



**MWD**

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

9-6

June 18, 1997

**To:** Board of Directors (Budget and Finance Committee -- Information)  
(Water Planning and Resources Committee -- Information)

**From:** General Manager

**Submitted by:** Robert J. Gomperz  
Acting Director of Public Affairs and Conservation

**Subject:** Update on Completed and On-going Conservation Projects

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**RECOMMENDATION(S)**

For Information Only.

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**EXECUTIVE SUMMARY**

The Intergrated Resources Plan (IRP) assembly statement recognized that new methods and technologies would be needed to meet the demand-reduction goals in the IRP. Metropolitan was asked to conduct research necessary to develop cost-effective new programs that look beyond the residential bathroom to find more opportunities for efficient use of water.

The search for ways to increase efficiency has focused on large landscape use, residential landscape and interior use by commercial, industrial and institutional (CII) customers. Recently, Metropolitan's Conservation Branch, in conjunction with participating member agencies, has completed work on a number of pilot projects and research studies. The results and findings follow, as well as some of the possible implications for future direction.

A workshop for your member agencies and Metropolitan staff has been scheduled for the third week in August to discuss the implications of the current research and to establish future direction for Metropolitan's Conservation Credits Program.

## **DETAILED REPORT**

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The largest share of the water savings realized through Metropolitan's conservation program has come from reduction of water use inside homes, primarily through replacement of 3.5 - 7 gallon-per-flush toilets with the ultra-low-flush (ULF) toilets, which use 1.6 gallons per flush, and the replacement of showerheads which use up to 7 gallons per minute with 2.5 gallon-per-minute showerheads. With more than one million ULF toilets installed through Metropolitan programs, we expect program participation to remain level at 125,000 - 250,000 ULF toilets per year. After more than five years of the state laws requiring a showerhead standard flow rate of 2.5 gallons per minute and the distribution of over 1.5 million showerheads, we have achieved maximum possible effectiveness with the showerhead programs in Southern California.

The IRP assembly statement also recognized that new methods and technologies would be needed to meet the demand-reduction goals in the IRP, and Metropolitan was asked to conduct research necessary to develop cost-effective new programs. In order to meet the requirements of the IRP, Metropolitan's Conservation Branch must look beyond the residential bathroom to find more opportunities for efficient use of water. The search for ways to increase efficiency has focused on large-landscape use, residential landscape and interior use by commercial, industrial and institutional (CII) customers.

### **LARGE-LANDSCAPE DEVELOPMENTS**

#### **Protector del Agua**

Protector del Agua (PDA) was developed by Metropolitan to educate gardeners, landscape professionals and contractors in efficient irrigation practices. The decision on how much water to apply to large landscapes (such as: parks, areas around office buildings and multi-family housing) is most often made by a landscape contractor. PDA gives landscape professionals hands-on experience with the latest irrigation methods and technologies, and demonstrates how they can achieve the maximum, cost-effective irrigation efficiency at their sites.

In response to the needs of the landscape professional and member agencies, the following improvements have been added to the program:

- It is now possible for four courses to run simultaneously throughout the Metropolitan service area, thus providing greater scheduling flexibility to member agencies.
- Two new bilingual instructors were hired to meet the growing number of Hispanic landscape professionals.
- Mini-classes have been tailored for contractors who have a specific area of focus.

In response to a request from Municipal Water District of Orange County (MWDOC), PDA has been shortened and revised for use by the single-family homeowner. Weekend classes will be piloted this summer.

### **Casta del Sol - Central Computer Irrigation Control System Pilot**

This pilot project, cosponsored by Metropolitan, MWDOC, Santa Margarita Water District, and the Casta del Sol Homeowners Association, to install and monitor a central computer irrigation control system, was completed in March. With this type of program, the property-owner agrees to maintain the irrigation system and adjust irrigation schedules to achieve a water savings goal. Conservation Credits from Metropolitan are based on verified water saved at \$154/AF, and can not exceed half the cost of the system.

The preliminary results show water savings, exceeding the project target of 15 percent. For this reason, this project is being used as a model for the landscape retrofit program now being offered to all member agencies.

