigation Management Training (Residential)

The Protector Del Agua Irrigation Management Training Program provides education to residential homeowners on a variety of landscape water efficiency practices they can employ in their home landscapes. These classes are hosted by MWDOC and/or the retail agencies to encourage

participation across the county. Table 5-4-3-A summarizes residential participation in this program.

The program consists of a series of four 4-hour classes taught either on four consecutive Saturdays or a designated Saturday each month. Alternatively, a mini class incorporates the curriculum from all four classes into one condensed class. The presentations cover the following topics:

<p><b>Basic Landscape Design</b>          Getting Started          The Design Process          The Planting Design          Plant Selection</p>	<p><b>Landscape Plants</b>          Why Go Native          Plant Selection Tips          Planting Guidelines          Maintenance</p>
<p><b>Landscape Sprinkler Systems</b>          The Irrigation System          Layout of the Irrigation System          Components of the System          Installation &amp; Maintenance          Practices</p>	<p><b>Landscape Watering, Fertilizing</b>          Scheduling your Irrigation          MWD’s Watering Calculator          Controller Programming Basics          Fertilizers</p>

**Table 5-4-3-A: Protector Del Agua Irrigation Management Training Residential Participation Summary**

	<b>FY 2001-02</b>	<b>FY 2002-03</b>	<b>FY 2003-04</b>	<b>FY 2004-05</b>	<b>Total:</b>
Number of Participants	405	945	847	537	2,734

Source: Municipal Water District of Orange County

**BMP No. 2 -Residential Plumbing Retrofit**

Using the 2001 *Orange County Saturation Study* as a benchmark, saturation of low-flow showerheads was measured at 67% and 60% in single- and multi-family housing stock respectively. Today, low-flow showerhead saturation is estimated at nearly 100% and 94% saturation in single- and multi-family homes. As a result, water agencies throughout Orange County have achieved the 75% saturation requirement for this BMP. No further low-flow showerhead distribution or installation activity has occurred.

**BMP No. 3 - System Water Audits, Leak Detection, and Repair**

With the sale of the Allen-McColloch Pipeline to the Metropolitan Water District of Southern California in 1995, MWDOC no longer owns or operates a distribution system. Water purchased and sold by MWDOC is distributed through Metropolitan’s system to the MWDOC retail agencies. As a result, implementation of BMP No. 3 is not applicable to MWDOC.

However in an effort to assist our retail agencies, MWDOC publishes annually the *Orange County Water Agencies Water Rates, Water System Operations, and Financial Information* survey. This survey facilitates a pre-screening survey that estimates the volume and percent of unaccounted-for-water for each retail water agency in the county. In 2004, the percent of unaccounted-for-water for retail water agencies ranged from a low of 1.2% to a high of 10.7%, with an average of 5.1%.

#### **BMP No. 4 - Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections**

Metering with commodity rates by wholesale and retail agencies has been an industry standard throughout Orange County for many years. All customers are metered and billed based on commodity rates either monthly or bi-monthly.

#### **BMP No. 5 - Large Landscape Conservation Programs and Incentives**

Three programs are offered in Orange County to assist retail agencies and their large landscape customers to use water efficiently. These programs include:

##### Protector Del Agua Irrigation Management Training (Professional)

This course consists of four consecutive classes in landscape water management geared at the landscape professional, 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. The following is a synopsis of each class in the course:

- **Irrigation Principles:** A comprehensive class that covers the principle factors in landscape irrigation and provides a solid foundation for sound landscape water management. At the conclusion of the class, participants will have attained, through lecture and classroom demonstrations, a practical knowledge of landscape irrigation design, installation, maintenance, and repair. Topics include irrigation system types, sprinkler layouts, sprinkler components, sprinkler selection and spacing, and common sprinkler problems;
- **Irrigation System Troubleshooting:** This session focuses on an analytical approach to solving irrigation system failures. Three potential problem areas are examined: (1) mechanical problems, 2) hydraulic problems, and 3) electrical problems. Workshop participants receive practical training in the use of electrical troubleshooting equipment;

- **Controller Programming:** A hands-on workshop where participants learn basic controller features by programming sample cases. Participants then move into advanced controller features as they input more complex schedules, taking into consideration temperature/seasonal changes, rain, landscape activities, and demands that limit irrigation times. Irrigation controllers are provided for in-class use;
- **Irrigation Scheduling:** This session focuses on two critical questions: 1) When to irrigate? 2) How much water to apply? A variety of field techniques and methods are presented, along with the technical aspects to be considered when scheduling irrigation run times. Each class participant is furnished with the tools needed to perform an irrigation scheduling assignment.

