

## **PROGRAM ACCOMPLISHMENTS**

The WCFSP has enabled the SCAO to build trusting, working partnerships with many of its customers. It has allowed several water agencies to embark on innovative conservation planning efforts and implement sound conservation measures. Through the WCFSP, southern California water agencies and districts have been given the opportunity to gain tremendous experience and familiarity with various aspects of planning programs, selecting and managing program contractors, tracking program costs, implementing quality assurance practices, and developing more cost-effective program designs. Equally important, the WCFSP has encouraged and promoted reliable water efficiency management and has allowed Reclamation to be recognized as an environmentally sensitive water resources manager.

Common measures or Best Management Practices (BMP) that are currently accepted and implemented by urban water agencies in the SCAO's jurisdiction are:

- |          |   |
|----------|---|
| BMP #1   | Water survey programs for single-family residential and multi-residential customers.        |
| BMP #2   | Residential plumbing retrofit.  |
| BMP #3   | System water audits, leak detection and repair.   |
| BMP #4   | Metering with commodity rates for all new connections and retrofit of existing connections. |
| BMP #5   | Large landscape conservation programs and incentives.                                       |
| BMP #6   | High-Efficiency Washing Machine Rebate Programs.  |
| BMP #7   | Public information programs.  |
| BMP #8   | School education programs.  |
| BMP #9   | Conservation programs for commercial, industrial and institutional accounts.                |
| BMP # 10 | Wholesale agency assistance programs.   |
| BMP # 11 | Conservation pricing.   |

BMP # 12 Conservation coordinator.

BMP # 13 Water waste prohibition.

BMP # 14 Residential ULF toilet replacement programs.

The efforts of the SCAO to support water agencies' indicated goals have been very successful. The SCAO has completed several effective projects with efficiency measures and is continuing to schedule more programs and activities for implementation or continuation in the upcoming fiscal years.

## **FISCAL YEAR 2000 PROGRAMS**

### **THE LANDSCAPE AREA BASELINE STUDY**

Partner: Helix Water District

The Helix Water District (District) embarked upon a Pilot Study to help determine the quantitative requirements of Best Management Practice #5 (BMP) as defined by the California Urban Water Conservation Council. The District used the results from a previous Reclamation project entitled, "Helix LAMS Pilot Project" to help estimate the number of targeted accounts in the District's service area. Using the results from the Helix LAMS Pilot Project, the District combined the data with its customer database and extracted all CII and Multi-family parcels. The District then incorporated water usage history into a matrix which allowed the District to target those sites that are at least one acre of irrigated landscape and calculate potential water savings. These targeted sites will allow the District to extrapolate the percentage of sites that would have valid water conservation potential to meet the requirements of BMP#5. The data from this Pilot Study will be extrapolated to water retailers throughout southern California.

### **RESIDENTIAL INDOOR/OUTDOOR SURVEY AND EDUCATIONAL PROGRAM WITH THE SOUTHERN CALIFORNIA WATER COMPANY**

Partners: Southern California Water Company  
The Municipal Water District of Orange County  
Central and West Basin Municipal Water Districts  
Metropolitan Water District of Southern California  
California Urban Water Conservation Council's

The Southern California Water Company, along with the Municipal Water District of Orange County (MWDOC), and the Central and West Basin Municipal Water Districts (CWBMWD) conducted an innovative hands-on survey program. This program involved a

combined retrofit and educational outreach effort within the participating agencies' respective service areas. The surveys targeted at the households of participating 6<sup>th</sup> grade students. Students learned the value of water from the classroom activities and through an interactive CD ROM program which provided a fun learning experience while helping them discover ways to conserve water and other resources in and around their homes. The objective of this program is to help students understand how important water use plays in the delicate balance of the environment. The goals of this program allow the participating water agencies to combine and comply with the California Urban Water Conservation Council's Best Management Practices (BMPs). The BMPs that will be implemented by participating in this program will be BMP #1, Water Survey Program for Single Family Residential Multi-Family Residential Customers, BMP #2, Residential Plumbing Retrofits and BMP #8, School Education Programs. This joint partnership has provided Reclamation with an excellent opportunity to continue its support of local water conservation for educational activities.

The program consisted of over 6,000 surveys and may include the replacement of showerheads, kitchen and bathroom aerators. It was also received national coverage through PBS.