### **Irvine Spectrum Large-Landscape Study**

This study, co-sponsored by Metropolitan, MWDOC, Irvine Ranch Water District (IRWD) and the Irvine Company, proved that lowering landscape water use to the level recommend by IRWD actually improved the appearance of the landscape. The project was implemented by a local water management company working in conjunction with the site's landscape maintenance contractor. All costs for improvements to the landscape and irrigation system were borne by the customer. Through timely maintenance of the irrigation system and efficient horticultural practices, such as proper mowing, fertilization, aeration and irrigation scheduling, water savings were realized, especially during peak season demand.

Additionally, the study analyzed the accuracy of the widely employed method of using catch-can tests to estimate system precipitation rates and distribution uniformity. The catch-can test recommended a higher than necessary water application rate when compared to the use of a soil moisture sampling probe. Further research is indicated by this finding.

## **RESIDENTIAL WATER USE FOR LANDSCAPE**

### **Irrigation Is the Largest Single Use for Residential Customers**

Metropolitan and three member agencies (San Diego County Water Authority (SDCWA), Las Virgenes Municipal Water District and Three Valleys Municipal Water District) are participating in the North American Residential End Use Study. This is the first conservation study to be funded by AWWA's Research Foundation. The initial results from the residential end-use analysis in the City of San Diego verifies reduction of water use in the bathroom. The results for the City of San Diego show that irrigation comprises 60 percent of total residential use in summer and 37 percent in the winter. Last year, your Board approved the addition of residential landscape components to Metropolitan's Residential Survey Program.

Your Board also directed Metropolitan conservation staff to provide training and program-management support to staff at your member agencies as part of the transition to the new program.

### **Residential Surveys Irrigation Component Upgraded**

Over the past year, the Residential Survey Program Project Advisory Committee (RESPAC) developed a state-of-the-art Single Family Residential Survey Program with a much stronger emphasis on landscape conservation opportunities. RESPAC's 19 members include staff from six member agencies (Eastern MWD, SDCWA, Los Angeles Department of Water and Power, West Basin MWD and Las Virgenes MWD) and three subagencies.

RESPAC combined the best elements of each individual agency's program to build a newer, stronger Residential Survey Program from top to bottom. A curriculum and training sessions for the member agencies' surveyors was one service supplied by Metropolitan's conservation staff to the RESPAC agencies. The two-week training session includes a day on interior evaluation, three days on outdoor water use evaluation, field demonstrations of irrigation system evaluation techniques, group training surveys on several residences, and finally, trainer 'ride-alongs' with individual surveyors. RESPAC successfully completed field testing of the surveyor training in June.

In addition, RESPAC developed several training and program management tools to support the participating agencies. Each surveyor has been provided with an extensive resource titled the *Single Family, Residential Water Use Survey Program: Surveyor Training Manual and Reference Guide*. Metropolitan also developed, with RESPAC oversight, the *Single Family, Residential Water Use Survey Program: Start-up Kit*. Finally, Metropolitan's Residential Survey Program includes field forms and a relational data base that permits agencies to easily capture the data recorded on the survey forms and to develop project reports.

### **PROGRAMS TO INCREASE EFFICIENCY INSIDE COMMERCIAL FACILITIES**

#### **CII Survey Results and the New Menu Rebate Program**

During the period from 1992 through 1996 Metropolitan, working closely with many of its member agencies, sponsored a program to provide water-use surveys to Commercial, Industrial and Institutional (CII) business sector customers. The program was successful in reaching over 900 CII customers throughout our service area and providing each customer with information on methods of improving its water efficiency. The database that resulted from the surveys is now being evaluated in order to determine implementation rates, frequency of use of various conservation measures, and other customer-related information that will be shared with the participating member agencies.

The most commonly recommended measures for CII retrofits have been incorporated into the new CII Menu Rebate Program. This new program has been implemented successfully by the San Diego County Water Authority.

Metropolitan is going to provide Cooling Tower Efficiency Workshops this summer to member agency CII customers. The workshops are going to be sponsored by several member agencies and will be free of charge to both the member agency and the CII customer. With the information learned in the workshop, plant engineers and operators will be able to adjust cooling towers to run more efficiently, thereby saving water.