Upon completion of the course, participants receive a certificate listing all classes completed. Participants are eligible for 21 Continuing Education Units as certified by the Irrigation Association. Table 5.4.3-B summarizes commercial participation in this program.

**Table 5-4-3-B: Portector Del Agua Irrigation Management Training Professional Participation Summary**

	<b>FY 2001-02</b>	<b>FY 2002-03</b>	<b>FY 2003-04</b>	<b>FY 2004-05</b>	<b>Total:</b>
Number of English Participants	324	454	66	118	962
Number of Spanish Participants	359	215	198	122	894

Source: Municipal Water District of Orange County

Landscape Performance Certification Program

MWDOC has created a unique and innovative partnership linking landscape water management, green material management, and the non-point source pollution prevention goals of separate agencies into one program -- the Landscape Performance Certification Program. This partnership includes MWDOC as lead agency, Metropolitan, Orange County Integrated Waste Management Department, United States Bureau of Reclamation, and all retail water agencies in Orange County. The Landscape Performance Certification Program is designed to:

- Assist water agencies in meeting the landscape irrigation management requirements of the California Urban Water Conservation Council's Best Management Practice #5;

- Assist cities and the county in meeting Integrated Waste Management Act goals (AB 979) to reduce the volume of waste and to recycle organic materials for the benefit of the landscape; and
- Assist cities and the county in identifying landscape run-off sites and providing site-by-site remedies.

Homeowner associations managing dedicated landscape irrigation meters are the primary target audience for participation in this program; however, city and school district landscapes also participate. There are more than 17,000 dedicated irrigation meters served by retail water agencies in Orange County, of which nearly 14,000 use potable water, while the remaining 3,000 use reclaimed water to irrigate urban landscapes. Table 5-4-3-C identifies the agencies currently activated in the program along with the number of meters and associated acre-feet per year water savings. Water savings is based on the results of the “Evaluation of the Landscape Performance Certification Program” which include a 765 gallon per day savings rate.

**Table 5-4-3-C: Landscape Performance Certification Program**

Activated Agency	Number of Meters Activated and Acre-Feet Per Year of Water Savings				
	12/31/01	8/31/02	8/31/03	7/31/04	5/30/05
Capistrano Valley Water District	42 Meters 36 acre-feet per year	43 Meters 37 acre-feet per year	47 Meters 40 acre-feet per year	Not reported	Not reported
El Toro Water District	0	0	63 Meters 54 acre-feet per year	79 Meters 68 acre-feet per year	91 Meters 64 acre-feet per year
Irvine Ranch Water District	80 Meters 69 acre-feet per year	122 Meters 105 acre- feet per year	187 Meters 160 acre-feet per year	157 Meters 135 acre-feet per year	242 Meters 207 acre-feet per year
Mesa Consolidated Water District	4 Meters 3 acre-feet per year	115 Meters 99 acre-feet per year	184 Meters 158 acre-feet per year	156 Meters 134 acre-feet per year	249 Meters 213 acre-feet per year
Moulton Niguel Water District	161 Meters 138 acre- feet per year	181 Meters 155 acre- feet per year	189 Meters 162 acre-feet per year	60 Meters 51 acre-feet per year	229 Meters 192 acre-feet per year
Newport Beach	9 Meters 8 acre-feet per year	47 Meters 40 acre-feet per year	48 Meters 41 acre-feet per year	22 Meters 18 acre-feet per year	92 Meters 79 acre-feet per year
Santa Margarita Water District	333 Meters 285 ACRE- FEET PER	354 Meters 303 acre- feet per year	558 Meters 478 acre-feet per year	640 Meters 548 acre-feet per year	753 Meters 645 acre-feet per year