#### RESIDENTIAL CONTROLLER RETROFIT AND EVALUATION

Partners: Riverside-Corona Resource Conservation District (RCRCD)  
Western Municipal Water District

The objective and goals of this project were to assist in the continued fulfillment of Assembly Bill 325 and the BMP's of the California Urban Water Conservation Council. The RCRCD provided and installed multi-programmable controllers. They also performed a cost/benefit analysis of fifty homes using the new controllers and developed water conserving irrigation schedules. This allowed the cooperating agencies to operate an in-field water management program in an efficient manner and provide the customer with one-on-one assistance. The data and analysis from this project will be useful to Western Municipal Water District, as well as, other water agencies throughout the Southern California region.

RCRCD estimates that the outdoor water use can be reduced by 10% to 12% by installing the multi-programmable controllers and monitoring the sites.

#### WATER EDUCATION ADVISORY COUNCIL WITH THE WESTERN MUNICIPAL WATER DISTRICT

Partners: The Water Education Advisory Council  
Western Municipal Water District

The City of Corona Water Utilities Department  
The City of Riverside Public Utilities Department  
Elsinore Valley Municipal Water District  
Home Gardens County Water District  
Jurupa Community Services District  
Rancho California Water District  
Rubidoux Community Service District

The Water Education Advisory Council (Council) is a regional consortium of eight water purveyors that work together to implement water education programs to educators and students. Formed by Western Municipal Water District in 1995, the Council has expanded to reach more than 200,000 students from kindergarten to the 12<sup>th</sup> grade. The Council provides an extensive array of water education curriculum, field trips, presentations and teacher services. There is also an educational theater program, a science fair, and a fifth grade poster contest. This joint partnership provided Reclamation with an excellent opportunity to continue its support of local water conservation educational activities.

#### WATER ENVIRONMENT FEDERATION TEACH 2000 (WEFTEACH 2000) WITH THE WATER ENVIRONMENT FEDERATION

Partner: Water Environment Federation

The SCAO helped sponsor the WEFTEACH 2000 in Anaheim, California to promote water use efficiency and reuse education. WEFTEACH 2000 has been developed by the Water Environment Federation (WEF) and this year the event was held in conjunction with the 73<sup>rd</sup> Annual WEF Technical Exposition and Conference. This one-day event was presented to over 70 secondary science and social studies teachers in the Los Angeles and Orange County Unified School Districts to educate them regarding current and local water issues. The courses were taught by water professionals, including environmental engineers, chemists, treatment plant managers and equipment distributors. Some of the local concerns that were highlighted were:

- Water reuse
- Water and wastewater treatment
- Urban run-off, and
- Water conservation

#### ULTRA - LOW FLUSH TOILET DISTRIBUTION AND RECYCLING PROGRAM (ULFT PROGRAM)

Partners: Eastern Municipal Water District  
Local High Schools

Eastern Municipal Water District (Eastern) successfully implemented an ULFT Program utilizing a community-based organization involving all of the high schools within Eastern's service areas. Reclamation's partnership in this program helped promote water use efficiency, as well as educate many of Eastern's customers and high school students. Over 2,000 ULFTs were given away during this event.

Eastern's focus is targeted on low and fixed income groups and is expected to save approximately 1,134 acre-feet of water over the fifteen year life of the ULFTs.

#### ULTRA - LOW FLUSH TOILET DISTRIBUTION

Partner: West and Central Basin Municipal Water Districts  
ExPert  
Old Timers Foundation

This program is designed to replace approximately 15,900 toilets with ultra-low flush models throughout the West and Central Basin Municipal Water Districts. The SCAO is supporting this program by purchasing 1,600 toilets for the first year of the program. The expected water savings is approximately 620 acre-feet over ten years. The distribution will incorporate community-based organizations such as ExPert and the Old Timers Foundation.

#### PRECISION IRRIGATION SCHEDULING METHOD (PRISM) PROGRAM

Partner: San Jacinto Basin Resource Conservation District

The objective of this program is to improve and refine the irrigation scheduling practices of vineyards owners and managers in the service area of the San Jacinto Basin Resource Conservation District's Integrated Water Management Lab who are using Colorado River water. The water is delivered through the Colorado River Aqueduct to Lakes Perris and Matthews and via the San Diego Aqueduct and Canal to Lake Skinner. To accomplish this, the SJBRCD Mobile Lab provided season-long soil moisture monitoring and computerized irrigation scheduling services using the PRISM system to participating vineyard owners and managers in the Temecula Valley wine grape growing region.