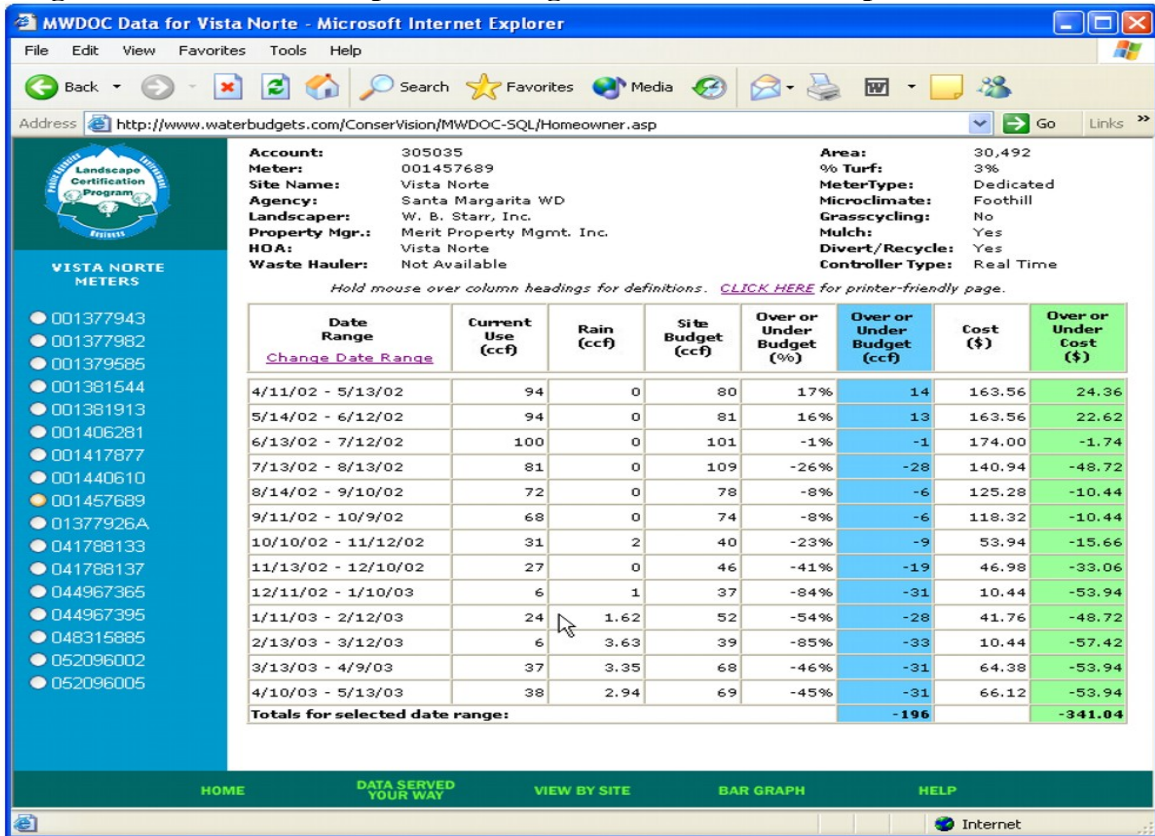
	YEAR				
San Clemente	0	38 Meters 33 acre-feet per year	151 Meters 129 acre-feet per year	134 Meters 115 acre-feet per year	168 Meters 144 acre-feet per year
South Coast Water District	0	0	62 Meters 53 acre-feet per year	21 Meters 18 acre-feet per year	83 Meters 71 acre-feet per year
Westminster, City of	0	0	0	9 Meters 8 acre-feet per year	18 Meters 16 acre-feet per year
<b>Total</b>		<b>900 Meters 771 acre- feet per year</b>	<b>1,489 Meters 1,277 acre- feet per year</b>	<b>1,278 Meters 1,095 acre-feet per year</b>	<b>1,925 Meters 1,650 acre-feet per year</b>

Source: Municipal Water District of Orange County

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Usually, three different parties are involved in managing landscapes associated with these meters: (i) the property owner (home owner association board of directors), (ii) the property manager, and (iii) the landscape contractor. This program creates a “Loop of Accountability” by providing regular (monthly or bi-monthly) irrigation performance reports to all three parties via the program website, [www.waterbudgets.com](http://www.waterbudgets.com). Participants are sent an e-mail informing them that their Irrigation Performance Report has been updated and requesting that they to log-on to the program website to view their latest reports. A monthly newsletter sent via e-mail encourages implementation of seasonally appropriate landscape maintenance practices, describes case studies, and provides a schedule of upcoming Protector del Agua classes. An example of an Irrigation Performance Report is provided as Figure 5-4-3-A.

**Figure 5-4-3-A: An Example of an Irrigation Performance Report**



Source: Municipal Water District of Orange County

Each participating landscaper, property manager, or homeowners' association has the ability to become certified as a good water manager through the program. Certification is based on irrigation management performance over time. It is the full intent of the program that every landscaper contractor and property management company receives program certification. The educational materials, training, site case studies, and monthly irrigation performance reports are designed to help accomplish across-the-board certification. The list of certified companies is posted on the web site and updated three times per year. The level of water budget performance per site determines higher levels of certification. With seasonal updating, companies may move up or down the certification scale.

The intent of the certification component of the program is to provide property managers and landscape-contracting companies with increased marketing opportunities for their services, increased business retention, and access to new business opportunities. The ability to recognize and promote certified companies can and should expand over the life of the program. Promotion will include:

- Advertisement of certified companies to local public agencies and their customers;
- Advertisement of certified companies to professional associations;
- Advertisement of certified companies through trade publications; and
- Potential advertisement of certified companies through local media outlets and the Internet.

NEW as of 2004 - SmarTimer Rebate Program

This regional program is available to all participating retail agencies and their customers. Residential and commercial customers are eligible to receive a rebate when they purchase and install a new, state-of-the-art, weather-based sprinkler timer. This advanced sprinkler timer technology has been shown to save 41 gallons per day per residential installation and to reduce runoff and pollution by 49%. A total of 5,000 residential and commercial SmarTimer installations are targeted over the next few years.

**BMP No. 6 - High-Efficiency Washing Machine Rebate Programs**

Orange County residents are eligible to receive a \$100 rebate when they purchase a new High-Efficiency Clothes Washer (HECW). This program is sponsored by MWDOC, Metropolitan, and local retail water agencies. Rebates are available on a first-come, first-served basis, while funds last. Machines must be purchased after January 1, 2002 and installed in Orange County. Participants must be willing to allow an inspection of the installed machine for verification of program compliance. These machines use 15 to 25 gallons less water per load and, depending on use, can save 7,000 gallons of water per year. Effective as of May 1, 2005, machines must have a water factor of 6.0 or less. Participants are encouraged to contact their local gas and/or electric utility as additional rebates may be available.

As detailed in Table 5-4-3-D, more than 13,900 HECWs have been installed in single-family homes through this program. These retrofits are saving more than 160 acre-feet of potable water per year.

**Table 5-4-3-D: Clothes Washers Replaced by Agency**

Agency	Previous Years	FY 99/00	FY 00/01	FY 01/02	FY 02/03	FY03/04	Total for all Fiscal Years	Cumulative Water Savings across all Fiscal Years
Brea	0	0	0	17	107	178	302	9.60
Buena Park	0	0	0	9	45	88	142	4.47
Cap Valley	0	0	0	16	95	120	231	7.59
East Orange	0	0	0	3	8	20	31	0.98
El Toro	0	0	0	21	88	108	217	7.26
Fountain Valley	0	0	0	36	127	209	372	12.15
Garden Grove	0	0	0	39	173	278	490	15.85
Huntington Beach	0	0	0	114	486	857	1,457	46.73
Irvine Ranch	0	0	0	158	619	1,084	1,861	59.98
La Habra	0	0	0	8	40	86	134	4.17
La Palma	0	0	0	3	5	13	21	0.68
Laguna Beach	0	0	0	17	88	119	224	7.34
Mesa Consolidated	0	0	0	24	117	228	369	11.63
Moulton Niguel	0	0	0	158	630	841	1,629	54.15
Newport Beach	0	0	0	17	144	343	504	15.28
Orange	0	0	0	58	247	304	609	20.36
San Clemente	0	0	0	32	182	235	449	14.73
Santa Margarita	0	0	0	140	510	743	1,393	46.06
Santiago	0	0	0	1	7	4	12	0.43
Seal Beach	0	0	0	13	28	57	98	3.22
Serrano	0	0	0	9	16	54	79	2.47
So Cal Water	0	0	0	37	195	339	571	18.17
South Coast	0	0	0	35	138	165	338	11.39
Trabuco Canyon	0	0	0	10	63	76	149	4.91
Tustin	0	0	0	21	89	152	262	8.44
Westminster	0	0	0	37	159	235	431	14.10
Yorba Linda	0	0	0	36	214	342	592	18.93
<b>MWDOC Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,069</b>	<b>4,620</b>	<b>7,278</b>	<b>12,967</b>	<b>421.06</b>
<b>Acre-Feet Water Savings</b>	0.0	0.0	0.0	13.8	59.5	93.7		
Anaheim	0	0	0	97	32	-	129	6.23
Fullerton	0	0	0	40	196	369	605	19.14
Santa Ana	0	0	0	15	69	188	272	8.28
<b>Non-MWDOC Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>152</b>	<b>297</b>	<b>557</b>	<b>1,006</b>	<b>33.65</b>
<b>Acre-Feet Water Savings</b>	0.0	0.0	0.0	0.2	0.8	1.2		
<b>Orange County Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,221</b>	<b>4,917</b>	<b>7,835</b>	<b>13,973</b>	<b>455</b>
<b>Acre-Feet Water Savings</b>	0.0	0.0	0.0	13.9	60.3	94.9		

Source: Municipal Water District of Orange County

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**BMP No. 7 - Public Information Programs**

MWDOC's water use efficiency public information programs are built around communication, coordination and partnerships with its member agencies and cities, Metropolitan, and other local, state, and federal legislative and regulatory bodies. MWDOC's information programs are carried out on behalf of and in coordination with its member agencies. The goal is to help the member agencies and public understand current issues and the challenges, opportunities and costs involved in securing a reliable supply of high quality water.