#### RESIDENTIAL PLUMBING DEVICE SATURATION SURVEY FOR ORANGE COUNTY

Partners: Metropolitan Water District of Southern California  
Municipal Water District of Orange County

The Metropolitan Water District of Southern California (Metropolitan) and the Municipal Water District of Orange County (MWDOC) are pursuing a study to measure the saturation of residential plumbing devices in Orange County. The project will also provide important data for Metropolitan's retail demand forecasting model. In addition to showerhead data, the on-site inspections will gather data on toilets, faucets, water-using appliances, leaks, irrigation systems, and demographic information.

#### PADRE DAM GRAYWATER PILOT PROJECT

Partners: Padre Dam Municipal Water District  
City of San Diego

Padre Dam Municipal Water District (District) embarked on a pilot project to investigate and document the operating characteristics of individual prepackaged residential graywater irrigation systems. The pilot project is designed to assess potential cost savings to customers as well as the effects these systems may have on the operations and maintenance of District facilities (sewer and water) over an extended period of time. The District will also provide additional meters to monitor the actual flows into the graywater system. The inspection and certification of no more than 2 backflow prevention devices per site will also be provided by the District for a period of 2 years as part of the pilot program. The District will monitor usage of these systems on a site-by-site basis for a period of 5 years.

## PLANNING MODEL FOR THREE VALLEYS MUNICIPAL WATER DISTRICT

Partner: Three Valleys Municipal Water District  
Metropolitan Water District of Southern California

Three Valleys Municipal Water District (District) has proposed to develop a Planning Model for the District and its retail agencies. The Planning Model will use secondary sources to compile data that will provide a reasonable assessment of the saturation level of various conservation measures. This information will help agency planners and management determine the remaining potential for water savings from conservation interventions. The Planning Model will also develop and incorporate methodology for determining the cost-effectiveness of the individual BMPs. The final deliverable of the Planning Model will be the development of a suggested implementation plan for each retail agency. This information will be useful for agencies that are required to develop an Urban Water Management Plan for the state of California.

## DEVELOPMENT OF A WATER BUDGET IN THE LOS ANGELES AND SAN GABRIEL'S DOUBLE WATERSHED

Partners: The Los Angeles & San Gabriel Rivers Watershed Council  
California Urban Water Conservation Council  
The Association of Ground Water Agencies  
The WateReuse Association

The Los Angeles & San Gabriel Rivers Watershed Council (Council) are working cooperatively with local water agencies within its jurisdiction to gather data and develop a water budget. An accurate water budget is critical to water use efficiency planning and program implementation. This information will be accessible to the general public, as well as those involved in local water issues. This water budget will be a useful tool and resource for Reclamation and its customers, because it will provide in one complete document information that is not otherwise available. This will be a visible document and will provide Reclamation the opportunity to continue its promotion of water conservation activities.

## RESIDENTIAL HIGH-EFFICIENCY CLOTHES WASHER INCENTIVE PROGRAM

Partners: San Diego County Water Authority  
San Diego Gas and Electric Company  
City of San Diego  
Metropolitan Water District of Southern California

Because of this program's success, the SCAO has continued to partner with the San Diego County Water Authority (SDCWA). The SDCWA is offering water customers in its service area a financial incentive to encourage replacing high water use clothes washers with high-efficiency clothes washer. These devices use approximately 30% less water per load than standard top-loading machines as well as offer significant energy savings. Implementation of a high-efficiency clothes washer rebate program is consistent with Best Management Practice #6.

#### CALIFORNIA URBAN WATER CONSERVATION COUNCIL

Partners: California Urban Water Conservation Council (CUWCC)  
Over 100 signatories to the MOU  
California Department of Water Resources

The CUWCC was formed to participate, monitor and evaluate the implementation of water conservation practices by signatory agencies in California. CALFED is recommending the CUWCC adopt a process for endorsement or certification of water supplier compliance with the terms of the MOU as part of CALFED's Water Use Efficiency Program. The proposed certification process would serve as a basis for assuring that urban areas are implementing cost-effective water use efficiency measures. A grant has been issued to assist the CUWCC to become the key facilitator of urban water conservation planning and implementation in California.

This fiscal year, the SCAO and the Mid-Pacific Regional Office have agreed to revise the existing agreement with CUWCC in order to continue to provide technical assistance on BMP programs through workshops and conferences., provide travel and per diem expenses for environmental group members who are participating in the CALFED Water Use Efficiency Certification Program development, and provide technical assistance on system water audits and purchase demonstration equipment for distribution system leak detection that can be loaned to California water agencies.