Through a variety of public information programs, MWDOC assists its member agencies in reaching 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. MWDOC also assists its member agencies in publicizing the availability of water use efficiency programs and technologies throughout Orange County.

### **Public Affairs Workgroup**

MWDOC's Public Affairs Department conducts monthly meetings with its members' public affairs and customer service representatives to coordinate public outreach efforts and to share information and ideas. Through the Public Affairs Workgroup, MWDOC facilitates and ensures message consistency, especially when promoting water use efficiency programs and workshops. The workgroup also serves as a vehicle through which MWDOC can disseminate to its member agencies important materials and information sent by Metropolitan on regional marketing and advertising programs, including outdoor irrigation.

### **Poster/Slogan Contest**

Each year, MWDOC and its member agencies honor elementary school students as winners in the "Water is Life" Poster and Slogan Contest. As part of MWDOC's school education program, MWDOC solicits entries to the contest throughout the fall and winter. More than 1,000 entries are typically received. Winners are recognized in May and June at either a member agency board of directors meeting or at a city council meeting, depending upon the area in which the student resides. A member of the MWDOC Board of Directors also attends, which allows both organizations (MWDOC and the water retailer) to honor the student. The winning artwork and slogans are incorporated into a school-year calendar that is distributed to every classroom in Orange County the following academic year. In 2005 another venue in which to promote the water-conservation message was identified: the Orange County Youth Expo, an annual event held at the Orange County Fair Grounds. Winning artwork and slogans were displayed during the weeklong event, which drew hundreds of thousands of school-aged children and their families.

### **Local and Regional Events**

Through its participation in the Association of California Water Agencies and the California Water Awareness Campaign, MWDOC also supports and participates 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, especially in the semi-arid Southern California region.

### **Speakers Bureau**

MWDOC receives approximately 50 requests annually from civic, business, community, and homeowner groups for presentations on key issues affecting Orange County's water supply. MWDOC's water use efficiency programs and conservation tips for residents and businesses are integrated into our presentation. Printed pieces explaining rebate programs (i.e. SmarTimer Rebate Program, High Efficiency Clothes Washer Rebate Program) and other programs (residential and commercial landscaping workshops, landscaper certification) are distributed, and the programs are promoted. MWDOC staff also works with member agency representatives to assist them in being informed and effective spokespersons on these topics.

### **Facility Inspection Trips**

Each of MWDOC's appointed Metropolitan directors is entitled each year by Metropolitan to sponsor inspection trips of the Colorado River Aqueduct, the State Water Project, and the Diamond Valley Lake. MWDOC takes full advantage of this opportunity by inviting public administrators, elected officials, community leaders, and members of the media to attend these highly educational inspection trips. MWDOC's aim is to familiarize trip guests about the facilities that bring imported water into Southern California, and the need to augment supplies from these facilities to keep up with growing demand. MWDOC optimizes these opportunities to educate guests by distributing information on water use efficiency programs and services available in Orange County.

### **Information Materials**

MWDOC Public Affairs staff regularly produces informational materials, including newsletters, fact sheets, brochures, issue bulletins, manager's reports, annual reports, briefing books, press kits, exhibit booths and displays. These materials are made available to the public and to our member agencies and cities. MWDOC also provides information via the Internet on its website, [www.mwdoc.com](http://www.mwdoc.com). A consistent and high-profile message in each of these information pieces is the critical need to follow water use efficiency practices and their cumulative impact on Orange County.

### **Water Quality Reports**

Each year, MWDOC coordinates the production of Water Quality Reports for each of its member agencies and cities. These reports, required by the California Department of Health Services, are distributed to all residents of Orange County via the retail water agencies. The reports include information about the sources of water for each customer and quality of that source water, as well as the quality of the water that consumers get from

their taps. The reports also provide MWDOC with the opportunity to include messages about water use efficiency and conservation to all county residents.

**Media Relations**

MWDOC is a credible source of information to the media for regional and statewide water issues, as well as water issues within Orange County. In addition, staff keeps environment reporters apprised of key conservation issues and messages, which are often integrated into general-interest articles. Staff also prepares press releases on local and regional issues, and provides template press releases that can be tailored for local use by our member agencies and cities. This message consistency has worked well in Orange County, especially as we disseminate information on water use efficiency.

**BMP No. 8 - School Education Programs**

BMP No. 8 focuses on the implementation of a school education program to promote water conservation and water conservation-related benefits.

One of the most successful and well-recognized water-education curriculums in Southern California is MWDOC’s School Education Program. For more than 30 years, MWDOC teachers, assisted by mascot "Ricki the Rambunctious Raindrop," have been educating students in grades K-12 about the water cycle, the importance and value of water, and the personal responsibility we all have as environmental stewards

Since its inception in January 1973, the MWDOC School Education Program has evolved into what has become the standard for all water-education curriculum. To date, nearly 2.5 million Orange County students have benefited from the program.

In 2004, MWDOC formed an exciting partnership with the 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. Table 5-4-3-E provides an implementation summary of the school education Program.

**Table 5-4-3-E: Implementation Summary for MWDOC School Education Program**

	<b>FY 00-01</b>	<b>FY 01-02</b>	<b>FY 02-03</b>	<b>FY 03-04</b>	<b>FY 04-05</b>
Student Participants	118,522	109,919	101,826	66,550	49,433

Source: Municipal Water District of Orange County

**BMP No. 9 - Conservation Programs for Commercial, Industrial and Institutional Accounts**

The goal of BMP No. 9 is to identify and rank commercial, industrial, and institutional customers according to use and to establish long-term implementation targets for the replacement of high-water-using toilets with Ultra Low Flush Toilets in the Commercial Industrial and Institutional sector.

Save Water - Save a Buck!

This program began in 2002 and offers rebates to assist commercial, industrial, and institutional 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 5-4-3-F 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 5-4-3-F: Retrofit Devices and Rebate Amounts Available Under the “Save Water – Save a Buck!” Program**

<b>Retrofit Device</b>	<b>Rebate Amount</b>
Ultra-Low-Flush Toilet	\$60 to \$120
Ultra-Low-Flush Urinal or Waterless Urinal	\$60
Flush Valve Retrofit Kit	\$15
Coin/Card-Operated High Efficiency Commercial Clothes Washer	\$250
Cooling Tower Conductivity Controller	\$500
Hospital X-ray Film Processor Re-circulating System	\$2,000
Water Pressurized Broom	\$100

Source: Municipal Water District of Orange County

As detailed in Table 5-4-3-G below, more than 5,800 water wasting plumbing fixtures have been replaced with low flow fixtures through this program. These retrofits are saving more than 560 acre-feet of potable water per year.

**Table 5-4-3-G: Commercial, Industrial, Institutional (CII) Retrofit Devices Replaced by Agency**

Agency	Previous Years	FY 99/00	FY 00/01	FY 01/02	FY 02/03	FY 03/04	Total for all Fiscal Years	Cumulative Water Savings across all Fiscal Years
Brea	0	0	0	0	2	0	2	13
Buena Park	0	0	0	10	17	28	55	23
Cap Valley	0	0	0	0	0	21	21	5
East Orange	0	0	0	0	0	0	0	0
El Toro	0	0	0	23	20	73	116	35
Fountain Valley	0	0	0	1	28	2	31	9
Garden Grove	0	0	0	21	53	51	125	33
Huntington Beach	0	0	0	5	63	73	141	63
Irvine Ranch	0	0	0	155	919	87	1,161	455
La Habra	0	0	0	10	13	52	75	16
La Palma	0	0	0	0	0	0	0	0
Laguna Beach	0	0	0	2	1	2	5	1
Mesa Consolidated	0	0	0	424	37	22	483	85
Moulton Niguel	0	0	0	31	8	65	104	28
Newport Beach	0	0	0	4	144	9	157	61
Orange	0	0	0	84	21	22	127	69
San Clemente	0	0	0	0	2	5	7	2
Santa Margarita	0	0	0	0	1	3	4	1
Santiago	0	0	0	0	0	0	0	0
Seal Beach	0	0	0	3	0	44	47	12
Serrano	0	0	0	0	0	0	0	0
So Cal Water	0	0	0	11	66	34	111	68
South Coast	0	0	0	0	3	8	11	2
Trabuco Canyon	0	0	0	0	0	0	0	0
Tustin	0	0	0	9	64	16	89	34
Westminster	0	0	0	16	5	32	53	15
Yorba Linda	0	0	0	0	4	12	16	28
<b>MWDOC Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>809</b>	<b>1,471</b>	<b>661</b>	<b>2,941</b>	<b>1,059</b>
<b>Acre-Feet Water Savings</b>	0.0	0.0	0.0	56.9	223.8	80.1		
Anaheim	0	0	0	1,042	400	647	2,089	299
Fullerton	0	0	0	28	41	28	97	49
Santa Ana	0	0	0	115	142	419	676	215
<b>Non-MWDOC Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,185</b>	<b>583</b>	<b>1,094</b>	<b>2,862</b>	<b>564</b>
<b>Acre-Feet Water Savings</b>	0.0	0.0	0.0	50.5	50.8	104.6		
<b>Orange County Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,994</b>	<b>2,054</b>	<b>1,755</b>	<b>5,803</b>	<b>1,623</b>
<b>Acre-Feet Water Savings</b>	0.0	0.0	0.0	107.4	274.6	184.7		