The CUWCC and the BMP process it oversees are now central to existing and proposed State and Federal urban water conservation initiatives, including the following: CVPIA, Urban Water Management Planning, California's 4.4 Plan, and CALFED Water Use Efficiency Program.

#### CONFERENCES AND WORKSHOP PARTICIPATION

2000 Annual California Water Policy 10 Conference for The Public Officials for Water and Environmental Reform (POWER). The Water Conservation Specialist served on the Conference Steering Committee and helped provide valuable input on California's current water issues.

NEST Advisory Committee - The Water Conservation Specialist is currently on the

Advisory Board for the Network for Environmental Science Teaching (NEST). This committee has partnered with the California Regional Environmental Education Coordinators Network (CREEC), a state-wide effort of the California Department of Education to enhance the environmental literacy of teachers and students throughout four counties. NEST liaisons throughout San Bernardino, Riverside, Mono, and Inyo counties, receive a how-to guide, a local resources guide, a quarterly newsletter, environmental curriculum, and invitations to workshops and meetings. Thus, these teachers can learn about environmental resources and how to integrate these resources into lessons.

Recycled Water Site Supervisor Class - San Diego County Water Authority. SCAO assumed costs associated with printing and assembling "Training Guide/Reference Manuals" for the one-day class.

Recycled Water Training - CA-NV Section, AWWA  
SCAO assumed costs associated with printing and assembling "Training Guide/Reference Manuals" for the one-day class through a partnership with the South Coast Water District.

The Water Conservation Specialist for the SCAO, along with five other Reclamation Water Conservation Specialists, went to Washington, DC to give presentations on the successes of the WCFSP.

Presentation to Western Coalition for Arid States

Participated and sponsored the Temecula Valley Wine Grape Day

## ONGOING EFFORTS

The following programs are ongoing efforts from previous fiscal years which the SCAO has continued to support.

### REGIONWIDE COMMERCIAL-INDUSTRIAL-INSTITUTIONAL (CII) WATER CONSERVATION PROGRAM

Partners: Metropolitan Water District of Southern California (Metropolitan)  
15 Member Agencies  
7 Sub-Agencies

The objective of this ongoing CII Program is to achieve savings in CII water use by replacing old high-water-use fixtures and equipment with new water conserving fixtures and equipment in CII facilities. In order to increase penetration of the southern California CII market, Metropolitan will use a regionwide approach in marketing the benefits of CII water conservation to end-users. The program will target those specific end-uses where replacing an existing fixture would yield the highest annual lifetime water savings. This new partnership will enable metropolitan to increase the rebate amounts to a level that will attract greater participation.

The expected water saving from this CII Program is approximately 2,850 acre-feet per year over the lifetime of the retrofits.

#### MODELING WORK FOR FORECASTING DEMANDS AND IMPLEMENTATION OF WATER USE EFFICIENCY MEASURES IN ORANGE COUNTY

Partners: Municipal Water District of Orange County (MWDOC)  
32 Retail Agencies throughout Orange County

This partnership will assist MWDOC in setting the stage for defining future resources needs within Orange County. Current demands in Orange County are approximately 650,000 acre-feet per year, which are projected to grow to about 870,000 acre-feet per year by 2020. Having a forecast methodology will help facilitate future planning, as will knowing how much demand reduction can be expected and by anticipating the costs and implementation responsibilities for water use efficiency measures. This partnership will allow MWDOC and Reclamation to produce demand forecasts and develop Best Management Practices Implementation Plans at the retail level.

#### MOBILE IRRIGATION WATER AND NUTRIENT MANAGEMENT LABS

Partners: USDA Natural Resources Conservation Service  
San Jacinto Basin Resource Conservation District  
Eastern Municipal Water District

This ongoing effort allows area growers and turf managers who are referred by Cooperative Extension farm advisors, local water district officials or previous customers, to examine poor irrigation performance, high water bills, poor crop yields or uncertainties about how to determine proper irrigation scheduling for farming or landscaping operations. Fundamental services provided by the Mobile Lab include comprehensive field evaluations of irrigation system performance; an assessment of water use history for crops or landscape; and irrigation system scheduling. Reclamation also sponsors an annual technical conference and trade show.