[1] Retrofit devices include ULF Toilets and Urinals, High Efficiency Clothes Washers, Cooling Tower Conductivity Controllers, Flush Valve Retrofit Kits, Pre-rinse Spray heads, Hospital X-Ray Processor Recirculating Systems, and Water Pressurized Brooms.

Source: Municipal Water District of Orange County

*In the event of a discrepancy between the information shown above and that contained within a local retail agency's Urban Water Management Plan, the local retail agency's data takes precedence.*

### **BMP No. 10 - Wholesale Agency Assistance Programs**

MWDOC provides financial incentives, conservation-related technical support, and regional implementation of a variety of BMP-based programs. In addition, MWDOC conducts research projects to evaluate implementation of both existing programs and new pilot programs. Examples of this research include the *Orange County Saturation Study* (2001), the *Residential Runoff Reduction Study* (2004), and the *Evaluation of the Landscape Performance Certification Program* (2004). Greater detail describing MWDOC's role in supporting and implementing water use efficiency programs in Orange County is contained in Section 5.4.2.

### **BMP No. 11 - Conservation Pricing**

MWDOC publishes annually the *Orange County Water Agencies Water Rates, Water System Operations, and Financial Information* survey. This survey documents the rates charged by each retail water agency, as well as the type of rate structure, i.e., a flat rate, inclined block, or seasonal rate structure. Table 5-4-3-H provides a brief summary of the types of rates used by retail water agencies in Orange County and shows a slow progression away from uniform rates.

**Table 5-4-3-H: Summary of Rate Structure Types Used in Orange County**

Types of Rate Structure	Number of Agencies Utilizing Different Rate Structure Types					
	1991	2000	2001	2002	2003	2004
Declining Block	0	0	0	0	0	0
Uniform or Flat	22	19	16	19	16	15
Inclined Block	13	10	12	13	12	13
Seasonal Inclined Block	1	3	3	1	3	3

Source: Municipal Water District of Orange County

### **BMP No. 12 - Conservation Coordinator**

All retail water agencies in Orange County have designated water conservation coordinators, regardless of signatory status to the Memorandum of Understanding. All retail water agencies in Orange County are actively implementing BMPs in their service areas.

### **BMP No. 13 – Water Waste Prohibitions**

In 2004, MWDOC conducted a survey documenting water waste prohibitions enacted at each retail water agency in Orange County and compared enacted prohibitions to the BMP requirement. This survey revealed that out of the 16 agencies that responded, only one agency was in full compliance with the BMP. The remaining agencies were in partial compliance. In addition, the enacted prohibitions were not centrally located

in one section, but generally dispersed throughout each agency's regulations, thus making the survey a difficult process.

As a result of the survey findings, staff began working with retail and regional water agencies and surface water quality agencies to develop a menu of suggested items local agencies could adopt to augment their existing regulations in order to both comply with the BMP and better manage pollutant-laden nuisance runoff. This menu of suggestions will be promoted to local agencies for their consideration in 2005.

#### **BMP No. 14 - Residential Ultra Low Flush Toilet Replacement Programs**

Over the past 13 years, MWDOC has continuously implemented regional Ultra Low Flush Toilet Rebate and/or Distribution Programs targeting single- and multi-family homes in Orange County. All retail agencies encourage participation by their customers. MWDOC develops, prints, and provides marketing materials such as water bill inserts, direct mailers, or brochures for retail agencies to distribute to their customers.