#### MOBILE IRRIGATION EVALUATION LAB

Partners: Mission Resource Conservation District  
San Diego County Water Authority

The objective of this program is to evaluate the irrigation systems and irrigation practices of growers in San Diego County who are presently using Colorado River water supplied by the San Diego County Water Authority and its member agencies. The Mobile Irrigation Lab will continue to provide on-site irrigation system evaluations which include evaluating the existing irrigation system while the system is in operation, and soil type analysis to determine water holding capacity and possible drainage problems. A written report will be compiled and returned to participating growers and will contain the following information: Summary of the system's hydraulic performance, including the system's pressure and flow rates; Emission uniformity; Recommendations for improvements; Detailed soil information; Baseline crop water use guidelines; Specification of sprinklers/Emitters; and All flow/pressure data collected during the evaluation.

## PREVIOUS PROJECTS THAT WERE COMPLETED IN FISCAL YEAR 2000

Below are examples of partnerships/programs that had begun in previous Fiscal Years and have been completed this year.

### CALIFORNIA IRRIGATION MANAGEMENT INFORMATION SYSTEMS (CIMIS) UPGRADE

Partners: California Department of Water Resources (DWR)  
Bureau of Reclamation - Mid-Pacific Region  
Bureau of Reclamation - Yuma Area Office

The current CIMIS system contains 102 stations with over 60 of these stations purchased and maintained by local agencies, making CIMIS a successful partner with the local beneficiaries of the program. This network is the major source of reference evapotranspiration data for many agricultural and landscape water users throughout California. It provides data and information state-wide, and 51 stations out of the 102 existing stations are located in or adjacent to Reclamation's service areas. This partnership assisted DWR in upgrading and/or replacing the current software and database which will allow CIMIS users to access information through the Internet in a more user friendly browser.

In 1996, the University of California, Berkeley reported that the total benefits to California agricultural users of CIMIS from applied water reduction and increased yield increased by \$64.7 million per year. It is estimated that this upgraded site will have over 2000 hits per month.

### ESTIMATION OF REFERENCE EVAPORATION (Eto) IN NON-IDEAL LOCATIONS STUDY

Partners: California Urban Water Conservation Council (CUWCC)  
Bureau of Reclamation - Mid-Pacific Region  
San Diego County Water Authority  
Metropolitan Water District of Southern California

## East Bay Municipal Water District

This state-wide partnership assisted the CUWCC in conducting a study to estimate reference Eto in non-ideal urban environment locations. This study tested a method of estimation in three different regions throughout California and will establish whether microclimate differences exist, and if the proposed method to estimate Eto at non-ideal sites is sufficiently accurate for use by the California Department of Water Resources. The results of the study will be used to recommend locations for CIMIS stations in these areas and will provide important information necessary for urban water agencies to perform Best Management Practice #5.

### RESIDENTIAL OUTDOOR MOISTURE SENSOR PROGRAM

Partner: Southern California Water Company

As a result of this program, 300 residential moisture sensors which meet Best Management Practice #1 have been installed. Moisture sensors were installed in residences which have an automatic sprinkler system and a minimum of 500 square feet of turf. A comparison of pre-intervention water use history to post-intervention water use history will be documented and included in a final report. Moisture sensors conserve water by not allowing a time clock to actuate control valves when water is not needed.

It is estimated that in a single family dwelling unit, water saving from a moisture sensor is 127 gallons per day. Over 5 years, 300 installed sensors could save as much as 213 acre-feet of water.

### NATURAL RESOURCE LABORATORY MOBILE VAN - COMMENCEMENT 2000

Partners: Los Angeles Natural Resource Conservation Service Urban Team  
Los Angeles Unified School District  
Antelope Valley Resource Conservation District

This educational project provides natural resources education assistance to approximately 6,50 students, 300 teachers and administrators, and 500 residents and other community interests in the east and south-central areas of Los Angeles a year. The Mobile Van was customized to include watershed models, add-on modules, data collection and analytical tools and supplies, and technical materials needed for classes. The Mobile Van's mission is to educate and inform schools and community interests about the influences of natural resources and help initiate and complete hands-on field study projects. This Mobile Van enhanced and supplemented the existing environmental education curriculum throughout Los Angeles.

### IRRIGATION MANAGEMENT MOBILE LAB

Partners: Riverside-Corona Resource Conservation District  
City of Corona  
Western Municipal Water District

This mobile lab conducted residential management evaluations on homes that have historically high water bills, problems with landscaping, drainage or other water related issues. The lab was able to demonstrate to homeowners ways to reduce runoff and drainage water, and manage irrigation on an as needed basis. Two homeowner workshops were held in the Fall and Spring to inform participants of the analysis. Irrigation schedules were provided based on how much water the landscapes really need. A video tape was produced to help pass on the lessons learned to other homeowners as well. The SCAO also purchased a CIMIS station for the City of Corona as part of this partnership.