As detailed in Table 5-4-3-I below, more than 351,000 high volume flush toilets have been replaced with ultra-low-flush toilets through these programs, with more than 230,000 being replaced over the past five years. The total of these retrofits is saving more than 11,700 acre-feet of potable water per year.

**Table 5-4-3-I: Toilets Replaced by Agency**

Agency	Previous Years	FY 99/00	FY 00/01	FY 01/02	FY 02/03	FY 03/04	Total for all Fiscal Years	Cummulative Water Savings across all Fiscal Years
Brea	1,287	144	867	585	341	401	3,625	591
Buena Park	2,161	469	524	1,229	2,325	1,522	8,230	1,021
Capistrano Valley	2,202	1,319	347	152	201	151	4,372	952
East Orange CWD RZ	113	17	15	50	41	44	280	41
El Toro WD	3,958	171	310	564	472	324	5,799	1,242
Fountain Valley	3,874	2,355	1,697	1,406	1,400	802	11,534	1,856
Garden Grove	10,811	3,556	2,423	3,855	3,148	2,117	25,910	4,358
Huntington Beach	13,183	3,492	3,281	2,698	3,752	1,901	28,307	5,204
Irvine Ranch WD	9,252	3,251	1,531	1,874	2,242	6,726	24,876	3,938
Laguna Beach CWD	717	306	220	85	271	118	1,717	312
La Habra	2,472	105	582	645	1,697	1,225	6,726	945
La Palma	636	132	518	173	343	193	1,995	311
Mesa Consol. WD (100%)	7,673	1,956	1,393	1,505	2,387	988	15,902	2,828
Moulton Niguel WD	3,035	475	716	891	728	684	6,529	1,146
Newport Beach	2,535	1,223	438	463	396	1,883	6,938	1,028
Orange	4,978	2,263	1,778	2,444	2,682	1,899	16,044	2,435
San Clemente	752	198	667	483	201	547	2,848	409
Santa Margarita	2,642	456	1,258	790	664	260	6,070	1,079
Santiago	94	5	3	28	21	15	166	34
Seal Beach	1,108	155	132	81	134	729	2,339	364
Serrano WD	265	52	95	73	123	98	706	115
So. Cal. Water Co.	12,209	2,957	1,379	2,143	3,222	1,870	23,780	4,468
South Coast	759	181	133	358	191	469	2,091	312
Trabuco Canyon WD	197	21	40	181	102	30	571	87
Tustin	3,446	1,292	1,508	1,206	1,096	827	9,375	1,588
Westminster	5,611	2,291	2,304	1,523	2,492	1,118	15,339	2,417
Yorba Linda WD	1,844	1,400	759	1,690	1,155	627	7,475	1,079
<b>MWDOC Totals</b>	<b>97,814</b>	<b>30,242</b>	<b>24,918</b>	<b>27,175</b>	<b>31,827</b>	<b>27,568</b>	<b>239,544</b>	<b>40,160</b>
<b>Acre-Feet Water Savings</b>	<b>3,261.3</b>	<b>1,008.3</b>	<b>830.8</b>	<b>906.1</b>	<b>1,061.2</b>	<b>919.2</b>		
Anaheim	8,705	7,551	4,593	6,346	9,707	5,075	41,977	5,470
Fullerton	5,847	2,138	1,926	2,130	2,213	1,749	16,003	2,596
Santa Ana	9,097	8,788	5,614	10,822	10,716	9,164	54,201	6,652
<b>Non-MWDOC Totals</b>	<b>23,649</b>	<b>18,477</b>	<b>12,133</b>	<b>19,298</b>	<b>22,636</b>	<b>15,988</b>	<b>112,181</b>	<b>14,719</b>
<b>Acre-Feet Water Savings</b>	<b>788.5</b>	<b>616.1</b>	<b>404.5</b>	<b>643.4</b>	<b>754.7</b>	<b>533.1</b>		
<b>Orange County Totals</b>	<b>121,463</b>	<b>48,719</b>	<b>37,051</b>	<b>46,473</b>	<b>54,463</b>	<b>43,556</b>	<b>351,725</b>	<b>54,879</b>
<b>Acre-Feet Water Savings</b>	<b>4,049.8</b>	<b>1,624.4</b>	<b>1,235.3</b>	<b>1,549.5</b>	<b>1,815.9</b>	<b>1,452.2</b>	<b>11,727.1</b>	

Source: Municipal Water District of Orange County

*In the event of a discrepancy between the information shown above and that contained within a local retail agency's Urban Water Management Plan, the local retail agency's data control.*

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